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The Relationship between Motivational Factors and Classroom Engagement Behaviors among Secondary School Students: A Multidimensional Analysis

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ABSTRACT

The purpose of this study was to investigate the effect of motivation on students' classroom engagement at the secondary school level. It was quantitative research that employed a survey research correlational research design. The population of the study was all the secondary school students in one district of Punjab province. The convenient sampling technique was used to select 211 students as participants of the study. The data were collected through a self-developed five-point Likert scale questionnaire with twenty-five items. The data were analyzed through SPSS (Statistical Package for Social Sciences) version 22. Descriptive statistics (Mean & Standard deviation) and inferential statistics (t-test and correlational) were employed to check the mean difference between different variables. The findings of the study show that there was a strong and positive relationship between the students' motivation and classroom engagement. Whereas by gender, sector and age, female, 9th-grade students, and private students' mean scores were different and better than male public school students and 10th grade students. Based on the result, it was recommended that the differences in motivation and engagement between private and public school students suggest a need for improved teaching methods, resources, and student support in public schools.

Introduction

The primary definition of motivation is a force that propels or encourages someone to perform in a particular manner or in a particular direction. One way to describe motivation is as a driving force or a process that initiates and propels various psychological and physical behaviours (Gerrig & Zimbardo, 2006). Motivation is "the factors that direct and energize the behaviour of humans and

other organisms," according to Feldman (2015, p. 287). Motivation is "the urge to move towards one's goals, to accomplish tasks," according to Feist and Rosenberg (2015, p. 397).

Motivation is an internal mental entity whose power may be measured in several ways, including fulfilling one's commitments, persevering and exerting effort in the face of failure, and others (Asor, 2005; Davidovitch & Dorot, 2023). The reasons behind people's actions in a given circumstance are known as motives. People's goal structures and views on the significance of different topics are components of their motivations. A person's motivations also influence the course they will follow and the objectives they set for themselves (Filchenfeld, 2003; Davidovitch & Dorot, 2023). Theories of motivation attempt to explain the mechanisms that drive a person to behave and carry out particular behaviours. Researchers discovered that accomplishment in difficult activities and meaningful learning depend on motivation. According to Kaplan and Asor (2001), motivation is just as crucial for admission, academic performance, and career success as knowledge and grades (Davidovitch & Dorot, 2023). The urge to devote time and energy to a particular endeavour, despite the challenges, failures, and high costs, is referred to as motivation.

According to Kaplan and Asor (2001), motivation is linked to the general behaviour in which a person selects between different objectives and means to be managed and guided to achieve a specific goal. These researchers define three characteristics of motivated behaviour: quality, intensity, and direction. Direction is the decision a person takes to stick with a task and complete specific tasks even when they are not required to do so or to choose an activity to carry out consistently even when they face challenges, or other options become available. The amount of effort a person puts into a specific task is known as its intensity. The quality of an activity can distinguish different motivational behaviours. Good self-perceived learning ability, a sense of confidence, relatedness, belonging, and a sense of meaningfulness are the three key processes that underlie good quality motivation for learning. A student's motivation will be high and of good quality when these three processes are present (Kaplan & Asor, 2001; Davidovitch & Dorot, 2023).

Numerous cognitive processes support human behaviour, including motivation. Motivation refers to the forces that drive individuals to achieve their goals and behave in a specific manner under certain circumstances. An individual's motivation shapes their chosen path and the goals they establish (Beck, 2021; Davisovitch & Dorot, 2023). Many forms of motivation and their manifestations and effects on human actions, desires, and skills have been the subject of years of investigation.

According to self-directed learning theory, which characterizes extrinsic and intrinsic motivation as two poles of a continuum reflecting the degree to which actions are perceived as autonomous and significant. Two types of motivation have been identified: extrinsic and intrinsic (Mulang, 2021; Davidovitch & Dorot, 2023). Extrinsic motivation, intrinsic motivation, and behavioural motivations situated at different places on the continuum between these two poles have all been identified by research (Mulang, 2021; Dorot & Davisovitch, 2023). Particularly in the age of learner-centred teaching (STEM) (Kaniel, 2006), motivation is one of the most important subjects in educational processes and has a crucial role in both teaching and learning (Davidovitch & Dorot, 2023). Students in high school and secondary school are extremely driven to learn because they want to do well on their matriculation and secondary exams. Both student groups share a common objective and are similarly motivated to excel academically and achieve excellent marks (Notov, 2019; Afaq et al., 2022; Davidovitch & Dorot, 2023).

