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Why Are Students' Self-Initiated Contributions Important? A Study on Agentic Engagement

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Date of publication: October 25th, 2019

Edition period: October 2019-February 2020

To cite this article: Montenegro, A. (2019). Why Are Students' Self-Initiated Contributions Important? A Study on Agentic Engagement, *International Journal of Sociology of Education*, 8(3), 291-315. doi: [10.17583/rise.2019.4540](https://doi.org/10.17583/rise.2019.4540)

To link this article: <http://dx.doi.org/10.17583/rise.2019.4540>

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Why Are Students’ Self-Initiated Contributions Important? A Study on Agentic Engagement

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(Received: 30 July 2019; Accepted: 20 September 2019; Published: 25 October 2019)

Abstract

This article is part of a research project on student engagement, achievement goals, and autonomy support in higher education. This systematic observational study presents a categorization of the contributions initiated by students in lecture-based courses. For this purpose, an observation form was developed and implemented in two courses delivered by the same professor. The form is based on the research question “Which students’ verbal contributions in lecture-based courses are aligned with the concept of agentic engagement?” A sub-question is whether agentic behavior is performed differently by male and female students in small and large courses. Self-initiated contributions were classified, counted, and described in order to compare results between the two courses. The findings revealed that (1) the self-initiated contributions classified as ‘expected by the educator’ were the most common in both courses, and (2) the number and type of contributions were different depending on both student gender and class size. The paper concludes with recommendations to advance the state of research on agentic engagement.

Keywords: agentic engagement, initiatives, lectures, agency, higher education

¿Por Qué Son Importantes las Contribuciones Autoiniciadas de los Estudiantes? Un Estudio sobre el Compromiso Agéntico

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(Recibido: 30 Julio 2019; Aceptado: 20 Septiembre 2019; Publicado: 25 Octubre 2019)

Resumen

Este artículo es parte de un proyecto de investigación sobre el compromiso del estudiante, sus objetivos de logro y el apoyo del docente para el desarrollo del aprendizaje autónomo en la educación superior. Este estudio de observación sistemático presenta la categorización de las contribuciones iniciadas por los estudiantes en clases magistrales. Para este propósito, se desarrolló e implementó un formato de observación en dos cursos impartidos por el mismo profesor. La pregunta de investigación fue “¿Qué contribuciones verbales en clases magistrales están alineadas con el concepto de compromiso agéntico de los estudiantes?” Esta pregunta también tiene como objetivo explorar la premisa de que los estudiantes exteriorizan su compromiso agéntico de manera diferente dependiendo del género y del tamaño del grupo. Cada contribución auto-iniciada se clasificó, contabilizó y describió, con el fin de comparar posteriormente los resultados entre los dos cursos. Los resultados revelaron que (1) las contribuciones auto-iniciadas clasificadas como ‘esperadas por el docente’ fueron las más comunes en ambos cursos, y (2) la cantidad y el tipo de contribuciones fueron diferentes con respecto al género de los estudiantes y al tamaño del grupo. El artículo concluye con recomendaciones para avanzar en el campo de la investigación del compromiso agéntico.

Palabras clave: compromiso agéntico, iniciativas, clases magistrales, proactividad, educación superior

Educational researchers have aimed to identify and characterize student engagement in a variety of learning scenarios and cultures. During the last three decades, the concept of student engagement has evolved, driven by studies conducted in the USA (Astin, 1993; Kuh, 2009), Australia (Tinto, 1997, 2003; Coates, 2009), the UK (Hardy & Bryson, 2010, 2016), Taiwan and Korea (Reeve & Tseng, 2011; Reeve & Lee, 2014), and South America (Pineda-Báez, 2014, 2019).

Recent results have given special attention to the fourth dimension of engagement, agentic engagement (Reeve & Tseng, 2011), in combination with behavioral, emotional, and cognitive engagements. The present observational study focuses on the recent conceptualization of agentic engagement as a form of proactive engagement that (1) is observed through students' contributions that enrich both learning and teaching practices, (2) is more common in autonomous learning environments than in controlled ones, and (3) is linked to students' achievement goals, which are highly determined by students' socioeconomic backgrounds (Reeve, 2013, 2019). The scale on agentic engagement refined by Reeve (2013) has been implemented and adapted throughout the world (Montenegro, 2017).

