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Students' Perceptions of Learning Success: Comparative Trends in NAMA Schools Across Tanzania, Indonesia, and Kyrgyzstan (2021–2022)

Nurazzelena Abdullah[1]

ABSTRACT

This paper examines students' perceptions of learning success in NAMA schools across Indonesia, Kyrgyzstan, and Tanzania between 2021 and 2022, following the implementation of the NAMA Foundation's 2019–2023 Strategic Plan and the ROOTS (Roadmap of Outstanding Educators) project. Data were collected through a NAMA-developed questionnaire designed to evaluate students' perceptions of their learning experiences, focusing on ten indicators of learning success. In 2021, the respondents comprised 4,117 students from 63 Islamic schools across Indonesia (38%), Tanzania (33%), and Kyrgyzstan (29%), while in 2022 a smaller number of students responded to the survey (N = 905), with the following breakdown: Indonesia (40%), Tanzania (31%), and Kyrgyzstan (29%). Data were analyzed descriptively using frequencies, percentages, means and standard deviations. The results reveal substantial disparities among the three countries. Indonesia demonstrated the most substantial improvements, with marked enhancements in collaborative, reflective, and problem-solving skills. Kyrgyzstan showed moderate gains, particularly in collaborative activities and real-world application projects, but a decline in reflective practices. In contrast, Tanzania experienced marked declines across most indicators, including understanding lessons and computer skills. The results underscore the transformative potential of capacity-building initiatives like ROOTS while highlighting the need for targeted interventions in underperforming regions to ensure equitable learning success.

Keywords: *Students' perceptions, learning success, NAMA schools, ROOTS intervention, 21st-century learning experiences*

1 Kulliyyah of Education, International Islamic University Malaysia, Kuala Lumpur, Malaysia
**Corresponding Author:* azzelena@iium.edu.my

INTRODUCTION

Learning success is the achievement of desired educational outcomes, encompassing both academic performance and personal development (York et al., 2015; Kuh et al., 2006). It involves acquiring knowledge, skills, and competencies that are applicable to real-world situations (Alrasheedi et al., 2015). Learning success also includes achieving individual goals, such as improving self-efficacy, attaining higher grades, or gaining employability skills (Nyström et al., 2018). Importantly, the definition of learning success is subjective and may differ among students, educators, and institutions (Kuh et al., 2006). In this article, learning success refers to the ability to: 1) understand lessons well through teacher explanations; 2) receive teacher guidance to improve schoolwork; 3) use materials beyond textbooks for better comprehension; 4) enhance computer skills through school support; 5) collaborate effectively in group activities and projects; 6) engage in thought-provoking activities or projects; 7) develop problem-solving skills during activities; 8) relate classroom activities or projects to real-life applications; 9) provide constructive feedback on peers' work; 10) reflect on learning. These abilities are closely tied to teachers' instructional efficacy and classroom practices, especially in 21st-century teaching.

In the modern classroom, teaching and learning must meet the demands of a rapidly changing world characterized by technological advancements, globalization, and diverse societal challenges. This paradigm emphasizes equipping students with skills, knowledge, and attitudes that prepare them to navigate the complexities of the modern era. 21st-century teaching and learning practices prioritize the development of critical thinking, creativity, collaboration, communication, and digital literacy. These competencies—often referred to as the 4Cs—are essential for success in both academic and professional domains. These practices also integrate problem-solving, adaptability, and lifelong learning, ensuring students are prepared for dynamic and interdisciplinary contexts. Hence, teachers must employ creative and innovative pedagogical approaches that underpin 21st-century teaching and learning. They include active learning, technology integration, collaborative learning and reflective practices.

Active learning methods, including project-based learning (PBL), problem-based learning, and inquiry-based learning, are designed to enhance student engagement and promote independent thinking (Prince & Felder, 2006). These approaches actively involve students in their learning process, making it more meaningful and effective. Furthermore, research highlights that active learning can improve knowledge retention and critical thinking skills, as students apply theoretical concepts to practical problems (Freeman et al., 2014). For instance, incorporating real-world scenarios in PBL enables students to connect academic content with professional applications, fostering a deeper understanding and long-term skill development (Barrows, 1996).

Technology integration further supports this by leveraging digital tools and platforms to create personalized learning experiences, foster collaboration, and provide access to a wealth of global resources (Kirkwood & Price, 2014). Advanced tools such as learning analytics and artificial intelligence can provide tailored feedback, helping students identify strengths and areas for improvement (Luckin et al., 2016). Additionally, gamified platforms and virtual reality tools enhance engagement and allow students to explore complex concepts in an immersive environment (Huang et al., 2020). These innovations enable teachers to address diverse learning needs effectively and promote equity in education by bridging gaps in access to quality resources.

Collaborative learning, with its focus on teamwork and peer interaction, helps students develop essential interpersonal skills while preparing them for real-world professional environments (Johnson, Johnson, & Smith, 2014). By engaging in group tasks, students learn to negotiate, manage conflicts, and appreciate diverse perspectives, which are critical in today's globalized workforce (Le et al., 2018). Collaborative projects also encourage accountability, as students contribute to shared goals while honing their leadership and organizational skills (Slavin, 2011). Moreover, studies suggest that peer learning fosters higher-order thinking by allowing students to co-construct knowledge through dialogue and mutual support (Vygotsky, 1978).

Additionally, reflective practices play a critical role by encouraging students to evaluate their learning experiences, thereby cultivating metacognitive abilities and fostering self-directed learning (Schön, 1983). Recent studies have emphasized that structured reflection activities, such as journaling or guided discussions, can help students identify learning gaps and strategize for improvement (Boud et al., 2013). Reflection also promotes emotional intelligence by helping students process their experiences and develop resilience in facing academic challenges (Mezirow, 2000). Furthermore, integrating peer and instructor feedback into reflection activities ensures a comprehensive approach to self-assessment, fostering both confidence and adaptability in learners (Brookfield, 2017).

