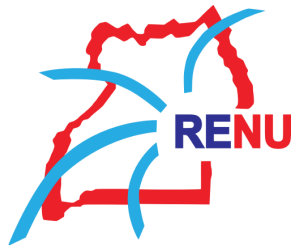# IMPORTANCE OF ICT IN EDUCATION

By

Ben Kyemba

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ICT Skilling for Schools Workshop

Maryhill High School - Mbarara
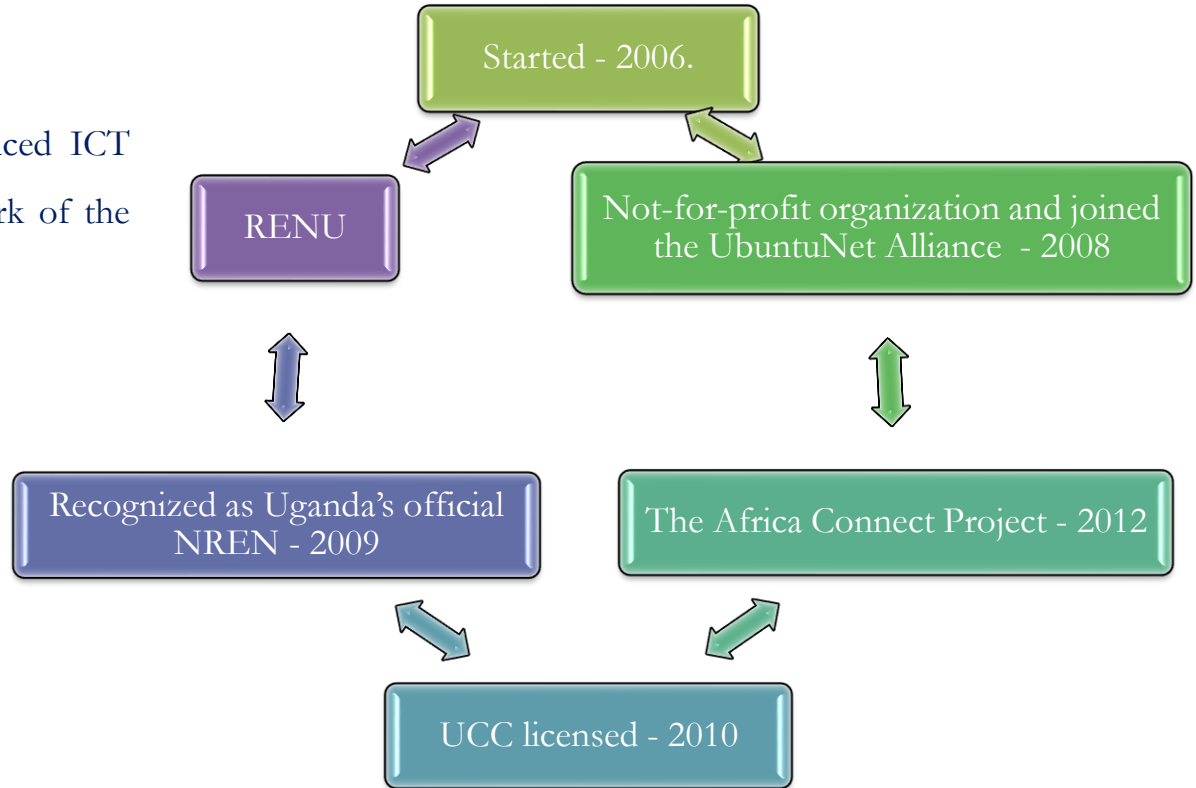
5 – 9 May, 2025