This study presents and applies a categorization of students' self-initiated contributions in lecture-based courses to gain a better understanding on agentic behavior in small and large courses. Few prior studies have been conducted in large classes with a focus on students' contributions during instructor-student interaction (Tatum, Schwartz, Schimmoeller, & Perry, 2013; Karabenick, 2004).

In a first step, survey items taken from Reeve (2013) were implemented in preliminary observations of lecture-based courses at a German university. Results from this observation highlighted the need to (1) categorize students' self-initiated contributions in lecture-based courses, (2) implement an observation form in order to characterize possible teaching and learning challenges in these courses, and (3) identify further research directions regarding agentic engagement and survey methodology.

The research question of this study is "*Which students' verbal contributions in lecture-based courses are aligned with the concept of agentic engagement?*" This question also aimed at exploring the premise that agentic behavior is performed differently by male and female students in small and large courses. This article is divided into six sections. Following

the next section with a theoretical background regarding university lectures and student engagement, the section of materials and methods describes the design of the observational form for recording students' agentic behavior and how this form was implemented in two courses during an academic semester. A section with results and discussion presents the description and analysis of findings regarding students' self-initiated contributions in lecture-based courses. The last section of this article is devoted to research directions on agentic engagement in higher education.

University Lectures and Students' Behavior

The origin of the lecture is generally accepted to be found in the medieval pre-printing press era (Brown & Race, 2005; Brown, 2015). The term 'lecture' is derived from Late Latin 'lectura', and from Latin 'lectus' which means 'to read aloud' (Brown, 1987, 2001), and was understood as "a reading or dictation of selections from an authoritative text" (Friesen, 2011, p. 96). This practice leads to the text losing its meaning and authority over time, allowing the lecturer to stand as the authentic origin of a speech—as the author of his/her spoken thoughts and words (Friesen, 2011). From this perspective, lectures can be understood as "bridging oral communication with writing, rather than as a purely spoken form that is superseded by textual, digital, or other media technologies and other mediatic forms as they have coevolved" (Friesen, 2011, p. 96).

During the 20th century, multiple technologies for projection, recording, and transmission were added to text and speech in the lecture, extending its content beyond the spoken word (Friesen, 2011). Despite recent innovations, the experience of learning in lecture-based courses, for most students, seems unattractive. Lecturers often affirm that students' attendance in lectures decreases significantly over time, and many students are absent even from the beginning of the academic semester.

Higher education institutions usually enroll as many students in one lecture class as they have seats in a lecture hall (Lom, 2012). As class sizes increase, many lectures are overcrowded, negatively affecting student engagement. In this respect, educators argue that large classes are "relatively impersonal and lack the support, sustained contact, and intimacy that elementary, middle, and even most high school classes provide"

(Karabenick, 2004, p. 570). Large class size is a contextual variable that has generally adverse effects on student learning, mediated primarily by lowering students' level of active involvement (Cuseo, 2007).

For these reasons, lectures are being constantly re-evaluated and criticized (Laurillard, 2002). Both large courses and lecture-teaching format present challenges for students regarding attention span, class size, absence of peer work, and a feeling of anonymity. Despite negative views on lecturing, lecture-based courses remain a dominant teaching method (Goffe & Kauper, 2014) in contemporary undergraduate education, depending on country and university (Lom, 2012).

From a different point of view, educators may affirm that lecture-based courses are not necessarily passive modes of learning or authoritative modes of teaching (Brown & Manogue, 2001). A lecture is understood as a teaching form that “interconnects multiple media (originally, spoken and written word; later, audio, image, and video) to both reflect and reinforce prevailing epistemologies or approaches to knowledge and its propagation” (Friesen, 2011, p. 95). Indeed, technology has increased educators' options to make images, animations, and videos for lecture-based courses (Lom, 2012), although its use depends on the discipline and the teaching style of the lecturer. From this view, lectures are an appropriate way to disseminate new ideas, synthesize information from multiple sources, clarify complex concepts, and model professional practices (Woodring & Woodring, 2011). Furthermore, lecture-based courses ideally offer an opportunity to be in contact with an expert who has demonstrated experience both in research and academia.

