Student Engagement, Achievement Goals, and Autonomy Support in German Lecture-Based Courses

Kumulative Arbeit

Inaugural-Dissertation
zur Erlangung der Doktorwürde
der
Philosophischen Fakultät
der
Rheinischen Friedrich-Wilhelms-Universität
zu Bonn

vorgelegt von

Aida Milena Montenegro Mantilla

aus

Bogota, Kolumbien

Bonn, 2026

Gedruckt mit der Genehmigung der Philosophischen Fakultät
der Rheinischen Friedrich-Wilhelms-Universität Bonn

Zusammensetzung der Prüfungskommission:

Prof. Dr. Clemens Albrecht
(Vorsitzender)
Prof. Dr. Jörg Blasius
(Betreuer und Gutachter)
Prof. Dr. David Kaldeway
(Gutachter)
Jun.-Prof. Dr. Hanno Kruse
(weiteres prüfungsberechtigtes Mitglied)

Tag der mündlichen Prüfung: 05.05.2026

Abstract

This cumulative dissertation examines the relationship between student engagement with achievement goals and autonomy support in lecture-based courses in Germany. Using a mixed-methods approach, this research aims to understand the nature and quality of student engagement in a university context characterized by voluntary attendance. The study focuses on (1) the reactive and proactive dimensions of student engagement, (2) the relationships between these dimensions and achievement goals (both mastery and performance), and (3) the relationships between these dimensions of engagement and the perception of autonomy support from lecturers. The findings highlight the pivotal role of both mastery and performance goals in fostering student engagement. Quantitative analyses based on cross-sectional data collected before and after the COVID-19 pandemic (between 2017 and 2024) indicate that mastery goals are particularly associated with higher levels of student engagement. This increase may, in part, reflect the digital learning experiences brought on by the pandemic that students encountered during their secondary education while preparing for the *Abitur*. Notably, even in lecture-based courses that may appear impersonal, students who perceive greater autonomy support from their lecturers reported significantly higher levels of engagement, underscoring the importance of supportive instructional environments. Overall, this research highlights that both prior school experiences and the role that lecturers assign to students — as autonomous individuals in the process of specialization within an academic culture and specific field of knowledge — have a decisive influence on perceived engagement levels at university, even in the context of large lecture-based courses. Future research is recommended to examine how perceptions of autonomy influence student engagement in heterogeneous university courses, where students from diverse educational backgrounds—such as the *Abitur*, vocational training, or international school systems—converge.

Table of Contents

1. Introduction

Research on student engagement in large, lecture-based courses remains limited, despite persistent concerns that such environments foster passivity and undermine motivation. This dissertation addresses this gap by examining how motivational factors influence four dimensions of engagement—cognitive, behavioral, emotional, and agentic—among first-year students at public universities in North Rhine–Westphalia, Germany.

The study builds on the premise that lecture-based formats, which continue to dominate the early semesters of many university programs, present both constraints and opportunities for student engagement. On the one hand, their traditional, teacher-centered design restricts direct interaction and visible participation. On the other hand, the German school culture—with its emphasis on autonomy and self-regulated learning—encourages students to use silence as a form of engagement. In this way, lectures often function as preparatory spaces where attentive listening and reflective processing lay the groundwork for more active participation in parallel learning environments such as seminars and tutorials.

This cumulative dissertation contributes to the field by advancing prior research in two key domains: first, by examining both reactive (emotional, behavioral, and cognitive) and proactive (agentic) forms of student engagement, and second, by investigating how achievement goals and perceived autonomy support interact with these dimensions. Together, these perspectives provide a more comprehensive understanding of what drives students to participate and persist in lecture-based environments.

Student engagement has long been recognized as a central construct in educational research, valued for its predictive power in explaining persistence, learning outcomes, and overall academic quality. However, much of the existing

literature has been shaped by Anglo-American contexts, which differ substantially from the structural and cultural realities of German higher education. As such, there is a pressing need to explore engagement within the German university setting, where institutional traditions, levels of student autonomy, and expectations of self-regulation create distinctive conditions for learning.

The German context is particularly relevant because students typically enter university directly after secondary education, encountering a system that emphasizes independence and self-management from the outset. This transition often takes place in large lecture-based courses. Understanding how students perceive engagement and autonomy support—especially in the wake of the COVID-19 pandemic, which familiarized them with hybrid and digital learning formats—is critical for assessing both the challenges and potentials of large courses in higher education.

Finally, as German universities expand their international reach and serve increasingly diverse student populations, understanding engagement across cultural and institutional contexts becomes even more crucial. Against this backdrop, the central guiding question of this dissertation is: What motivates students to attend and remain engaged in lecture-based courses within the German higher education context? Addressing this question sheds light not only on the conditions that sustain student motivation in traditional lecture-based courses but also on broader debates surrounding autonomy, silence as a component of engagement, and achievement goals.

This cumulative dissertation draws on five peer-reviewed journal articles and explores the interplay between student engagement, achievement goals, and perceived autonomy support in lecture-based courses in Germany. Using a mixed-methods design, the research aims to capture not only the extent but also

the quality of student engagement within a higher education setting characterized by voluntary class attendance.

More specifically, the dissertation investigates three key aspects: (1) the reactive and proactive dimensions of student engagement, (2) their connections with mastery- and performance-oriented achievement goals, and (3) their links to students' perceptions of autonomy support provided by lecturers. These dimensions are addressed across five individual studies, each contributing distinct insights into how motivation, engagement, and instructional practices interact in university learning environments. The five publications that constitute the foundation of this dissertation are shown below. Together, they form the scientific foundation of the cumulative dissertation and demonstrate the thematic and methodological coherence of the research.

Montenegro, A., & Schmidt, M. (2025). What drives first-semester student engagement in large lecture-based sociology courses in Germany? *Education Sciences*, 15(8), 1080. https://doi.org/10.3390/educsci15081080

Montenegro, A., & Schmidt, M. (2023). Achievement goals, student engagement, and the mediatory role of autonomy support in lecture-based courses. *Education Sciences*, 13(9), 912. https://doi.org/10.3390/educsci13090912

Montenegro, A. (2022). Lecturers' perceptions of student engagement and their role in supporting it. *European Journal of Education Studies*, 9(4), 134–153. https://doi.org/10.46827/ejes.v9i4.4243

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. https://doi.org/10.17583/rise.2019.4540

Montenegro, A. (2017). Understanding the Concept of Agentic Engagement for Learning. *Colombian Applied Linguistics Journal*, 19(1), 117–128. https://doi.org/10.14483/calj.v19n1.10472

2. Theoretical Perspectives and State of Research

Student engagement is widely recognized as a crucial component of success in higher education, shaping academic achievement, persistence, and personal development (Kahu & Nelson, 2018; Pepple, 2022). The transition to university life has been shown to depend strongly on motivational factors such as achievement goals and perceived autonomy support, which can sustain engagement during this formative period. Despite this, there remains a research gap in understanding how these factors operate within large lecture-based courses, which continue to dominate university programs.

University lecture halls, by design, are often structured for instructor-centered teaching, with fixed seating and podiums that restrict opportunities for dialogue and collaboration (Scott-Webber et al., 2000). While lectures have the potential to foster intellectual growth and critical thinking (Friesen, 2011), they are often perceived as learning environments that fall short in effectively promoting student engagement. This tension has been emphasized in my own work (Montenegro, 2019), where I showed that the spatial and pedagogical constraints of lecture settings may limit agentic contributions from students, thereby raising questions about what sustains motivation when active participation is restricted. The question has become especially timely in the aftermath of the COVID-19 pandemic, which reshaped learning habits and expectations through hybrid and online experiences.