Outline

- Introduction to NRENs
- ICT Adoption in Uganda
- Challenges related to ICT
- RENU Journey with Schools
- Common Network challenges
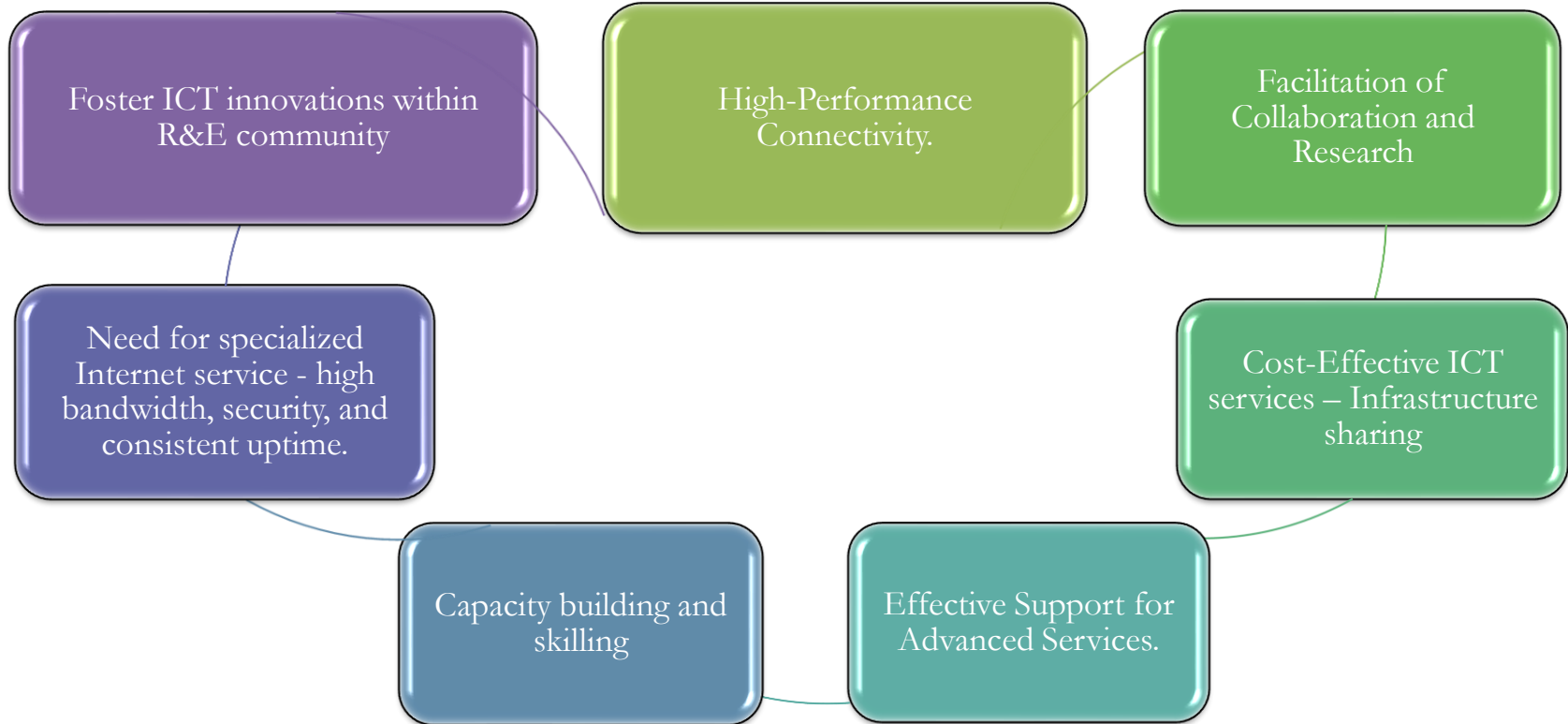- AI statistics in Education
- Q&A.

What is an NREN?

National Research and Education Network

❖ An organization that operates advanced ICT services designed to enhance the work of the research and education community

Started - 2006.

RENU

Not-for-profit organization and joined the UbuntuNet Alliance - 2008

Recognized as Uganda's official NREN - 2009

The Africa Connect Project - 2012

UCC licensed - 2010

Why NRENs?

Foster ICT innovations within R&E community

High-Performance Connectivity.

Facilitation of Collaboration and Research

Need for specialized Internet service - high bandwidth, security, and consistent uptime.