The current study's goal is to determine whether and to what degree secondary school students who decided to pursue graduate courses differ from high school students, for whom studying is required, in terms of their motivation for learning. Additionally, if and to what degree motivation influences high school and secondary school students' academic performance, and whether motivation is linked to gender, personal, family, and social background elements. This study's significance is its emphasis on high school motivation, a crucial time in an individual's life for formative purposes. In addition to being an academic setting, high school can help students become more motivated to learn, especially for their university courses.

Objectives of Study

1. To examine the correlation between students' motivation and classroom engagement among secondary school students.
2. To analyze demographic differences (gender, grade level, and school sector) in students' perspectives on the effect of intrinsic and extrinsic motivation on classroom engagement at the secondary school level.

Literature Review

In the field of education, a student's level of interest and effort to accomplish goals is explained by their motivation for learning (Beck, 2021; Davidovitch & Dorot, 2023). According to Grew (2017), motivation is the desire of an individual to devote resources to a particular conduct. According to the self-direction hypothesis, people are born with three basic needs: the need for belonging, the need for autonomy, and the need for self-efficacy. According to self-direction theory, motivation comes from both intrinsic and external sources.

Gopalan et al. (2017) argue that a learning environment that stimulates the innate motivation to enhance and broaden knowledge is most advantageous. It also observes that children acquire knowledge more effectively when motivated by social interaction, such as collaborating in groups and contributing to the community.

Cenic and Petrovic (2019) highlight the significance of motivation in the learning process, asserting that it is a crucial element for effective knowledge acquisition. It emphasizes the significance of intrinsic and extrinsic motivation, which is especially crucial due to its association with a student's innate desire to learn. The study highlights the impact of social elements and the learning environment on motivation, indicating that a supportive and engaging atmosphere can improve learning outcomes. The influence of extrinsic incentives on academic achievement is contingent upon pupils' intrinsic motivation level. Students with high intrinsic motivation face adverse effects on their academic performance, whereas those with low intrinsic drive gain advantages from extrinsic incentives (Liu et al., 2020; Fernandez, 2024).

Extrinsic motivation can serve to encourage students to engage in activities they may find unenjoyable, while the cultivation of intrinsic motivation is promoted through the enhancement of personal responsibility and the encouragement of positive learner attributes (Pedrotti, 2017; Fernandez, 2024). Novita and Sutantoputri (2009) propose that educators can enhance students' mastery and success motivation by using external incentives and promoting positive expectations.

Students' participation in class, educational goals, enjoyment of school, academic learning, and academic accomplishment are all closely linked to motivation and engagement. An individual's

tendency, energy, direction, and drive with regard to learning and achievement are referred to as motivation. Engagement encompasses the attitudes, behaviours, and feelings that are indicative of this propensity, vigour, and motivation. Various theories articulate the essential components of students' motivation and involvement. These ideas explain the significance of engagement and motivation for educational outcomes in and of themselves and the significance of these factors as a means to other desired educational goals.

Due to the wide variety of ideas developed in the fields of engagement and motivation, scholars have called for the integration of the accumulated body of knowledge. One multifaceted framework that covers important motivation and engagement elements from significant theory and research is the Motivation and Engagement Wheel. The factors mentioned earlier include negative motivation constructs (anxiety, uncertainty control, and failure avoidance), negative engagement constructs (self-handicapping and disengagement), and positive motivation constructs (self-efficacy, valuing, and mastery orientation). The importance of the Wheel's components is supported by a large body of research using a number of research designs and methodologies, as well as in relation to a wide range of other variables (such as background traits and cultural factors). Crucially, there are fascinating avenues for motivation and engagement research pertinent to maximizing kids' academic growth during and after school, including real-time studies, the application of biomarkers, the interface with teachers, and intervention research (Collie & Martin, 2019).

According to Eshel (2010), university faculty members are held accountable for their students' motivation in higher education, and as a result, they typically place this burden on students. In an ideal world, recent high school graduates arrive on college campuses prepared to study early for class and ask their instructors questions that will guide their students' education. This isn't usually the case, though.