The German university system provides a particularly relevant context for studying these dynamics. Students typically enter higher education after completing the *Abitur* at the *Gymnasium* around the age of 18 or 19. Upon entry, they encounter a system that emphasizes considerable flexibility in the selection of lectures, seminars, and examinations, allowing them to shape their own academic trajectories (Mohle, 1992; Montenegro, 2022a). This flexibility fosters autonomy but simultaneously demands a high degree of self-regulation and

responsibility, skills that were previously fostered in the more structured context of secondary education (Artelt & Sixt, 2023). These dynamics became even more complex when students were exposed to hybrid formats during the pandemic (Montenegro & Schmidt, 2025), bringing with them into university life new modes of autonomy and reactive forms of engagement.

According to Reeve (2013), student engagement must be understood as a multidimensional construct. The literature commonly emphasizes four interrelated dimensions: emotional, cognitive, behavioral, and agentic. Emotional engagement refers to the positive and negative feelings that accompany learning; cognitive engagement concerns the strategic approaches and self-regulatory practices students apply; and behavioral engagement reflects observable effort, persistence, and adherence to classroom norms (Fredricks & McColskey, 2012). Agentic engagement was later introduced to capture students' proactive contributions aimed at shaping their learning environments (Reeve & Tseng, 2011). In my previous research (Montenegro, 2017; Montenegro, 2022b), I highlighted the significance of this dimension, stressing that it is precisely in traditional lecture settings where agentic engagement is most constrained. Recognizing the interdependence of these four dimensions is therefore critical for evaluating learning processes in lecture-based environments, where students' voices and initiatives often remain limited.

Previous studies on achievement goals provide valuable insights into how motivational orientations shape engagement. For example, Kolić-Vehovec et al. (2008) showed that students with mixed goal profiles—those pursuing both mastery and performance goals—adopt more effective strategies and display adaptive patterns of motivation. Pekrun, Elliot, and Maier (2009) further demonstrated that mastery-oriented students report higher emotional engagement and lower boredom, while Lüftenegger et al. (2016) highlighted that mastery goals are more strongly related to enjoyment than avoidance-based

goals. These findings are consistent with my work on student motivation (Montenegro, 2017; Montenegro, 2022a), where I show that mastery goals play a central role in sustaining student engagement even when direct opportunities for agency are absent.

Building on this literature, my joint research with Schmidt revealed the importance of dual-goal orientations. In our 2023 study, we showed that many students simultaneously pursue mastery and performance goals, and that this combination can enhance engagement across several dimensions (Montenegro & Schmidt, 2023). More recently, in a 2025 study, we demonstrated that mastery goals, far more than performance goals, drive reactive forms of engagement such as emotional, behavioral, and cognitive responses to learning (Montenegro & Schmidt, 2025). Interestingly, students with prior experience in hybrid formats—especially during the pandemic—showed a greater tendency to prioritize mastery over competitive performance, suggesting a cultural shift away from competition-based goals and toward more meaningful and autonomous forms of learning.

Methodologically, many studies on engagement have relied solely on self-reports, which can be prone to bias. As I have argued in a study on proactive engagement (Montenegro, 2017), a more comprehensive understanding of goals and engagement requires considering both student and teacher perspectives, thereby capturing classroom dynamics beyond individual accounts. Consistent with this approach, my current project adopts a mixed-methods design, integrating quantitative survey data with qualitative insights. This perspective allows for a nuanced understanding of how achievement goals and perceived autonomy support shape engagement in German lecture-based courses, while situating these dynamics within broader educational cultures and learning environments. Cultural context plays a crucial role in influencing how students

define their goals and regulate their behavior, with notable differences emerging between small, interactive settings and large lecture-based courses.

2.1 Student Engagement: Conceptualization and Dimensions

Student engagement is a multidimensional construct that integrates four interrelated dimensions—behavioral, cognitive, emotional, and agentic—reflecting the complex convergence of action, thought, emotion, and interaction in learning (Reeve, 2013). Behavioral engagement refers to observable student actions, such as class attendance and active participation, while cognitive engagement captures the depth of mental effort and the strategic approaches students apply to learning (Hiver et al., 2021). Emotional engagement encompasses affective experiences, including interest, enjoyment, and a sense of belonging, which strongly influence persistence and motivation (Fredricks & McColskey, 2012).

Agentic engagement refers to students' proactive contributions that shape their learning experiences (Reeve & Tseng, 2011). It includes behaviors such as providing feedback, asking questions, or suggesting improvements in teaching practices (Reeve, 2012; Bielak & Mystkowska-Wiertelak, 2024). Unlike reactive forms of engagement, which involve students responding to teacher-directed activities, agentic engagement highlights ownership and intentional influence over the learning process. When teachers respond positively to such initiatives, students' proactive input can enhance the classroom climate and foster more meaningful learning opportunities (Pineda-Báez et al., 2019; Reeve et al., 2020; Reeve & Jang, 2022).

One way to conceptualize engagement is by distinguishing between *internal and external dimensions* (Reeve, 2013). Cognitive and emotional engagement belong to the internal sphere, while behavioral and agentic engagement

represent external expressions. External engagement often takes the form of visible actions—such as arriving punctually, taking notes consistently, or completing assignments—whereas internal engagement encompasses less visible but equally critical processes of reflection and affect. In lecture-based courses, where interaction and student choice are limited, agentic engagement tends to decline, leaving internal forms of engagement (e.g., attentive listening or reflective processing) as the dominant modes of participation (Goodman, 2016; Oga-Baldwin, 2019).

Research further suggests a developmental relationship among the dimensions: behavioral engagement can foster emotional and cognitive involvement, which in turn may create the conditions for agentic contributions (Reeve, 2012; Oga-Baldwin, 2019). Agency—understood as the capacity to make intentional decisions and influence one's learning trajectory—has gained recognition as a critical factor in deep learning (Sorokin & Froumin, 2022; Patall, 2024). It emerges at the intersection of individual motivation, social interaction, and institutional context (Tomanović, 2019). When students perceive their actions as capable of influencing outcomes, they are more likely to assume ownership of their learning, particularly in autonomy-supportive environments (Reeve & Cheon, 2021; Reeve et al., 2022; Patall et al., 2022).

Over the past four decades, engagement research has developed from early concerns with dropout prevention to a robust theoretical construct that captures how students think, feel, and act in learning settings (Fredricks, Blumenfeld, & Paris, 2004; Hiver et al., 2024; Montenegro, 2017). Its study has expanded across diverse cultural contexts, including the United States, Europe, Asia, and South America. While much of the literature draws from Anglo-American settings, research increasingly acknowledges cultural and structural differences in higher education systems that shape how engagement is expressed and valued (Montenegro & Schmidt, 2023).

Self-Determination Theory (SDT) has been particularly influential, highlighting how autonomy, competence, and relatedness support motivation and, in turn, engagement (Reeve, 2013; Shernoff, 2012; Reeve & Lee, 2025). Within this framework, autonomy is seen as central to sustaining both internal and external engagement. Engagement is thus widely recognized as a dynamic, context-sensitive process, influenced not only by personal dispositions (e.g., personality, self-concept) but also by prior schooling and cultural expectations (Kahu & Nelson, 2018). For instance, behaviors such as speaking up or remaining silent may be valued differently across institutional contexts—underscoring the need to study engagement as both an individual trait and a relational, situated phenomenon.

The conceptual framework by Fredricks et al. (2004) remains foundational, but the field has evolved substantially in recent decades. The inclusion of agentic engagement (Reeve & Tseng, 2011) added a proactive dimension to the three traditional, reactive ones, expanding the understanding of how students participate in learning. This development has been especially relevant in higher education, where diverse teaching formats—from large lectures to interactive seminars—create varying opportunities for student engagement. By recognizing both reactive and proactive dimensions, current research conceptualizes engagement as a multifaceted construct that adapts dynamically to institutional and cultural conditions (Montenegro & Schmidt, 2023; Montenegro & Schmidt, 2025).