Cost-Effective ICT services – Infrastructure sharing

Capacity building and skilling

Effective Support for Advanced Services.

Knowledge | Community | Solutions

ICT Adoption in Uganda's Education Sector

Education Digital Agenda Strategy (2021–2025)

- ❖ Improve Uganda's education service delivery through sustainable digital transformation

Education Sector Strategic Plan (ESSP 2017–2020)

- ❖ Early emphasis on ICT integration in curriculum delivery and institutional management.
- ❖ Achieve equitable access to relevant and quality education and training

Vision 2040

- ❖ Uganda's national goal is to transform into a knowledge-based economy.
- ❖ ICT is seen as a key driver of social transformation, including education.

Before ICT…

Physical seminars & Teaching Methods

❖ Formal with desks in rows.

❖ Class teacher at the front.

❖ Lectures, rote memorization, and direct instructions.

❖ Chalkboards.

Learning Materials

❖ Textbooks, handwritten notes, and printed materials.

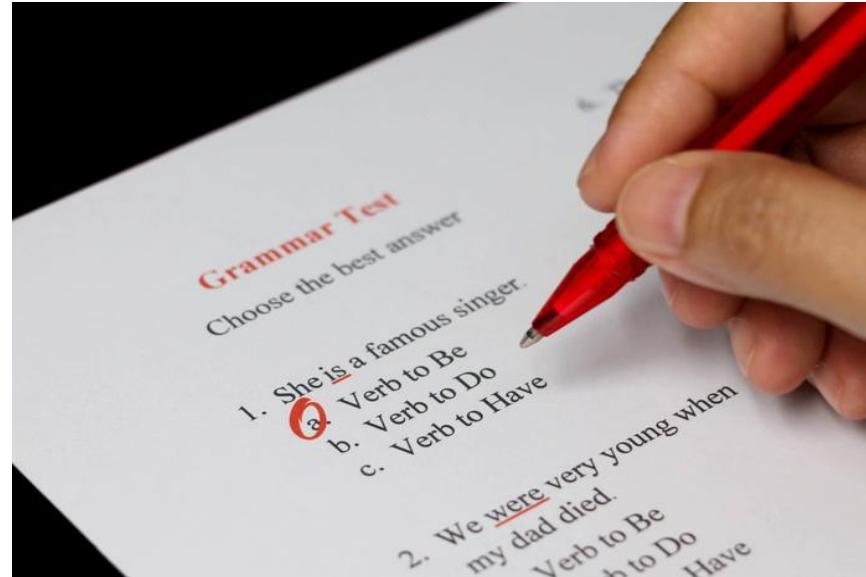❖ Libraries – crucial for research, handwritten assignments, and projects.

Cont…

Assessments.

❖ Tests and quizzes were given in written form.

❖ Feedback on assignments given in person or written form.

Manual Processing.

❖ Attendance.

