

# EXPLORING TRIGGERS FOR AROUSING INTEREST IN THE ONLINE LEARNING

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## Abstract

Teachers and educators in different domains and educational levels attempt to motivate and engage students through learning and interaction. Teachers and educators often think that students either have interest or not, but they might not recognize that interest can be aroused by features of environments, by designing an array of teaching and learning and by different activities. The aim of this research is to explore the significant triggers among higher education students (n=74) in a socio-digital environment. The data consists of students' online discussion posts (N=68), group discussion syntheses (N=10), and essays (N=21). The content analysis identified significant triggers, and categories were clustered. The results show that the most significant triggers are collaboration, topic, and feedback. The results reveal a new understanding for a collaborative learning framework. Findings from the present study suggest that teachers and educators in different domains and levels need to pay more attention to triggers in collaborative learning, particularly in socio-digital contexts.

Keywords: Triggers, interest, learning, socio-digital, online, higher education.

## 1 INTRODUCTION

Teachers and educators in different domains and educational levels make great attempts to motivate and engage students in learning and interaction ([1]). When using information and communication technologies in socio-digital learning contexts, students are expected to be engaged co-creators, rather than passive multimedia learners ([2]). Unmotivated, unengaged, and cynical students are a problem in Finland and other countries ([1], [3], [4], [5]). When students are described as unengaged, it signals that educational experiences do not trigger their interest. Previous studies suggest that educators, policy-makers, and research communities need to pay attention to student engagement ([6]). One way to promote the engagement of cynical students would be to make greater use of socio-digital technologies in their studies ([5]).

For promoting engagement in learning, the use of technologies should be embedded in sophisticated pedagogical practice. In designing learning environments, meaningful learning matters, and students should be guided toward innovative practices of knowledge creation ([7]). Our hypothesis is that promoting interest of students, both in face-to-face and socio-digital learning contexts, can increase students' motivation to interact with each other's, deepen their knowledge, and engage with learning practices. Earlier research shows that both teachers' and students' interests and engagement in the teaching and the learning processes are crucial for building positive learning experiences ([8], [9]). Teachers and educators often think that students either have interest or not, but they might not recognize that interest can be aroused by features of environments, by designing pedagogically teaching and learning, and by incorporating different activities. For instance, instructions such as activating prior knowledge, supporting autonomy, and providing students with a sense of control can trigger interest in the school context ([10]). Arousing interest takes time, practice, and awareness for perceiving triggers around students' formal and informal as well as virtual and physical environments.

Triggers can advance problem-solving and increase enjoyment for learning ([11]). They are prerequisites for inspiration, motivation, and engagement, but how can we provide and ensure learning experiences that meet students' motivational, social, and emotional needs and that also awaken their potential for learning? What elements can trigger students' interest? The aim of this study is to explore which triggers are significant for students in a socio-digital learning context. Specifically, we are interested in discovering which triggers university students in educational domains find significant for their collaborative learning and knowledge construction in socio-digital learning contexts. The results are applicable for teacher education in higher education, particularly when using digital environments for collaborative knowledge construction. In addition, the results are useful for

teachers and educators in different domains and levels as they design inspiring and engaging technology-enhanced teaching and learning processes.

The theoretical framework consists of the two concepts *triggers* and *interest*. They are conceptually different entities, but, in practice, they include the same phenomena. We are aware that motivation and engagement are included in the same continuum, but we concentrate only on finding the triggers which lead to interest. Triggers are origins for interest, but they are challenging to perceive and label in learning processes. Teachers and students should become aware about triggers, particularly those which are significant for learning and interaction. Such affordances for inspiring learning, as long as they are not perceived, are called positive but hidden affordances ([12]).

