

The effect of systematically created success situations on learning motivation among primary school students

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ABSTRACT

Learning motivation is a critical factor influencing students' academic engagement, persistence, and long-term educational outcomes. In primary education, motivation is particularly important, as early learning experiences shape children's attitudes toward school and their willingness to participate in academic activities. The aim of this study was to examine the impact of systematically created success situations on learning motivation among primary school students in Kazakhstan. The study involved 72 participants. A quasi-experimental design was employed, with students participating in a six-week intervention structured to provide frequent success experiences, while a comparison group continued regular classroom instruction. Motivation was assessed before and after the intervention using selected subscales of the intrinsic motivation inventory, including interest/enjoyment, perceived competence, and effort/importance. The results indicated significant improvements in all measured dimensions of motivation for students who experienced the intervention compared with the comparison group. Increases were observed in students' perceived competence, engagement with learning activities, and willingness to invest effort. These findings suggest that systematically creating opportunities for success is an effective approach to enhancing learning motivation in primary education and provide practical guidance for classroom implementation.

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1. INTRODUCTION

Learning motivation (LM) is widely acknowledged in educational research as a central determinant of students' academic achievement, engagement, and long-term educational success [1], [2]. LM influences students' effort, persistence, choice of tasks, and use of self-regulated learning strategies, which in turn affect academic outcomes across subjects and educational stages [3]. High levels of LM are positively associated with greater classroom participation, deeper cognitive engagement, and stronger autonomous learning behaviors, whereas low motivation often predicts disengagement, avoidance of challenges, and reduced academic performance [4].

In primary education, motivation assumes particular importance because it shapes children's early attitudes toward school, initiates the formation of stable learning habits, and impacts the development of foundational cognitive and social skills [5]. Intrinsically motivated learners tend to engage more actively with

learning tasks, demonstrate curiosity, and persist in the face of difficulty [6]. In contrast, insufficient motivational engagement can lead to superficial task involvement, negative attitudes toward school, and early patterns of academic avoidance [7]. In classroom practice, teachers frequently encounter motivational challenges among primary school students, including declining interest in learning activities, avoidance of demanding tasks, and fear of making mistakes or failure. These issues become particularly evident when students repeatedly experience academic difficulties, reducing their willingness to participate and persist in learning activities. In the context of Kazakhstani primary education, such challenges are further intensified by large classroom sizes and varying levels of student preparedness, making it difficult for teachers to sustain student engagement and motivation. These classroom challenges highlight the need for instructional approaches that support students' confidence and promote sustained motivation during the early stages of education.

Self-determination theory (SDT) and social cognitive theory (SCT) provide complementary perspectives for understanding students' motivation [8], [9]. SDT proposes that intrinsic motivation develops when learners' basic psychological needs for autonomy, competence, and relatedness are satisfied [10], [11], whereas SCT emphasizes the importance of self-efficacy (SE) as a determinant of students' willingness to engage in challenging tasks and persist despite difficulties [12]. Empirical evidence indicates that students with stronger perceptions of competence and higher SE demonstrate greater intrinsic motivation, more effective use of self-regulated learning strategies (SRLS), and improved academic outcomes [13]–[16]. Within this framework, situations of success (SS), defined as structured opportunities for students to experience achievement, progress, and positive feedback, have increasingly been recognized as practical instructional tools that strengthen students' confidence, motivation, and engagement in learning activities [17]–[21].

Despite growing evidence regarding the importance of LM, SE, and SS, several important research gaps remain. Existing international studies have focused predominantly on secondary and higher education contexts [22], with comparatively limited attention to primary education, where motivational patterns are initially established. Research on success-oriented instructional strategies among young learners, particularly within non-Western educational systems, also remains scarce [23]. Furthermore, many previous studies have relied on correlational or descriptive designs, limiting understanding of causal relationships and providing insufficient explanation of how structured classroom success experiences translate into changes in students' perceived competence and engagement. There is also a lack of classroom-based interventions that systematically operationalize SS in authentic teaching practice.