Lowman (1995) identified the three most commonly used formats of lectures in higher education as (1) formal oral essays that present elaborately planned selection of topics, (2) expository lectures in which the students ask occasional questions, and (3) provocative lectures that challenge students' existing knowledge and support them to form a more complex and integrated perspective. Many undergraduate programs offer seminars and tutorials that run in tandem with large lecture-based courses to offer academic spaces to reflect, ask questions, and share knowledge.

Students' proactive behavior is not expected in large courses at university. Educational studies confirmed this statement. For example, Nunn (1996) conducted an observational study in twenty social science and

humanities classrooms at the university level and found that instructors devoted 5.85% of the total class time to student participation, indicating that little participation occurs. More than twenty years later, this picture seems to have not changed considerably. In the case of lecture-based courses, proactive behaviors might not be expected because lectures are primarily considered as a content-centered practice for ‘listening to’ instead of ‘talking with’.

Proactive and Reactive Forms of Engagement

Student engagement is one of the most relevant concepts to emerge in the latter half of the twentieth century in relation to teaching (Hardy & Bryson, 2010). Student engagement is defined as a “relatively public, objective, and observable classroom event” (Reeve, 2012, p. 167). More specifically, engagement refers to the public action or manifestation in which a set of motivational variables such as persistence and focused actions interact (Furrer & Skinner, 2003) to guide and direct student behavior. Due to these characteristics, student engagement has been considered an indicator of learning, improvement of performance, positive expectations about abilities, long-term academic achievement, and the quality of socialization and preferences (Furrer & Skinner, 2003). Empirical research has also demonstrated that engagement is highly influenced by the learning environment (Shernoff, 2012; Shernoff et al., 2016).

Research on student engagement has included observations and measures of students’ effort, enjoyment, strategic thinking, and proactive actions (Fredricks et al., 2011; Reeve, 2013, 2016). Specifically, educational researchers have explored behavioral (Fredricks, Blumenfeld, & Paris, 2004; Cappella, Kim, Neal, & Jackson, 2013), emotional (Sagayadevan & Jeyaraj, 2012; Wang, Chow, Hofkens, & Salmela-Aro, 2015), cognitive (Walker, Greene, & Mansell, 2006; Rotgans & Schmidt, 2011), and agentic engagements (Reeve & Tseng, 2011; Reeve & Lee, 2014) in classroom settings.

Behavioral engagement is described as a student’s conduct in accordance with classroom norms, attendance, and effort towards task completion (Fredricks et al., 2011). Emotional engagement makes reference to the expression of interest, belonging, and affective reactions such as anger,

happiness, anxiety, and boredom (Fredricks et al., 2011). Cognitive engagement refers to the ability to self-regulate by understanding and mastering skills (Fredricks et al., 2011), and agentic engagement deals with the contributions initiated by the students (Reeve, 2013).

Behavioral, emotional, and cognitive engagements emerge from a directional process initiated by the teacher (Reeve, 2012). This direction is contrary in agentic engagement, since it refers to the voluntary act in which students are intentionally proactive with their learning (Goodman, 2016). From this perspective, the internal or non-observable forms of engagement are cognition and emotion, whereas the observable or external forms refer to behavior and agency (Reeve, 2013, 2016). Thus, a difference among these four forms of engagement lies in (1) proactive and reactive behaviors, and (2) internal and external responses (Reeve, 2013) (Figure 1). Each form of engagement contributes to academic performance and skill development, is malleable to external support such as instructor's feedback, and is an indicator for teachers in their efforts to motivate their students (Reeve, 2012).

