

The Impact of Constructivist Learning Environment on Students' Motivation in Primary School

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Abstract

Learning in a constructivist environment has the potential to help students' motivation in primary school. This study aims to present the impact of the constructivist learning environment on students' motivation in primary school and specify which aspects of the constructivist learning environment are related to the types of students' motivation in primary school. The data was collected using two instruments: the Constructivist Learning Environment Survey (CLES), which aims to measure students' perceptions of their learning environment, and the Elementary School Motivation Scale to measure students' motivation. The study was undertaken with 320 primary school students. This study highlights the importance of constructivist learning environments in fostering student motivation. The results show a positive relationship between self-importance, uncertainty, critical voice, shared control, and student negotiation with different types of motivation and a positive impact of the constructivist learning environment on students' motivation, specifically on intrinsic motivation. These findings suggest that improving the learning environment, especially when it is oriented towards constructivist practices, can lead to an increase in students' motivation to engage in learning. These findings help teachers and policymakers implement constructivist learning environments to foster motivation in primary school students.

Keywords: constructivist learning environment, motivation, primary school, student

Introduction

In recent decades, the constructivist approach in education has become one of the most important topics in pedagogy. Constructivism, based on the theories of scholars such as John Dewey (1938), Lev Vygotsky (1978), and Jean Piaget (1954), emphasizes the importance of students actively constructing knowledge through experience, collaboration, and reflection.

The traditional model of teaching is characterized by the teacher being the center. Alternatively, the constructivist model emphasizes the student as an active participant, allowing them to explore, discover, and develop knowledge through experiences and interactions in their learning environment.

In the context of primary schools, where the basics of learning are formed, and these fundamentals influence the entire educational process, the application of constructivist

methods can play a crucial role in increasing students' motivation. Motivation, as an essential component of academic achievement, is a key factor that determines students' commitment and their success in learning. A learning environment that includes hands-on activities, group collaboration, and projects based on real situations can influence students' intrinsic motivation, prompting them to engage in the learning process, not just for the grade, but also for their enjoyment and interest (Deci & Ryan, 2000).

Numerous studies have shown the benefits of constructivist approaches and their impact on students' motivation and academic outcomes. According to Jonassen (1991), constructivist theory focuses on the learner's experiences of the real world, prior knowledge, mental structures, and beliefs, emphasizing knowledge construction and meaningful context. Children construct their concept of reality through their interactive experiences with the world. The learning process occurs in different stages of development, each reflecting different forms of thinking. Constructivist environments are essential for the development of cognitive and social skills, allowing students to actively explore and discover (Piaget, 1954). Moreover, constructivist practices enhance learning through collaboration and social interaction, creating new opportunities for intellectual development (Vygotsky, 1978). Constructivist methods are necessary for the development of critical thinking and problem-solving skills, thus creating a more inclusive learning experience (Fosnot, 2005). In a constructivist environment, when students are given more autonomy and opportunities to develop their competencies, they engage more in the learning process and are highly motivated (Deci & Ryan, 2000). Schunk (2012) examines how learning occurs in different contexts and the crucial role that motivation and self-regulation processes play in this context. Learning in a constructivist environment helps students develop skills to manage their learning process and engage more sustainably.

Fraser (1998) examines the various factors of the classroom environment that influence students' engagement and motivation. Furthermore, he analyzes how structuring the environment can improve the learning experience and academic outcomes. A classroom environment that promotes collaboration and creates spaces for active learning positively impacts students' motivation and engagement. Dorman (2001) suggests that both classroom environment and individual student characteristics impact academic achievement and engagement in learning. Students benefit most from classroom environments that are structured to be supportive and that foster a sense of belonging, hence improving academic outcomes. Constructivist approaches are the most crucial factors that positively influence students' outcomes. Based on Wilson (1996), the constructivist learning environment enhances learners' ability to interact with knowledge and each other using various tools and emphasizes the learning environment where learning occurs rather than instruction itself.