In the context of Kazakhstan, educational reforms have emphasized learner-centered pedagogies aimed at promoting active participation, independent thinking, and sustained motivation among learners [24]. However, teachers continue to face difficulties in maintaining student motivation when academic tasks are perceived as overly difficult or when repeated failure undermines confidence. Empirical investigations of success-oriented instructional practices in Kazakhstani primary education remain limited [25], [26].

To address these gaps, the present study focuses specifically on primary school students in Kazakhstan and examines the influence of systematic implementation of SS on students' intrinsic motivation. The central research question is: how does the systematic implementation of SS influence primary school students' intrinsic motivation? Grounded in the integrated theoretical framework of SDT and SCT, the study hypothesizes that systematic opportunities for achievement will significantly enhance students' intrinsic motivation, increase perceived competence, and promote more active engagement in learning activities. The study contributes to the literature by providing quasi-experimental evidence on the effectiveness of a structured SS intervention in primary education while identifying perceived competence as a potential mechanism linking instructional success experiences with student motivation. These findings may provide practical guidance for teachers and contribute to the development of evidence-based motivational practices in classroom settings.

2. METHOD

2.1. Research design

This study employs a quasi-experimental (QE) design [27] to examine the impact of SS on LM among primary school students. Specifically, a pre-test–post-test control group design was implemented, in which an experimental group participated in structured success-oriented learning activities, while a control group received standard classroom instruction. The QE approach was chosen because it enables comparison between groups without requiring full random assignment, making it practical for authentic classroom settings. This design is widely used in educational research to evaluate the effectiveness of pedagogical interventions while maintaining ecological validity. By using a pre-test and post-test framework, the study could assess changes in LM attributable to the implementation of SS, thereby testing the hypothesis that

structured success experiences enhance intrinsic motivation relative to traditional instruction. Prior to hypothesis testing, the normality of the data distribution was assessed using the Shapiro–Wilk test, ensuring the appropriateness of subsequent statistical analyses.

2.2. Participants

The study involved 72 primary school students aged 8–10 years from 4th-grade Kazakh-language classes at School-Lyceum No. 50 named after A. Baitursynov in Shymkent, Kazakhstan. A cluster sampling approach was used, where intact classroom groups were selected rather than individual students. No individual randomization was applied; instead, existing classes were assigned as experimental (4A, $n=36$) and control groups (4B, $n=36$) to preserve natural classroom conditions. This quasi-experimental cluster design is commonly used in school-based intervention research where individual randomization is not feasible and ecological validity is required [28].

Both groups followed the same curriculum, were taught in the Kazakh language, and were located within the same school context to minimize potential confounding variables. Baseline equivalence was confirmed through pre-test scores and demographic characteristics, as seen in Table 1, indicating no significant differences prior to the intervention. However, as this was a quasi-experimental design, the possibility of unmeasured confounding factors such as classroom climate or instructional style cannot be fully excluded.

Inclusion criteria were enrollment in Grade 4 Kazakh-language classes at the selected school, age between 8 and 10 years, and availability of parental consent and student assent. Exclusion criteria included diagnosed cognitive or learning disabilities and absenteeism exceeding 20% during the study period. Ethical approval and parental consent were obtained prior to data collection, and the study was conducted in accordance with ethical standards for research involving human participants.

Table 1. Demographic characteristics of participants

Characteristic	EG	CG	Total sample
Age (years), mean $\pm$ SD	9.1 $\pm$ 0.6	9.0 $\pm$ 0.5	9.05 $\pm$ 0.55
Gender			
- Male	18 (50%)	17 (47%)	35 (49%)
- Female	18 (50%)	19 (53%)	37 (51%)
Previous academic performance (average grade)	4.2 $\pm$ 0.3	4.1 $\pm$ 0.4	4.15 $\pm$ 0.35

2.3. Instruments

Students' learning motivation was assessed using selected subscales of the intrinsic motivation inventory (IMI) [29], a widely used multidimensional instrument designed to measure intrinsic motivation and related psychological constructs in specific activity contexts. In this study, three subscales were used in accordance with the research objectives and the SS intervention: interest/enjoyment (IE), perceived competence (PC), and effort/importance (EI). The IE subscale reflects students' perceived enjoyment and engagement in learning activities, PC assesses perceived ability to successfully complete tasks, and EI measures effort investment and perceived task value.