Role of Teachers

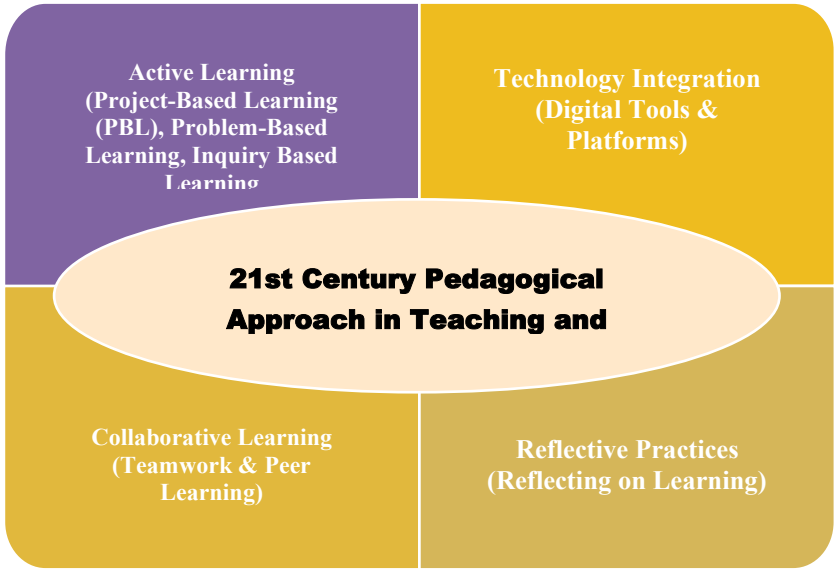
Teachers in the 21st century act as facilitators, guiding students in constructing knowledge rather than delivering it passively. According to Darling-Hammond et al. (2020), effective teaching practices focus on creating meaningful connections between content and real-world applications. Teachers must also be culturally responsive and embrace diversity to meet the needs of learners from various backgrounds (Gay, 2010).

Challenges and Opportunities

While the shift to 21st-century teaching offers numerous benefits, challenges remain. Limited access to technology in underserved areas, insufficient teacher training, and resistance to change in traditional educational systems are significant

barriers (OECD, 2018). However, the growing emphasis on lifelong learning and professional development provides opportunities for educators to adapt and innovate. 21st-century teaching and learning practices represent a transformative approach to education, emphasizing skills that are vital for personal and societal progress. By adopting active, collaborative, and technologically integrated methods, educators can better prepare students to meet the demands of an interconnected and ever-evolving world. Further research and practical implementation are essential to address existing challenges and maximize the potential of these practices.

Figure 1: 21st Century Pedagogical Approach in Teaching and Learning



LITERATURE REVIEW

Students' Perceptions of Learning Success

Students' perception of learning success is important because it directly influences their motivation, engagement, and self-regulation, which are critical for effective learning outcomes. These perceptions often reflect students' confidence in their abilities, satisfaction with the learning process, and the alignment of teaching strategies with their needs and expectations. Understanding these perceptions can guide educators in refining their teaching methods to improve educational experiences and outcomes.

Research indicates that students' perception of their learning success plays a

significant role in fostering intrinsic motivation and engagement. When students perceive their learning experiences as successful, they are more likely to persist in challenging tasks and demonstrate higher levels of engagement. According to Ryan and Deci (2000), perceived competence is a key component of self-determination theory, which underscores the importance of positive perceptions in promoting intrinsic motivation.

Students' perception of learning success is closely linked to their self-efficacy, or belief in their ability to achieve specific learning goals. Bandura (1997) highlights that self-efficacy influences not only students' choice of activities but also their effort, persistence, and resilience in the face of difficulties. Positive perceptions of success contribute to stronger self-efficacy, thereby enhancing overall academic performance.

The Importance of Studying Students' Perceptions in Teaching and Learning

Understanding students' perceptions is essential for enhancing teaching and learning practices. Research consistently demonstrates that students' views significantly influence learning outcomes and teaching effectiveness (Struyven et al., 2005). These perceptions serve as critical feedback for evaluating teaching methods, instructional design, and learning activities. Ramsden (1991) highlights that student feedback helps educators identify strengths and weaknesses in their teaching approaches, enabling necessary adjustments to improve engagement and understanding. Aligning teaching strategies with students' expectations can result in more meaningful and impactful learning experiences.

A learner-centered approach prioritizes the needs and experiences of students, ensuring that educational practices address diverse learning styles and cultural contexts (Biggs, 1999). Understanding how students perceive various aspects of teaching enables educators to create inclusive and equitable learning environments (Brown & Atkins, 1988). Furthermore, students' perceptions of teaching quality and relevance play a crucial role in influencing their motivation and engagement. Deci and Ryan (1985) found that students are more likely to participate actively in their learning when their opinions are valued. Similarly, Kember and Gow (1994) emphasized that addressing student concerns fosters a sense of ownership, leading to improved academic performance.

Student feedback also highlights barriers to effective learning, such as unclear instructions or inadequate resources, enabling educators to address these challenges proactively (Tinto, 1997). Investigating students' perceptions bridges gaps between their expectations and experiences, promoting satisfaction and fostering a positive learning environment (Prosser & Trigwell, 1999). These insights are instrumental in shaping institutional policies and curriculum designs. Hattie (2009) underscores the importance of incorporating students' views into evidence-based decision-making to ensure educational practices reflect classroom realities. Nicol and Macfarlane-Dick (2006) emphasize the importance of formative feedback in shaping students' perceptions of their progress and guiding them toward successful learning strategies.

In diverse learning environments, students' perceptions are influenced by cultural and contextual factors. Educators must consider these elements to ensure that students feel their learning is relevant and meaningful. Research by Biggs (1996) on constructive alignment shows that when learning activities and assessments are aligned with students' goals and cultural backgrounds, their perceptions of success improve. Ultimately, studying students' perceptions enhances educational quality by fostering engagement, inclusivity, and responsiveness. This approach creates an adaptive and effective education system that not only meets students' current needs but also prepares them for future challenges.

