Instant Video Blogging as a Tool for Students to Unveil Academic Emotions in Learning Situations

Anni Loukomies
Viikki Teacher Training School, Faculty of Educational Sciences, University of Helsinki, Finland; and Department of Childhood Education at the Faculty of Education, University of Johannesburg, South-Africa
Contact corresponding author: anni.loukomies@helsinki.fi

Jari Lavonen
Faculty of Educational Sciences, University of Helsinki, Finland; and Department of Childhood Education at the Faculty of Education, University of Johannesburg, South-Africa

Kalle Juutti
Faculty of Educational Sciences, University of Helsinki, Finland

ABSTRACT
Recognizing students' learning-related emotions and taking them into consideration are important pedagogical tools for teachers. Taking students' views into account promotes their participation. In this study, instant video blogging (IVB) is used to collect primary school students' first-hand accounts of their emotions in learning situations. Through an experience sampling method (ESM), 22 Finnish sixth-grade students (12–13 years old) took part in IVB nine times during this study. The verbal expressions of students were analyzed to investigate students' emotional experiences throughout the teaching sequence. The IVB method offered direct insight into how all students experienced teaching sequences. Compared to teacher observations, IVB offers a more diverse view into students' experiences. This information can be employed when educating future teachers, and developing instructional methods. Further, offering students the opportunity to express themselves is the first step in supporting their participation.

Keywords: academic emotions, instant video blogging, experience sampling, situational interest, participation

Introduction
The aim of this study is to examine how video blogging can be employed in authentic learning situations to convey students' academic emotions and learning-related
Anni Loukomies, Jari Lavonen & Kalle Juuti

experiences to the teacher. Having one’s views and opinions acknowledged may promote motivation and the experience of participation. Recognizing students’ learning-related emotions and taking them into consideration are important pedagogical tools for teachers, but getting this information by simply observing the students may be difficult (Loukomies et al., 2015).

In this study, we introduce instant video blogging (IVB) as an experience sampling method (ESM) for collecting students’ first-hand accounts of their momentary emotions and experiences in learning situations (Figure 1). The main aim of this research is to pilot a method for obtaining accurate information about students’ experiences, and to reveal the potential for and obstacles in capturing learning-related emotions through employing IVB in a learning context. Based on the results and the experiences of the pilot, the potential of IVB as a tool for gathering students’ experiences is discussed.

The research questions are:

1. What potential does the IVB method have for unveiling students’ academic emotions and experiences in learning situations?
2. What emotions did the students express in the learning situations?

Emotions in Learning Situations

Emotions, together with motivation, learning strategies, and competence beliefs, have a critical impact on subsequent performance (Pekrun et al., 2010; Putwain et al., 2018). According to Pekrun et al. (2018), the concept of academic emotions refers to emotions focusing on achievement, epistemic aspects of learning (knowledge generation), the topic at hand, or the social aspects of learning. In other words, academic emotions are emotions that appear in the academic domain, and focus on the learning situation and its content. The Finnish National Core Curriculum for Basic Education (FNCCBE, 2014) states that “the interests, appraisals, working approaches and emotions of the pupils, as well as their experiences and ideas of themselves as learners, influence their learning process and motivation” (p. 17). Positive emotions associated with a task may help students reach the objectives of the task, whereas negative emotions may impair performance (Pekrun et al., 2018). Apart from familiarizing students with a given topic, teachers are also responsible for inspiring excitement for learning in the context of the discipline (Pekrun et al., 2018). A teacher continuously observes and evaluates students’ emotional expressions, and as a consequence, revises or abandons some lesson activities. At the same time, the teacher’s choice of lesson activities and feedback to the students may influence students’ emotions. In this reciprocal loop, recognizing and influencing students’ learning-related emotions are important pedagogical tools for a teacher. In their teaching placement periods, student teachers practice these skills of observing and adjusting their actions.