To ensure linguistic and cultural equivalence, the IMI was translated into Kazakh using a forward–backward translation procedure. Two independent bilingual experts translated the instrument into Kazakh, and a separate expert back-translated it into English. Discrepancies were resolved through consensus to ensure conceptual equivalence. The adapted version was pilot-tested with 18 primary school students (not included in the final sample) to evaluate clarity and age appropriateness, resulting in minor wording adjustments. The final questionnaire consisted of 15 items (five per subscale), rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating higher levels of intrinsic motivation. The instrument was administered during regular classroom sessions under teacher supervision. Internal consistency was acceptable for all subscales (IE $\alpha = 0.86$, PC $\alpha = 0.84$, EI $\alpha = 0.82$).

2.4. Procedure

The study was conducted at School-Lyceum No. 50 named after A. Baitursynov in Shymkent, Kazakhstan, from March to April 2025. At the beginning of the study, both the experimental group (EG) and control group (CG) completed a pre-test using the IMI to assess baseline levels of learning motivation. All instructions and questionnaire items were administered in Kazakh.

During the six-week intervention, the EG participated in classroom activities designed to implement SS, including differentiated tasks, immediate positive feedback, short-term achievable goals, and scaffolded support. Collaborative learning activities were also used to facilitate peer interaction and shared task completion. These components were systematically integrated into regular Kazakh-language lessons to ensure consistency of implementation.

The intervention was delivered three times per week during 45-minute lessons. Approximately 30–35 minutes per lesson were dedicated to SS-based activities, while the remaining time followed standard instruction. The CG continued regular classroom teaching without SS-based interventions. After the intervention, both groups completed the IMI post-test. Pre- and post-test data were used to evaluate changes in motivation across IE, PC, and EI. Table 2 summarizes the weekly structure of the intervention.

Table 2. Weekly structure of the SS-based intervention in the EG

Week	Key activities/focus of SS
1	Introduction to the concept of SS; short achievable individual tasks; initial positive feedback
2	Differentiated tasks adapted to individual skill levels; collaborative pair work
3	Incremental goal-setting for small group projects; immediate recognition of achievements
4	Combination of individual and group tasks; scaffolded challenges designed to ensure successful task completion
5	Application of learned strategies to new tasks; continued constructive feedback
6	Final collaborative and individual tasks; summary of achievements and motivational reflection

2.5. Teacher training for implementation of SS

Prior to the intervention, the EG classroom teacher participated in a one-day training session on February 28, 2025. The training aimed to ensure consistent implementation of the SS intervention during the six-week program. The session introduced classroom strategies for SS implementation, including differentiated task design, provision of immediate positive feedback, short-term goal setting, scaffolding techniques, and collaborative learning activities. A weekly lesson planning template was provided to support integration of SS into regular 45-minute lessons, with 30–35 minutes allocated to SS-based activities.

To ensure implementation fidelity, the teacher maintained session documentation, and the research team conducted weekly classroom observations using a structured checklist. The checklist assessed: i) task differentiation; ii) feedback frequency; iii) clarity of goal setting; iv) scaffolding support, and v) collaborative learning opportunities. Each item was rated on a 3-point scale (0=not observed, 1=partially implemented, 2=fully implemented). Fidelity scores were monitored weekly to ensure consistency of implementation. Ethical considerations included maintaining a supportive learning environment, ensuring equal participation opportunities, and preserving student confidentiality protocol. The structure of the teacher training (TT) session for implementing the SS intervention is presented in Table 3.

Table 3. Structure of TT for implementing the SS intervention

Session	Key activities/focus
1	Overview of success situations and theoretical foundations
2	Practical classroom strategies: differentiated tasks, immediate feedback, short-term goals, collaborative activities
3	Lesson planning and integration into 45-minute lessons; use of weekly planning templates and documentation
4	Monitoring and fidelity procedures: classroom observation and weekly implementation tracking
5	Ethical and procedural considerations: supportive classroom climate, equal opportunities for success, confidentiality

2.6. Data analysis

Data obtained from the IMI were analyzed to evaluate the effects of the SS intervention on students' LM. Prior to conducting t-tests, assumptions of normality and homogeneity of variance were assessed using the Shapiro–Wilk and Levene's tests. Descriptive statistics, including means and standard deviations, were calculated for each IMI subscale. In addition, 95% confidence intervals (CI) were calculated for mean difference estimates where appropriate. All statistical analyses were performed using IBM SPSS Statistics 27. The analysis consisted of preliminary data screening, statistical testing, and data visualization. Table 4 summarizes the analytical procedures.