Studies on Students' Perception of Learning Success in Indonesia, Tanzania, and Kyrgyzstan

Understanding students' perceptions of learning success is essential for improving educational practices and outcomes. Studies conducted in Indonesia, Tanzania, and Kyrgyzstan provide valuable insights into how cultural, institutional, and pedagogical factors shape these perceptions, offering implications for both local and global educational strategies.

Indonesia

Research on students' perceptions of learning success in Indonesia underscores the importance of cultural and educational practices. Although studies specifically focusing on learning success perceptions are limited, existing research highlights factors such as motivation, teaching strategies, and educational policies. For instance, Arlinwibowo et al. (2020) compared Indonesian and Singaporean students' perceptions of science education, identifying five key factors: Practicum, Assistant, Explorative, Counselling, and Collaborative. Indonesian students displayed stronger perceptions of exploration, collaboration, and effective teacher counseling, suggesting the need for teaching methods that align with students' preferences and foster improved learning outcomes.

Tanzania

In Tanzania, research has explored various educational contexts and their influence on students' perceptions. A study conducted in Handeni District, Tanga, investigated students' perceptions of mathematics and their academic performance. Findings indicated that students perceiving mathematics as a challenging subject performed poorly, whereas those with positive attitudes toward the subject excelled. This study emphasized the importance of fostering students' self-esteem and positive attitudes to improve their performance (Kalla et al., 2023).

Another study examined students' perceptions of open and distance learning (ODL) programs. The findings revealed that 71.5% of students had positive perceptions of ODL quality, with 63.6% expressing a willingness to recommend such programs. However, challenges such as insufficient learning materials and

limited internet access highlighted areas needing improvement (Messo, 2014).

Moreover, research in Tanzanian higher education institutions assessed the relationship between perceived service quality and student satisfaction. Results demonstrated that factors such as reliability, transparency, and trust significantly influenced satisfaction levels. These findings highlight the importance of improving service quality to enhance students' educational experiences (Kumburu & Sospeter, 2023).

Kyrgyzstan

Research specifically focusing on students' perceptions of learning success in Kyrgyzstan remains sparse. However, broader studies in Central Asia suggest that educational reforms and modern teaching methodologies have a substantial impact on students' learning experiences and perceptions. Kyrgyzstan has implemented educational reforms to align with 21st-century competencies, aiming to enhance teaching and learning practices.

The Education Development Strategy for 2021–2040 emphasizes integrating information and communication technologies (ICT) to prepare citizens for the digital economy. Key initiatives include creating e-learning environments, leveraging distance education technologies, and adopting an education management information system (EMIS) to improve access and quality in education. These reforms underline the potential for a more positive perception of learning success as they address infrastructural and pedagogical gaps.

This analysis highlights the need for more localized and comprehensive research in these countries to address students' educational needs effectively and improve learning outcomes.

NAMA's Definition of Learning Success

In line with its 2019–2023 Strategic Plan, NAMA has identified three core indicators of learning success under student domain. These indicators reflect a holistic approach to education, emphasizing not only the acquisition of knowledge but also the cultivation of critical skills and the achievement of academic benchmarks.

1. Acquisition of Curriculum Knowledge and Skills

This indicator focuses on students mastering the essential content and skills outlined in the curriculum. It ensures that students acquire a strong foundation in core subject areas, enabling them to progress academically and apply their knowledge in various contexts.

2. Development of Reflective, Critical, Analytical, Creative, and Problem-Solving Skills Beyond rote learning, this indicator emphasizes higher-order thinking skills. Students are expected to engage in reflective and critical thinking, analyze complex situations, generate creative ideas, and develop effective solutions to problems. This prepares them for lifelong learning and equips them

with the cognitive tools needed for success in a rapidly changing world.

3. Performance Against National Academic Standards

This indicator measures students' academic achievement in relation to national benchmarks. By aligning with these standards, NAMA ensures that students are not only meeting but also excelling in the expected academic outcomes, thus fostering competitiveness and excellence at a national level.

Through these three dimensions, NAMA's framework for students' learning success provides a comprehensive model that integrates knowledge acquisition, skill development, and measurable academic performance. This approach ensures a well-rounded education that prepares students for future challenges and opportunities.

The outlined indicators align with common educational frameworks that emphasize a holistic approach to student development. For instance, the U.S. Department of Education's Strategic Plan highlights the importance of meeting students' social, emotional, and academic needs, which resonates with the focus on both knowledge acquisition and skill development.

Additionally, organizations like CASEL advocate for integrating social and emotional learning (SEL) into education, emphasizing the development of reflective, critical, analytical, creative, and problem-solving skills.

Objectives and Scope of the Paper

This paper aims to analyze students' perceptions of learning success in NAMA schools across three countries—Indonesia, Kyrgyzstan, and Tanzania—between 2021 and 2022, following the implementation of NAMA's 2019–2023 Strategic Plan. Specifically, it documents and profiles teaching indicators from students' perspectives and evaluates changes observed after the ROOTS intervention. Data for this analysis were gathered through a questionnaire administered to students. In this study, impact is defined as the transfer of changes in teachers' instructional practices, resulting from the ROOTS intervention, to students. These changes are assessed by examining the presence or absence of specific indicators outlined in the questionnaire, which was designed based on 21st-century teaching and learning practices.