2.2 Reactive and Proactive Dimensions of Engagement

Student engagement is a multidimensional construct encompassing behavioral, emotional, cognitive, and agentic dimensions (Reeve, 2013), with the first three reflecting reactive responses to instructional contexts and the agentic

dimension highlighting students' proactive contributions to learning. Behavioral engagement involves observable actions such as attending classes, completing assignments, and participating in discussions, serving as indicators of persistence and academic performance (Hiver et al., 2021).

Emotional engagement reflects students' affective responses, including interest, enjoyment, and sense of belonging, as well as negative emotions such as boredom or frustration, which strongly influence motivation (Fredricks & McColskey, 2012). Cognitive engagement refers to the depth of mental effort students invest in learning, encompassing strategies such as elaboration, organization, and critical thinking, which support comprehension and long-term retention (Fredricks, Blumenfeld, & Paris, 2004).

Unlike other forms of engagement, agentic engagement is characterized by a deliberate, intentional, and constructive effort to influence the learning process (Zambrano et al., 2023). Students engage agentically by asking questions, providing feedback, or suggesting alternatives, thereby influencing classroom processes (Reeve, 2012; Patall et al., 2022; Bielak & Mystkowska-Wiertelak, 2024). When teachers respond positively, such initiatives enhance autonomy, motivation, and classroom climate (Pineda-Báez et al., 2019; Reeve et al., 2020; Reeve & Jang, 2022). This dimension highlights students as co-creators rather than passive recipients of learning.

Understanding why students engage involves examining achievement goals. The Achievement Goal Framework (Elliot & McGregor, 2001) differentiates *mastery and performance goals*, each with approach and avoidance orientations. Mastery-approach goals focus on skill development and deep understanding, while mastery-avoidance goals aim to prevent loss of competence. Performance-approach goals reflect the drive to outperform peers, and performance-avoidance goals focus on avoiding failure or negative judgment (Pintrich, 2000; Elliot & Murayama, 2008). Mastery-approach goals are associated with deeper

engagement, higher persistence, and greater enjoyment, whereas performance-avoidance goals often undermine motivation (Kahu & Nelson, 2018).

Building on these insights, Montenegro and Schmidt (2025) further demonstrated that mastery-approach goals consistently predict higher levels of all reactive forms of engagement. Students with strong mastery goals exhibit increased attention, effort, and positive emotional investment in lecture-based courses, confirming that self-improvement motivations are crucial for sustaining engagement even in settings with limited interaction. These studies collectively underscore the interplay between goal orientation, prior educational experiences, and engagement in lecture-based environments, emphasizing the importance of fostering mastery-focused learning goals.

2.3 Achievement Goals and Autonomy Support

The achievement goal framework differentiates between mastery and performance goals, each with approach and avoidance orientations (Elliot & McGregor, 2001; Pintrich, 2000). Mastery goals focus on developing competence and understanding, generally producing positive outcomes such as persistence, effective learning strategies, well-being, and academic achievement (Senko, 2019; Miller et al., 2021). Specifically, mastery-approach goals drive students to deepen their knowledge and acquire new skills, whereas mastery-avoidance goals aim to prevent loss or misunderstanding of previously acquired knowledge.

Performance goals emphasize demonstrating competence relative to others. Performance-approach goals motivate students to outperform peers, while performance-avoidance goals orient students toward avoiding negative judgments or failure (Elliot & Murayama, 2008). The literature presents mixed perspectives on performance-approach goals: some studies highlight adaptive effects when combined with mastery goals (Pintrich, 2000), whereas others note

that these goals may lead to stress or exhaustion under certain conditions (Senko & Dawson, 2017; Lee & Anderman, 2020). For instance, Lee and Anderman (2020) found that students combining perfectionism and performance-approach goals reported higher academic exhaustion, while those with high mastery-avoidance orientations expressed lower satisfaction with learning despite effort.

Achievement goals differentially shape student engagement, influencing students' behavioral, cognitive, and emotional responses (Bossert et al., 2025; Daumiller et al., 2019). Mastery-approach goals are consistently linked to deeper cognitive engagement and more positive emotional experiences, such as enjoyment and interest (Pekrun et al., 2009; Lüftenegger et al., 2016). Performance-approach goals may increase behavioral and emotional engagement through competitiveness, but their effects on cognitive engagement are inconsistent. Avoidance-oriented goals, both mastery- and performance-focused, generally relate to surface-level learning strategies and lower overall engagement (Pintrich, 2000).

Despite broad research on achievement goals, their role in lecture-based university courses remains underexplored. Montenegro and Schmidt (2023) studied 340 first-semester sociology students and found that many simultaneously endorsed both mastery and performance goals, indicating that students pursue a blend of learning-focused and competitive aims. Their study also highlighted the critical role of perceived autonomy support, showing that when students feel their choices and perspectives are acknowledged, they exhibit higher engagement—particularly in large lecture settings where students may feel anonymous or overwhelmed.

Expanding on these findings, Montenegro and Schmidt (2025) demonstrated that mastery-approach goals strongly predict reactive forms of engagement, including cognitive, behavioral, and emotional dimensions. Students with strong mastery goals invested more effort, displayed greater attention, and experienced

more positive emotions in lecture-based courses, emphasizing the centrality of self-improvement motivations even in teacher-centered environments. These studies collectively underscore how goal orientation and contextual factors interact to sustain student engagement in higher education (Montenegro, 2017).

Other research supports these insights. Kolić-Vehovec et al. (2008) found that students combining mastery and performance goals used more effective learning strategies and demonstrated adaptive motivational profiles compared to students focused solely on avoidance goals. Wijnia et al. (2011) reported that instructional clarity and autonomy support improve motivation even in structured lecture environments, while mandatory attendance and unclear expectations can undermine engagement.

Central to these outcomes is perceived autonomy support, defined as the extent to which students feel they have meaningful choices and that their perspectives are respected (Deci & Ryan, 2008; Reeve, 2016). Autonomy-supportive practices—such as providing meaningful choices, connecting content to students' interests, and explaining the purpose behind assignments—enhance emotional engagement, intrinsic motivation, and self-regulation (Patall et al., 2024; Reeve & Cheon, 2021; Montenegro & Schmidt, 2023, 2025). Complementing autonomy support, structured learning environments—including transparent learning objectives, clear expectations, and timely feedback—help students navigate lecture-based courses effectively, promoting sustained engagement and academic persistence.

In lecture-based contexts, the balance between autonomy support and structure is particularly critical. Autonomy support allows students to exercise agency within structured parameters, fostering ownership, self-efficacy, and adaptive learning behaviors. Conversely, insufficient structure can undermine motivation, while excessive control may restrict intrinsic engagement (Daumiller et al., 2019). Integrating achievement goal theory with autonomy-supportive and

structured teaching provides a comprehensive framework to understand how and why students engage, highlighting the importance of mastery-approach goals and supportive environments in sustaining engagement across cognitive, behavioral, and emotional dimensions (Montenegro, 2017; Montenegro & Schmidt, 2025).

2.4 Lecture-Based Courses at German Universities

Lecture-based instruction remains a central pillar of higher education in Germany, serving not only to transmit knowledge but also to cultivate critical thinking, academic discourse, and intellectual development. As Friesen (2011) observes, lectures can be particularly effective when enriched with multimedia and interactive elements. However, in certain learning contexts, the academic culture of attentive listening itself constitutes a meaningful component of student engagement (Montenegro, 2022a).

At the same time, the general characteristics of lecture-based courses—such as large enrollments and limited opportunities for student interaction—can diminish motivation and increase the risk of disengagement or dropout. These challenges, including impersonal relationships and reduced opportunities for participation, are especially pronounced during the transition from secondary school to university. Research consistently shows that class size significantly influences student participation and engagement (Owuor, 2018; Sapelli & Illanes, 2016). Typical lectures accommodate between 60 and 120 students (Boer & Bordoloi, 2021), or even larger cohorts of 400–800 students. In such settings, direct interaction with instructors is limited, opportunities for posing questions are reduced, and a sense of anonymity may prevail, making it more difficult for students to take initiative or actively contribute to classroom discourse.