Table 4. Data analysis steps

Step	Description
Preliminary analysis	Data were screened for missing values, outliers, and normality. Descriptive statistics (mean and standard deviation) were calculated for each IMI subscale separately for the experimental and control groups. Internal consistency reliability was assessed using Cronbach's alpha.
Within-group comparisons	Paired-sample t-tests were conducted to examine changes between pre-test and post-test scores within each group for all IMI subscales.
Between-group comparisons	Independent-sample t-tests were used to compare post-test scores between the experimental and control groups to determine whether the intervention produced significant differences in motivation.
Significance level	Statistical significance was set at $p < 0.05$.

3. RESULTS

Descriptive statistics were calculated to examine baseline levels of learning motivation (LM) in the EG and CG. Prior to hypothesis testing, assumption testing indicated that all variables met the requirements for parametric analysis. Shapiro–Wilk tests showed no significant deviations from normality across IMI subscales (all $p > 0.05$), and Levene’s tests confirmed homogeneity of variances between groups (all $p > 0.05$). Therefore, independent-samples and paired-samples t -tests were considered appropriate for further analyses. As shown in Table 5, both groups demonstrated comparable scores across all IMI subscales prior to the intervention. Independent-samples t -tests indicated no statistically significant differences between groups at pre-test, confirming baseline equivalence in intrinsic motivation.

Table 5. Pre-test motivation scores

IMI subscale	EG	CG	t	p
	Mean $\pm$ SD	Mean $\pm$ SD		
IE	3.02 $\pm$ 0.48	3.05 $\pm$ 0.46	0.18	0.86
PC	2.95 $\pm$ 0.50	2.97 $\pm$ 0.52	0.26	0.80
EI	3.10 $\pm$ 0.47	3.08 $\pm$ 0.49	0.18	0.86

Note: t -values derived from independent-sample t -tests

Post-test descriptive statistics and independent-samples t -test results are presented in Table 6. Statistically significant differences were observed between the EG and CG across all IMI subscales, with higher scores in the EG. Large effect sizes (Cohen’s $d = 1.60$ – 1.79) indicated substantial practical significance of the intervention. In addition, the 95% confidence intervals for mean differences did not include zero, providing further support for the statistical significance of the observed between-group differences.

Table 6. Post-test motivation scores

IMI Subscale	EG	CG	t	p	Cohen’s d	95% CI
	Mean $\pm$ SD	Mean $\pm$ SD				
IE	3.85 $\pm$ 0.42	3.10 $\pm$ 0.45	7.19	<0.001	1.72	[0.55, 0.95]
PC	3.78 $\pm$ 0.44	3.05 $\pm$ 0.47	7.33	<0.001	1.60	[0.52, 0.94]
EI	3.92 $\pm$ 0.40	3.15 $\pm$ 0.46	6.85	<0.001	1.79	[0.57, 0.97]

Note: t -values were derived from independent-sample t -tests; 95% confidence intervals represent mean difference estimates between groups.

Paired-samples t -tests were conducted to examine changes from pre-test to post-test within each group, as seen in Table 7. The EG demonstrated statistically significant improvements across all IMI subscales, whereas no significant changes were observed in the CG. Within-group effect sizes indicated large improvements in the EG, while effects in the CG were negligible.

Table 7. Paired-samples t -test results (pre-test vs. post-test)

IMI Subscale	Group	t	df	p	Cohen’s d
IE	EG	6.12	35	<0.001	1.02
	CG	0.84	35	0.405	0.14
PC	EG	5.74	35	<0.001	0.96
	CG	0.79	35	0.432	0.13
EI	EG	6.45	35	<0.001	1.08
	CG	0.91	35	0.366	0.15

As shown in Figure 1, the EG exhibited substantially higher post-test scores across all IMI subscales compared to the CG. Specifically, EG students reported greater IE, higher PC, and increased EI. Error bars represent standard deviations, illustrating within-group variability.