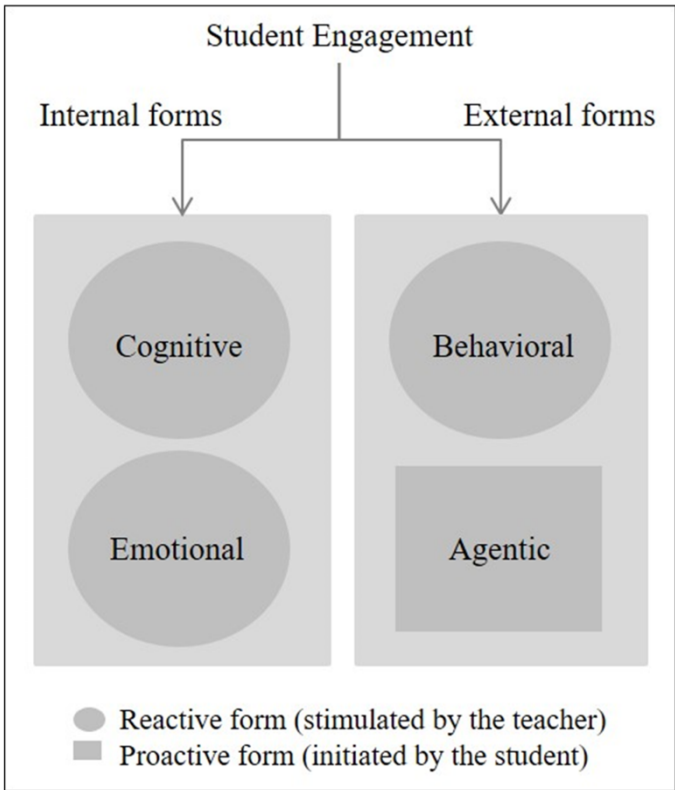


Figure 1. Forms of engagement

Agentic engagement is observed when students proactively find ways of enriching, modifying, and personalizing their instruction by providing educators with opportunities to determine how supportive his/her instruction is or can be (Reeve, 2012). In other words, agentic engagement refers to the act of exerting agency through proactive behaviors that may alter or enrich the flow of teaching (Reeve, 2013) in which the reciprocity of participation and exchange of ideas between the educator and the student are relevant (Reeve, 2012).

Agentic engagement is linked to the learners’ constructive and transactional contributions in the classroom (Reeve, 2012). These acts of

contribution are understood as those that enrich (e.g., challenging the activity), modify (e.g., working with a peer), and personalize (e.g., expressing a preference) learning (Bandura, 2006). According to Reeve (2013), agenticallly-engaged learners may create self-supportive moments in the classroom by displaying their initiative and collaboration, which contributes directly to their learning (e.g., motivational support and achievement) and the classroom environment itself (e.g., instruction, teacher-student communication).

Although the perception of the students as active contributors of their own learning process is not new (see Bandura, 1980, 2006), a pioneering work to develop a measure of agentic engagement was conducted by Reeve and Tseng (2011). To better understand students' contributions in the classroom, Reeve and Tseng (2011) created a database of middle and high school students' proactive actions between 10th and 12th grades in Taiwan. Then, after identifying categories, possible items were correlated through exploratory and confirmatory analyses with behavioral, emotional, and cognitive engagements. Lastly, these scores were correlated with the results of autonomy, self-efficacy, relatedness, and performance. By performing these analyses, Reeve and Tseng confirmed the existence of the new form of engagement and proposed a scale of five items called the Agentic Engagement Scale.

With the aim of revalidating the Agentic Engagement Scale, Reeve (2013) conducted a project designed with middle school students, high school students, and university students in Korea. The results of the refined measure were positively correlated with scores of the students' perceptions of autonomy support, confirming the value assigned by the students to participation and exchange of ideas with the teacher. The revised items are "During class, I ask questions to help me learn", "When I need something in this class, I'll ask the teacher for it", "During this class, I express my preferences and opinions", "I let my teacher know what I need and want", and "I let my teacher know what I am interested in."

Despite its merits, the Agentic Engagement Scale takes into account only a part of the wide range of student agentic behaviors (Mameli & Passini, 2018). Reeve's items need adaptations for studies conducted in large courses and lecture formats in which students-teacher interaction has particular behavioral norms. At first sight, determining the extent of agentic behaviors

in lectures may not be relevant due to the lecture formats at traditional universities. Despite this, low levels of agentic engagement may still exist and a scale of agentic engagement in lecture-based courses is lacking.