## 2 TRIGGERS

Recent research ([13], [14], [15]) in education and educational psychology provides evidence that interest, motivation, and engagement form a process in which triggers fill a key role, because they can awaken and maintain students' interest. A trigger can be an object, an event, a person, a task, or an idea; it can be something which is novel for learners, or it can be a challenge or a cognitive conflict. Repetitive, routine, and similar tasks seldom serve as triggering activities for learning. The problem is that the same triggers are not effective for different students or for the same students in different situations. Triggers can change and direct interest strongly in either a negative or positive way. Interest aroused by a positive trigger can be a fleeting feeling in the beginning; teachers should be aware of triggers and detach students' interest. Interest aroused by triggers is a cognitive and affective motivational factor alongside which increased interest, self-efficacy, goal-orientation and self-regulation may develop ([14], [15], [16], [17]).

Only a few studies have explored triggers in higher education, particularly in technology-enhanced learning contexts. A comparative study in an online course shows that *reflective triggers* were extensively employed by the participants, and they were perceived to be useful for reflection and learning. Reflection triggers were linked to receiving, giving, and verbalizing information, and they provided opportunities for comparison with other students and enhanced self-reflection and self-monitoring ([18]). Another study ([19]) shows that students who use video triggers put more effort into understanding problems than students who use paper triggers. Triggers can also enhance learning in virtual groups ([20]). Other researchers ([21]) call triggers "motivational drivers," and they found that economic value, ease of use, escapism, and visual attractiveness enhance users to engage activities in virtual worlds. Määttä, Järvenoja and Järvelä ([22]) investigated primary school pupils' social interaction while working in small groups in a science class. Three trigger categories were used in their content analysis: 1) individual progress triggers, 2) group progress triggers, and 3) contextual triggers. The main findings showed that efficacious interaction demanded collaboration between group members and required active participation and productive on-task effort.

## 3 INTEREST

Interest as a "subjective experience on learning" ([16]) plays a major role in students' motivation and learning ([23]). It is characterized by an affective component of positive emotion and a cognitive component of concentration ([10], [13]). When students experience interest, their actions acquire an intrinsic quality, and they will be driven by enjoyment rather than external motivations ([24]). Further, higher levels of interest would result in higher levels of cognitive activation, which would then produce stronger links with learning ([25]).

Researchers consider interest a psychological state ([13]), while others link interest to emotions ([26]). Research has identified two types of interest: *situational* and *individual* ([10], [24], [27], [28], [29]). Situational interest is a temporary attention and feeling in response to a specific situation ([30]), and individual interest is more like personal orientation, or an individual's tendency to engage with something ([31]). According to Renninger ([32], [33]), both interests are motivating, and they involve positive affect ([20]). However, situational interest can also have negative affect ([1]).

### 3.1 Situational interest

Situational interest develops in the interaction between a person and the surrounding context, and is triggered by environmental factors and objects ([34]). In addition to supporting autonomy, situational

interest can be increased by engaging students with better texts and helping them to process information at a deeper level ([35]).

Situational interest is used to describe interest that is triggered primarily by certain conditions and/or concrete objects in the environment; it is dependent on the environmental factors and may vary from day to day ([34]). Situational interest can increase learning when a task or to-be-learned information is novel ([30]). The provision of scaffolding can maintain situational interest and can provide opportunities to make connections with educational concepts ([36], [37]).

### **3.2 Individual interest**

While situational interest can be triggered quite spontaneously in interactions with the environment, individual interest is seen as less spontaneous, of enduring personal value, and internally activated ([38]). Many conceptualizations of individual interest include positive emotion, affect, or feelings ([13], [38], [39]). Hidi and Renninger ([13]) specify that individual interest includes an individual's perceived value for the content being taught as well the importance of accrued knowledge or perceived competence with regard to individual interest. Many researchers confided that higher levels of individual interest lead to higher levels of engagement ([40]). However, simply engaging individuals behaviorally is not enough; they should be also cognitively engaged via activities and interaction. Cognitively engaged individuals think deeply, creatively, and critically about the content; they think about what they know and what they still need to know. They use different strategies to increase their understanding ([41]).

### **3.3 Interest development**

Developing and maintaining interest requires significant triggers along the process. The four-phase model ([13]) of interest development suggests that each phase can be characterized by variety amounts of affect, knowledge, and value. The four phases include situational interest, maintained situational interest, emerging individual interest, and well-developed individual interest. The first two phases are types of situational interest, and the next two phases of the Hidi and Renninger ([13]) model focus on individual interest and reflect more stable individual difference. These two last phases are characterized by positive emotion toward the content.