The ROOTS Project

Recognizing the critical role of 21st-century teaching in fostering sustainable student learning, NAMA Foundation launched an intervention program called ROOTS (Roadmap of Outstanding Educators) in 2017. Initially implemented across eight countries, including Indonesia, Lebanon, Yemen, Tanzania, India, Kyrgyzstan, and Malaysia, the program aimed to transform teachers into skilled and contemporary educators. ROOTS focused on equipping teachers with expertise in assessment, 21st-century teaching practices, and other essential skills

to enhance student learning and engagement. The program provided systematic training in learner-centered strategies, instructional design, gamification, coaching, mentoring, and facilitation techniques. The goal was to enable teachers to translate classroom learning into real-world performance effectively. By doing so, NAMA aimed to improve teacher effectiveness and optimize student learning outcomes both inside and outside the classroom. ROOTS, as a capacity-building initiative, was rolled out in three phases between 2017 and 2019, involving 161 schools, 1,854 teachers, and 55,620 students (NAMA Foundation, 2020). Currently, under its 2019-2023 Strategic Plan, the program focuses on Indonesia, Kyrgyzstan, and Tanzania, engaging 63 schools and over 500 teachers.

METHODOLOGY

The data for this study were collected from a total of sixty-three (N = 63) Islamic schools distributed across three countries: Indonesia (24 schools, 38%), Tanzania (21 schools, 33%), and Kyrgyzstan (18 schools, 29%), as illustrated in Figure 1.2. The participants comprised students enrolled in these schools, all of which were part of the NAMA initiative aimed at improving educational outcomes. In the 2021 survey, a total of four thousand one hundred seventeen (N = 4,1117) students participated, with country-specific distributions as follows: Indonesia (1,839 students, 45%), Tanzania (694 students, 17%), and Kyrgyzstan (1,584 students, 38%). For the 2022 survey, a total of nine hundred five (N = 905) students participated, distributed as follows: Indonesia (362 students, 40%), Tanzania (284 students, 31%), and Kyrgyzstan (259 students, 29%), as illustrated in Figure 1.3. The diverse sampling across these schools provided a comprehensive perspective on students' perceptions of learning success across the three countries.

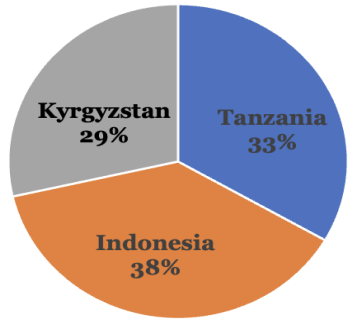


Figure 1.2: Percentage of schools involved across three countries

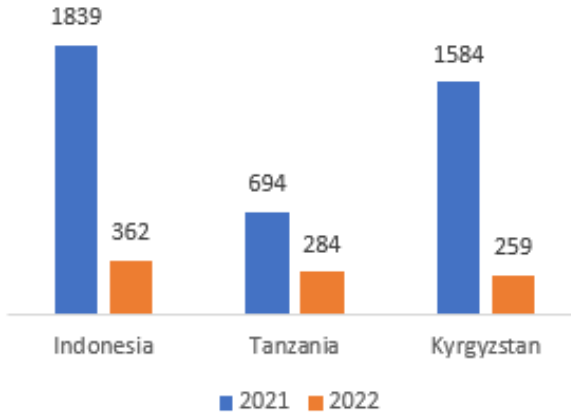


Figure 1.3: Number of students involved across three countries

Data Sources

Source of the data were derived from a large, comprehensive NAMA database encompassing survey responses from students in Tanzania, Indonesia and Kyrgyzstan in 2021 and 2022. The database was part of a broader educational monitoring initiative, ensuring wide coverage and representation across urban, suburban and rural school settings in the respective countries. The extensive data set provides a rich source of information for comparing trends across the three countries and analyzing the learning success from students' perception. The large-scale nature of the data strengthens the robustness of the analysis and the generalizability of the results.

Instrument

A questionnaire developed by NAMA was used as the instrument to collect data. The questionnaire consists of ten items grouped under the Learning Success domain, with the student dimension as the focus. These items are categorized into two constructs: LSS1, which refers to "having the necessary curriculum knowledge and skills," and LSS2, which refers to "having developed reflective, critical, analytical, creative, and problem-solving skills." The instrument employs a five-point Likert scale (4 = Always, 3 = Often, 2 = Sometimes, 1 = Very Little, 0 = Never) to assess the frequency and extent of students' experiences with specific learning-related activities, aiming to capture their perceptions of learning success. The contents of the questionnaire are summarized in Table 1.1

Table 1.1: Content Summary of the Questionnaire

Part	Description	Item
1	LSS1	1) Understanding lessons through teacher explanations. 2) Receiving teacher guidance to improve schoolwork. 3) Using materials beyond textbooks for better comprehension. 4) Enhancing computer skills through school support. 5) Collaborative group work in class activities and projects.
2	LSS2	1) Engaging in thought-provoking activities/projects. 2) Developing problem-solving skills during activities. 3) Relating activities/projects to life outside school. 4) Providing feedback on peers' work 5) Reflecting on learning

Note: LS = Learning Success (domain); S = Student (dimension); 1&2 = Construct

Specifically, the items can be categorized into the following domains: teachers' clarity of explanations, teacher guidance and support, use of supplementary materials, digital skills development, collaborative learning, critical thinking, problem-solving skills, real-life applications, peer feedback, reflection, and learning outcomes. This structured instrument assesses essential aspects of active learning and student engagement, focusing on how teaching practices, project-based tasks, and collaborative learning shape students' perceptions of their educational experiences. The findings offer valuable insights into areas of strength and opportunities for enhancing learning practices.

Data Analysis

The descriptive data collected from the survey were organized using Microsoft 365 Excel and analyzed with IBM SPSS Statistics 29.0. The mean values (M) and standard deviations (SD) were calculated to provide an overview of data distribution and variability, and to facilitate comparisons across the three countries. For comparative analysis, the data were categorized by country, enabling an exploration of trends and patterns specific to Indonesia, Tanzania, and Kyrgyzstan. Additional analyses, including visual representations such as tables and bar charts, were created to highlight differences in key dimensions of learning success across the three countries. A comparative analysis was then conducted to explore significant variations among the countries, offering insights into students' perceptions of learning success.