Students experience a rich diversity of emotions in academic settings (Pekrun et al., 2002). Emotions include affective, cognitive, motivational, physiological, and expressive components. The affective component is a core component of emotions, whereas
the other components may or may not be present (Pekrun et al., 2018). Genetic dispositions, physiological processes, and cognitive appraisals can be regarded as the main proximal sources of emotions (Pekrun et al., 2002). Emotions that occur in the context of learning are referred to as academic emotions (Pekrun et al., 2018). As mentioned above, Pekrun et al. (2018) categorize academic emotions into subcategories: achievement emotions, epistemic emotions, topic emotions, and social emotions. Achievement emotions can be further distinguished as activity and outcome emotions. Boredom and enjoyment are examples of activity emotions, whereas pride and shame are outcome emotions. Epistemic emotions, for example curiosity that may be followed by situational interest, express the affective side of thinking, and they are related to knowledge or knowledge generation (Pekrun et al., 2018, p. 9). In contrast to epistemic emotions, topic emotions are aroused by the material or topic at hand. They can be positive or negative, and both have the potential of grabbing students’ attention and triggering their interest. Finally, learning usually takes place in a social context, and there are many kinds of social emotions involved, which may or may not be related to achievements. Non-achievement social emotions may be related to the relationships of the persons in the learning situation.

Pekrun et al. (2002) suggest that academic emotions exist in two dimensions, positive-negative and activating-deactivating (p. 97). These two dimensions constitute four categories: positive activating (enjoyment, hope for success, pride); positive deactivating (relief, relaxation after success, contentment); negative activating (anger, anxiety, shame); and negative deactivating emotions (boredom, hopelessness).

**Interest as an Emotion**

When considering the positive pre-conditions for learning, interest is an obvious one. In his article on the role of interest in learning, Schiefele (1991) points out that from the writings of Dewey and James in the beginning of the 20th century onwards, the role of interest as an enhancer for learning has been indisputable. Pekrun et al. (2018) mention interest as a consequence of primary emotions, such as surprise. Because interest plays such a significant role in learning, we consider it here in a bit more detail. Interest has been identified as a way to motivate people to learn (Silvia, 2008), and it motivates exploration and information seeking (Ainley & Hidi, 2014). Hidi (2006) defines interest as “a unique motivational variable, as well as a psychological state that occurs during interactions between persons and their objects of interest, and [it] is characterised by increased attention, concentration and affect” (p. 70). Situational interest is awakened by an external factor that captures the attention, whereas personal interest is more internal and connected to a person’s values and knowledge structure (Schiefele, 1991). Hidi and Renninger (2006) propose a four-phase model of interest development, as they state that aroused (caught) and maintained (held) situational interest first develops into emerging personal interest, and then into well-developed personal interest. Linnenbrink-Garcia, Patall and Messersmith (2010) have further developed this model, proposing that maintained situational interest may be awakened because of feeling-related or value-related factors.
Silvia (2008) has a slightly different view of interest compared to the person-object theory of interest introduced above. He considers interest to be an emotion, because it encompasses all the typical components of emotions, namely physiological changes, facial and vocal expressions, patterns of cognitive appraisal, a subjective feeling, and an adaptive role across one’s lifespan. It has cognitive and attention-related aspects as well (Lonka & Ketonen, 2012). The opposite emotion of interest is boredom, an academic emotion connected with reduced arousal, lack of motivation, attention problems, and impaired performance (Pekrun et al., 2010). Interest is a more complicated construction than basic emotions, as it may be accompanied by other, positive or negative emotions (Ainley & Hidi, 2014), depending on how and why it emerges. Therefore, the expression of interest may vary.

Support for Students’ Participation by Offering Them Tools for Communication

In his book (2015), Biesta names subjectification as one of the goals of education. Students should gain knowledge and skills so that they can influence and regulate their own learning activities. However, to be able to influence one’s learning, one must be able to express him or herself. Through the procedure proposed in this article, we aim to give voice to all students in a specific classroom. In a broader sense, this is in line with the Convention on the Rights of the Child (UN, 1989), which states that a child must be assured the right to express his/her views freely, in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child. The Finnish National Core Curriculum is in line with the convention, since students’ participation in their own learning processes is highly recommended (FNCCBE, 2014). Niemi and Kiilakoski (2020) state that participation is a concept operationalized in the relationship of an individual and a social entity, such as a class. They maintain that participation requires having a recognized position as an agent, which means the potential to act. Niemi and Kiilakoski (2020) further assert that participation manifests itself in action, and thus the necessary condition for participation is that children are active. Finally, children should experience participation and involvement.