Constructivist learning environments have seven main characteristics (Knuth & Cunningham, 1993; Honebein, 1996). These seven characteristics include: experience with knowledge; appreciation of multiple perspectives; using realistic contexts; student voice and ownership; social interaction; multiple modes of representation; and self-awareness in learning. The role of all of these dimensions is crucial in constructivist learning. In the constructivist learning environment, students are active learners in the learning environment, conduct activities for promoting learning, collaborate with peers during the learning process, take responsibility in the learning environment, and are free to express their ideas and thoughts about the classroom environment (Cetin-Dindar,

2015). Students tend to prefer more constructivist learning environments in which they have more opportunities to relate science to the real world, communicate in the classroom, take a role in the decision-making process of what will be more beneficial for them, question freely about what is going on in the lesson and experience the formulation of scientific knowledge (Özkal et al., 2009). Similarly, in a constructivist learning environment, students are encouraged to reflect on the experience, learn to analyze real-world issues, learn how to investigate, enhance social negotiation, develop their collaborative learning and inquiry skills, build communication skills, apply and integrate the content of different subjects, improve their learning skills, and reach a collective outcome over some time (Banchi & Bell, 2008; Yager, 2000).). Constructivist teaching leads to better engagement and motivation among students when they are encouraged to take part actively in learning (Brooks & Brooks, 1999). Autonomy allows students to actively participate in their learning process. Fraser (1998) examines the impact of classroom environment factors on student engagement and confirms that personalized learning and student negotiation enhance their involvement and interest.

This study aims to examine how learning in a constructivist environment affects the students' motivation in primary schools.

Methodology

Population/sample

Students of the fourth and fifth grades of the primary school of the municipality of Vushtrria in Kosovo are included in this study. The population of these students consists of 1863 students, 939 of them belong to the fourth grade, and 924 to the fifth grade. To make a fair representation, 320 students were selected through the stratification method, where the students were divided based on their respective classes proportionally. For this study, 160 students were selected from the fourth grade and 160 students from the fifth grade. The students are 9 and 10 years old. This selection was made randomly to ensure impartiality and accurate representation of the population. In this group of students, the impact was measured before and after learning in a constructivist environment.

Instruments

The Constructivist Learning Environment Survey (CLES) assesses student perceptions of the degree to which the classroom learning environment is constructivist-oriented. The original CLES was developed by Taylor and Fraser (1991). Johnson and McClure (2004) created a shortened and revised version, which was used in this study.

The Elementary School Motivation Scale (ESMS) was developed by Guay et al. (2010). Based on Self-Determination Theory (SDT), the ESMS evaluates intrinsic motivation, identified motivation, and controlled motivation. This instrument helps analyze the relationship between the constructivist environment and the type of students' motivation.

The surveys were translated by language experts using the back translation method. Initially, the surveys were translated from English to Albanian, then the Albanian version was translated back to English. The differences between the two English versions were reconciled if meaningful.

Research questions

This study aims to investigate the following research questions:

- What is the relationship between learning in a constructivist environment and the motivation of primary school students?
- What is the impact of a constructivist learning environment on the motivation of primary school students?

Findings

The participants of this research were 160 fourth-grade students and 160 fifth-grade students, of whom 148 (46.3%) were female and 172 (53.7%) were male.

Table 1. Descriptive statistics of the study group

<i>Variable</i>	<i>Category</i>	<i>Frequency</i>	<i>Percentage (%)</i>
Gender	Female	148	46.3
	Male	172	53.7
Grade	4 th Grade	160	50
	5 th Grade	160	50

Considering that the variables are presented with a Likert scale and are considered categorical variables for analysis, the value of the Spearman correlation coefficient was obtained.