RESULTS

Indonesia

Table 1.2 shows Indonesian students' perceptions toward learning success in their respective schools. The data indicate an upward trend where there was an increase of 26.9% of students reporting that they understood their teachers' explanations well, moving from 65.4% in 2021 (M =2.85, SD = .78) to 92.3% in 2022 (M =3.19, SD = .57). Similarly, there was a significant improvement in teachers giving students ideas on how to improve their schoolwork, where there was an increase of almost 50%, moving from 41.2% in 2021 (M = 2.94, SD = .87) to 90.9% in 2022 (M = 3.35, SD = .69). Collaboration on activities and projects that need thinking saw one of the largest increases of 44.3%, jumping from 43.5% in 2021 (M = 2.38, SD = .93) to 87.8% in 2022 (M = 3.29, SD = .71), highlighting greater engagement in teamwork. Students also reported better support from their schools in developing computer skills, with an increase of 8.1% from 43.0% in 2021 (M = 2.32, SD = 1.07) to 51.1% in 2022 (M = 2.46, SD = 1.09). Additionally, reflection on learning and peer feedback improved significantly, with an increase of 25.7% rising from 41.4% in 2021 (M = 2.31, SD = .93) 67.1% in 2022 (M = 2.90, SD = .83). Furthermore, the data highlight a marked improvement in students' ability to produce solutions to problems, with an increase of 46%, moving from 37.4% in 2021 (M = 2.24, SD = 0.94) to 83.4% in 2022 (M = 3.20, SD = 0.75). These findings indicate an overall enhancement in active, collaborative and reflective learning practices, and ability to solve problem in Indonesian schools between 2021 and 2022.

Table 1.2: Students' Perceptions of Learning Success in Indonesian Schools (2021-2022)

Item		Year	Responses			M	SD
			Never & Very Little	Sometimes	Often & Always		
1.	Understanding lessons well upon teachers' explanations. [LSS1_a]	2021	41 (2.2)	594 (32.4)	1201 (65.4)	2.85	0.78
		2022	1 (0.3%)	27 (7.5%)	334 (92.3%)	3.19	0.57
2.	Teachers giving ideas on how to improve school work. [LSS1_b]	2021	106 (5.8%)	433 (23.6%)	755 (41.2%)	2.94	0.87
		2022	3 (0.8%)	30 (8.3%)	329 (90.9%)	3.35	0.69
3.	Teachers' use of external material helps student understanding. [LSS1_c]	2021	194 (10.6%)	514 (28.0%)	1126 (61.4%)	2.73	0.92
		2022	2 (0.6%)	49 (13.5%)	311 (85.9%)	3.23	0.71
4.	School helping students to be better at computer skills. [LSS1_d]	2021	523 (28.5%)	522 (28.5%)	789 (43.0%)	2.32	1.07
		2022	71 (19.6%)	106 (29.3%)	185 (51.1%)	2.46	1.09
5.	Students collaborating on activities and projects. [LSS1_e]	2021	149 (8.1%)	598 (32.6%)	1087 (59.3%)	2.73	0.90
		2022	1	29	331	3.47	0.67

			(0.3%)	(8.0%)	(91.7%)		
6.	I work on activities/projects that need thinking. [LSS2_a]	2021	341	696	799	2.38	0.93
			(18.6%)	(37.9%)	(43.5%)		
		2022	4	40	318	3.29	0.71
			(1.1%)	(11.0%)	(87.8%)		
7.	Students producing solutions to problems. [LSS2_b]	2021	440	706	686	2.24	0.94
			(24.0%)	(38.5%)	(37.4%)		
		2022	4	56	302	3.20	0.75
			(1.1%)	(15.5%)	(83.4%)		
8.	Activities/projects related to life outside school. [LSS2_c]	2021	568	661	603	2.11	0.95
			(31.0%)	(36.1%)	(32.9%)		
		2022	16	94	252	2.85	0.84
			(4.4%)	(26.0%)	(69.6%)		
9.	Students' reading friends' work and giving ideas on improvement. [LSS2_d]	2021	398	676	760	2.31	0.93
			(21.7%)	(36.9%)	(41.4%)		
		2022	12	107	243	2.90	0.83
			(3.3%)	(29.6%)	(67.1%)		
10.	Students reflecting on learning. [LSS2_e]	2021	279	502	1051	2.66	1.01
			(15.2%)	(27.4%)	(57.4%)		
		2022	7	65	289	3.11	0.78
			(1.9%)	(18.0%)	(80.1%)		

