14th International Conference on Sustainable Development, 8-9 September 2026, Rome, Italy
https://ecsdev.org

SUSTAINABLE LEARNING BY DESIGN: A SIX-YEAR UDL IMPLEMENTATION STRATEGY

Adrianna Kozlowska
Gertruda Gwozdz-Lukawska
Lodz University of Technology, Poland
adrianna.kozlowska@p.lodz.pl
gertruda.gwozdz-lukawska@p.lodz.pl

ABSTRACT: This poster presents a six-year institutional strategy for implementing Universal Design for Learning (UDL) at Lodz University of Technology (TUL), structured as a coherent three-step action plan aligned with the core UDL principles: engagement, representation, and expression. The first phase, Engagement, is operationalised through the "Flipped Education at TUL" project, which supports large-scale course redesign and promotes active, student-centred learning by shifting knowledge acquisition outside the classroom and enhancing in-class interaction. The initiative is strengthened by collaboration with international experts and academic staff acting as change agents. The second phase, Representation, is addressed through the "Power Up: Time for Digital Transformation" project, focusing on multimodal content development across 12 bachelor programmes using the Moodle platform. This phase fosters systemic collaboration among academics, learning designers, and media assistants, while piloting Student–Staff Partnership models. The third phase, Expression, is realised within the "Integrated University Programme", introducing a comprehensive model of programmatic assessment. It combines a competency-based case study, diploma thesis, and multimedia presentation with Q&A, enabling holistic verification of learning outcomes. Together, the three projects demonstrate a scalable and sustainable approach to embedding UDL in higher education.

Key words
Universal Design for Learning, programmatic assessment, digital transformation, student engagement, multimodality

INTRODUCTION

Universal Design for Learning promotes inclusive education through:
- ENGAGEMENT Why students learn
- REPRESENTATION How students access learning
- EXPRESSION How students demonstrate learning

Since 2020, TUL has systematically implemented these principles through coordinated institutional projects.

RESULTS: SIX-YEAR UDL ROADMAP

1. ENGAGEMENT Flipped Education at TUL (2020–2023)

The university implemented a ministerial pilot project introducing the Flipped Classroom model. Academic teachers redesigned courses so that students studied core content independently before classes, while classroom time was dedicated to active learning, problem solving, teamwork and discussion. International experts cooperated directly with TUL staff to support course redesign and pedagogical innovation.

Objective: Transform traditional teaching into active, student-centred learning.

Key Activities
- Flipped Classroom implementation
- Course redesign towards active learning
- Collaboration with international experts
- Faculty development and peer support

Indicator	Value
Courses redesigned in Flipped model	30
Academic teachers involved	30
International experts/peers	15
Faculty development workshops	48
Students reached	221