One way to expand the conceptualization of agentic engagement is by identifying and understanding verbal contributions initiated by the students. For example, Waring (2011) analyzed the classroom interaction of seven groups of students with class sizes ranging from 7 to 15 ESL (English as a Second Language) adults from different cultural backgrounds. Her analyses focused on initiative turns, conversational sequence, and accomplishments, allowing for the proposition of an empirically based typology of students' initiatives as contributions. According to her findings, students' initiatives can be (1) contributions voluntarily expressed (e.g., when a student says, "May I ask a question?"), (2) stimulated contributions (e.g., when a teacher says, "Any questions?"), and (3) contributions that are offered to complement other interventions (e.g., when a student says, "My classmate meant..."). In her words, these contributions are named (1) initial self-selection, (2) volunteering initiative as a response, and (3) initiatives to transform a sequence. But, as she clarifies, the "picture is certainly more complex" (p. 214).

Waring (2011) argues that the use of self-selection manifests the students' participation at the level of the discourse that typically belongs to the teacher. Thus, the participants are not only respondents to teacher questions because they rather "use the language to inform, resist, redirect, plead and persuade" (Waring, 2011, p. 208). As she admits, her results do not show how learners changed their participation over time, but attempt to show how initiatives may contain certain ingredients and characteristics that enhance learning.

Recent studies on agentic engagement focus on how students show proactive behaviors through initiatives, which can originate from themselves or be coerced, or seduced by another entity (e.g., teacher, reward). This engagement may determine the degree of autonomous or controlled motivation (Reeve & Jang, 2006) as well as students' understanding and performance (Person, Graesser, Magliano, & Kreuz, 1994).

Agentic engagement is still a new concept that needs further research, especially in large learning settings at a university level. The agentic engagement measure was refined and validated by Reeve (2013), but does

not correspond to all learning scenarios and teaching methods. This is the case for large lectures that may not require students' active participation and/or attendance. Little is known about agentic engagement in non-mandatory attendance courses in higher education.

Materials and Methods

The research aims at exploring and understanding how students verbally and voluntarily contribute during lectures in a university context. What follows is a description of how and why the observational data of agentic engagement were gathered for this study.

Observing Students' Agentic Engagement

Research on agentic engagement often relies on self-reports. However, observation of students provides a far more direct route to obtain information about students' behavior. Structured or systematic observation is a technique in which the observer employs procedures for observing and recording behavior (Bryman, 2012). Classroom observations are also "especially suited to assess such features as the quality of instruction and the ways that teachers provide motivational and interpersonal support and control in their classes" (Karabenick, 2004, p. 579). Structured observations on agentic engagement permit observers to characterize those contributions that are self-initiated.

Observational studies on agentic engagement are more complex when classroom interaction involves a variety of turn-taking and group work. In the case of lecture-based courses, systematic observation may be less complicated at the moment of gathering data because teaching in lectures usually involves all students facing forwards towards a single speaker.

Systematic and multiple observations help differentiate between behavior required by the instructor (reactive response) and behavior initiated voluntarily by the student (proactive action). In this study, students' self-initiated contributions are defined as proactive actions characterized by the act of self-selection and self-action. They are stimulated when the instructor promotes self-questioning and provides opportunities for communication throughout the ongoing learning session. Thus, students' agentic

engagement occurs when students are not required explicitly to participate (absent of explicit and external selection).

Reeve (2013) proposed a set of items that aims at identifying to what extent students allow their instructors to know what they want, their interests, their preferences and opinions, questions, and requests during their learning process. Thus, this study modifies the five items proposed by Reeve (2013) based on preliminary observation and the characteristics of lecture-based courses.

The observation form designed for this study also includes the type of signal or call (raising a hand or directly speaking loudly), student gender, and instructor responses (e.g., approval, disapproval, encouragement) (Table 1). The observation procedure was guided by a central question on students’ self-initiated contributions and how each turn-taking was produced, including timing, signal (e.g., hand raising), seating chart, and the lecturer’s reactions. The observation cycle proceeded with the researcher-observer writing down the group number, date, time, lecture topic, and the approximate number of students present. For the quantitative analysis, the number of contributions was counted in each observation form, and then the results were compared between groups.

Table 1.

Observation form for data collection during lectures.