In the school context, participation can take various forms, which differ from each other by the level of responsibility and freedom of choice offered to the student, and on the other hand, the level of self-regulation required of the student. In the hierarchy according to Niemi et al. (2018), the weakest form of participation is active joining, where students actively participate in teacher-led activities and relate to other students. The second level of participation is a collaborative form, where the teacher takes the initiative in choosing the lesson topic based on the curriculum, but the lesson is formulated in collaborative discussions between the teacher and the students. Students’ previous knowledge and their ideas play an essential role. The third, and second highest, level of participation is called child-oriented participation (Niemi et al., 2018). This means that learning situations are based on students’ ideas and preferences, and the students have a responsibility for their own learning. The teacher acts in an assistant role, helping the
learners to implement their ideas, and offering suggestions for further improvements of the learning outcome. The most evolved form of participation according to Niemi et al. (2018) is child-­led participation. On this level, learning situations happen as a result of students’ initiatives, without adults’ interference. The students make independent decisions about how the situation proceeds. Children playing without adult guidance is an example of child-­led participation, but as the curriculum usually frames learning at school, authentic child-­led situations are rare.

Classes are usually organized in a way that one teacher teaches approximately twenty or more students. Asking for everyone’s opinion and feelings may be difficult to organize, and there may be social pressure hindering some students from talking about their views. In this study, we pilot a method that gives all students an equal opportunity to speak about issues related to their studying, even anonymously.

**Instant Video Blogging in Experience Sampling**

During lessons, teachers observe the classroom atmosphere and motivational states of students, and adjust their actions accordingly. To motivate students optimally, and adjust their own actions, teachers need accurate information about students’ emotions. Shirazi (2017) argues that teachers should not just consider conceptual knowledge to be important, but also the way in which subject content knowledge is taught, because having a teacher with a good sense of humor and empathy increases positive experiences in learning conceptual knowledge. In addition, autonomy-­supporting teachers acknowledge students’ expressions of negative affect, and communicate their understanding of the students’ perspectives (Reeve & Halusic, 2009). It is plausible that the perception of students’ emotional states may influence teacher’s decisions throughout the course of the lesson. During a lesson, a teacher observes students’ emotional states by observing their facial and verbal expressions, but may not draw correct conclusions. Loukomies, Juuti, and Lavonen (2015) found that students may hide their actual emotional states from the teacher, who then draws incorrect conclusions about the students’ level of interest. In order to design teaching sequences that will potentially promote positive emotions, it is essential to obtain accurate information about what students actually experience.

Students should be asked about their emotional states when emotions emerge. Retrospectively asked, students may interpret the past incorrectly (Shirazi, 2017). To grasp the actual situational emotional states and diminish bias due to retrospection, we applied an experience sampling method (ESM) in the data collection for this study. ESM makes it possible to distinguish the longer-­term conditions from the immediate context of a certain feeling (Csikszentmihalyi & Hunter, 2003). The reporting of experiences takes place over a period of several days, and is conducted multiple times a day (Katz-­Buonincontro & Hektner, 2014). After hearing a signal at random moments in time, the participants would answer questions related to their experiences at that particular moment (Csikszentmihalyi & Hunter, 2003). Traditionally, ESM is defined as repeatedly collecting written responses to questions tailored to fit the particular
situation (Hektner et al., 2007; Palmer, 2009), but digital tools have also been designed for mobile phones or iPads as a means of reporting experiences (Katz-Buonincontro & Hektner, 2014; Litmanen et al., 2012).

Figure 1: IVB session.