❖ Grading.
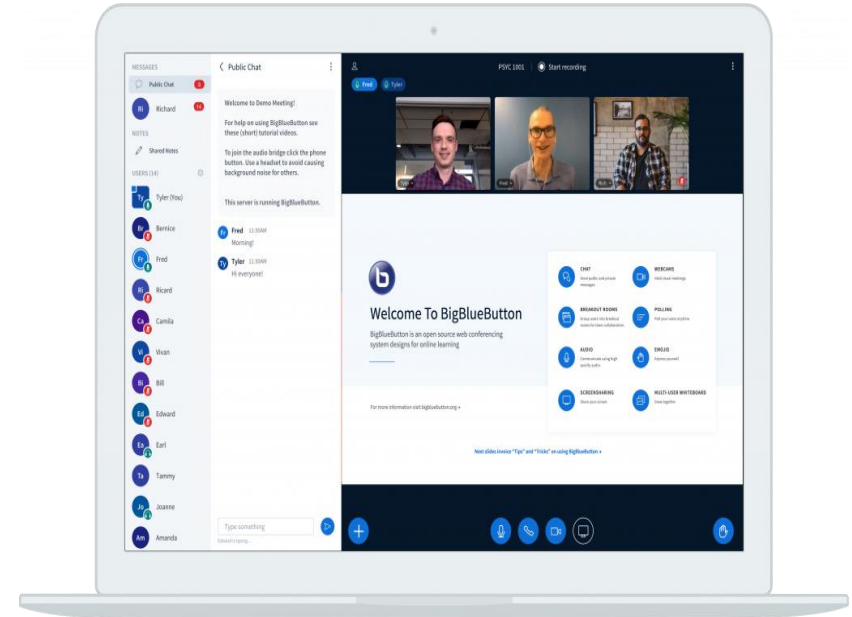
❖ Record-keeping

ICT Challenges Faced By Schools

How RENU Can Help!

Access to information/resources.

❖ Strategic partnership e.g.) Forums

❖ Fast and reliable Internet connection.

❖ Capacity building and skilling

❖ Access to federated services

❖ eduroam

Digital Classrooms.

❖ Virtual seminar and classes e.g.) HeLP

❖ Tools like BigBlueButton, Zoom.

Technology in teaching and learning.

❖ UCC support to schools - Internet extension.

Donations in forms of; **Computer Labs, Laptops** Etc.

❖ Learning Management Systems (LMS) like Moodle, etc.

❖ eduroam on the Go - Facilitate mobile researchers.

❖ Web conferencing - Virtual classes and seminars – Zoom & BigBlueButton.

❖ Web development - School websites.

❖ Domain Registration - Unique domain name server for schools' websites.

❖ ERP - Oversees school processes in terms of management.

RENU Schools Journey

RENU and UCC Initiatives.

- Computer labs and equipment donations by UCC.

- Reliable connectivity at subsidized prices.

Strategic Partnership.

- RENU Collaboration with UCC under UCUSAF.

- Extending the Internet connection to schools.

Founding & Purpose.

- Established by University VCs.

- Provide affordable Internet to universities and institutions.

Customization & Development.

