



NOAKHALI SCIENCE AND TECHNOLOGY UNIVERSITY

Noakhali - 3814, Bangladesh.

SDG PROGRESS REPORT 2024

4 QUALITY EDUCATION



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Comprehensive Report: SDG 4 - Quality Education

Noakhali Science and Technology University

December 2024

Introduction

Noakhali Science and Technology University (NSTU) is firmly committed to Sustainable Development Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. We believe that research is the key to understanding and improving educational outcomes, developing modern skills, and creating the knowledge-based tools for a sustainable future.

Our 2024 research contributions demonstrate this commitment by focusing on two key pillars:

- Research and Innovation:** Focusing on enhancing educational performance, bridging education with relevant technical skills, and developing innovative resources for sustainable development.
- Operations and Community Engagement:** Ensuring our graduates are prepared to teach, providing extensive lifelong learning opportunities, and supporting first-generation students.

This report outlines our key 2024 accomplishments in support of the targets of SDG 4.

Pillar 1: Research for Better Education

Our 2024 research provides an evidence base to understand and improve modern education, focusing on three core pillars.



Enhancing Learning Outcomes

Using ML to analyze the impact of internet usage on academic performance and researching the role of student motivation.

Bridging Skills & Employment

Assessing internship programs to close the theory-practice gap and building AI-driven job recommendation systems.

Developing Resources for ESD

Creating open-access datasets (NSTU-BDTAKA) and frameworks for promoting environmental knowledge in the workplace.

Pillar 1: Progress through Research and Innovation

Our research provides the evidence base to understand and improve modern education.

Section 1.1: Enhancing Educational Performance & Learning Outcomes (Target 4.1)

A core focus of our research is understanding the factors that drive student success.

- **Understanding Modern Learning:** The study by Hemal, S.H. et al. ("Predicting the impact of internet usage on students' academic performance...") uses machine learning to analyze one of the most significant factors in modern education. This research provides critical data for educators on how to harness digital tools effectively.
- **Analyzing Student Motivation:** The work by Siddiky, M.R. & Haque, I.E. ("Factors Affecting Students' Academic Performance...") investigates the fundamental drivers of student success, offering invaluable insights for building a learning environment that fosters intrinsic motivation.

Pillar 2: Operations – A Commitment to Access & Teachers

Our operational focus is on creating a pipeline of qualified teachers and ensuring inclusive access for all, from first-generation students to lifelong learners.

First-Generation Students (2024)
Creating an engine for social mobility.



434 of 1,462 new students are first-generation.

Graduates w/ Teaching Qualification (2024)
A foundational contribution to national education.

100%

1,541 of 1,541 graduates are qualified to teach primary education

Section 1.2: Bridging Education with Technical Skills & Employment (Target 4.4)

We are dedicated to ensuring that education translates into relevant skills for the modern workforce.

- **Evaluating Practical Training:** The research by Alam, S. & Yesmin, S. ("Bridging theoretical abstraction to professional practice...") directly assesses the efficacy of internship programs. This work is essential for closing the gap between academic theory and the practical skills required in the professional world.
- **Developing Skills-Based Technology:** The study by Aziz, M.T. et al. ("Machine Learning-Driven Job Recommendations...") contributes to this target by developing an advanced AI tool to help match students' skills with relevant employment opportunities.

Section 1.3: Developing Innovative Resources for Education & Sustainable Development (Targets 4.7, 4.a)

Our research extends to creating new knowledge and tools that support both educational infrastructure and sustainable development.

- **Creating Open-Access Educational Resources:** The creation of the "NSTU-BDTAKA" dataset by Rafi, M.J.A. et al. is a direct contribution to Target 4.a. By developing and openly sharing a new dataset for Bangladeshi currency, our researchers have provided a vital new tool for students and developers in computer science and AI.

- **Promoting Education for Sustainable Development (ESD):** The research by Miah, M. et al. ("Effects of green human resource management...") directly supports Target 4.7 by identifying the critical role of "employee's environmental knowledge management" and providing a framework for how organizations can educate their workforce on sustainability.

Pillar 2: Progress through University Operations and Community Engagement

NSTU's operational strategy is focused on creating a pipeline of qualified teachers, providing extensive lifelong learning opportunities, and ensuring inclusive access to education.

