Exploring student engagement and motivation – Insights from a case competition

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***Abstract*— This study evaluates the design choices of a two-day, industry-collaborative case competition at Campus Helsingborg and their effect on student motivation and engagement. Using pre and post Self-Determination Theory surveys, observations, and interviews we observed very high intrinsic (4.82/5) and extrinsic motivation (4.33/5). The perceived value of competition elements increased consistently after participation. Authentic briefs, mentor access, and a staged workflow with a public pitch to an external jury supported focus, learning, and professional readiness. Autonomy was enabled by open problem framing, competence by sequenced practice and iterative feedback, and relatedness by peer, mentor, and industry interactions.**

***Index Terms*— Student Competition, Student Engagement, Student Motivation**

I. Introduction

A recurring challenge in higher education is fostering student engagement, particularly in courses that require active participation, problem-solving, and real-world application of knowledge. University educators often discuss the difficulty of maintaining student motivation throughout the semester, as engagement levels can fluctuate throughout the course. While traditional instructional techniques remain foundational, there is a growing recognition of innovative pedagogical strategies that enhance student involvement and learning experiences.

One approach that has demonstrated significant potential in enhancing engagement is student competitions. Competitions have been successfully integrated the business education, STEM fields, and social sciences, where they have been shown to improve student motivation, critical thinking, and skill development [1, 2]. Research suggests that well-designed competition-based activities can lead to increased participation, deeper learning, and higher levels of intrinsic motivation [3, 4]. However, while competition has been widely studied as a motivational tool, its effects on student learning are complex and context dependent. Studies indicate that competition can enhance engagement and drive academic achievement [5], but it can also contribute to learning anxiety and disengagement, particularly among students who struggle in competitive settings. In the context of applied disciplines, where real-world problem-solving and industry collaboration are essential, competition-based learning offers an opportunity to bridge the gap between theoretical knowledge and practical application.

Student engagement, spanning behavioral, emotional, and cognitive dimensions, is a key determinant of academic success. When well designed, competition introduces goal-oriented challenges that increase motivation and participation [1,2]. Implementations include gamified leaderboards and point systems that enhance motivation, especially for higher-ranked students [5]. Other formats are semester-long competitions with systematic rewards that improve engagement and collaboration [2], and experiential case or engineering design contests that apply theory and build critical thinking and problem-solving [6,7]. Effectiveness is context dependent, as some students feel discouraged, especially those with lower self-efficacy or a preference for cooperative learning [8].

Beyond motivation, competition-based learning improves academic performance and skill acquisition: intergroup competition in collaborative settings enhances engagement, achievement, and creativity [3], and online competitions in programming and translation raise grades and motivation. It also supports career readiness in international business case competitions strengthen problem-solving, teamwork, and employability [4]. Entrepreneurship competitions cultivate resource management, self-management, and strategic decision-making essential for professional success [9].

Despite its benefits, competition has challenges including gender and anonymity effects [5], better long-term outcomes when tasks emphasize skill development over rankings [10], and evidence that “backward grading” (awarding points for contributions rather than rank) increases participation while reducing stress and competitive pressure [11].

II. Methods

A. Research Approach and Competition Set-up

This study explores specific elements of a student competition influence motivation and engagement, drawing on Self-Determination Theory (SDT) [12], which highlights three core psychological needs (i.e., autonomy, competence, and relatedness) as essential for sustaining motivation. The objective is to identify which aspects of the competition design are most effective in fostering intrinsic and extrinsic motivation and how students’ engagement evolves throughout the competition.

The competition was held at Campus Helsingborg, Lund University, in March 2025, in collaboration with an established well-known brand retail company. Designed around a real-world business case, the competition challenged students to develop future-oriented in-store customer experiences, providing an applied learning opportunity directly aligned with current industry challenges in retail and business management. The competition was open for all LU students to apply in pairs, which were then

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invited to a short digital interview to confirm eligibility, commitment, and skill sufficiency.

The competition lasted for two days, immediately following the end of a study period. It began with an additional evening kick-off event aimed at creating a joint team spirit and providing practical information. Students, organizers, and mentors gathered for a social introduction that included team-building activities and a shared dinner. The following morning, students received their assignment directly from the partner company: to develop the in-store customer experience of the future. Over the course of an intensive 2-day period, students worked on solving the case in close collaboration with mentors and experts from both academia and industry. Each team had access to a dedicated creative workspace and received ongoing mentorship throughout the process. They were provided with structured guidance through a series of teaching modules designed to actively support discovery-based learning and creative problem-solving.