Table 2. The Spearman correlations between the constructivist learning environment and motivation

	<i>Intrinsic Motivation</i>	<i>Identified Motivation</i>	<i>Controlled Motivation</i>
Personal Relevance	.433**		
Uncertainty	.317**		
Critical Voice		.475**	
Shared Control	.389**		
Student Negotiation		.961**	

**p<0.01

Table 2 represents the Spearman correlation coefficient for the relationship between aspects of the constructivist learning environment and types of students' motivation in primary school.

The correlation coefficient $r = 0.433^{**}$ indicates a positive and moderate relationship between personal relevance and intrinsic motivation. If the personal relevance of learning increases, the intrinsic motivation also increases. Therefore, students feel more motivated when they understand the value of knowledge for practical applications and

real life. This finding emphasizes the importance of creating learning content that is meaningful to students and that is related to problems in the world outside the school. Moreover, engaging in activities that have a direct connection to the real world stimulates interest and intrinsic satisfaction.

The correlation coefficient $r = 0.317^{**}$ between uncertainty and intrinsic motivation shows a moderate positive relationship. Uncertainty creates space for exploration and discovery, accompanied by the teacher's guidance and support, and ensuring that students maintain interest and curiosity. Furthermore, it allows students to learn that science cannot provide perfect answers to problems, thus increasing intrinsic motivation.

The correlation coefficient $r = 0.475^{**}$ between critical voice and identified motivation indicates a moderate positive relationship. Promoting an environment where students feel free to ask and discuss learning content and where it is reasonable for students to express their opinions creates a sense of belonging and encourages critical reflection.

The correlation coefficient $r = 0.389^{**}$ indicates a moderate positive relationship between shared control and intrinsic motivation. This shows that greater autonomy in learning increases students' engagement and sense of responsibility for their learning. By involving students in decision-making about learning activities and processes, teachers can build an environment that enhances autonomy and competence. Students feel empowered and more motivated to achieve their personal goals. This finding has a correlation with Reeve et al. (2008), who claimed that teaching that supports autonomy strengthens students' intrinsic motivation and engagement.

The correlation coefficient $r = 0.961^{**}$ indicates a very strong positive relationship. Social interactions and collaboration increase a sense of belonging and engagement. Group discussions and collaborative activities create a sense of community in the classroom, encouraging students to share and analyze their ideas. The p-value is <0.001 , which is much smaller than the usual limit level of 0.01. This suggests that the correlation is statistically important.

The data collected in this study do not match the normality criterion, and the non-parametric test, Wilcoxon signed-rank, has been performed to understand whether the use of a constructivist learning environment had affected the students' motivation in primary school.

In Table 3, the use of the Wilcoxon signed rank test enabled the generation of results to discern if there was any effect of learning in a constructivist environment on students' motivation. According to the results, there are 143 cases where the post-test (after learning in the constructivist environment) was higher than the pre-test (before learning in the constructivist environment), no cases of intrinsic motivation after the intervention was lower than before, and in 177 cases intrinsic motivation did not change between the pre-test and post-test.

The Z value = -10.537 shows an enormous deviation from the expected distribution, which suggests a strong and significant difference. The significance value $p < 0.001$ is notably lower than the significance level of 0.05, indicating that the result is statistically significant. Therefore, there is a sharp rise in the intrinsic motivation of primary school students after learning in a constructivist environment.

Table 3. Wilcoxon signed-rank test results for the study group pre-test and post-test of constructivist learning environment scores for intrinsic motivation

<i>Pretest / Posttest</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>	<i>z</i>	<i>P</i>
Positive Ranks	143	72	10296.00	-10.537	<.001
Negative Ranks	0	.00	.00		
Ties	177				

p<.05

According to the results, there are 80 cases where the post-test (after learning in the constructivist environment) was higher than the pre-test (before learning in the constructivist environment), no cases where the identified motivation after the intervention was lower than before, and 240 cases for the identified motivation did not change between the pre-test and post-test. The Z value = -7.924 shows a significant deviation from the expected distribution, which suggests a strong and important difference. The p-value < .001 is smaller than the 0.05 significance level, indicating that the result is statistically significant. Consequently, there is a major difference in the identified motivation after the constructivist intervention. This is in line with Jonassen's (1991) study, which supports the idea that constructivism helps in knowledge construction through experience and active exploration, which directly relates to increased intrinsic motivation.