Methods
Participants and Procedure
Twenty-two Finnish sixth-grade students (12–13 years old) from the Helsinki area took part in this study, which consisted of four 45-minute science lessons. During the lessons, there were three adults present in the classroom: a teacher-researcher, who was the teacher of the class and had the overall responsibility for activities being in line with curriculum requirements; and two researchers, who joined in organizing classroom activities and acted as co-teachers. There was permission from the school principal and the guardians of the students for the activities described below.

In this research, ethical standards were followed in the conduct of the study. The learning and videoblogging activities were normal curriculum-based practices of the class, and did not cause any risk to the students. Consent to use the data that originated from these activities was obtained from the guardians of the students. The guardians were openly informed that the results of the study will be employed to further develop instructional methods and teacher education. The students were told that the data will be transcribed and anonymized before analysis, and the teacher-researcher could not recognize students from the data. In any case the videos do not influence students’ evaluation. The students were also informed that the data are treated confidentially and kept in a safe place at the university. The activities and reflections related to this research project can be regarded as normal classroom activities.

Instant Video Blogging (IVB)
In this study, we applied IVB as an ESM. The students were given randomly numbered smartphones equipped with video cameras. Student numbering followed the phone numbering. The phones only had back cameras, so the students were not able to see their own faces when recording videos. Students were asked to introduce their activities and evaluate their feelings upon hearing a signal sound, which was not randomized but synchronized with the phases of the lesson and the variation of instructional methods. At the beginning of each IVB session, the students explained what they
were doing, which provides the basis for how the situations are defined in this study, according to the students’ own understanding. At the beginning of the first actual lesson, the students were reminded of the correct use of the smartphone cameras, and reminded that the researchers were interested in their honest experiences during the lessons. Students were reminded that their video blogs would be used only for research purposes, not for academic evaluation or any other use. The students were told that once they heard a signal sound, they should stop what they were doing, take the smartphone out, and answer the following questions on video:

(1) What are you doing at the moment?
(2) What are your emotions right now?

The data for this study consists of transcribed recordings of the students in the IVB videos. There were 11 video blogging situations, in which 22 students participated. So altogether there were 242 possible IVB measurement situations during the observed lesson. Out of those, there were 161 measurement situations where students recorded recognizable speech. Sometimes, some students did not do the blogging. One recording was chosen as an analysis unit. In 108 recordings, there was content related to emotions or feelings. In 53 analysis units, the content consisted of plain descriptions of the activities. The transcriptions were read, keeping in mind the theoretical construct of emotions based on the research of Pekrun et al. (2008), and then classified as positive, negative, or not including emotions or feelings-related content. The decision to use only a rough categorization into three categories was driven by research showing that even among adults, the evaluations of different positive emotions correlate strongly (Lonka & Ketonen, 2012), so there is no need for more categories to encompass all of the possible emotions.

Teaching Sequence Description
The teaching sequence consisted of four 45-minute lessons and a practice session. The focus of the practice session was to practice the correct use of the device used for the study. Then the students were instructed to use the device during science lessons. The content (Finnish swamps) was consistent with the FNCCBE (2014), and the lessons were planned to include interesting content and various instructional methods (teacher-led demonstration, narratives, teacher-led lecture, hands-on experimental work, and group work). The aim was to offer versatile learning experiences according to the primary science curriculum. In teacher-led situations the dialogic form of interaction was emphasized. The students’ goal was to learn about different types of swamps and peat. Lessons one and two were as follows: The students were informed about the structure of the session. Then they watched a news clip related to swamps. The students then discussed their experiences related to swamps. The relevant textbook chapter was read aloud by volunteering students. A teacher-led demonstration followed. During the teacher-directed parts of the lessons, students asked questions and made comments. After the demonstration and discussion, notes were written about
the essential concepts and their relations. Then the students listened to one researcher’s experiences in a geography field course related to swamps. Students were given a task to recognize different swamp types with the help of their textbooks. Lessons three and four began with an experiment using pH paper. Samples were shown to students. Students then received instructions regarding the student-led experiment, providing details on the pH levels of peat, ash, and soil. The students conducted the experimental work in small groups of three. After students completed the experimental work, the results were scrutinized in a teacher-led discussion, and the students made some final notes.