Additionally, it was discovered that college students' intrinsic motivation was higher when they were allowed to choose their assignments and the amount of time allocated to each one than when these factors were fixed. High school pupils showed similar results (Sasy, 2016). According to other research, people become uncomfortable with the task or how it is performed when asked to execute an engaging activity in a novel way, and their motivation levels drop (Koestner et al., 1984). Since college students are older and more "prepared" for academic work, motivating them differs from motivating high school students.

It was discovered that a student's home life impacts their motivation to learn in addition to their school experiences. It was discovered that students' self-regulation in their academic achievements is impacted by the way parents promote autonomy as opposed to engagement and control (Mulang, 2021). There are two ways that students can develop views about their abilities: Students first evaluate their skills using grades and teacher feedback. Additionally, they make comparisons: To evaluate their own proficiency in a particular subject, they compare their own performance to that of other pupils. When their accomplishment exceeds that of others, students may believe they are more capable (Chung & Chang, 2017).

According to Cohen et al. (2014), a student may be motivated by their relationship with their teacher. According to their survey, most students said they felt more connected to professors who were Facebook friends and discussed personal matters with them than academic ones. They discovered that the strength of the bonds between students and professors on Facebook had a major impact on students' enthusiasm to learn. According to Gruzd et al. (2012), students anticipate

rewards for their actions, and internal sources can be used to provide incentives. Even if they might not be independent, students can effectively internalize motivation when they acquire achievement-related motivation or when that motivation is converted into demands for self-improvement during the learning process. Incentives are unnecessary for students who possess a fundamental motivation for studying. They can decide for themselves, and the process of learning gives them a sense of fulfilment and delight. This study suggests that in order to motivate pupils to learn, teachers or parents might mix their exterior rewards with their internal areas of interest.

Student engagement has been thoroughly examined in a variety of contexts, with a focus on the cognitive, emotional, and behavioural integration of students' learning performance. Numerous research studies have been carried out to identify the elements that impact student engagement. According to Kabu (2013), a student's learning engagement is influenced by their traits and experiences. The learning community enhances learning outcomes, student engagement, and general happiness with post-secondary education. Academic and social experiences, favourable views regarding campus life, and learning outcomes are all linked to success when one participates in the learning community. Learning resources are indirectly and favourably linked to learning activities through student engagement, which also mediates the relationships between observed learning behaviours and personal resources.

The three primary components of student engagement are behavioural, emotional, and cognitive. The behavioural aspects are effort, perseverance, focus, questioning, and communication in the classroom. Students' effective communication and behaviours on campus are among the emotional aspects. The psychological involvement that results from learning, comprehending, and mastering the skills and knowledge given in schools is the main focus of the cognitive factors. Boatman and Long (2016) examined the Gates Millennium Scholarship (GMS) Program to examine the connection between the influence of financial aid and college student involvement. It was discovered that the program positively impacts kids' social involvement and academic performance. Gamification, for instance, has a significant impact on student engagement. Students' health is also impacted.

Carini et al. (2006) investigated the connection between learning and students' engagement. Desired learning outcomes, such as critical thinking and good grades, were linked to student engagement. Critical thinking, being a twenty-first-century life skill, is fundamental for today's learners as it represents essential competencies that transcend traditional academic knowledge (Kivunja, 2015). These skills enable students to navigate complex real-world challenges, make informed decisions, and adapt to rapidly changing environments (Jamil et al., 2023). Research across multiple subjects, including Physics, Chemistry, and Pakistan Studies, consistently demonstrates that integrating critical thinking and core life skills into educational curricula significantly enhances students' ability to analyze information, solve problems creatively, and develop resilience (Jamil, Ain, & Chohan, 2024; Jamil, Arif, & Shahzadi, 2024; Jamil, Bibi, & Shahzadi, 2024). While teachers acknowledge the importance of these competencies (Jamil et al., 2023; Jamil & Muhammad, 2019), implementation faces challenges that require innovative instructional approaches (Jamil, Zahra, & Fida, 2024; Umamah & Hartono, 2020). The development of these skills not only prepares students for academic success but equips them with the adaptive capabilities necessary for future employment opportunities and responsible citizenship in an increasingly interconnected and technologically driven global society (Jamil, Mehmood, & Noorani, 2024; Naseer et al., 2022).