Renninger and Hidi ([17]) recommended five characteristics for incorporation to increase student interest. In their view, interest occurs with respect to a particular class of objects, events, or ideas. Interest has cognitive and affective parts that co-occur and shift with the development of interest. Interest characteristics develop in relation to the learning environment and are malleable. Teachers' and peer learners' roles are supportive. A learner may not or may be aware of the triggering process if the learner has so little interest that there are no expectations of interest or if the learner is caught up in the experience of interest. Interest has been described as having a neurological basis; learners want to re-engage and develop their understanding of contents of interest over time.

## **4 METHODOLOGIES**

### **4.1 Aim and research question**

The aim of this study is to explore which triggers are significant in socio-digital discussion within university students in the educational field. The following research question is specified: which factors raise students' interest for learning and knowledge creation in a socio-digital context?

### **4.2 Participants and context**

Seventy-four first-year university students in the faculty of education took part in seven-week course entitled "Learning, Interaction and Tutoring" (4 ects credits). All the participants were Finnish university students coming mostly from the northern part of Finland. The students will be teachers and educators after completing a five-year programme, including the completion of teacher training and a master's thesis. The aim of the course was to provide students basic knowledge about learning, interaction, and tutoring, such as the main principles of collaborative learning, self-regulated learning, active participation, and tutoring in different learning environments, including learning in socio-digital contexts.

### 4.3 Procedures

The “Learning, Interaction and Tutoring” course included lectures, scientific literature, and individual and collaborative learning tasks carried out both face-to-face and in a digital Optima environment. The data collection process included the following steps.

- 1 Students individually wrote essays in which they were asked to reflect on the following question: “What inspires, interests, and motivates in an online discussion?” The students uploaded their essays through URGUND plagiarism detector system.
- 2 Students participated in group discussions in the digital Optima environment. Ten groups of 6-7 students were formed, and the ultimate aim of the discussions was to collaboratively define criteria for high-quality online discussion which can activate and inspire students and enhance their learning. The time provided to the students for the discussions and knowledge co-creation in the digital environment was three weeks. At the end of the online learning period, each group identified the three most relevant factors that could trigger students for effective online discussion. Students presented their three recommendations, justified them, and evaluated their own learning throughout the course in the final face-to-face meeting. The Optima environment was open only to students and teachers. Students were instructed by their two lecturers, and the third teacher acted as a tutor. The tutor’s role was to make sure that students started their tasks and to provide help when students asked for it. Her task was not to participate in the discussions, per se, but to orchestrate the discussions and learning activities during the discussion period. Students, after the discussion, presented three the most significant factors for successful socio-digital discussion. They also reflected on the entire process.

### 4.4 Data

The data consisted of students’ online group discussion posts (n = 68), small group synthesis (n = 10), and essays (n = 21). All online discussions and students’ essays were implemented in the spring of 2016. The data from all three sources were transcribed and analyzed using qualitative content analysis ([42]) and Atlas.ti 6.2 software.

### 4.5 Analysis

The content analysis focused on identifying the triggers that are significant in a socio-digital context in online discussions. The data was categorised and analysed according to the factors which raised students’ interest in online discussion. The unit of analysis was one sentence. The main coding categories were formed in a data-driven manner. In addition, the structure of the main and sub-categories was developed by reflecting on the background theories. The categories were revised iteratively, and researcher triangulation was used to increase the validity of research findings. The most effective triggers are not clearly separated but rather linked with each other. For instance, group activity, interaction, and collaboration are very similar phenomena; therefore, we connected them.