Results
In Tables 1 and 2, the distribution of students’ expressions in IVB situations into different categories is presented. The emotional expressions have been picked from the answers to the second question, What are your emotions right now? Despite the explicit reference to emotions in the question, many students spoke about the qualities of the task. For example, with respect to category ‘nice’, most students did not say, *I feel nice*, but instead *This is nice*. Further, they did not say, *I feel interested*, but instead, *This is interesting*, and instead of saying, *I’m bored*, they said, *This is boring*. However, that was their understanding of the question, and that understanding influenced their way of answering it. The answers might refer to topic emotions (Pekrun et al., 2018), and instead of relating their own emotions when dealing with the topic, the students speak about the characteristics of the topic. This may be due to the characteristics of the Finnish language, expressions related to the qualities of the task are in many cases more fluent and natural to use. For example, *This is boring*, is translated, *Tämä on tylsää*, whereas, *I’m bored*, is translated, *Minä tunnen itseni tylsistyneeksi*, which is not the language young people are accustomed to use. To sum up, all content in the answers to question two were categorized, although it is possible that the researchers have made an incorrect interpretation.

<table>
<thead>
<tr>
<th>Table 1: Distribution of students’ positive expressions in IVB situations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TOTAL POSITIVE MENTIONS</td>
</tr>
<tr>
<td>Interesting</td>
</tr>
<tr>
<td>Nice</td>
</tr>
<tr>
<td>Fun</td>
</tr>
<tr>
<td>Ok</td>
</tr>
<tr>
<td>Important</td>
</tr>
<tr>
<td>Pleasant</td>
</tr>
<tr>
<td>Good</td>
</tr>
<tr>
<td>Excited</td>
</tr>
<tr>
<td>All right</td>
</tr>
<tr>
<td>Sensible</td>
</tr>
<tr>
<td>Thrilling</td>
</tr>
<tr>
<td>Helpful</td>
</tr>
</tbody>
</table>
Table 2: Distribution of students’ negative expressions in IVB situations.

<table>
<thead>
<tr>
<th>2. TOTAL NEGATIVE MENTIONS</th>
<th>49</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boring</td>
<td>18</td>
</tr>
<tr>
<td>Not interested</td>
<td>12</td>
</tr>
<tr>
<td>Not nice</td>
<td>3</td>
</tr>
<tr>
<td>No energy</td>
<td>3</td>
</tr>
<tr>
<td>Not important</td>
<td>3</td>
</tr>
<tr>
<td>Irritating</td>
<td>1</td>
</tr>
<tr>
<td>Embarrassing</td>
<td>1</td>
</tr>
<tr>
<td>Not fun</td>
<td>1</td>
</tr>
<tr>
<td>Doesn’t matter</td>
<td>1</td>
</tr>
<tr>
<td>Tired</td>
<td>1</td>
</tr>
<tr>
<td>Confused</td>
<td>1</td>
</tr>
<tr>
<td>Stupid</td>
<td>1</td>
</tr>
<tr>
<td>Nothing special</td>
<td>1</td>
</tr>
<tr>
<td>Irrelevant</td>
<td>1</td>
</tr>
<tr>
<td>Sucks</td>
<td>1</td>
</tr>
</tbody>
</table>

Below some direct quotes from students are presented to enhance the characteristics of the data. Positive verbal expressions were most often related to students’ interest in a topic or subject.

Now the teacher is telling about what she did when she was young. I mean when she was studying. It was very interesting. We learnt that things can be conserved in a swamp, and what has been found there in the past. We have not written much. (Student 20, situation 5)

We’re about to start a pH test. It seems interesting. (Student 5, situation 9)

I’m working with swamps at the moment and it is interesting. We have biology. The topic is swamps and it is quite interesting. (Student 5, situation 1)

Well, we started to conduct an experiment and finished it quite quickly. We tested the pH level of peat. I mean peat, compost, and some kind of flour. This was really an interesting experiment. (Student 61, situation 10)

‘Nice’ was also a common positive emotional expression in the students’ speech. In Finnish, ‘nice’ is a neutral positive expression and quite general and unspecific.