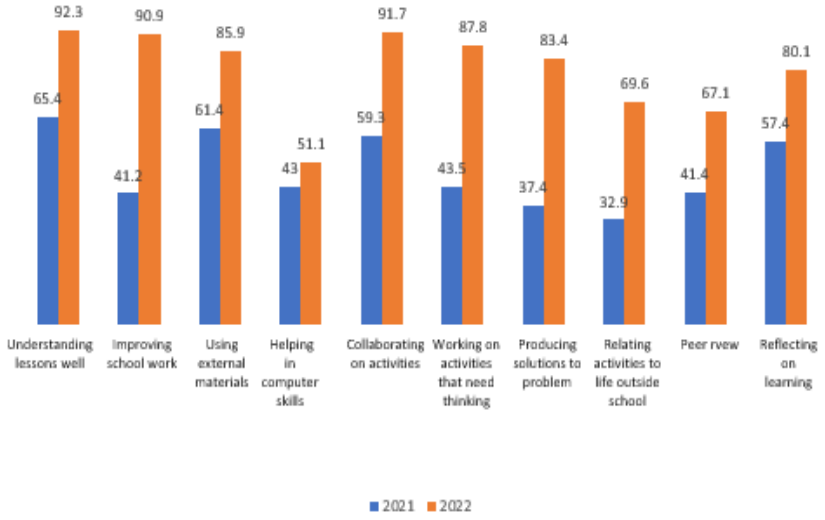


Figure 1.4: Learning Success Improvements in Indonesian schools

Tanzania

Table 1.3 illustrates Tanzanian students' perceptions of learning success in their schools, highlighting a downward trend with significant declines across most indicators. For example, students' perception of understanding lessons well upon teachers' explanations dropped by 22%, from 80.1% in 2021 (M = 3.34, SD = 0.87) to 58.1% in 2022 (M = 2.69, SD = 0.80). The most notable decrease was in schools helping students improve their computer skills, which fell by 42.2%, from 55.9% in 2021 (M = 2.65, SD = 1.27) to 13.7% in 2022 (M = 1.21, SD = 1.19). Reflection on learning and peer feedback also declined by 21.7%, from 68.2% in 2021 (M = 3.08, SD = 1.01) to 46.5% in 2022 (M = 2.50, SD = 0.50). Additionally, teachers' use of external materials to aid understanding saw a minor decrease of 2.8%, from 57.4% in 2021 (M = 2.75, SD = 1.16) to 54.6% in 2022 (M = 2.57, SD = 0.95). Furthermore, students' ability to reflect on their learning fell by 11.5%, from 61.7% in 2021 (M = 3.36, SD = 0.91) to 50.2% in 2022 (M = 2.45, SD = 1.04). In conclusion, the data indicates a substantial decline in Tanzanian students' perceptions of learning success, particularly in critical areas like understanding lessons, computer skills, and reflective practices. These trends highlight the need for schools to address these challenges to improve students' learning

experiences and outcomes.

Table 1.3: Students' Perceptions of Learning Success in Tanzanian Schools (2021-2022)

Item		Year	Responses			M	SD
			Never & Very Little	Sometimes	Often & Always		
1.	Understanding lessons well upon teachers' explanations. [LSS1_a]	2021	22 (3.2%)	116 (16.8%)	554 (80.1%)	3.34	0.87
		2022	12 (4.2%)	107 (37.7%)	165 (58.1%)	2.69	0.80
2.	Teachers giving ideas on how to improve school work. [LSS1_b]	2021	35 (5.1%)	102 (14.7%)	555 (80.2%)	3.39	0.91
		2022	16 (5.6%)	70 (24.6%)	198 (69.7%)	2.89	0.93
3.	Teachers' use of external material helps student understanding. [LSS1_c]	2021	142 (20.5%)	153 (22.1%)	397 (57.4%)	2.75	1.16
		2022	35 (12.3%)	94 (33.1%)	155 (54.6%)	2.57	0.95
4.	School helping students to be better at computer skills. [LSS1_d]	2021	209 (30.2%)	96 (13.9%)	387 (55.9%)	2.65	1.27
		2022	179 (63.0%)	66 (23.2%)	39 (13.7%)	1.21	1.19
5.	Students collaborating on	2021	29 (4.2%)	121 (17.5%)	542 (78.3%)	3.34	0.91

	activities and projects. [LSS1_e]	2022	34 (12.0%)	85 (29.9%)	165 (58.1%)	2.66	0.98
6.	I work on activities/projects that need thinking. [LSS2_a]	2021	63 (9.1%)	193 (27.9%)	436 (63.0%)	2.93	1.02
		2022	40 (14.1%)	122 (43.0%)	122 (43.0%)	2.36	0.91
7.	Students producing solutions to problems. [LSS2_b]	2021	93 (13.4%)	177 (25.6%)	422 (61.0%)	2.87	1.08
		2022	44 (15.5%)	85 (29.9%)	155 (54.6%)	2.54	1.02
8.	Activities/projects related to life outside school. [LSS2_c]	2021	83 (12.0%)	157 (22.7%)	452 (65.3%)	2.94	1.06
		2022	31 (10.9%)	117 (41.2%)	136 (47.9%)	2.31	1.15
9.	Students' reading friends' work and giving ideas on improvement. [LSS2_d]	2021	53 (7.7%)	167 (24.1%)	472 (68.2%)	3.08	1.01
		2022	57 (20.1%)	95 (33.5%)	132 (46.5%)	2.50	0.90
10.	Students reflecting on learning. [LSS2_e]	2021	30 (4.3%)	116 (16.8%)	546 (61.7%)	3.36	0.91
		2022	42 (15.3%)	95 (34.5%)	138 (50.2%)	2.45	1.04

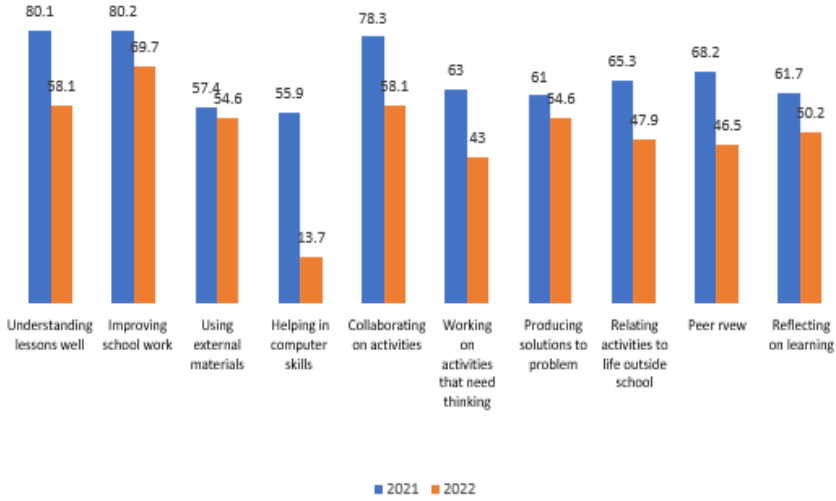


Figure 1.5: Learning Success Decline in Tanzanian schools

Kyrgyzstan

Table 1.4 presents Kyrgyz students' perceptions of learning success in their respective schools. The data indicated an upward trend in various areas. Notably, the percentage of students who reported understanding their teachers' explanations well increased by 13.8%, rising from 78.1% in 2021 (M = 3.31, SD = 0.88) to 91.9% in 2022 (M = 3.34, SD = 0.66). Similarly, the use of external materials by teachers to enhance student understanding showed significant growth, with a 13.1% increase from 74.9% in 2021 (M = 3.19, SD = 0.96) to 88.0% in 2022 (M = 3.27, SD = 0.77). Collaboration on activities and projects requiring critical thinking also improved significantly, with a 12.4% increase from 64.8% in 2021 (M = 2.91, SD = 1.03) to 77.2% in 2022 (M = 3.02, SD = 0.90). Students' participation in activities and projects related to life outside school saw the largest increase of 17%, rising from 56% in 2021 (M = 2.72, SD = 1.07) to 73% in 2022 (M = 2.44, SD = 1.18), indicating greater engagement in social activities. Additionally, there was a moderate improvement in the support