As a result, the following sub-categories were revealed and connected (Fig. 1):

- Collaboration: group activity, interaction, inspiration, and motivation. Inspiration and motivation could have been taken together under “emotions,” but, in the data, students associated them closely with collaboration. They mentioned that inspiration and inspiring topics lead to motivation and engagement to participate in discussion and to further, together, knowledge acquisition and construction.
- Topic: Challenge and the focus of the theme and activity
- Feedback
- Atmosphere
- Learning environment
- Teacher

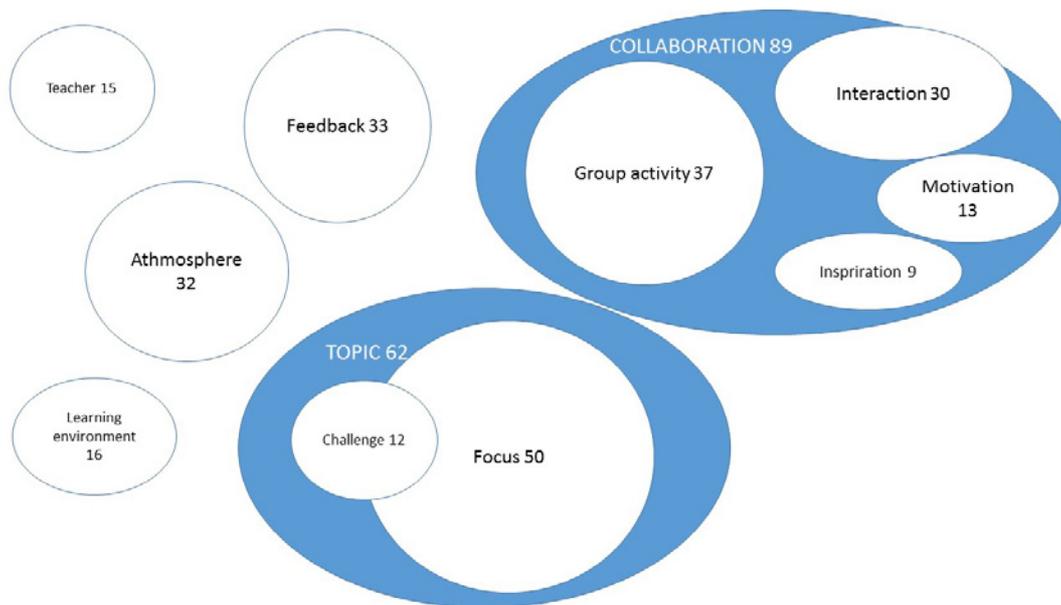


Fig. 1. Clustering data

## 5 RESULTS

Research indicates, the most relevant trigger for successful and inspiring online discussion is *collaboration* (Fig. 1). By identifying collaboration as a trigger, we specify collaboration as a feeling of belonging in the same group, and to collaborative learning, where students use different strategies for enhancing deeper learning. Students noted that collaborative discussion led to richer and deeper thinking than individual student could ever achieve. They posed open questions and looked for solutions together. They shared a common goal and actively pursued it. Reciprocal activity, dialogical action, listening to each other's, and joint insights were mentioned as inspiring and triggering collaboration. These aforementioned elements were achieved through collaborative learning, in which they, together, constructed new knowledge. "We had a feeling that our group is the whole entity, and we all felt that we are doing this really together; we learn together. Everyone is needed, everyone is listened to for achieving goals, which we have defined together."

The meaning of motivation as a trigger was discussed vividly. Students perceived that if individuals in groups are motivated, it could trigger motivational engagement among the members, in other words; if some individuals in a group are motivated, then they might motivate other members. In sum, students triggered cognitively, socially, and emotionally in collaboration, which led to successful online discussion. Students highlighted how their motivation increased their inspiration to take part in the discussion and knowledge construction and vice versa. The meaning of motivation was argued: "Motivation is one prerequisite for getting interested in the task." Activity in the group and meaningfulness in discussion seems to support motivation. Although external factors, such as academic credit, often trigger motivation, students in this course found that internal motivation existed due to their experiencing new understandings and new skills, such as online discussions skills.

The second relevant trigger is the *topic* (62) of the discussion. The topic should be sufficiently challenging in relation to students' competencies and resources. The topic should be formed as an open problem, where several possible solutions could be found through the discussion process. Open problem-solving can awaken creativity and collaboration and afford possibilities for co-regulation. The focus of the activity and the topic were experienced as inspiration first at the individual level and then at the collaborative level. Interest can be maintained through interaction among group members, after setting their goals for the discussion. In this case, the topic itself contained the goal: after the discussion, the task was to define three main factors that are relevant for a successful online discussion.