Gray and DiLoreto (2016) studied the effects of student engagement, student satisfaction, and perceived learning in online learning settings. They maintained that, in terms of both perceived

student learning and student satisfaction, student engagement is a significant factor in the relationship between learner interaction and instructor presence.

According to Gunuc and Kuzu (2015), peer relationships, relationships with faculty, a sense of belonging and value, and cognitive, emotional, and behavioural involvement are all components of student engagement. In the end, learning performance and quality are enhanced by student participation. The two components of student engagement are class engagement (cognitive, emotional, and behavioural engagement) and campus engagement (valuing, sense of belonging, and participation). They looked at the connection between community college students' retention and engagement. Student grades and course completion rates were positively impacted by student participation, which also favoured student learning communities. Absenteeism in the learning community decreased as a result of the increased student participation. Thus, short-term student success and established learning communities are linked to student involvement.

Student engagement and learning results are positively impacted by teacher support. Teacher and student professional learning communities provide personalized learning environments. According to Kuh et al. (2008), learning persistence and first-year College grades are positively impacted by student engagement. Student-faculty contact, educational experiences, collaborative learning, academic challenge levels, and supportive campus surroundings are all considered by the student engagement benchmarks. Additionally, via students' experiences of participating and learning, creating a sense of belonging is associated with increased student engagement. Their sense of belonging influences students' engagement and retention.

Positive peer networks and engagement are also facilitated by helping students develop a feeling of belonging, create learning identities, and make sense of their performance. From a methodical standpoint, Quin (2017) found a contextual link between student involvement and teacher-student connections. That study included a variety of indices of student participation, including academic grades, attendance, disruptive behaviours, suspension, dropout, and psychological engagement. Shernoff et al. (2016) found that environmental complexity affects student involvement in secondary school classrooms. The calibre of the classroom experience is linked to the calibre of the learning environment. In the classroom, it was discovered that environmental complexity predicted both student involvement and self-esteem.

Furthermore, Shernoff et al. (2016) discovered that blended learning settings have a particularly significant impact on learning performance and engagement, and You (2016) contended that psychological capital has a favourable function in fostering learner empowerment and student engagement. Enhancing student involvement and learning results is another advantage of the "flipped classroom" pedagogy.

As a result, literature proposes several important determinants of student engagement, such as students' learning and thinking skills, behaviour, and personal traits; the behaviour of teachers and the teacher-student relationship; assistance through educational materials; and environmental support.

Research Methodology

This research used a quantitative, correlational research design to examine the relationship between motivation and classroom engagement among secondary school-level students. The population of the present study consisted of all the secondary school students from a district of Punjab. The convenient sampling technique was used to select 211 students as this technique is

utilized when researchers need a quick, convenient, and cost-effective means to gather data, particularly when resources are limited or a representative sample is not necessary, such as in pilot projects or early research (Edgar & Manz, 2017). A total of 211 secondary students were selected as a study sample. The researchers developed a structured five-point Likert scale questionnaire to measure motivation and students' engagement. The scale was used to determine the students' motivation based on the six sub-scales. These sub-scales were intrinsic motivation, extrinsic motivation, self-efficacy, behavioural engagement, emotional engagement, and cognitive engagement. A questionnaire is a research tool with questions designed to elicit relevant information from respondents. Questionnaires can be qualitative or quantitative and can be offered online, over the phone, on paper, or in person (Cint, 2022). The researchers visited schools and collected the data. The data were analyzed through SPSS (Statistical Package for Social Sciences) version 22. Correlational bivariate was used to measure the relationship between variables (motivation and classroom engagement). Moreover, descriptive statistics (Mean & Standard Deviation) and inferential statistics (t-test) were employed to check the mean difference between different variables, and the result shows that there was a strong and positive relationship between the concerned variables.

Data Analysis and Findings

Table 1: Cronbach alpha of the tool

No items	Mean	St. Deviation	Cronbach alpha
25	98.86	12.86	.870

The above table reveals 25 items, and the mean score and standard deviation were (M=98.86, SD=12.86). The Cronbach alpha of the tool was .870, which shows its high reliability.