We did the experiment, the results were good and we’re writing in our notebooks. And we got the pH papers, and we put them in the containers, and got two pH papers in which there were five or four. One quite greenish yellow and one was kind of very dark blue. Now it is quite nice. (Student 20, situation 10)
Well, we did the test. The aim of it was to measure the pH level and this was nice. We had ash, peat, soil, and we checked them. This was nice. Now we start to make notes of what we observed and what the differences were. (Student 23, situation 10)

Now we wrote almost all our notes, and figured out that not all plants like sour soil. And which plants like alkaline soil. And ash, all that carbon and lava. They are like, they make the soil more neutral, and most plants that did not grow there before, start to grow as the pH level changes. That’s quite nice, the lesson ends soon. (Student 20, situation 11)

In seven answers, the students referred to the importance of the topic, even though it was their emotional experience that the question was about.

Conservation of swamps feels important. Conservation of swamps is important in my opinion. The topic is not my favourite, but it is nice to learn. (Student 20, situation 2)

Well, we did an experiment in which we watched how much water the peat absorbs. And it was, maybe it was important. (Student 68, situation 3)

Negative verbal expressions were most often related to boredom, but also lack of being interesting was mentioned.

Hi, this experiment is boring, and I'm happy it is about to be over. (Student 26, situation 11)

Well, we checked the pH level of the swamp soil. It is below seven. ... Well, I feel bored. Have been feeling like that all the time. I haven't even listened to the whole lesson, just sat at my desk. And I did not learn anything. Bad student. (Student 36, situation 11)

We read the textbook, and it is very boring. (Student 54, situation 7)

Well. We are making notes about this swamp, and this is not nice because we need to write, and my hands can't take writing, and therefore it is boring. (Student 30, situation 5)

We are supposed to classify different swamp types based on the pictures [laughing]. This was not too interesting of a topic. (Student 50, situation 7)

Nothing specific has happened, and at the moment we are discussing what experience we have regarding swamps. Nothing particularly interesting has happened, but maybe soon. (Student 1, situation 1)

Well, we had the text from the book. Something like the soil of the swamp consists of peat. Then we discussed what we have seen when visiting swamps,
and the teacher made a mind map out of the answers. And this is an ok topic, but doesn't particularly interest me. (Student 23, situation 2)

In some excerpts, there were both positive and negative content. They may have referred retrospectively to different points of the lesson.

We are doing this...what is this...tests with the colored strips that change color based on something. And I'm bored like I was in all my videos. (Student 36, situation 10)

We do...places of plants where they live and make notes. This is a bit boring but interesting. (Student 7, situation 11)

We make notes. This lesson is about to end. Quite fun lesson. Some aspects were a bit boring, reading and making notes. (Student 13, situation 11)

Well we read the peat chapter and this is not so interesting. Well probably this is important. I don't know. (Student 31, situation 2)

Neutral verbal expressions were most often related to students describing the activity but not explaining their emotions related to it.

We were discussing how the swamp conserves things, and how the peat has been taken out of the swamp. (Student 50, situation 6)

We had an experiment with peat. In it, we measured the pH level and wrote down the answers. Then we have to consider the results. (Student 13, situation 7)

There is also a possibility that students gave a false answer in the IVB on purpose, or the student was speaking with irony in his/her voice.

Hi, we're about to conduct a nice test, but this lesson is very, very boring. This is so boring. And student X, he gives a false impression in his videos. (Student 26, situation 7)

Hi, this lesson is about to end. This has been a fun lesson or actually two lessons. This research has also been quite fun, and handling the phone has been nice, once we got permission. And these people here, they have been teasing me all the time, these friends of mine. Making notes was a bit boring, but the experiment was nice. And my hand gets tired and I'm dying, but this was fun. This sucks. (Student 30, situation 11)

Discussion
IVB as a Method for Gathering Information About Academic Emotions
Teachers make plenty of decisions based on observations and evaluations of the classroom atmosphere, although they may be partially uninformed. For example, a student's level of interest proved to be difficult for a teacher to evaluate (Loukomies et al.,
The main aim of the research was to pilot a method for obtaining accurate information about all students’ experiences, in order to support their participation and opportunities to express themselves on learning-related issues.