- Solutions tailored to school-specific needs.
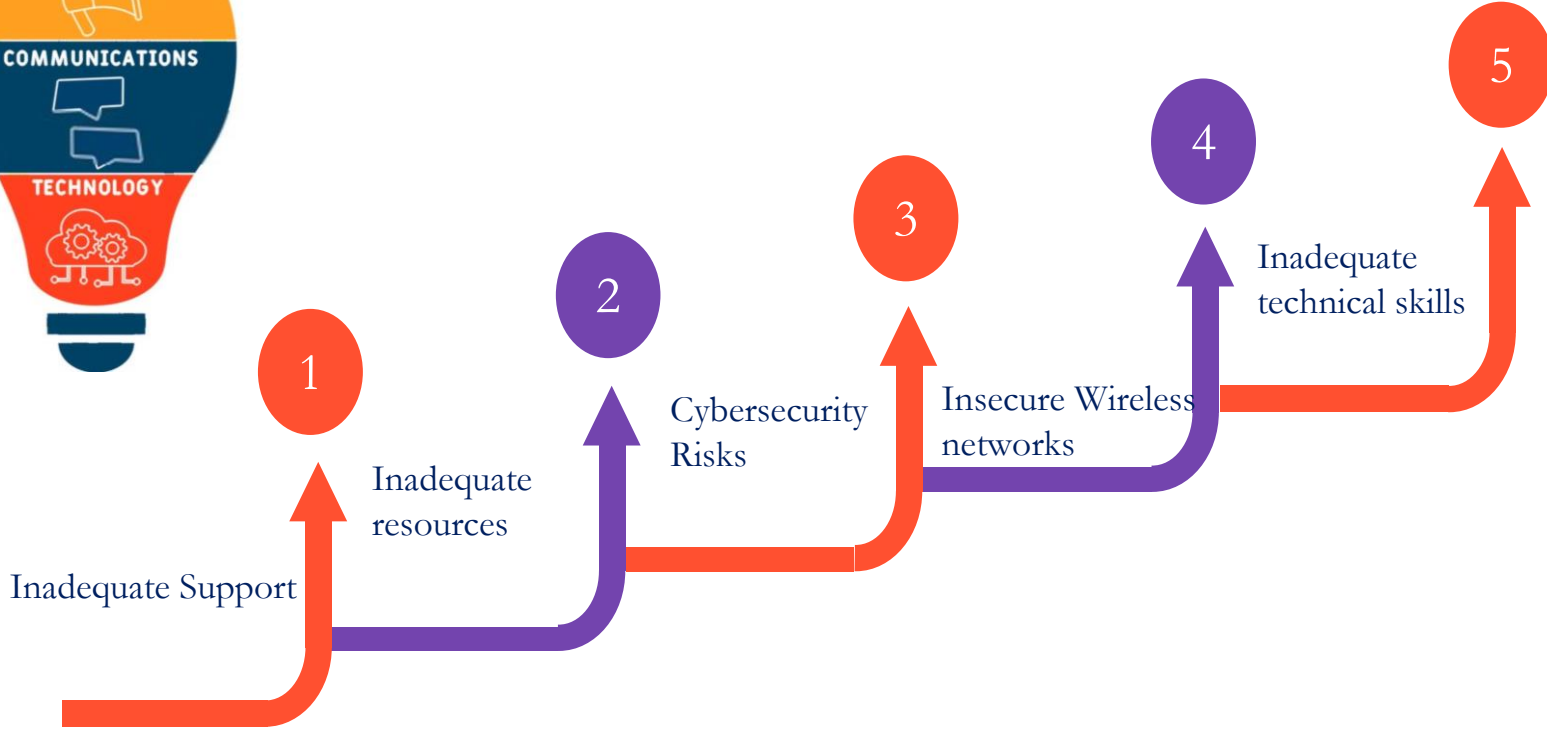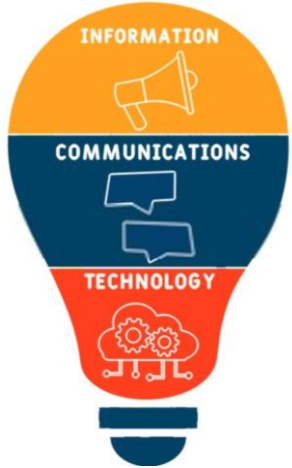
- Continuous updates and enhancements

Capacity Building & Support.

- ICT workshops for teachers and headteachers.

- Bandwidth boosts during school events and trainings.

Digital Solutions

- RENU services: Moodle LMS, ERP systems.

- Website hosting, email, and domain registration

1   2   3   4   5   6

Knowledge | Community | Solutions

RENU

Challenges

1 — Inadequate Support

2 — Inadequate resources

3 — Cybersecurity Risks

4 — Insecure Wireless networks

5 — Inadequate technical skills

RENU Solutions

1 — Dedicated Support

2 — Bandwidth boosts

3 — Cybersecurity team.