Table 2: Relationship between students' motivation and classroom engagement

Correlations			
		Motivation	**Engagement**
Motivation	Pearson Correlation	1	.891**
	Sig. (2-tailed)		.000
	N	211	211
Engagement	Pearson Correlation	.891**	1
	Sig. (2-tailed)	.000	
	N	211	211
**. Correlation is significant at the 0.01 level (2-tailed).			

Correlational bivariate was employed to measure the relationship between motivation and classroom engagement. The above table values show a significant and positive relationship between motivation and classroom engagement among secondary students.

Table 3: Impact of students' motivation on classroom engagement based on gender

Variables	Group	N	Mean	SD	DF	T	P
Classroom	Male	106	96.41	13.81	209	2.82	.005
engagement	Female	105	101.33	11.36			
factors	Male	106	32.55	3.85	209	1.241	.216
	Female	105	33.22	4.01			
Intrinsic	Male	106	15.50	2.77	209	.285	.776

motivation	Female	105	15.60	2.80			
Extrinsic	Male	106	14.76	3.21	209	3.56	.000
motivation	Female	105	16.31	3.10			

The above table results reflect that a significant difference was established between the male and female students in classroom engagement and extrinsic motivation in favour of female students who had higher mean scores, 101.33 and 16.31 respectively, rather than male students who had 96.41,14.76 however, above table also reflect that no significance difference between students perceptions about multiple factors of motivation and classroom engagement and intrinsic motivation on the basis of gender. So, it is concluded that the mean score of female students' perception of classroom engagement and extrinsic motivation is better than that of males. There is a significant difference between students' perceptions of multiple motivation factors, classroom engagement, and intrinsic motivation based on gender.

Table 4: Impact of students' motivation on classroom engagement based on grade level

Variables	**Group**	**N**	**Mean**	**SD**	**DF**	**T**	**P**
Classroom	9th grade	92	35.78	4.25	209	2.04	.043
engagement	10th grade	119	34.18	6.15			
Factors	9th grade	92	33.65	3.29	209	2.50	.013
	10th grade	119	32.30	4.39			
Intrinsic	9th grade	92	15.70	2.31	209	.696	.487
motivation	10th grade	119	15.43	3.10			
Extrinsic	9th grade	92	15.90	2.87	209	1.44	.150
motivation	10th grade	119	15.25	3.49			

The above table results reflect that a significant difference was established between the 9th and 10th-grade students in classroom engagement and different factors about motivation and classroom engagement in favour of 9th-grade students who had higher mean scores of 35.78, 33.65 respectively, rather than 10th-grade students who had 34.18, 32.30. However, the above table also shows no significant difference between students' perceptions of intrinsic and extrinsic motivation based on grades. So, it is concluded that the mean score of 9th-grade students' perception of classroom engagement and different factors about motivation and classroom engagement is better than that of 10th-grade students. A significant difference exists between students' perceptions of intrinsic and extrinsic motivation based on grades.

Table 5: Impact of students' motivation on classroom engagement based on the school sector

Variable	**Group**	**N**	**Mean**	**SD**	**DF**	**T**	***P***
Classroom	Public	93	33.37	6.49	209	3.50	.001
engagement	Private	118	36.06	4.64			
Factors	Public	93	32.19	3.53	209	2.30	.022
	Private	118	33.44	4.15			
Intrinsic	Public	93	15.52	2.68	209	.128	.899
motivation	Private	118	15.57	2.86			
Extrinsic	Public	93	14.63	3.18	209	3.68	.000
motivation	Private	118	16.24	3.12			

The above table results reflect that a significant difference was established between the public and private sector students in classroom engagement and different factors about motivation & classroom engagement, and extrinsic motivation in favour of private sector students who had higher mean scores of 36.06, 33.44, and 16.24 respectively, rather than public sector students who

had 33.37, 32.19, and 14.63. However, the above table shows no significant difference between students' perceptions of intrinsic motivation based on sector. So, it is concluded that the mean score of private sector students' perception of classroom engagement and different factors about motivation, classroom engagement, and extrinsic motivation is better than that of public sector students. There is no significant difference between students' perceptions of intrinsic motivation and sector-based ones.