Students’ self-initiated contributions (SSIC):					
1: <i>Asking questions</i> (e.g., What does X mean?)					
2: <i>Answering inquiries</i> (e.g., The result is...)					
3: <i>Requesting clarifications</i> (e.g., Could you give us an example?)					
4: <i>Suggesting options</i> (e.g., Could you upload that reading?)					
5: <i>Communicating ideas</i> (e.g., This topic makes me think about...)					
Number and signal	Minute	SSIC	Female	Male	Lecturer’s reaction

Note. Signal refers here to ‘Raising a hand’ (RH) or ‘Directly speaking loudly without raising a hand’ (DS).

Every student’s self-initiated contribution expressed in questions, answers, requests, suggestions, and comments was annotated and counted in each observation form. During observation, instructor’s statements that

welcomed students' participation (e.g., by saying, "Any questions?") were also documented. Additionally, the most predominant form of engagement in each session was described and voice recorded as part of an observation diary for further revision.

Participants and Lecture-Based Courses

The participants for this study were two groups of students at a university located in North Rhine-Westphalia in Germany. One group of students was enrolled in a large undergraduate course (approx. 250 students) and the other in a smaller post-graduate course (approx. 50 students). The large lecture-based course was part of the undergraduate curriculum in Political Sciences and Sociology. The smaller course was enrolled in a master's program in sociology. The number of female students was almost double that of male students in both courses.

Lecture attendance was not mandatory in the large class which was given in a lecture hall (capacity = 624 seats). The master's course was offered in another building of the university (capacity = 50 seats). Both courses were delivered in Winter Semester (October – March) 2016/2017 by the same German male professor with more than 20 years of teaching experience in higher education. Each 90-minute lecture was classified as an expository lecture. In these courses students had access to readings and PowerPoint presentations provided by the professor. A total of eight sessions were observed once a week from October 2016 to February 2017.

Results and Discussion

The categories of students' initiatives proposed by Waring (2011) were renamed after analyzing the data gathered in this study. Waring proposed three initiatives: initial self-selection, volunteering initiative as a response, and initiative to transform a sequence. These were changed to 'unexpected contribution', 'expected contribution', and 'interceding contribution' (Table 2). This recoding was necessary because the concept of agentic engagement is connected itself to the concept of *The Self*. From this perspective, all contributions are self-initiated and voluntary, characterized by autonomous behavior and social interaction.

Table 2.

Categories of contributions initiated by students in lecture-based courses

Expected:	Performed after an instructor's explicit invitation to participate. Students usually raise a hand in order to take a turn.
Unexpected:	Performed without any instructor's explicit invitation to participate. Students usually speak loudly in order to intervene.
Interceding:	Performed in a previous instructor-and-peer turn-taking. Students can raise their hand or speak loudly in order to intervene.

Only interactions that received a verbal response initiated by students were counted in this study. From this perspective, agency was observed when a student raised his or her hand or spoke loudly in order to participate. In this sense, an agentially-engaged student was associated with the expression "I intentionally participate". A majority of 'expected contributions' (166 out of 169) were identified from the observational data. This means students self-selected through a voluntary response when the lecturer asked a question to the whole class. Specifically, 79 self-initiated contributions were observed in the small course and 90 self-initiated contributions in the large course. These contributions were scored as follows: *asking questions* (57.4%), *answering questions* (37.3%), and *requesting clarifications* and *suggesting options* (5.3% combined). The behavioral characteristics included hand-raising as a signal to initiate a contribution. Only two students initiated a contribution by speaking loudly and only one student intervened in a previous instructor-student interaction, also by speaking loudly.

The contribution *asking questions* requires the instructor's modeling of questions and the students' interest in asking about the topic. When a student asks a question in a lecture-based course, (s)he shows curiosity and interest. Depending on the lesson's structure (lectures, seminars, or tutorials), students learn to identify which questions are necessary. In this study, students mainly asked questions about meanings and relationships among concepts. Thus, most of the contributions (57.4%) were identified as *asking contributions*. This contribution is related to the notion of cognitive engagement. In this respect, according to Takashiro (2016), past research has

focused on cognitive strategies both shallow (reproduction of memory) and deep (e.g., elaboration and organization). As Takashiro highlights, other learning strategies such as ‘seeking help’ have not been widely examined.