Table 4. Wilcoxon signed-rank test results for the study group pre-test and post-test of constructivist learning environment scores for identified motivation

<i>Pretest / Posttest</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>	<i>z</i>	<i>P</i>
Positive Ranks	80	40.50	3240.00	-7.924	<.001
Negative Ranks	0	.00	.00		
Ties	240				

p<.05

According to the results, there are 11 cases where the post-test (after learning in the constructivist environment) was higher than the pre-test (before learning in the constructivist environment), 1 case where the controlled motivation after the intervention was lower than before, and 308 cases where the motivation did not change between the pre-test and post-test. The p-value < .003 is less than the significance level of 0.05, indicating that the result is statistically significant. Hence, the results show a moderate change in students' controlled motivation after learning in a constructivist environment.

Table 5. Wilcoxon signed-rank test results for the study group pre-test and post-test of constructivist learning environment scores for controlled motivation

<i>Pretest / Posttest</i>	<i>N</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>	<i>z</i>	<i>P</i>
Positive Ranks	11	6.91	76.00	-2.973	.003
Negative Ranks	1	2.00	2.00		
Ties	308				

p<.05

Intrinsic motivation has experienced the greatest increase, with a statistically significant difference ($p < 0.001$). This shows that constructivist learning has played a crucial role in increasing students' desire to learn by themselves. Identified motivation has also shown a major increase, indicating that students saw learning as important and valuable to them, and controlled motivation has shown a small increase, with only 11 cases of improvement and a statistically significant difference, but lower than other forms of motivation. This indicates that the constructivist environment has less impact on controlled motivation, which is usually related to external factors such as rewards or obligations.

Conclusion

In conclusion, the findings of this study indicate that the constructivist learning environment has a moderate positive relationship with intrinsic motivation and identified motivation of students, and there is no relationship with controlled motivation. Components such as personal relevance, inequality, and student negotiation are closely related to the increase in students' engagement and interest. Moreover, the autonomy provided through shared control and opportunities for critical reflection induces the development of social and critical skills. This is in line with the findings of Schunk (2012), who analyzes how self-regulation and motivational processes are influenced by the learning environment, aligning with the finding that autonomy and critical reflection foster social and critical skills. This study highlights the importance of creating a learning environment that supports autonomy and collaboration, focusing on the students' needs and interests. The findings are statistically significant and provide insight into the aspects of the constructivist learning environment that influence the types of motivation of students in primary school. The findings of this research have a direct correlation with the findings of Savage (2022), which show that constructivist learning environments have a direct positive correlation to motivation, engagement, and achievement. The constructivist environment has a positive impact on students' intrinsic motivation. This result is consistent with constructivist theories, which suggest that students are more intrinsically motivated when they have the opportunity to explore, solve problems, and construct knowledge through experience. This is a piece of strong evidence that constructivist learning can significantly improve students' intrinsic motivation.

The identified motivation is related to students' desire to learn because they see it as important and valuable to them. This type of motivation has increased significantly, indicating that learning in a constructivist environment has helped students realize the value and importance of learning. Additionally, along with the increase in intrinsic motivation, these results suggest that the constructivist environment has significantly improved students' autonomous motivation.

The impact of constructivism on controlled motivation may not be equally strong for all students, given that most did not show a change. However, the statistically significant increase indicates that for some students, the constructivist environment had a positive impact on controlled motivation.

Limitations

This study did not include other factors that may affect students' motivation, such as family support and teaching conditions, or psychological factors, which may have an

impact on students' motivation. Eventually, the use of surveys and questionnaires in collecting data may be subjective, and these were analyzed only from the perceptions of students, so the most crucial educational actors, such as teachers, were not included.

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