Such large lecture-based learning environments are particularly relevant for pupils graduating from the Gymnasium, the highest track in the German school system. At the end of their secondary education, these students take the Abitur—a comprehensive examination typically administered at the age of 18 or 19 (after 12 or 13 years of schooling). The upper levels of secondary school and the Abitur constitute the sole direct qualification for university admission, highlighting the highly structured and competitive nature of preparation in the German system. Consequently, students often enter university with well-developed cognitive, motivational, and self-regulatory skills (Booth, 2001), equipping them to navigate less structured, large-scale lecture environments. Success in such settings depends heavily on competencies such as goal-setting, time management, and the capacity to sustain attention independently (Montenegro, 2022b).

The German school system, in general, emphasizes the development of autonomous learners from an early age, which becomes especially relevant in the university context where students are expected to manage their studies independently and with minimal direct guidance. A defining feature of German higher education is the substantial autonomy afforded to students. As Mohle (1992) and Montenegro (2019) observes, students often enjoy flexibility in selecting courses, seminars, and examination formats. University instruction is typically organized into three primary formats: *Vorlesung* (lecture), involving large-class oral delivery; *Seminar*, focused on small-group discussions and critical analysis; and *Übung*, comprising practical exercises that reinforce theoretical knowledge. While such flexibility can be empowering, it simultaneously places considerable demands on students' ability to self-regulate, particularly in lecture-based courses where engagement tends to be lower.

Traditionally, the term *Vorlesung* has implied prolonged oral delivery and a largely passive transmission of information. Despite global trends toward

interactive and student-centered lectures, German introductory courses have often retained a more conventional structure. Before the COVID-19 pandemic, the integration of educational technology into university lectures was limited, reflecting a broader tendency in the German school system to adopt digital tools more slowly than in other European countries. The pandemic has accelerated digitalization, prompting universities to experiment with online platforms, blended learning, and interactive digital tools. These shifts, although uneven across disciplines and institutions, are gradually transforming lecture practices and expanding opportunities for active engagement.

Waqar, Sultana, and Ata (2025) provide a comprehensive synthesis of 36 peer-reviewed studies examining tools and pedagogical approaches to enhance student engagement in higher education lectures. Their review identifies four principal strategies: technology-based tools (e.g., polling systems, Socrative, Kahoot), interactive methods (e.g., Think-Pair-Share, Buzz Groups), innovative methodologies (e.g., storytelling, mind mapping), and classroom modifications, such as flexible seating, to foster inclusivity and interaction. A key insight from their synthesis is that while technology-enhanced tools like clickers and real-time polling often increase participation and reduce fear of judgment, their effectiveness depends on factors such as institutional infrastructure, class size, and the use of validated engagement measures.

Beyond these pedagogical considerations, it is essential to situate student engagement within the broader academic culture of lecture-based higher education. In Germany, lecture-based courses are valued for their efficiency and their ability to transmit complex material to large cohorts. At the same time, they embody an institutional tradition that emphasizes content delivery over interactive participation. This tradition shapes an academic culture where silence is often the norm, with proactive engagement displaced to individual study at home or to complementary academic settings such as tutorials and seminars.

Within this framework, students' perceptions of autonomy support become decisive. When lecturers position students as colleagues in formation and provide well-structured materials that are aligned with their field of study, contemporary developments, and the realities of today's society, engagement is not only legitimized but also strengthened. Thus, the dynamics of student engagement must be understood at the intersection of institutional expectations, cultural norms of participation, and the autonomy students experience in shaping their own learning trajectories.

For international students, adapting to academic culture can be particularly challenging, especially if their previous school experiences emphasized collaborative or dialogical learning. Similarly, foreign faculty entering the German educational system may experience cultural shock as they attempt to reconcile interactive pedagogical ideals with entrenched lecture traditions. Therefore, understanding the effectiveness of engagement strategies requires careful consideration of the cultural and institutional context, where norms of participation, authority, and academic performance are deeply embedded.

3. Discussion and Contribution

The findings of this cumulative dissertation contribute to research on student engagement and motivation in lecture-based higher education by offering a comprehensive view of how multiple motivational goals and autonomy-supportive teaching practices interact to shape engagement. Across the five publications (Montenegro, 2017, 2019, 2022a; Montenegro & Schmidt, 2023; Montenegro & Schmidt, 2025), several key insights emerge regarding the nature, dimensions, and drivers of engagement in large introductory courses.

A primary contribution is the demonstration that students simultaneously endorse both mastery and performance goals, reflecting the coexistence of learning-oriented and competitive motives (Montenegro & Schmidt, 2023). Mastery-approach goals, focused on self-improvement and deep learning, were consistently associated with higher levels of emotional, behavioral, and cognitive engagement, confirming that students prioritizing mastery invest more consistently across all dimensions (Montenegro, 2017; Montenegro & Schmidt, 2023, 2025). Mastery-avoidance goals (reflecting concerns about forgetting or misunderstanding material) were also reported, indicating that engagement is not solely driven by growth motives.

Performance goals showed a more differentiated effect. Performance-approach goals were linked primarily to emotional engagement, suggesting that competitive motivation increases affective involvement without necessarily promoting deeper cognitive engagement (Montenegro & Schmidt, 2025). By contrast, performance-avoidance goals, oriented toward avoiding failure or appearing incompetent, were associated with lower engagement and surface-level learning strategies, consistent with prior studies (Pintrich, 2000; Elliot & Murayama, 2008; Montenegro, 2022a).

Across the five studies, emotional engagement was the highest-rated dimension by students, followed by behavioral and cognitive engagement. Emotional engagement correlated moderately with both behavioral and cognitive forms, highlighting the interrelated nature of reactive engagement (Montenegro & Schmidt, 2025). Although agentic engagement could not be quantitatively assessed in large German lecture halls—where silence and quiet attentiveness are culturally valued—it was indirectly inferred that students who demonstrated preparedness and reflective behavior were more likely to engage cognitively (Montenegro, 2017; Montenegro & Schmidt, 2023). This aligns with Oga-Baldwin's (2019) hierarchical model, where behavioral engagement provides the foundation for emotional and cognitive involvement.

The role of perceived autonomy support was consistently identified as a key predictor of emotional and cognitive engagement (Montenegro, 2022a; Montenegro & Schmidt, 2025). Students who experienced respect for their perspectives, encouragement of initiative, and meaningful choices reported greater emotional investment and deeper cognitive involvement. These findings emphasize that even in traditional, lecture-based environments, autonomy-supportive teaching promotes meaningful engagement, reinforcing the results of the second and third publications in this dissertation series.

Additionally, longitudinal insights from earlier studies (Montenegro, 2017; Montenegro, 2022a) highlight the influence of prior learning experiences, such as hybrid and digitally supported secondary education, in shaping engagement patterns in higher education. Students familiar with self-directed or hybrid learning formats demonstrated a greater ability to engage behaviorally and cognitively, particularly when autonomy-supportive practices were present in lectures.

Overall, the findings from all five publications highlight two key factors that sustain engagement in large lecture-based courses. The first is the endorsement

of mastery-oriented goals, which promotes emotional, behavioral, and cognitive engagement. The second is the perception of autonomy support, which not only enhances students' sense of value and motivation but also fosters a sense of belonging in the learning environment. This autonomy allows students to engage in less controlled discourse, positioning them as active colleagues and investigators rather than passive recipients of knowledge, thereby deepening their engagement and ownership of the learning process. At the same time, the persistence of performance-oriented goals underscores the complex, multidimensional nature of student motivation, challenging the assumption that learners pursue a single type of achievement goal.

3.1 Theoretical Contributions to Engagement Research

By situating student engagement within both psychological theory and the cultural and structural context of German universities, this dissertation advances our understanding of engagement in lecture-based higher education by examining the interplay between motivational goals, autonomy support, and the different dimensions of engagement.