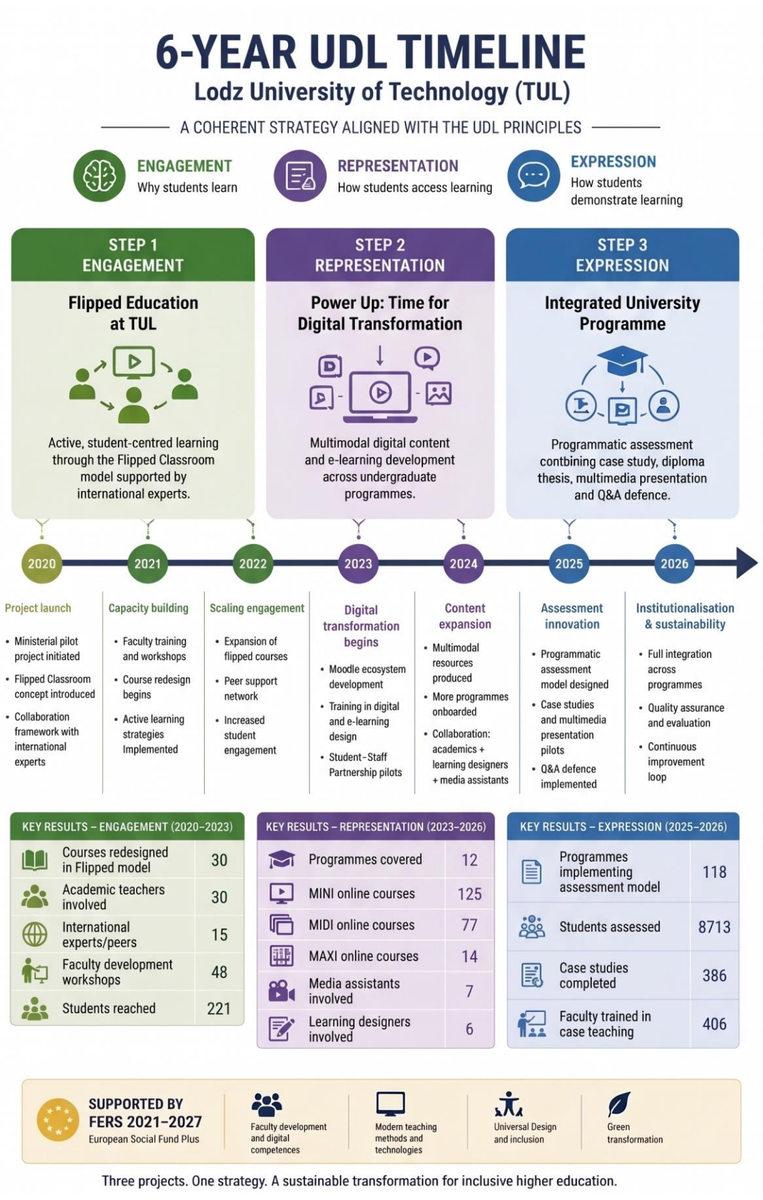
2. REPRESENTATION Power Up: Time for Digital Transformation (2023–2026)

The second phase focuses on digital transformation and creation of multimodal educational resources within bachelor programmes delivered through Moodle-based learning environments. The initiative is aligned with institutional investments in digital competences, educational technologies and modern teaching methods supported under FERS-funded activities.

Objective: Provide multiple means of representation through digital and multimodal content.

Key Activities
- Moodle-based course development
- Multimedia learning resources
- Learning design support
- Student–Staff Partnerships
- Accessibility-oriented content production

Indicator	Value
Programmes covered	12
MINI online courses	125
MIDI online courses	77
MAXI online courses	14
Media assistants involved	7
Learning designers involved	6



3. EXPRESSION Case Teaching Academy (2020–2026)
The third phase introduces a university-wide programmatic assessment model that integrates:
- competency examination based on a case study,
- diploma thesis,
- oral defence (mulitimedia presenattion) and Q&A session.

The approach supports diverse ways for students to demonstrate achievement of learning outcomes at the end of studies and promotes authentic assessment.

Objective: Enable students to demonstrate learning outcomes using multiple forms of expression.

Assessment Components
- Competency-based case study
- Diploma thesis
- Oral defence (multimedia presentation)
- Q&A session

Benefits
- Holistic competence verification
- Authentic assessment
- Greater student agency
- Multiple pathways for success

Indicator	Value
Programmes implementing assessment model	118
Students assessed	8713
Case studies completed	386
Faculty trained in case teaching	406

The three projects form a coherent institutional ecosystem thatCsupports sustainable educational transformation.

DISCUSSION

The strategy demonstrates that UDL implementation is most effective when embedded at institutional rather than course level.

Success factors identified at TUL include:
- long-term strategic planning,
- faculty development,
- international collaboration,
- digital infrastructure,
- student partnership,
- assessment reform.

The sequential implementation of Engagement, Representation and Expression created cumulative organisational capacity while maintaining consistency with UDL principles.

CONCLUSIONS

- UDL can be scaled successfully through coordinated institutional projects.
- Flipped Education established foundations for learner engagement.
- Digital transformation expanded inclusive and multimodal representation of knowledge.
- Programmatic assessment strengthened opportunities for diverse student expression.
- The six-year roadmap offers a sustainable model for higher education institutions seeking systemic educational transformation.

REFERENCES

1. Lodz University of Technology. Flipped Classroom / Flipped Education Project.
2. Lodz University of Technology. Active Educational Methods.
3. Lodz University of Technology. Centre for Education – FERS Programme Activities.
4. Lodz University of Technology. Projects financed under FERS 2021–2027.