Discussion

The findings of this study highlight the significant role of motivation in shaping secondary students' classroom engagement. The high reliability of the research instrument, indicated by a Cronbach alpha of 0.870, ensures the credibility of these findings. The study establishes a significant and positive relationship between motivation and classroom engagement, confirming that motivated students are more likely to actively participate in learning activities. In the Philippines, Tan and Santiago (2017) examined the relationship between teacher-student interactions and classroom engagement. The findings showed how crucial it is for instructors and students to get along well to foster a positive learning environment, boosting students' overall involvement in class activities. Santos and Reyes (2018) investigated how instructional methods affected the participation of high school students in the Philippines. Research on the effectiveness of interactive teaching tactics shows a favourable correlation between dynamic instructional approaches and increased student involvement. This local study highlighted how educational techniques affect students' participation in class.

Gender-based analysis revealed that girls perceive classroom engagement more positively than boys. This suggests that female students may be more receptive to motivational factors, leading to higher levels of participation. However, boys and girls have similar perceptions regarding motivation and engagement in general, as well as intrinsic motivation. This indicates that while gender differences exist in certain aspects, intrinsic motivation affects both genders equally. Regarding extrinsic motivation, the study found that girls better perceive their role in classroom engagement than boys. This suggests that external rewards and reinforcements might be more effective in encouraging female students to participate actively. Furthermore, no significant differences were found in students' perceptions of extrinsic motivation based on qualification, indicating that educational level does not influence how students respond to external motivational factors.

The study also found that grade 9 students have a more positive perception of classroom engagement than grade 10 students. This could be due to increased academic pressure at higher levels, leading to reduced engagement. Additionally, significant differences exist in students' perceptions of motivation and engagement based on qualification, indicating that educational level influences motivational factors differently. School type also played a role, with private school students having a more positive perception of classroom engagement and motivation than public school students. This finding highlights potential disparities in teaching methodologies, resources, and learning environments between public and private institutions. However, no significant difference was found in students' perceptions of intrinsic motivation based on school type, suggesting that internal drive remains consistent across different educational settings. Skinner et al. (2009) investigated how classroom involvement is related to the affective and behavioural components of teacher-student relationships. The importance of positive teacher-student interactions in creating a supportive atmosphere that promotes student involvement in the learning process was underlined in the study.

To sum up, the combination of research from the cognitive, emotional, and psychomotor domains provides a comprehensive understanding of the intricate connection between student engagement and motivation in the classroom. It highlights how important it is to thoroughly understand motivation across domains to create teaching tactics that will successfully increase student engagement in the classroom.

Conclusion

Based on the results, there was a significant and positive relationship between motivation and classroom engagement among secondary students. The mean score of female students' perception of classroom engagement and extrinsic motivation is better than that of males. There is a significant difference between students' perceptions of multiple motivation factors, classroom engagement, and intrinsic motivation based on gender. The mean score of 9^{th}-grade students' perception of classroom engagement and different factors about motivation and classroom engagement is better than 10^{th}-grade students. A significant difference exists between students' perceptions of intrinsic and extrinsic motivation based on grades. The mean score of private sector students' perception of classroom engagement and different factors about motivation, classroom engagement, and extrinsic motivation is better than that of public sector students. There is no significant difference between students' perceptions of intrinsic motivation and sector-based ones.

Recommendations

Based on the findings, the following recommendations are proposed to enhance student motivation and engagement in secondary classrooms:

1. Since girls perceive classroom engagement more positively, schools may implement strategies catering to boys' learning preferences to improve their engagement levels.
2. While both genders perceive intrinsic motivation similarly, extrinsic motivation appears to be more effective for girls. Teachers may integrate both types of motivation to address diverse student needs.
3. Since grade 9 students show higher engagement than grade 10 students, interventions may be designed to maintain motivation and interest as students progress to higher grades.
4. The differences in motivation and engagement between private and public school students suggest a need for improved teaching methods, resources, and student support in public schools.
5. Schools may create interactive and student-centred learning environments that promote active participation, especially in public schools where engagement levels are lower.
6. Training programs may be introduced to help teachers understand and implement motivational strategies effectively, ensuring that students of all backgrounds remain engaged in the learning process.
7. Encouraging parents to support and motivate their children can reinforce engagement strategies used in the classroom, particularly for students in public schools.
8. Schools may design motivation-based interventions tailored to students' needs, considering differences in grade level, gender, and school type to enhance engagement.

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