A central theoretical contribution lies in establishing agentic engagement as a researchable yet underexplored dimension, thereby extending existing frameworks beyond their traditional focus on reactive forms of engagement. While previous literature emphasizes proactive contributions (Reeve, 2013; Patall et al., 2022), far less attention has been given to the absence of agentic engagement, that is, why some students remain silent or appear passive even in autonomy-supportive environments.

Waring (2011) categorized classroom contributions into three types: Type A, initiating a new sequence, such as introducing a novel topic or asking an original question, representing the most agentic form of participation; Type B,

responding to a teacher prompt; and Type C, transforming an existing sequence through elaboration, reinterpretation, or the introduction of creative elements such as humor. My methodological contribution lies in adapting Waring's framework to systematically analyze student participation in large lecture-based courses, distinguishing between Expected Contributions (responses to direct prompts), Unexpected Contributions (self-initiated interventions), and Interceding Contributions (interventions during ongoing discussions). This adaptation enables a more precise capture of subtle and context-dependent forms of student agency, including non-verbal behaviors such as reflective silence and attentive note-taking, which indicate active cognitive processing and deep engagement with content, even within highly structured lecture environments.

From a theoretical perspective, this approach extends the concept of agentic engagement by integrating both verbal participation and more discrete forms of cognitive and emotional involvement, aligning with prior studies by Montenegro (2017, 2022a). Applying this methodological framework revealed that students can exercise influence over their learning and demonstrate autonomy even in traditional lecture formats, where verbal interaction is often limited by cultural or structural norms. Thus, my work contributes to the academic debate on measuring engagement by providing a systematic tool to distinguish and categorize different levels of participation, demonstrating that student agency is not always expressed through explicit interventions, but also through attention, reflection, and preparation for parallel learning environments such as seminars and tutorials.

Findings from interview-based research with lecturers (Montenegro, 2022a) revealed three central themes regarding engagement in large lecture-based settings: 1) *Lecturers as Committed Professionals* - Lecturers viewed teaching as an integral part of their professional identity and expressed responsibility for

structuring content in ways that inspire engagement. They emphasized combining structure, flexibility, and variety while avoiding controlling practices, thus fostering a learning environment that supports autonomy and intellectual curiosity (Montenegro, 2022a). 2) *Positioning Students as Social Scientists:* Lecturers conceptualized students as active, reflective learners rather than passive recipients. Students' silence, often interpreted as disengagement in other contexts, was reframed as behavioral and cognitive engagement, a form of active processing essential for deeper learning (Montenegro & Schmidt, 2023). This finding reinforces the notion that in German lecture settings, reflective listening and attention are meaningful forms of participation, particularly as preparation for subsequent seminars and tutorials. 3) *Messages Supporting Autonomous Motivation:* All lecturers emphasized promoting autonomous motivation, encouraging goal-setting, effort over outcomes, and strategic learning practices such as planning, self-monitoring, and reflection. Despite this support, agentic engagement—students actively shaping the course—remained limited, suggesting that structural constraints in large lectures restrict the full expression of learner initiative (Montenegro, 2022a; Montenegro & Schmidt, 2023, 2025).

Across these studies, several engagement strategies emerged as particularly effective within the lecture format. Lecturers reported using technology creatively, fostering emotional safety, linking content to real-world applications, and relating material to students' personal and academic development. While interactive tasks were often better suited for seminars, the consistent recognition of reflective silence and focused attention highlighted culturally and contextually specific forms of engagement that support cognitive and emotional involvement (Montenegro, 2017; Montenegro & Schmidt, 2023).

The integration of findings from the five publications demonstrates that meaningful engagement in lecture-based environments arises from a

combination of mastery-oriented goals, perceived autonomy support, and pedagogical strategies that recognize silent reflection as participation. These insights advance engagement theory by emphasizing that proactive and reactive dimensions are intertwined, and that lecture-based courses—despite their structural limitations—can foster deep cognitive, emotional, and behavioral engagement when aligned with culturally informed teaching practices (Montenegro & Schmidt, 2025).

Mastery goals—focused on personal growth and a deep understanding of the subject matter—have consistently emerged as key drivers of student engagement. Students who prioritize mastery goals demonstrate higher levels of emotional, cognitive, and behavioral engagement, particularly in large, lecture-based courses where individual learning strategies and intrinsic motivation are crucial for success. These findings underscore the importance of promoting mastery-oriented motivations over performance-driven goals, which primarily focus on outperforming peers. While performance goals are still present in the student population, they were found to be less strongly linked to engagement, suggesting that an emphasis on personal development may be more effective in fostering sustained engagement and academic success.

A shift in the relationship between performance goals and emotional engagement was observed when comparing the current findings with my study conducted in 2017 and published in 2023 (Montenegro & Schmidt, 2023). In our earlier study, performance goals were strongly linked to emotional engagement, reflecting the competitive nature of the academic environment. However, in the more recent study (see Montenegro & Schmidt, 2025), the connection between performance goals and emotional engagement appears to have weakened, particularly in the context of the post-pandemic shift toward digital learning environments. This change could be attributed to the evolving nature of student

motivations in response to the increased emphasis on intrinsic learning and self-regulation following the disruption caused by the pandemic.

A significant insight from this research is the role of students' previous educational context, which shapes their perceptions of autonomy, agency, and engagement. Prior educational experiences, including the demands of earlier schooling, assessment methods, and the level of perceived autonomy, profoundly influence students' approaches to learning. In traditional German schools, for instance, students often face a highly structured environment with rigid assessment methods that emphasize external validation over self-directed learning. This context can impact students' sense of agency, influencing their ability to take initiative and engage proactively in lecture-based courses at university.

In this regard, students from digital learning backgrounds, which became more prevalent due to the pandemic, demonstrate a stronger focus on mastery over competition. These students typically exhibit higher intrinsic motivation, greater self-regulation, and a better capacity to engage with course material independently. Their experiences with digital learning environments, which emphasize autonomy and self-paced learning, have allowed them to develop stronger skills for self-directed learning—skills that are increasingly essential in today's educational landscape.

Furthermore, my findings underscore the importance of aligning teaching practices with students' diverse educational backgrounds. The differences in how students perceive autonomy and agency, shaped by their prior schooling experiences, can have a significant impact on how they engage with university courses. Educators must recognize these variations and consider students' previous educational contexts when designing instructional strategies. This approach will ensure that students are not only academically prepared but also

equipped with the tools necessary to engage meaningfully with their learning environments.

Ultimately, this research highlights the crucial role of previous schooling experiences. The pandemic-induced shift toward digital learning has had a lasting impact on students' motivations and their ability to engage autonomously with course content. The findings suggest that a supportive, student-centered learning environment that emphasizes intrinsic motivation and personal growth is key to enhancing student engagement and academic success.

3.2 Methodological Innovations and Challenges

A central methodological contribution of this dissertation is the adaptation and application of the Agentic Engagement Scale (AES), originally developed by Reeve and Tseng (2011) and refined by Reeve (2013), to the study of large lecture-based courses in German higher education (Montenegro, 2017; Montenegro & Schmidt, 2023).

While the AES is designed to capture proactive verbal behaviors—such as asking questions, expressing preferences, and suggesting alternatives—its use in structured lecture environments revealed that these behaviors are often less visible due to cultural norms emphasizing attentive silence. To address this, I combined the AES with systematic classroom observations. An adapted version of Waring's (2011) framework was employed to classify contributions as Expected, Unexpected, or Interceding, which allowed for a more nuanced analysis of students' initiatives (Montenegro, 2017; Montenegro, 2022a). These adaptations were crucial for capturing forms of engagement that are meaningful in contexts where verbal initiative is culturally moderated and lecture formats limit interactive opportunities.