4 — eduroam service

5 — Capacity Building

6 — SSL Certificates

7 — Campus Network as a Service (CNaaS)
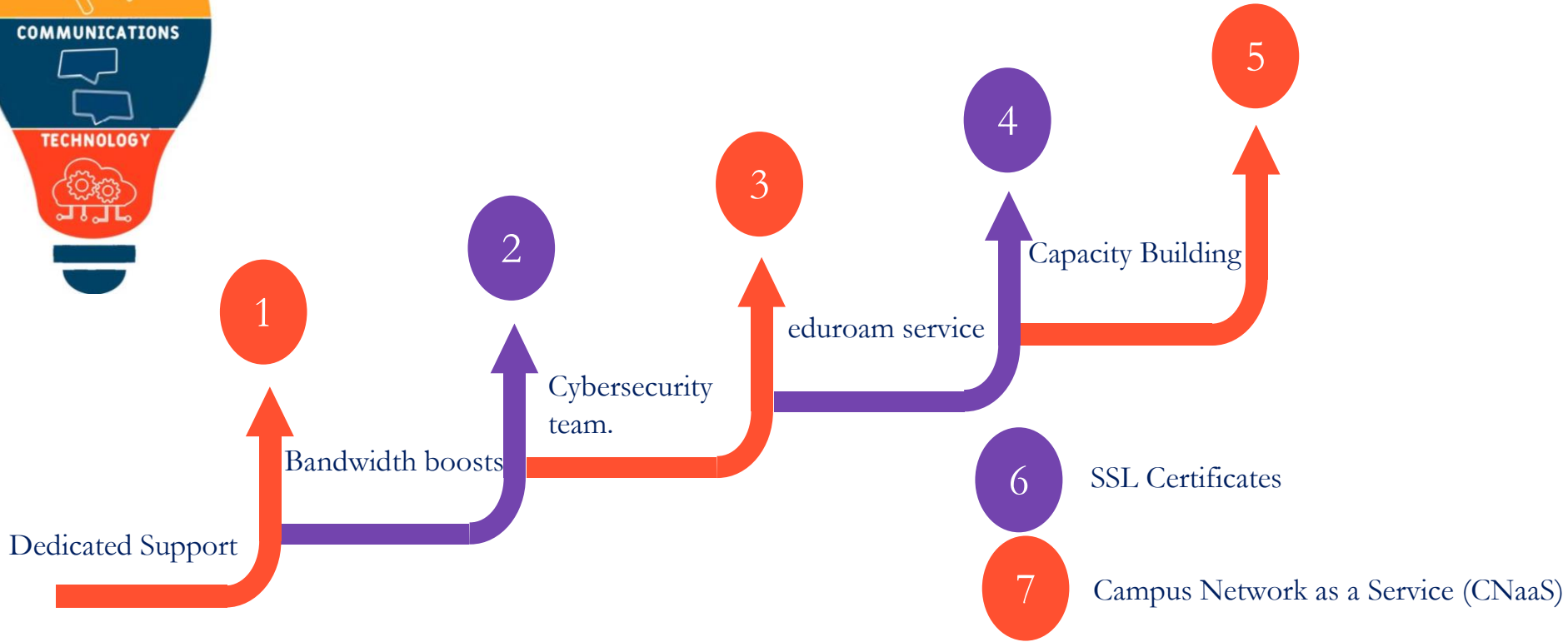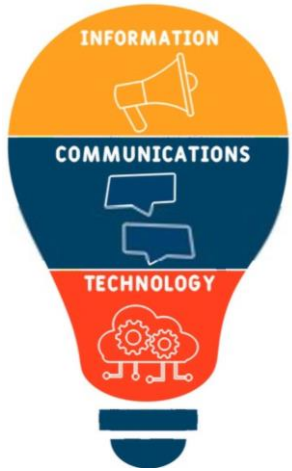
AI In Education Statistics

According to US college students, **43% of them use ChatGPT and other AI study tools.**