However, seeking help is an identifiable and observable active strategy (Cao & Nietfeld, 2007) which is related to agentic engagement. Students become agents of their own learning by seeking a deeper understanding of the material for their own curiosity and growth (Reeve, 2012). Lecturers should be aware of the importance of enhancing curiosity as well as the development of higher-order thinking skills. Few cases of ground questions were identified in this study. Ground questions “reflect the extent to which students take an active role in self-regulating their own knowledge” (Person et al., 1994, p. 212). Regarding elaborated questions, those used to reach the goal of deep understanding, this study identified only two asked by the students (e.g., “*If there are XXX, it means that..., right?*”).

The contribution *answering inquiries* requires the students’ desire to participate and accept the risk of receiving a negative reaction as a response. Answering questions may contain more risk than the act of asking questions. In this study, instructor’s questions were highly related to concrete mathematical results and social sciences studies. Combining results in both groups, a total of 37.3% of contributions were classified as answering inquiries. In comparison to the results for *asking questions*, we can assume that students tend to avoid situations that represent a possible failure by asking more than answering.

The contribution *requesting clarifications* refers to the need for understanding and desire for help. Previous research has shown a positive correlation between the proportion of questions asked that called for an explanation from students and student achievement (Evertson, Anderson, Anderson, & Brophy, 1980). By requesting clarifications, students learn to monitor their progress and are provided examples or explanations when needed. Monitoring enables the student to adopt other strategies to understand and find resources of knowledge and clarification. This idea of checking “what I already know” and what “I don’t know yet” is connected to the concept of self-regulation, which is defined as “an ongoing process of monitoring and evaluating one’s own progress and strategic approaches to learning” (Winstone et al., 2016, p. 9).

Students may be reluctant to look foolish in front of their instructor and

peers (Montenegro, 2012), making requests for clarification more unlikely. *Requesting clarifications* is connected to the repetition of examples or a previous topic that needs further explanation. In this way, students can gain more knowledge and understanding of a topic. Combining results from both courses, *requesting clarifications* accounted for only 4.7% of contributions.

The contribution *suggesting options* depends highly on whether the instructor allows and motivates this behavior during instruction. When asking for suggestions, students are not very participative, and in many cases, they take an impartial position (for example, by saying “Any decision is okay”). In this study, suggesting options was not a typical behavior unless the instructor explicitly offered the opportunity to suggest or choose an option. As an example, the lecturer asked in the large lecture-based course “Which example should be explained before or in more detail: A or B?” The students answered by raising their hands when the lecturer mentioned each option. Based on the data, *suggesting options* as a contribution initiated by students was observed in two interventions in the small lecture-based course.

The contribution *communicating ideas* plays an important role at the moment of generating ideas and interacting with others during learning. Even in lecture-based courses, communicating ideas is essential. Spaces for communication have to be offered and strategically designed. In this study, the communication of ideas was exclusively promoted in the small course in the form of a five-minute discussion in pairs.

Results by gender show that in the small class, more questions were asked by female students than male students (13 versus 7, respectively) and more inquiries answered (32 versus 20, respectively). *Requesting clarifications* was also performed more by female students than male (Table 3).

Table 3.

Students' self-initiated contributions by gender in the small lecture-based course (n=79)

Students' self-initiated contributions	Female	Male	Total
Asking questions	13	7	20
Answering inquiries	32	20	52
Requesting clarifications	4	2	6
Suggesting options	1	0	1
Total	50	29	79

In the large class, male students performed more *asking contributions* (60 versus only 17 female contributions), as well as *answering* (8 male versus 3 female). The lowest scores in the large group were from *requesting clarifications*, performed by two female students and no male student (Table 4).

Table 4.

Student's self-initiated contributions by gender in the large lecture-based course (n=90)

Students' self-initiated contributions	Female	Male	Total
Asking questions	17	60	77
Answering inquiries	3	8	11
Requesting clarifications	2	0	2
Total	22	68	90

Combining scores, female students made more *answering* and *asking contributions* than male students in the small group (45 versus 27, respectively). In contrast, *asking* and *answering* contributions were performed more by male students than female students in the large group (68 versus 20, respectively). The issue of student gender and student participation has been the object of considerable study with ambiguous results (Howard, 1998). Tatum, Schwartz, Schimmoeller, and Perry (2013) state that studies designed to examine the classroom climate for men and

women have resulted in mixed findings. In this study, the higher number of women in both courses as well as the different size of the groups affects standardized interpretations. Although different combinations of study results are insightful, the findings regarding differences among type of contribution, participants' gender, and class size are highlighted as relevant aspects for further research on agentic engagement.