Section 2.1: Educating the Next Generation of Teachers

A primary mission of our university is to provide a quality education to the nation's future teachers. In 2024, **1,541 graduates**, out of a total of 1,541, gained a qualification that entitled them to teach at the primary school level (as the minimum qualification required to enter into a primary teaching job in Bangladesh). This represents a major institutional contribution to the foundations of education in Bangladesh.

Section 2.2: Supporting First-Generation Students

We are committed to being an engine of social mobility. In 2024, **434 new students**, out of 1,462, were first-generation students, meaning they are the first in their family to pursue a university degree. We actively support these students in their transition to and success in higher education.



Section 2.3: Lifelong Learning and Community Outreach

NSTU is a hub for lifelong learning, providing numerous educational opportunities open to the general public.

- **Free Public Courses:** The Institute of Information Technology (IIT) offers free programs, such as the Digital Skills Training Program, in collaboration with the ICT Division and Bangladesh Computer Council (BCC), allowing anyone to enroll at no cost.
- **Educational Outreach:** Our students actively engage in the community. For example, students from the Faculty of Education participate in a six-month internship program, where they teach and mentor in local primary schools.

- **Vocational & Executive Education:** IIT also hosts vocational programs open to the public, such as the one-year Postgraduate Diploma in Information Technology (PGDIT), designed to develop skilled professionals (image attached on the previous page, left side).
- **Community Education Events:** We host events open to the public, such as the free educational sessions run every Friday by the student-led organization 'Luminary' for underprivileged children from the local community, held on the university campus (image attached on the previous page, right side).

Section 2.4: Policy on Inclusive Access

To govern all these activities, NSTU has a formal "Inclusive Access to Educational Resources and Outreach Activities Policy." This policy ensures that participation in all university-hosted programs (free courses, public lectures, community outreach) is provided without any discrimination based on ethnicity, religion, disability, immigration status, or gender, upholding our commitment to equity and inclusivity.

Pillar 2: Operations – Lifelong Learning for All

We provide numerous educational opportunities open to the general public, governed by a formal policy of inclusive access.



Governed by Inclusive Access Policy

All outreach and lifelong learning activities are governed by a formal policy ensuring access for all, regardless of ethnicity, religion, disability, immigration status, or gender.

Conclusion

Noakhali Science and Technology University's 2024 contribution to SDG 4 is comprehensive. Our research is creating an evidence base to improve academic performance, link education with employment, and promote sustainability. Operationally, we are a cornerstone of the national education system, with 100% of our 2024 graduates earning a teaching qualification. This, combined with our robust lifelong learning programs and strong support for first-generation students, demonstrates a holistic and impactful commitment to quality education for all.

Appendix: SDG 4 Targeting 2024 Publications Referenced

1. Hemal, S.H., Khan, M.A., Ahammad, I., Khan, M.A.S., Ejaz, S. (2024). Predicting the impact of internet usage on students' academic performance using machine learning techniques in Bangladesh perspective. *Social Network Analysis and Mining*.
2. Rafi, M.J.A., Rony, M.A.T., Majadi, N. (2024). NSTU-BDTAKA: An open dataset for Bangladeshi paper currency detection and recognition. *Data in Brief*.
3. Miah, M., Rahman, S.M.M., Biswas, S., Szabó-Szentgróti, G., Walter, V. (2024). Effects of green human resource management practices on employee green behavior: the role of employee's environmental knowledge management and green self-efficacy for greening workplace. *International Journal of Organizational Analysis*.
4. Aziz, M.T., Mahmud, T., Uddin, M.K., Hossain, M.S., Andersson, K. (2024). Machine Learning-Driven Job Recommendations: Harnessing Genetic Algorithms. *Lecture Notes in Networks and Systems*.
5. Alam, S., Yesmin, S. (2024). Bridging theoretical abstraction to professional practice: an assessment of LIS students' experience of their internship program. *Global Knowledge Memory and Communication*.
6. Siddiky, M.R., Haque, I.E. (2024). Factors Affecting Students' Academic Performance Mediated by their Motivation for Learning. *Asian Journal of University Education*.