Overall, statistically significant between-group differences were observed at post-test across all IMI subscales, with consistently higher scores in the experimental condition. In addition, significant pre–post improvements were found only in the EG, while the CG remained stable. Effect size analysis further confirmed that the intervention produced large practical effects, both in terms of between-group differences and within-group improvements in the EG, whereas effect sizes in the CG were negligible.

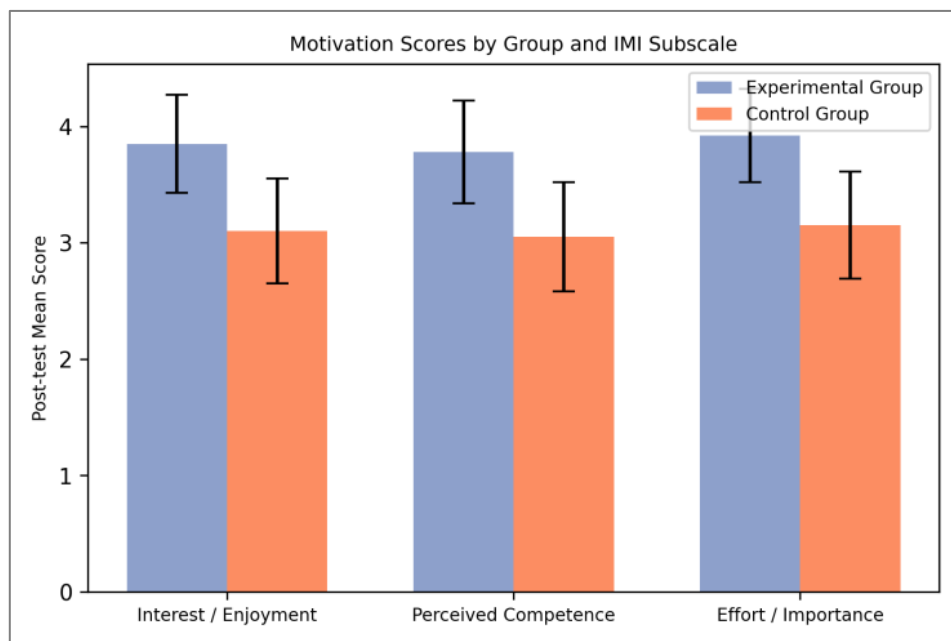


Figure 1. Post-test motivation scores by group and IMI subscale

4. DISCUSSION

The present study found that students who participated in the six-week SS intervention demonstrated significantly higher intrinsic motivation compared to the control group across all IMI subscales (IE, PC, EI), with large effect sizes indicating strong practical significance. These findings suggest that structured opportunities for success can effectively enhance intrinsic motivation in early schooling by increasing enjoyment of learning, perceived competence, and effort investment [30]–[32].

From the perspective of SDT, the observed increase in IE may be explained by the fact that the intervention created learning conditions that supported students' basic psychological needs, particularly competence and autonomy. Tasks structured to ensure achievable challenges and frequent success likely enhanced interest and enjoyment in learning activities [33], [34]. Similarly, improvements in PC can be interpreted as strengthened perceptions of competence resulting from repeated mastery experiences. Although SE was not directly measured, these findings are consistent with SCT, which emphasizes the role of mastery experiences in shaping perceived capability and persistence [35], [36]. The increase in EI further suggests that students became more willing to invest effort when learning tasks were perceived as attainable and meaningful, supported by feedback and recognition of progress [8], [37].

However, these findings should be interpreted with caution. The absence of a direct measure of SE limits conclusions regarding stable competence-related psychological change. It remains unclear whether observed gains reflect long-term motivational development or short-term task-specific effects. In addition, alternative explanations such as Hawthorne effects, novelty effects, and teacher expectancy effects may have contributed to the observed improvements, as increased attention, awareness of participation, or changes in teacher behavior could have influenced student engagement independently of the intervention itself.