Another methodological innovation stems from the cross-sectional data collection at multiple points in time, incorporating cohorts before and after the COVID-19 pandemic. Although not longitudinal, this approach enabled the study to compare traditional in-person lectures with hybrid and digital formats, highlighting how engagement patterns shift depending on instructional delivery while maintaining consistent variables and instruments across time (Montenegro & Schmidt, 2025). This design provided insights into how prior schooling experiences, particularly the structured preparation associated with the Abitur, influence students' perception of attentive silence as a legitimate and productive form of engagement in university lectures (Montenegro & Schmidt, 2023). Furthermore, these findings underscore the interplay between students' achievement goals—mastery and performance—and perceived autonomy support, offering a robust framework to interpret both proactive and reactive dimensions of engagement (Montenegro & Schmidt, 2025).

Complementing survey and observational data, qualitative interviews with lecturers provided a critical perspective on instructional strategies, classroom climate, and perceptions of engagement (Montenegro, 2022a). Using an elicitation interview framework inspired by Montenegro (2022b), Oplatka (2018), and Lesh & Kelly (1997), lecturers were guided through stages of Construction, Differentiation, Reorganization, and Refinement. The analysis, grounded in Positioning Theory, captured lecturers' self-positioning, student attributions, and relational dynamics, illuminating how educational practices and expectations shape observed engagement behaviors. The interviews revealed that lecturers recognize reflective silence and attentive listening as meaningful indicators of both cognitive and behavioral engagement, particularly in contexts where agentic behaviors are limited by lecture structure.

Taken together, the methodological innovations of this dissertation provide a comprehensive framework for studying student engagement in large lecture-

based courses. By integrating quantitative surveys, structured observations, and qualitative interviews, the research accounts for cultural, instructional, and individual factors that shape both reactive and proactive forms of engagement. These contributions, developed across the five doctoral publications (Montenegro, 2017, 2019, 2022a; Montenegro & Schmidt, 2023, 2025), establish a robust foundation for future research, particularly studies exploring the nuanced role of prior schooling culture, the impact of hybrid and digital learning environments, and the complex interplay of mastery goals, performance goals, and autonomy support in fostering meaningful student engagement.

3.3 Implications for Higher Education in Germany and Beyond

This dissertation makes a significant contribution to higher education research by bridging theoretical understanding and practical application regarding student engagement in large, lecture-based courses.

Across five publications (Montenegro, 2017, 2019, 2022a; Montenegro & Schmidt, 2023 and 2025), the study investigates how achievement goals, perceived autonomy support, and academic culture interact to shape emotional, cognitive, and behavioral engagement. It extends motivational theory, particularly Self-Determination Theory and the achievement goal framework (Elliot & McGregor, 2001; Pintrich, 2000), by demonstrating that mastery-oriented goals and autonomy-supportive teaching practices are central to fostering meaningful engagement, even within structurally constrained lecture environments.

A key theoretical contribution of this research is its emphasis on the role of prior educational culture, particularly the structured learning experiences students acquire during secondary education leading to the Abitur. By analyzing cross-sectional data collected both before and after the COVID-19 pandemic, the

study highlights how students' expectations and perceptions of engagement are shaped not only by the lecture context but also by their previous schooling. Silent attention, note-taking, and reflective observation—often interpreted as passivity—emerge as legitimate forms of engagement, signaling preparation for participatory environments such as seminars and tutorials (Montenegro & Schmidt, 2023, 2025). These insights are particularly valuable in understanding the experiences of international students, who may initially interpret silence and attentiveness differently, and of foreign lecturers entering the German university context, who may encounter cultural differences and pedagogical expectations that require adaptation. Recognizing these cultural dynamics is essential for fostering inclusive and equitable learning environments.

From a practical perspective, the dissertation provides actionable guidance for educators seeking to enhance student engagement in large courses. Strategies include positioning students as experts in their fields, integrating real-world examples to contextualize theory, offering meaningful choices in learning activities, and fostering an autonomy-supportive discourse (Montenegro, 2022a).

This research also demonstrates the value of flexible instructional approaches, balancing structure and autonomy to support students' cognitive, behavioral, and emotional engagement. Observational and survey data show that students respond positively when instructors acknowledge prior knowledge, respect diverse perspectives, and provide clear expectations, demonstrating that thoughtful pedagogical design can mitigate the constraints of large lecture formats (Montenegro, 2017; Montenegro & Schmidt, 2025).

Importantly, this work has broader implications beyond the German higher education context. It underscores the necessity of considering cultural and academic backgrounds when designing learning environments, particularly in increasingly diverse universities. Both students and instructors from different

national or cultural contexts may experience a cultural adjustment period, affecting their engagement, participation, and perceptions of autonomy.

As noted by Grüttner et al. (2018), access to higher education among newer generations of immigrants remains a relatively underexplored area. Gaining insight into these complexities will allow for the development of more inclusive and responsive pedagogical approaches, better aligned with the varied needs of today's student population and more effective in fostering meaningful, sustained engagement with learning. By combining rigorous empirical investigation with theoretical insights, the dissertation contributes both to the academic understanding of motivation and engagement and to the practical refinement of teaching strategies, offering evidence-based recommendations that can inform more inclusive, motivating, and effective educational practices globally.

4. References

Artelt, C., & Sixt, M. (2023). The National Educational Panel Study (NEPS) – Framework, design, and research potential. *Zeitschrift für Erziehungswissenschaft*, 26(2), 277–298. DOI: 10.1007/s11618-023-01156-w

Bielak, J., & Mystkowska-Wiertelak, A. (2024). Emotions and emotion regulation in L2 classroom speaking tasks: A mixed-methods study combining the idiodynamic and quantitative perspectives. *Modern Language Journal*, 108, 688–718. DOI: 10.1111/modl.12950

Boer, P. & Bordoloi, P. (2021). Affective learning and instructor evaluation in international classrooms. *Internationalisation of Higher Education*, 23(2), 76–94. DOI: 10.36197/INT.2-2021.05

Booth, A. (2001). Developing history students' skills in the transition to university. *Teaching in Higher Education*, 6(4), 487–503. DOI: 10.1080/13562510120078036

Bossert, S., Daumiller, M., Janke, S., Dresel, M., & Dickhäuser, O. (2025). On the influence of social norms on individual achievement goals. *British Journal of Educational Psychology*, 1–17. DOI: 10.1111/bjep.12756

Daumiller, M., Dickhäuser, O., & Dresel, M. (2019). University instructors' achievement goals for teaching. *Journal of Educational Psychology*, 111(1), 131–148. DOI: 10.1037/edu0000271

Elliot, A. J., & McGregor, H. A. (2001). A 2×2 achievement goal framework. Journal of Personality and Social Psychology, 80(3), 501–519. DOI: 10.1037/0022-3514.80.3.501

Elliot, A. J., & Murayama, K. (2008). On the measurement of achievement goals: Critique, illustration, and application. *Journal of Educational Psychology*, 100(3), 613–628. DOI: 10.1037/0022-0663.100.3.613

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74(1), 59–109. DOI: 10.3102/00346543074001059

Fredricks, J. A., & McColskey, W. (2012). The measurement of student engagement: A comparative analysis of various methods and student self-report instruments. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 763–782). Springer Science + Business Media. DOI: 10.1007/978-1-4614-2018-7_37

Friesen, N. (2011). The lecture as a transmedial pedagogical form: A historical analysis. *Educational Researcher*, 40(3), 95–102. DOI: 10.3102/0013189X11404603

Goodman, A. (2016). *The manifestation of student engagement in classrooms: A phenomenological case study of how teachers experience student engagement and how it influences pedagogical decision making* (Doctoral dissertation). University of Nevada, Las Vegas.