In a modern learning environment, where students move around, it may be difficult for the teacher to observe each student’s emotional expressions. Further, students may be embarrassed to speak about their negative or critical lesson-related emotional states directly to the teacher. In other words, the unspoken and conventional social rules, but also students’ different temperaments, may hinder some students’ will to express themselves and participate in the situation. To overcome these restrictions, we introduce IVB as a discrete way of revealing the students’ authentic opinions.

We conducted the pilot study in an authentic setting to offer all participants the same learning content and procedures. Limitations related to school schedules restricted the time allocated for this study, and therefore the sample size was small. However, distributing an educational innovation requires evidence ensuring its benefits, and therefore design and development must start on a small scale. In this pilot research, the lesson was interrupted for video blogging purposes, in order to gather students’ experiences of various learning situations and instructional methods. If the method is adopted in everyday use, blogging should be planned as part of the learning situation, to follow the curricular aims related to transversal competencies, such as learning to learn skills, self-regulation skills, ICT use skills, and skills of expressing one’s thoughts (FNCCBE, 2014) – not an interruption of the lesson.

Positive emotions expressed in IVB were mostly related to situational interest. Based on the evidence, it can be argued that students’ spontaneously perceive interest as a relation between person and object (see Hidi, 2006), because when asked about their feelings, the students include the object of interest in their speech, and they start to speak about the activity and how interesting it is. Interpreted this way, this emotion can be categorized as topic emotion, according to Pekrun et al. (2018). A teacher should recognize moments when situational interest can be triggered, as situational interest may develop and transform into personal interest if maintained (Hidi & Renninger, 2006). In this research, students’ interest was triggered when there was some kind of activity going on in the class, a teacher-led demonstration or experiments conducted by the students, but not so much when reading the textbook or making notes. Situational interest followed by surprise related to a demonstration is associated with epistemic emotions (Pekrun et al., 2018). Interest-based interactions with the environment provide optimal experiential modes that combine positive cognitive qualities and positive affective qualities (Krapp & Prenzel, 2011), which motivate people to learn (Silvia, 2008). Therefore, a teacher’s actions and lesson planning promoting activity are important in encouraging the transformation and development processes.

Negative affect expressed in IVB data was mostly related to boredom. Some students even claimed that they are always bored in classes. Boredom is an activity emotion that belongs to the category of achievement emotions. According to Pekrun et al. (2002), the experience of boredom may be related to too low or too high demands
compared to a student’s beliefs in his or her abilities. If a student feels unable to keep up with demands, s/he may use boredom as a means of escaping behaviorally or mentally from the uncomfortable situation (Pekrun et al., 2002, p. 94). Therefore, besides examining students’ pre-existing knowledge and altering the teaching accordingly, teachers should support students’ ability to scrutinize their mindsets in relation to interest in the subject. One may include growth or a fixed perspective in the concept of interest. A growth perspective leads students to express interest in new areas, but also to anticipate challenges in maintaining interest (O’Keefe et al., 2018, p. 11). A fixed perspective prevents a person from initiating the developmental process of interest in new areas, and thwarts the process if the person encounters difficulties (O’Keefe et al., 2018, p. 11). Classroom interactions should be harnessed for the purpose of supporting a growth theory of interest. The skill of developing interest can be seen as a starting point for a successful learning process.

**Pedagogical Implications of the IVB Method**

There is potential in the IVB method to be employed in learning situations outside this research pilot. We claim this based on the fact that this research project took place in an authentic situation, in which all the activities were based on the curriculum. One of the authors was a teacher-researcher, who was the teacher of the participating class, and the activities were ordinary activities of the class. The video-recording part of the procedure can be transferred to other contexts, as most students have mobile devices, and the recording did not take an excessive amount of time. However, there are some partly unsolved issues that hinder the implementation of this procedure. Requiring the students to use their own devices may be a threat to equality if students come from very different SES backgrounds. The teacher should be sensitive to the situation, and make sure everyone can attend the IVB sessions regardless of having or not having a smartphone, and use school devices when possible.