provided by schools for developing students' computer skills, with a 6.5% increase from 62.6% in 2021 (M = 2.88, SD = 1.14) to 69.1% in 2022 (M = 2.77, SD = 1.22). However, reflection on learning and peer feedback showed a decline with 8.5% decrease, falling from 64.5% in 2021 (M = 2.93, SD = 1.03) to 56% in 2022 (M = 2.85, SD = 0.99). Despite this, students reported better problem-solving skills, with a 6.5% improvement from 60.3% in 2021 (M = 2.48, SD = 1.02) to 83.4% in 2022 (M = 2.82, SD = 0.94). The findings highlight overall positive trends in Kyrgyz students' learning experiences, particularly in understanding teachers' explanations, collaborative activities, and engagement with life-related projects. While improvements in computer skills and problem-solving were also noted, the decline in reflection and peer feedback warrants further attention to ensure comprehensive learning success.

Table 1.4: Students' Perceptions of Learning Success in Kyrgyz Schools (2021-2022)

Item		Year	Responses			M	SD
			Never & Very Little	Sometimes	Often & Always		
1.	Understanding lessons well upon teachers' explanations. [LSS1_a]	2021	45 (2.9%)	299 (19.0%)	1228 (78.1%)	3.31	0.88
		2022	2 (0.8%)	19 (7.3%)	238 (91.9%)	3.34	0.66
2.	Teachers giving ideas on how to	2021	121 (7.7%)	310 (19.8%)	1138 (72.5%)	3.13	0.98

	improve school work. [LSS1_b]	2022	18 (6.9%)	45 (17.4%)	196 (75.7%)	3.07	0.96
3.	Teachers' use of external material helps student understanding. [LSS1_c]	2021	101 (6.5%)	292 (18.7%)	1172 (74.9%)	3.19	0.96
		2022	5 (1.9%)	26 (10.0%)	228 (88.0%)	3.27	0.77
4.	School helping students to be better at computer skills. [LSS1_d]	2021	270 (17.3%)	315 (20.1%)	980 (62.6%)	2.88	1.14
		2022	40 (15.4%)	40 (15.4%)	179 (69.1%)	2.77	1.22
5.	Students collaborating on activities and projects. [LSS1_e]	2021	181 (11.5%)	372 (23.7%)	1017 (64.8%)	2.91	1.03
		2022	17 (6.6%)	42 (16.2%)	200 (77.2%)	3.02	0.90
6.	I work on activities/projects that need thinking. [LSS2_a]	2021	122 (7.8%)	392 (25.0%)	1053 (67.2%)	3.00	0.98
		2022	21 (8.1%)	56 (21.6%)	182 (70.3%)	2.81	0.95
7.	Students producing solutions to problems. [LSS2_b]	2021	167 (10.7%)	454 (29.0%)	943 (60.3%)	2.84	1.02
		2022	22	64	173	2.82	0.94

			(8.5%)	(24.7%)	(66.8%)		
8.	Activities/projects related to life outside school. [LSS2_c]	2021	245 (15.7%)	443 (28.3%)	877 (56.0%)	2.72	1.07
		2022	29 (11.2%)	41 (15.8%)	189 (73.0%)	2.44	1.18
9.	Students' reading friends' work and giving ideas on improvement. [LSS2_d]	2021	164 (10.4%)	393 (25.0%)	1014 (64.5%)	2.93	1.03
		2022	51 (19.7%)	63 (24.3%)	145 (56.0%)	2.85	0.99
10.	Students reflecting on learning. [LSS2_e]	2021	93 (5.9%)	193 (12.3%)	1280 (81.7%)	3.34	0.91
		2022	11 (4.3%)	31 (12.0%)	216 (83.7%)	3.21	0.87

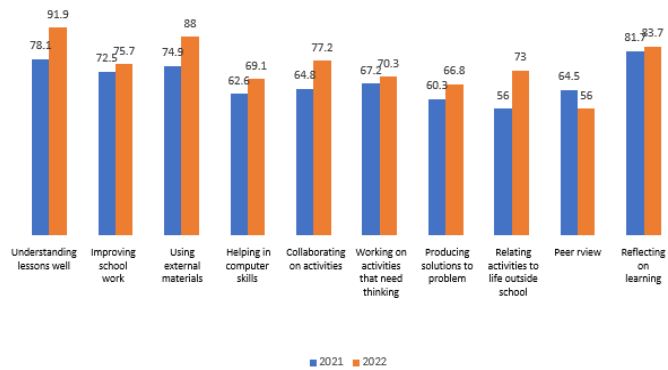


Figure 1.6: Learning Success improvements in Kyrgyz schools

Learning Success Trends from Students' perspective in Indonesian, Tanzanian and Kyrgyz Schools

The figure compares learning success across Indonesia, Tanzania, and Kyrgyzstan, highlighting significant disparities. Indonesia consistently achieves positive outcomes, with the highest score of 49.7% and consistently leading in all categories. In contrast, Tanzania demonstrates predominantly negative results, with a steep decline reaching as low as -42.2%, reflecting significant challenges in learning success. Kyrgyzstan shows a balanced performance with moderate results, mostly positive, peaking at 13.8%, but also includes slight negative dips such as -2.8% and -11.5%. Overall, Indonesia demonstrates superior learning success, Kyrgyzstan performs moderately, and Tanzania faces notable struggles in comparison.