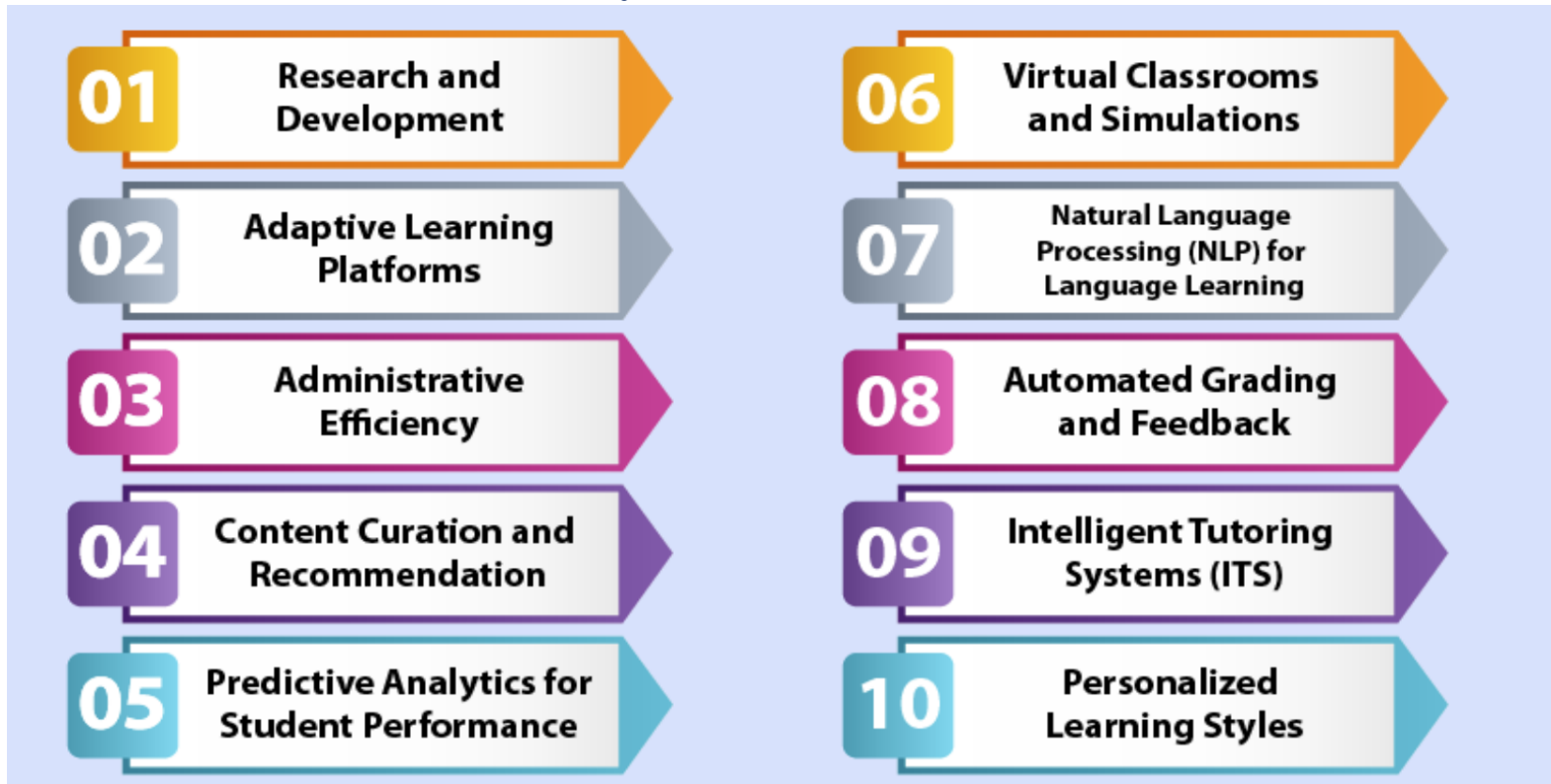For 90% of students, ChatGPT is a more effective study tool than hiring a tutor.

More than **34,700 failing kids** were identified and saved by AI-grade prediction technology.

By 2027, the market for AI education is expected to grow to $20 billion.

AI is used by half of educators to plan lessons.

https://www.a3logics.com/blog/ai-in-education

Why AI In Education

01 Research and Development

02 Adaptive Learning Platforms

03 Administrative Efficiency

04 Content Curation and Recommendation

05 Predictive Analytics for Student Performance

06 Virtual Classrooms and Simulations

07 Natural Language Processing (NLP) for Language Learning

08 Automated Grading and Feedback

09 Intelligent Tutoring Systems (ITS)

10 Personalized Learning Styles

Bigscal Technologies. (n.d.). *Top Benefits of Artificial Intelligence in the Education Sector*. Retrieved from
https://www.bigscal.com/blogs/education-industry/top-benefits-artificial-intelligence-education-sector/

Knowledge | Community | Solutions