Another concern is how to convey the videos to the teacher in a secure way. In this pilot research, students used research phones and videos were transferred using a cable, without using internet. If this method is employed during teaching, this aspect should be considered carefully. The factor that hinders implementation of the IVB method in everyday teaching most is related to communicating the content of the videos for the teacher’s use. Effective techniques for going through the videos and summing up relevant content is required. Transcribing them verbatim is too time-consuming and expensive for everyday use. Novel speech recognition technologies might be helpful in this respect.

Further, a pedagogical problem in using IVB is interrupting the lesson, although we believe that through repetition the procedure would become smooth, and the students would start to see the value in the possibility of being heard. However, if students are asked for their views, then the teacher should really welcome all emotions equally, and not let them influence how the student is seen. Also, if the teacher asks students for ideas for lessons, these ideas should really be employed.
Despite the mentioned difficulties, IVB has the potential to offer students a means of conveying their emotions to their teacher. In addition to the teacher’s observations, IVB enriches the picture of the students’ emotional experiences. Through IVB, students have the possibility to tell about their emotional experiences, and the teacher can better adjust content and instructional methods to promote and maintain situational interest. IVB might serve as a means of revealing students’ views, and increasing their participation in planning their studies, which is strongly recommended in the FNCCBE (2014) as a means of connecting given topics more closely with students’ worlds, and increasing the feeling of relevance related to studying. We also found that if the IVB tool is used in a way that all students blog simultaneously, the situation is more private than when students speak aloud in front of the group. Furthermore, IVB technology gives students the option to refuse to speak out.

Students also have the opportunity to express their negative emotions, which can serve as a starting point for discussions to support students’ skills in changing perspectives and becoming interested. Reeve and Halusic (2009) emphasize the importance of expressing and accepting negative emotions, as they reflect students’ trust in the teacher. Once negative emotions are conveyed to the teacher, they can be elaborated. However, the possibility to express negative emotions comes with responsibility. The students should be encouraged to change their perspectives, and find new, more constructive ways of reacting, not just complaining. Maintaining perseverance and finding constructive ways of dealing with negative emotions are related to the aim of overall growth as a human being (FNCCBE, 2014). Accepting emotional expressions and further elaborating on them through discussion are crucial steps towards changing perspectives. Gellin et al. (2012) have even proposed a structured protocol to support constructive criticism in classroom discussions. When ways of expressing constructive criticism are adopted, and students are taught methods to influence their own learning, they have the preconditions for experiencing participation. The teacher should hear the students’ ideas and opinions, and take them into account when planning teaching, whenever possible (Reeve & Halusic, 2009). Through video, students may feel it more convenient to express their feelings and thoughts, compared to talking directly to the teacher.

To summarize, the potential of the IVB approach lies in capturing students' emotional expressions effortlessly and effectively, and reaching all students simultaneously. IVB complements teacher observations and diminishes memory bias originating from retrospectively asking about experiences. Furthermore, some students may find it arduous to write answers about their experiences after a lesson, and therefore such expressions may be scarce. Being able to express ones' views promotes participation and learning motivation (Reeve & Halusic, 2009). Besides reflecting on their own actions during a lesson, student teachers should also be encouraged to collect and employ students’ experiences related to learning situations, systematically. The unsolved problems here are related to the safe transfer of the videos, and finding effective means to transmit content from the videos.
During teacher education, student teachers usually reflect on their own actions in a systematic way, but what they are able to say about students’ feelings and experiences may be based more on intuition. IVB can also be used in teacher education, especially teaching practicums, to offer student teachers feedback and opinions related to their lessons. Teaching practicums are usually short–term, and there may not be enough time to construct student teacher–student relationships that enable conversations in which students reveal their emotions. IVB conveys students' views to student teachers. Based on feedback from all students, student teachers can further develop the instructional methods and activities they use, and improve lesson structure. The same restrictions that were mentioned above apply to teaching practicums.

REFERENCES