The modules mixed theoretical input, hands-on exercises, and feedback, delivered in sequence: (1) field study and trend spotting with store visits and manager interviews, (2) problem/need and target group workshop with a mood board, (3) idea sharpening through brainwriting and inspiration from creative idols, (4) value proposition and unique selling point development, (5) customer survey workshop, (6) launch campaign with strategic communication planning, (7) concept realization and sustainability development, (8) startup budget with basic financial planning, and (9) final pitch preparation and rehearsal followed by the award ceremony. At the end of day two, each team delivered a 10-minute pitch to peers, mentors, and industry professionals, and a jury consisting of a project and operations manager from the retail company, the CEO of a national retail association, and the head of sustainability from a non-profit startup evaluated proposals on feasibility, creativity, and business impact. The winning team received a previously undisclosed monetary prize and an invitation to join a local business incubator to develop the project for one year free of charge.

B. Data collection and analysis

We used mixed methods, including surveys, observations, and semi-structured interviews, to capture motivation and engagement. Before and after the event, students completed an SDT-based questionnaire measuring baseline motivation (intrinsic vs. extrinsic) and expectations for competition elements with closed and open questions that assessed initial motivation, perceived relevance of activities, and anticipated engagement across stages, changes in motivation, engagement, and perceived learning outcomes, provided comparative motivation scores (pre vs. post), ranked the usefulness and impact of elements, and evaluated psychological needs fulfilment (autonomy, competence, relatedness). Observations recorded team dynamics, collaboration, leadership, problem solving, persistence, enthusiasm, and responses to guidance from company representatives and invited speakers. Follow-up interviews explored how elements influenced motivation over time, experiences of autonomy, competence, and relatedness across phases, and suggestions to improve the design to maximise engagement.

Eleven students participated in the competition (6 female and 5 male). Participants came from a range of study fields – Retail & Consumption (n=5), Environment & Engineering (n=2), Tourism (n=2), Sustainability (n=1), and Supply Chain Management (n=1). The age distribution was as following – 18–25 years (n=3), 26–35 years (n=6), and 36–45 years (n=2).

Due to a relatively small sample size, survey data analysis was restricted to use of descriptive statistics to assess changes in motivation and engagement. Following, comparative analysis identified differences in motivation shifts based on initial motivation type (intrinsic vs. extrinsic), competition elements rated as most or least effective, and engagement patterns across different teams. Then, interviews and observational notes undergone thematic analysis using an inductive coding approach. Further comparative analysis explored differences in engagement and motivation evolution across teams with high versus low engagement, students with initially high intrinsic motivation versus high extrinsic motivation, and perceptions of competition elements among different participant groups.

III. FINDINGS

A. Survey results

The responses indicate that participants found the most valuable part of the competition to be its real-world relevance and practical application. They appreciated working on an actual business challenge, which allowed them to apply their knowledge, engage in hands-on projects, and gain insight into real-life problem-solving. Many highlighted the importance of the learning process, including research, unlearning and re-learning, and developing their analytical and presentation skills. Additionally, the experience of collaborating in teams, receiving feedback from mentors and professionals, and engaging in a creative, solution-oriented process was seen as highly meaningful. Overall, the competition was viewed as an opportunity for personal growth, teamwork, and practical learning. The responses also indicated that the most significant learning experience during the competition was understanding how to approach and solve real-world problems in a structured and meaningful way. They emphasized the importance of narrowing down complex issues, thinking critically and practically, and developing business ideas that grow through continuous refinement**.** The process taught them the value of collaboration**,** the role of sustainable development goals, and the necessity of not rushing to solutions but instead engaging deeply with the problem. Additionally, they learned how to effectively present and pitch their ideas, gaining insights into the retail industry's challenges and how to address them with practical**,** solution-oriented thinking.

B. Motivation Types

Intrinsic motivation arises from internal drivers such as curiosity, interest, and the enjoyment of learning, so students engage because they find the work meaningful. Extrinsic motivation stems from external factors like grades, rewards, recognition, or avoiding negative consequences.