The role of teachers appears central to the effectiveness of SS implementation. By using differentiated instruction, scaffolded tasks, and immediate formative feedback, teachers created a learning environment that systematically supported students' psychological needs and reinforced incremental success. Importantly, the intervention was implemented within regular classroom instruction without major curriculum changes, suggesting that SS-based strategies are feasible and low-cost for everyday practice in primary education.

From a practical and policy perspective, the findings indicate that success-oriented instructional strategies should be systematically integrated into teacher professional development. Training programs should focus on designing graded learning tasks, applying formative feedback techniques, and implementing scaffolding strategies for low-achieving students. At the curriculum level, these principles can be incorporated as recommended pedagogical practices rather than additional instructional content. Policy support should also include classroom demonstration models, coaching-based supervision, and concrete examples of SS implementation to ensure effective transfer into practice. Overall, the study provides

evidence that systematically structured success experiences can enhance intrinsic motivation, perceived competence, and effort regulation among primary school students. However, further research using longitudinal and multi-site designs, as well as direct measures of SE and behavioral engagement, is needed to confirm the stability and generalizability of these effects.

4.1. Practical implications

The findings of this study have several practical implications for primary education. First, designing tasks that are challenging yet achievable allows students to experience frequent success, enhancing perceived competence and intrinsic motivation. Differentiated instruction is an effective strategy for tailoring tasks to individual skill levels. Second, timely and constructive feedback reinforces effort and progress, fostering a growth-oriented mindset and sustained engagement. Third, collaborative learning promotes shared achievements, peer support, and a positive classroom climate, further supporting motivation. Fourth, the results indicate that relatively simple, success-oriented strategies can be integrated into regular classroom instruction without major curricular changes, making them feasible and scalable. Finally, these findings have implications for TT and curriculum development, highlighting the value of motivational strategies that emphasize competence, progress, and active engagement to support long-term student learning outcomes.

4.2. Limitations

Several limitations of this study should be acknowledged. The sample was relatively small and drawn from a single school, which limits the generalizability of the findings due to potential school-specific influences such as institutional culture, teacher practices, and student characteristics. The six-week intervention also provides only short-term insights, and the long-term stability of motivational gains remains unclear.

The study relied on self-report measures, which may be subject to social desirability bias. In addition, academic achievement was not directly assessed, so the relationship between increased motivation and actual learning outcomes could not be examined. Individual differences such as prior achievement and learning preferences were also not controlled, which may have influenced the effectiveness of the intervention. Finally, the quasi-experimental design based on two intact classes limits statistical power at the cluster level. Although the sample size is comparable to similar school-based studies, the small number of clusters restricts the generalizability of the findings. Future research should therefore employ multi-site and longitudinal designs with a larger number of classrooms to allow for more robust statistical inference and multilevel analysis.

5. CONCLUSION

This study examined the effects of systematically implemented SS on primary school students' LM using a quasi-experimental design. The six-week intervention led to significant improvements in all measured dimensions of motivation, including IE, PC, and EI, compared with the CG following the standard curriculum. Structured SS enhanced students' confidence, engagement, and willingness to invest effort in learning tasks. These results indicate that relatively simple, achievable, and feedback-oriented instructional strategies can meaningfully improve motivation in early schooling. Importantly, the study contributes to the limited literature on motivational interventions in Central Asian contexts, demonstrating that competence-supportive approaches are effective in Kazakh-language primary classrooms. Overall, creating structured opportunities for success represents a practical, theory-driven strategy to strengthen intrinsic motivation, engagement, and persistence in young learners, with implications for teachers, curriculum developers, and educational policymakers.

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AUTHOR CONTRIBUTIONS STATEMENT

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C : Conceptualization

M : Methodology

So : Software

Va : Validation

Fo : Formal analysis

I : Investigation

R : Resources

D : Data Curation

O : Writing - Original Draft

E : Writing - Review & Editing

Vi : Visualization

Su : Supervision

P : Project administration

Fu : Funding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

DATA AVAILABILITY

The data that support the findings of this study are available from the corresponding author, [SZ], upon reasonable request.

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