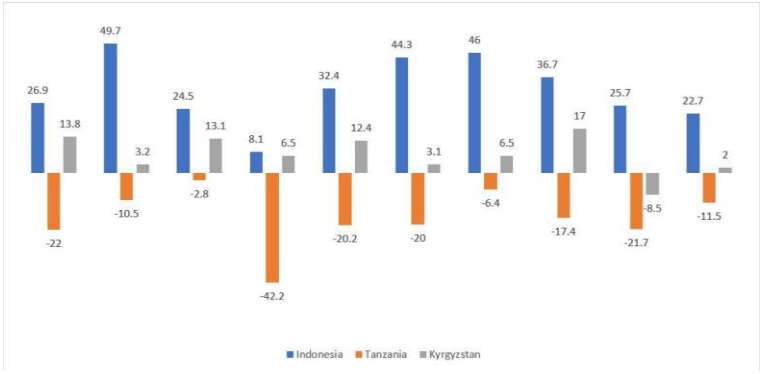


Figure 1.5: Learning Success Trends in Indonesian, Tanzanian and Kyrgyz Schools (2021 & 2022)

DISCUSSION

The results of the present study provide critical insight into students' perceptions of learning success across NAMA-supported schools in Indonesia, Tanzania, and Kyrgyzstan, and offer a robust basis for cross-national comparison with the existing literature. The findings reveal a diverse pattern of progress, with Indonesia showing marked improvements, Kyrgyzstan demonstrating moderate but steady gains, and Tanzania experiencing a decline in key indicators of learning success.

Indonesia: Evidence of Positive Change through Learner-Centered Approaches

Indonesia's substantial progress aligns with prior research that highlights the positive effects of learner-centered pedagogies, capacity-building, and structured

interventions. Our data show that Indonesian students' perceptions of their learning, collaborative skills, and reflective abilities improved significantly following the implementation of the ROOTS initiative. This outcome mirrors findings by Arlinwibowo et al. (2020) and Freeman et al. (2014), who argued that teacher training and student-active learning strategies drive motivation and achievement. The integration of reflective practices and collaborative projects, as reported in the Indonesian context, is also supported by Boud et al. (2013) and Brookfield (2017), who emphasize the importance of metacognition and peer engagement in deep learning.

Moreover, Indonesia's experience underscores the effectiveness of policy support and systemic reforms. The alignment of ROOTS activities with national educational priorities—such as the Merdeka Belajar (Freedom to Learn) framework—has likely contributed to the success observed (Arlinwibowo et al., 2020). This is in line with Gay's (2010) argument that reforms yield greater impact when they are culturally and contextually responsive.

Tanzania: Declining Outcomes and Persistent Barriers

Contrasting with Indonesia, Tanzania displayed declines in most learning success indicators over the study period. This pattern is consistent with concerns in the literature about persistent educational challenges in low-resource contexts (Kumburu & Sospeter, 2023). Messo (2014) and Johnson et al. (2014) previously documented that while Tanzanian students often exhibit positive attitudes toward learning, the benefits are undermined by insufficient infrastructure, limited teacher training, and lack of digital resources. Our findings reinforce these observations: students reported declines in computer skills, collaborative practices, and reflective learning, all of which are critical 21st-century competencies (OECD, 2018). This suggests that without targeted investment in professional development, technology, and school resources, even well-designed interventions may have limited effect.

Kyrgyzstan: Steady Progress, Persistent Gaps

Kyrgyzstan's moderate but positive trend reflects the incremental benefits of ongoing reform and technological integration, as described in the national Education Development Strategy 2021–2040 (Kirkwood & Price, 2014). While students in Kyrgyzstan reported gains in collaboration and project-based learning, the study also noted a lack of improvement in reflective practices and peer feedback. This mixed result suggests that while reforms and digitalization initiatives are bearing fruit, their implementation may not be comprehensive or evenly distributed across domains (Brookfield, 2017). This resonates with findings from international comparative studies, which stress the importance of capacity-building and sustained support for teachers to fully realize the benefits of educational innovation (Freeman et al., 2014; ISTE, 2016).

Cross-National Patterns and Theoretical Implications

Across all three contexts, the findings support the view that learning success is not a monolithic construct but is influenced by instructional practices, resource availability, and systemic support (York et al., 2015; Kuh et al., 2006). Indonesia's progress in project-based learning, reflection, and collaboration is consistent with the literature advocating for active and experiential pedagogies (Barrows, 1996; Prince & Felder, 2006). Kyrgyzstan's results confirm the partial but real benefits of integrating ICT and reform-driven instruction (Kirkwood & Price, 2014). Tanzania's challenges, meanwhile, highlight the critical role of foundational infrastructure and teacher development (OECD, 2018; Johnson et al., 2014). Importantly, the disparity between countries underscores the necessity of contextualized interventions. The literature is clear that cultural responsiveness, equity, and inclusion must guide reform if learning success is to be achieved for all students (Gay, 2010; Biggs, 1999).

CONCLUSION

This study provides empirical evidence that 21st-century learning success in developing country contexts is highly sensitive to local realities, including policy environments, resource constraints, and capacity for instructional innovation. Indonesia's achievements validate the efficacy of structured, learner-centered interventions, while Kyrgyzstan's incremental progress highlights the importance of continued reform and teacher support. Tanzania's setbacks serve as a cautionary example, emphasizing the need for foundational investment in training and infrastructure.

Policy makers and educational leaders should prioritize culturally responsive, contextually adapted capacity-building, particularly in under-resourced settings. The adoption of active learning, technology integration, and professional development is essential, but must be matched by equitable resource distribution and ongoing support. Finally, interventions should be assessed with attention to local needs and constraints, ensuring that all students—not just those in well-supported schools—can experience genuine learning success.

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