Another finding highlights the perspective of repeated contributions by the same students. A small number of students in each course (3 to 6) accounted for a majority of all verbal contributions, as was the case in Howard and Henney's study (1998), who found that students' contributions were made by roughly five 'talkers' who interacted twice or more in the classroom discussion. This number of active talkers is compatible with other empirical results on classroom discussions at university level. For example, similar results are reported by Nunn's (1996) observational study in twenty social science and humanities classrooms.

In the observed courses, students who sat closer to the lecturer were the ones who contributed in the sessions. Regarding the lecturer's behavior, overall characteristics included (1) explicitly welcoming students' contributions, (2) reflecting on the value of self-questioning on social topics, (3) advising for future professional decisions, (4) answers such as "exactly!", "yes!" and "correct!" (in the German language) after students' contributions, and (5) inviting participation by making pauses or directly asking students "Any questions?" The observed lecturer also made explicit the value of self-questioning in order to develop thinking skills as sociologists and encouraged his students to participate during his lectures.

Conclusions

This study adds a new perspective to the very limited literature on agentic engagement in lecture-based courses. Returning to the research question of this study, five students' self-initiated contributions were aligned to the concept of agentic engagement. They were classified as *asking questions*, *answering inquiries*, *suggesting options*, *requesting clarifications*, and *communicating ideas*. These contributions are defined as utterances characterized by the act of self-selection and self-action.

Students' self-initiated contributions are stimulated when the instructor

promotes self-questioning, asks questions, provides opportunities for suggesting options, and promotes communication throughout the learning session. The contributions do not involve explicit selection (e.g., by gesturing to the student or saying a student's name) because they are voluntary.

In this study, each contribution was identified as an 'expected', 'unexpected', or 'interceding' contribution. A majority of expected contributions (166 out of 169) were identified from the observational data. In both courses, two directions of interaction were present: either student-instructor interaction or instructor-whole class interaction. Interceding contributions (peer turn-taking) were almost absent. Even though peer interaction was not promoted, the results of this study corroborate that large lecture-based courses can be considered a learning space for students' agentic engagement.

Contrary to the large group, the results showed that female students made more self-initiated contributions in the small group. The higher number of women in both courses as well as the different size of the groups affects standardized interpretations. However, the findings revealed that the type of self-initiated contribution, gender, and class size are relevant aspects for further research on agentic engagement.

Future Research Directions

Observational data can continue to supplement the ubiquitous questionnaire on agentic engagement and provide greatly increased potential for understanding the student experience as agentially-engaged. For further research comparisons, observational studies on agentic engagement need to continue to differentiate students' verbal contributions that are voluntary from those explicitly required by the instructor. The proposed categorization of students' self-initiated contributions described in this study may serve that purpose. This observational study is a starting point to investigate students' agency in large classes and lecture-format teaching from a multidisciplinary perspective with these aspects serving as a basis for further research on student engagement at university level. The following future research questions are suggested:

- What pedagogical conditions may turn a lecture into an active

learning environment?

- Are female students more likely to participate if their lecturer is female?
- To what extent is the lecture format demotivating students to continue with their courses?
- What formats of lecture (e.g., expository versus provocative lectures) are preferred by students and lecturers in Western/Eastern educational contexts?
- Are there differences in student engagement (including agentic engagement) and student achievement as a function of whether the student is taking a lecture-based course as a requirement or as an elective?

A mixed methods approach that combines and integrates systematic observations, self-reports and qualitative interviews is recommended to explore the nature of student engagement and agency in large classes. Further research directions should focus on how to observe, measure, and interpret students' agentic engagement by also using instruments such as self-reports and interviews. Self-reports triangulated with observations or ratings, and discourse analysis can be used in the person-in-context perspective (Sinatra, Heddy, & Lombardi, 2015).

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