Grüttner, M., Schröder, S., Berg, J., & Otto, C. (2018). Refugees on their way to German higher education: A capabilities and engagements perspective on aspirations, challenges and support. *Global Education Review*, 5(4), 115–135

Hiver, P., Al-Hoorie, A. H., Vitta, J. P., & Wu, J. (2021). Engagement in language learning: A systematic review of 20 years of research methods and definitions. *Language Teaching Research*, 28(1), 201-230. DOI: 10.1177/13621688211001289

Hiver, P., Al-Hoorie, A. H., Vitta, J. P., & Wu, J. (2024). Engagement in language learning: A systematic review of 20 years of research methods and definitions. *Language Teaching Research*, 28(1), 201–230. DOI: 10.1177/13621688211001289

Kahu, E. R., & Nelson, K. (2018). Student engagement in the educational interface: Understanding the mechanisms of student success. *Higher Education Research & Development*, 37(1), 58–71. DOI: 10.1080/07294360.2017.1344197

Kolić-Vehovec, S., Rončević, B., & Bajšanski, I. (2008). Motivational components of self-regulated learning and reading strategy use in university students: The role of goal orientation patterns. *Learning and Individual Differences*, 18(1), 108–113. DOI: 10.1016/j.lindif.2007.07.005

Lee, Y. J., & Anderman, E. M. (2020). Profiles of perfectionism and their relations to educational outcomes in college students: The moderating role of achievement goals. *Learning and Individual Differences*, 77, 101813. DOI: 10.1016/j.lindif.2019.101813

Lesh, R., & Kelly, A. E. (1997). Teachers' evolving conceptions of one-to-one tutoring: A three-tiered teaching experiment. *Journal for Research in Mathematics Education*, 28(4), 398–430. Retrieved from https://www.jstor.org/stable/749681

Lüftenegger, M., Schober, B., van de Schoot, R., Wagner, P., Finsterwald, M., & Spiel, C. (2016). Students' achievement goals, learning-related emotions and academic achievement. *Frontiers in Psychology*, 7, 603. DOI: 10.3389/fpsyg.2016.00603

Miller, A. L., Fassett, K. T., & Palmer, D. L. (2021). Achievement goal orientation: A predictor of student engagement in higher education. *Motivation and Emotion*, 45(3), 327–344. DOI: 10.1007/s11031-021-09881-7

Mohle, H. (1992). German Democratic Republic: System of education. In B. R. Clarke & G. Neave (Eds.), *The encyclopedia of higher education* (Vol. 1). Oxford University Press.

Montenegro, A. (2017). Understanding the Concept of Agentic Engagement for Learning. *Colombian Applied Linguistics Journal*, 19(1), 117–128. DOI: 10.14483/calj.v19n1.10472

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

Montenegro, A. (2022a). Lecturers' perceptions of student engagement and their role in supporting it. *European Journal of Education Studies*, 9(4), 134–153. DOI: 10.46827/ejes.v9i4.4243

Montenegro, A. (2022b). Long-term student engagement in private foreign language tutoring. *European Journal of Foreign Language Teaching*, 6(2). DOI: 10.46827/ejfl.v6i2.4336

Montenegro, A., & Schmidt, M. (2023). Achievement goals, student engagement, and the mediatory role of autonomy support in lecture-based courses. *Education Sciences*, 13(9), 912. DOI: 10.3390/educsci13090912

Montenegro, A., & Schmidt, M. (2025). What drives first-semester student engagement in large lecture-based sociology courses in Germany? *Education Sciences*, 15(8), 1080. DOI: 10.3390/educsci15081080

Oga-Baldwin, W. L. (2019). Acting, thinking, feeling, making, collaborating: The engagement process in foreign language learning. *System*, 86, 102–128. DOI: 10.1016/j.system.2019.102128

Oplatka, I. (2018). Understanding emotion in educational and service organizations through semi-structured interviews: Some conceptual and practical insights. *The Qualitative Report*, 23(6), 1347–1363. Retrieved from https://nsuworks.nova.edu/tqr/vol23/iss6/6

Owuor, N. A. (2018). Class size and student achievement: A parametric paired t-test. UKH *Journal of Social Sciences*, 2(1), 19–24. DOI: 10.25079/ukhjss.v2n1y2018.19-24

Patall, E. A., Vite, A., Lee, D. J., & Zambrano, J. (2024). Teacher support for students' psychological needs and student engagement: Differences across school levels based on a national teacher survey. *Teaching and Teacher Education*, 137, 104400. DOI: 10.1016/j.tate.2023.104400

Patall, E. A. (2024). Agentic engagement: Transcending passive motivation. Motivation Science, 10(3), 222–233. DOI: 10.1037/mot0000332

Patall, E. A., Zambrano, J., Kennedy, A. A. U., Yates, N., & Vallín, J. A. (2022). Promoting an agentic orientation: An intervention in university psychology and physical science courses. *Journal of Educational Psychology*, 114(2), 368–392. DOI: 10.1037/edu0000614

Pekrun, R., Elliot, A. J., & Maier, M. A. (2009). Achievement goals and achievement emotions: Testing a model of their joint relations with academic performance. *Journal of Educational Psychology*, 101(1), 115–135. DOI: 10.1037/a0013383

Pineda-Báez, C., Hennig Manzuoli, C., & Vargas Sánchez, A. (2019). Supporting student cognitive and agentic engagement: Students' voices. *International Journal of Educational Research*, 96, 81–90. DOI: 10.1016/j.ijer.2019.05.007

Pintrich, P. R. (2000). Multiple goals, multiple pathways: The role of goal orientation in learning and achievement. *Journal of Educational Psychology*, 92(3), 544–555. DOI: 10.1037/0022-0663.92.3.544

Reeve, J. (2012). A self-determination theory perspective on student engagement. Handbook of research on student engagement. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 149–172). Boston, MA.

Reeve, J. (2013). How students create motivationally supportive learning environments for themselves: The concept of agentic engagement. *Journal of Educational Psychology*, 105(3), 579–595. DOI: 10.1037/a0032690

Reeve, J. (2016). Autonomy-supportive teaching: What it is, how to do it. In W. C. Liu, J. C. K. Wang, & R. M. Ryan (Eds.), *Building autonomous learning: Perspectives from research and practice using self-determination theory* (pp. 129–152). New York: Springer.

Reeve, J., Hyeon-Cheon, S., & Jang, H. (2020). How and why students make academic progress: Reconceptualizing the student engagement construct to increase its explanatory power. *Contemporary Educational Psychology*, 62, 101899. DOI: 10.1016/j.cedpsych.2020.101899

Reeve, J., & Cheon, S. H. (2021). Autonomy-supportive teaching: Its malleability, benefits, and potential to improve educational practice. *Educational Psychologist*, 56(1), 54–77. DOI: 10.1080/00461520.2020.1862657

Reeve, J., & Jang, H. (2022). Agentic engagement. In A. L. Reschly & S. L. Christenson (Eds.), *Handbook of research on student engagement* (pp. 95–107). Springer. DOI: 10.1007/978-3-031-07853-8_5

Reeve, J., & Lee, W. (2025). Autonomy recruits neural support for interest and learning. *Motivation and Emotion*. DOI: 10.1007/s11031-025-10119-z

Ryan, R. M., & Deci, E. L. (2022). Self-determination theory. In F. Maggino (Ed.), *Encyclopedia of quality of life and well-being research* (pp. 1–7). Springer.