The third relevant trigger in online discussions is *feedback* (33), because it affords possibilities for learning and development. Although feedback received from teachers and tutors is important, more value has been put on feedback from peers, because it motivates students to participate in discussion

more than feedback from a teacher. An emotionally safe, positive, open, and supportive atmosphere (32) seemed to be crucial trigger, because it allows students to express their thoughts more freely.

The learning environment (16) and engaged teachers (15) can trigger students to participate in online discussions. The learning environment can be used in many different ways to guide students toward deepening discussions and learning. The visual appearance and usability of the platform is meaningful for triggering participation, as students noted: the environment should be easy to use. Students expressed their wish to expand multimodality in virtual platforms. They concluded that in order to trigger discussion: "Discussion forums should, overall, support discussion, and every students should feel comfortable participating in the forums."

Teachers and tutors are in key roles, because they trigger participation, increase interest, and support learning. Their activity, enthusiasm, and engagement boosts students' activity. On the other hand, some students agreed that for them it is enough to know that teacher or tutor is available, if needed. Students noted how tutors' activity and engagement reflects on them: "When the teacher/tutor is active, then the students will be willing to be active as well."

## 6 DISCUSSION

The aim in this study is to explore significant triggers in a socio-digital context in online discussion in higher education. The most significant triggers appear to be *collaboration, topic, and feedback*. Based on the results, it is important to discuss the following issues. First, on the basis of earlier studies dealing with collaboration and collaborative learning ([43]), it is known that collaborative learning is effective for learning, but it does not happen easily ([44]). The authors conclude that three interactional elements in collaborative learning are crucial, namely: explanation, argumentation/negotiation, and mutual regulation. Collaboration is defined as follows: the group has a common aim which they pursue together in order to create new knowledge and shared understanding. Their interaction prompts (triggers) thinking and further co-constructing understanding and new ideas to share. They question, estimate, hint, explain, and reflect the activities of the group. ([43], [44], [45], [46]). On the basis of earlier research, collaboration has not been identified as a trigger for inspiring learning. However, its significance can be justified with earlier research, which indicates that group process triggers, as well as individual triggers, are important for achieving efficacious interaction, active participation, and productive on-task working ([22]), which was evidenced in the study. Another connection for collaboration comes from Veerporten et al. ([21]) and reflective triggers. In efficacious interaction and active participation on tasks, students monitored themselves and their peers and reflected their learning. Students received information, provided information, and also verbalized successfully. In addition, in our case, students posed questions and looked for solutions together. It is obvious that the emotionally safe atmosphere was one prerequisite for freely expressing thoughts and emotions.

Another significant trigger was the topic. As interest theory suggests, the psychological state of interest is automatically triggered when the contents are perceived as relevant to one's individual interest. Furthermore, as situational factors, topic and learning content are naturally assumed to be less stable and more easily manipulated than individual factors ([10]). In the present study, the course's content areas were related to learning and motivation theories; the students explored in theories and in practice similar phenomena. The students received basic information about the topic during lectures and, based on that, and course literature, they started to work in online groups.

The third trigger, on the basis of the results, indicates a slight linking with conclusions of Salmela-Aro et al. ([5]). In our study, the technology being socio-digital in nature was not significant for the students. It was mentioned, but the issue did not raise further discussion. This may be due to the fact that students are generally expected to learn using different learning environments and technologies. They were not accustomed to using discussion forums like those in this study, and neither did they practice such demanding online discussions.

The study does have limitations. The most substantial limitation is methodological: measuring triggers, interest, and engagement is challenging, and much of the earlier research is based on self-reported data. This study did not use self-reports; nevertheless, the aim is to further develop methods for reaching the triggering process more authentically. Another limitation deals with conceptualizing triggers; hence, these results will be used as a tool for more accurate conceptualization for upcoming research.

The results brought a new understanding for collaborative learning framework. This study supports the recommendation that teachers and educators design collaborative learning processes by focusing attention on how collaborative learning itself could work as a trigger.

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