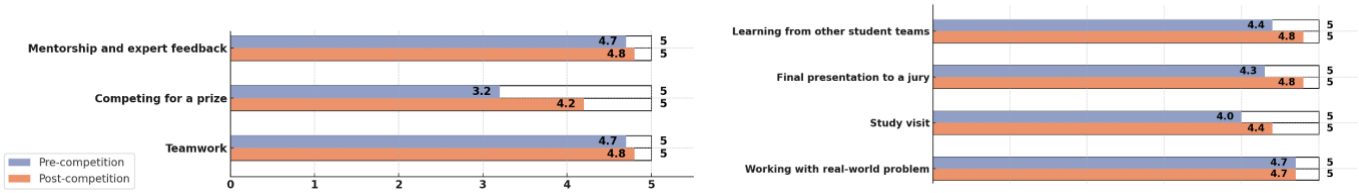

Figure 1. Students' evaluation of the importance of the competition elements (before and after the competition)

In learning, intrinsic motivation is associated with deeper learning, creativity, and long-term engagement, driven by a desire to master new skills. Extrinsic motivation can support task completion and performance but may produce surface-level learning if it becomes the main driver. Both forms relate to engagement, with intrinsic motivation linked to higher participation, persistence, and self-directed learning. Well-designed environments can also harness extrinsic incentives to support engagement when paired with autonomy and meaningful experiences. Participants reported very high intrinsic (4.82/5) and extrinsic (4.33/5) motivations. Intrinsic motivation was consistently higher than extrinsic for all participants.

In relation to the work with motivation, students were asked to evaluate usefulness of various competition elements. The results show a slight increase in the post-competition scores, suggesting that these aspects met or exceeded student expectations. The elements that showed the most notable change in perceived usefulness were Competing for a prize, Study visit, and Final presentation to a jury (see Figure 1). In particular, the usefulness of the prize component increased substantially, from 3.2 to 4.2, suggesting that students initially underestimated how motivating the competitive aspect would be. This could also be linked the the element of surprise, as students were not given details about the tipe of awards that would be provided in the competition during the promotion stage and up until the end of the first day of the competiton.

C. Interview results

Interviews showed largely pragmatic, career-oriented entry motives (i.e., practice in case solving and pitching, exposure to entrepreneurship, and networking) enabled by a manageable two-day format. Engagement deepened through the authenticity of a live company brief and the reputational stakes of presenting to unfamiliar industry professionals and faculty, creating public accountability. Prize confirmation sharpened competitive focus without displacing intrinsic learning goals. Structured scaffolds (mentors, peer interaction, clearly staged activities) were viewed as supportive and made the format accessible even for students from programs with limited entrepreneurship/marketing content. Learning centered on performing under time pressure: pitching with incomplete information, rapidly structuring ideas, and aligning proposals with business realities. Participants reported fulfilling disciplinary cross-over with the study visit, mentor dialogue, and observing peers' mini-pitches catalyzing sensemaking and skill uptake. The compressed, modular schedule forced prioritization and accelerated decisions, which participants treated as process challenges rather than barriers.

IV. Discussion

The competition conducted in Campus Helsingborg has shown that a tightly scoped, industry-anchored case challenge can elicit strong intrinsic motivation while productively activating extrinsic drivers without crowding them out. In line with SDT, autonomy was supported by open-ended problem framing and team agency within a staged workflow; competence was strengthened via sequenced modules, iterative feedback, and the culminating public pitch; and relatedness was cultivated through peer collaboration, mentor interactions, and contact with industry representatives. The delayed prize disclosure appears to have intensified salience of extrinsic incentives late in the process without diminishing intrinsic interest, suggesting that timing and framing of rewards can be leveraged to sustain momentum across phases. For instructional design, this implies that authentic briefs, public accountability, and mentor access, if delivered within a clear, time-bounded structure, can reliably trigger motivational synergies, while competitive elements should be calibrated for inclusivity (e.g., transparent criteria, supportive coaching, and opportunities for formative rehearsal). Finally, linking the competition to real post-event pathways (such as incubator invitations) signals consequentiality beyond grades, reinforcing students' professional identity development and perceived relevance of learning.

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