Sapelli, C., & Illanes, G. (2016). Class size and teacher effects in higher education. *Economics of Education Review*. 52, 19–28. DOI: 10.1016/j.econedurev.2016.01.001

Scott-Webber, L., Marini, M., & Abraham, J. (2000). Higher education classrooms fail to meet needs of faculty and students. *Journal of Interior Design*, 26(1), 16–34. DOI: 10.1111/j.1939-1668.2000.tb00356.x

Senko, C. (2019). When do mastery and performance goals facilitate academic achievement? *Contemporary Educational Psychology*, 59, 1–13. DOI: 1016/j.cedps ych. 2019. 101795

Senko, C., & Dawson, B. (2017). Performance-approach goal effects depend on how they are defined: Meta-analytic evidence from multiple educational outcomes. *Journal of Educational Psychology*, 109(4), 574–598. DOI: 10.1037/edu0000160

Shernoff, D. J. (2012). Engagement and positive youth development: Creating optimal learning environments. In K. R. Harris, S. Graham, & T. Urdan (Eds.), *The APA educational psychology handbook* (pp. 195–220). Washington, D.C.: American Psychological

Sorokin, P. S., & Froumin, I. D. (2022). 'Utility' of education and the role of transformative agency: Policy challenges and agendas. *Policy Futures in Education*, 20(2), 201–214. DOI: 10.1177/14782103211032080

Tomanović, S. (2019). Reconstructing changes in agency in the young people's social biographies through longitudinal qualitative research. *Young*, 27(4), 355–372. DOI: 10.1177/1103308818793304

Waqar, Z., Sultana, S., & Ata, M. (2025). In-class active engagement strategies to enhance student participation during lectures: A systematic review. Journal of Bahria University M & DC, 15(2), 146–158. DOI: 10.51985/JBUMDC2024486

Waring, H. Z. (2011). Learner initiatives and learning opportunities in the language classroom. *Classroom Discourse*, 2(2), 201–218. DOI: 10.1080/19463014.2011.614053

Wijnia, L., Loyens, S. M. M., & Derous, E. (2011). Investigating effects of problem-based versus lecture-based learning environments on student motivation.

Contemporary Educational Psychology, 36, 101–113. DOI: 10.1016/j.cedpsych.2010.11.003

Zambrano, J., Patall, E. A., Kennedy, A. A. U., Aguilera, C., & Yates, N. (2023). Qualitative study of urban high school teachers' beliefs about students' agentic engagement. *The Journal of Experimental Education*, 93(1), 69–90. DOI: 10.1080/00220973.2023.2238632

5. List of Publications

This dissertation is based on five peer-reviewed articles that have been published between 2017 and 2025. Each publication contributes uniquely to the overall research aim by addressing different dimensions of student engagement, achievement goals, and the role of autonomy support in lecture-based university courses. These articles were developed through various methodological approaches—including theoretical analysis, qualitative inquiry, and quantitative research—and collectively form the empirical and conceptual foundation of my doctoral dissertation.

Montenegro, A., & Schmidt, M. (2025). What drives first-semester student engagement in large lecture-based sociology courses in Germany? *Education Sciences*, 15(8), 1080. https://doi.org/10.3390/educsci15081080

Abstract: Research on the complex dimensions of engagement in large, lecture-based courses remains scarce. Lecture-based courses are often characterized by passive learning environments, raising concerns about their capacity to foster motivation. This study investigates how motivational factors shape multiple dimensions of engagement—cognitive, behavioral, emotional, and agentic—in introductory sociology courses. A quantitative, cross-sectional survey was conducted with 434 first-year students enrolled at seven public universities in North Rhine–Westphalia, Germany. All participants had completed the *Abitur* at the Gymnasium and experienced hybrid learning during their final years of secondary education due to the COVID-19 pandemic. The study formulated three hypotheses: (1) mastery (self-improvement) goals positively predict emotional, behavioral, and cognitive engagement (validated); (2) perceived autonomy support increases emotional engagement (validated); and (3) performance goals (motivation to outperform peers) have a stronger effect on emotional than cognitive engagement (rejected). Results indicate that performance goals neither enhance emotional engagement nor exert a stronger influence on emotional than on cognitive engagement, challenging common assumptions about the role

of competitive motivation in large lecture settings. Additionally, despite low levels of agentic engagement—attributed to the structural constraints of large lecture-based learning environments—students' internal engagement was in line with other studies. These findings highlight the critical role of educational culture, particularly the emphasis on autonomy within the German school system, and the influence of learning spaces in shaping student engagement. We suggest that engagement is shaped by familiarity with hybrid formats that support autonomy, as well as by an academic culture in which active silent engagement is often the norm. In such contexts, mastery goals and autonomy-supportive backgrounds help foster more reactive dimensions of student engagement.

Montenegro, A., & Schmidt, M. (2023). Achievement goals, student engagement, and the mediatory role of autonomy support in lecture-based courses. *Education Sciences*, 13(9), 912. https://doi.org/10.3390/educsci13090912

Abstract

What makes first-semester students stay engaged in non-mandatory lecture-based courses? This study aims to answer this question by analyzing the relationship between student engagement with autonomy support and achievement goals. Data gathered through self-reports from 340 students attending four introductory lecture-based courses at four German universities were used to test the following hypotheses: (1) students who pursue goals for self-improvement display emotional, behavioral, and cognitive engagement, (2) emotional engagement is predicted by students' perceptions of autonomy support, and (3) students who aim to outperform their peers display higher emotional engagement compared to cognitive engagement. After confirming the hypotheses with multiple regression analyses, additional results indicated a statistically significant relationship between both emotional engagement and achievement goals with autonomy. Further, results indicate a moderate positive association between emotional engagement and both behavioral and cognitive engagements.
These findings confirm the presence of both mastery and performance goals in courses with a lecture-based teaching. This study highlights some limitations for

statistical analyses with agentic engagement as well as the need to analyze study participants' school culture for further research on student engagement.

Montenegro, A. (2022). Lecturers' perceptions of student engagement and their role in supporting it. *European Journal of Education Studies*, 9(4), 134–153. https://doi.org/10.46827/ejes.v9i4.4243

Abstract

A positive relationship between emotional engagement and teaching support was reported in a previous quantitative study on students' perceptions of student engagement in four introductory lecture-based courses at four different German universities. The present qualitative research was designed to collect data from the four German male lecturers who participated in the previous study to explore their perceptions of student engagement and their role in supporting it. The lecturers of varying degrees of experience were observed while lecturing and subsequently interviewed to analyze their motivating teaching behavior. The analysis highlighted that lecturers (1) positioned themselves as committed professionals with a sense of ownership, (2) attributed positioning to students as social scientists, and (3) communicated messages characterized by supporting autonomous motivation. The lecturers implemented motivation strategies to engage their students who exhibited a preference for intentional silence. Certain characteristics of the students attending introductory level courses in Germany, such as having gained self-regulation skills at upper secondary school, highlight the importance of establishing specific goals before attending higher education courses.

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. https://doi.org/10.17583/rise.2019.4540

Abstract

This article is part of a broader research project on student engagement, achievement goals, and autonomy support in higher education. This observational study presents a categorization of students' self-initiated contributions for learning. For this purpose, an observation form was developed and implemented in both a large and a small course delivered by the same professor. The research question was "Which students' verbal contributions in lecture-based courses are aligned with the concept of agentic engagement?" This question also aimed to explore the premise that agentic behavior is performed differently by male and female students in small and large courses. Each self-initiated contribution was classified, counted, and described, and then compared between courses. The findings revealed that (1) expected self-initiated contributions were the most observed ones in both courses, and (2) the number and type of contributions were different regarding student's gender and class size. The paper concludes with recommendations to advance the state of research on agentic engagement.

Montenegro, A. (2017). Understanding the Concept of Agentic Engagement for Learning. *Colombian Applied Linguistics Journal*, 19(1), 117–128. https://doi.org/10.14483/calj.v19n1.10472

Abstract

Bearing in mind that agentic engagement has a recent history in comparison to the other types of engagement (behavioral, emotional and cognitive), this paper will present a theoretical review of this concept, including the reasons it has been denominated as the fourth type of student engagement. Agentic engagement is understood as the observable classroom event in which the learner constructively contributes to his/her learning and the instruction he/she

receives (Reeve, 2012). The revision of research and theory on agentic engagement included in this paper supports the idea that it provides a consistent researchable field. Future research contributions may focus on (1) the disaffected face of agentic engagement, its conceptualization and its effects (Reeve & Tseng, 2011; Reeve, 2013) and (2) the understanding (description, typology, and analysis) of students' self-initiated contributions (proactive actions) in the classroom (Waring, 2011) in order to identify which strategies may facilitate students' learning processes, teacher's agentic engagement interventions, and student-teacher interaction.