POLAND25.EU

Chancellery of the Prime Minister

EIPA European Institute of Public Administration

EUPAN european public administration network

CAF COMMON ASSESSMENT FRAMEWORK

Leertrac

Data driven Educational Insights

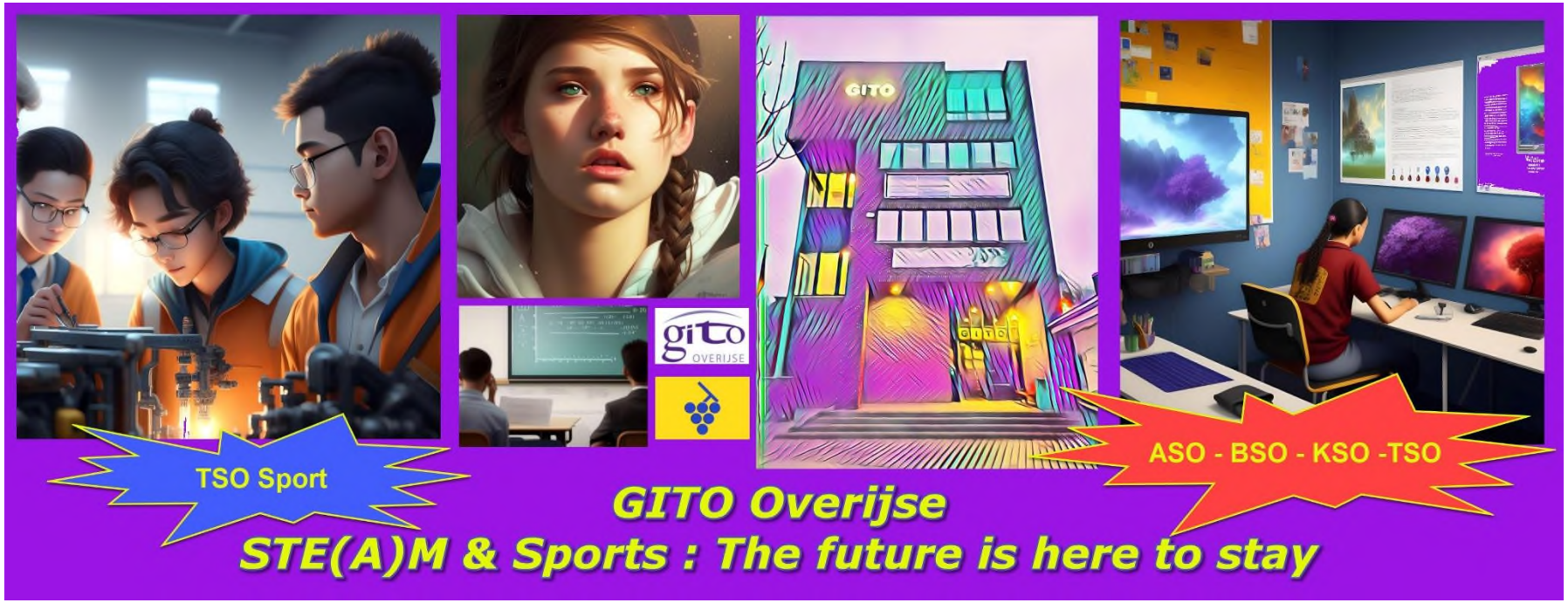
GITO Overijse (Belgium)
Dr. Marc Rabaey

10th CAF Users' Event under the Polish Presidency of the Council of the EU

10th April 2025, Warsaw

Context

- A secondary school in Flanders, Belgium
  Governed by the local municipal council, focusing on higher education and regional labor market needs.

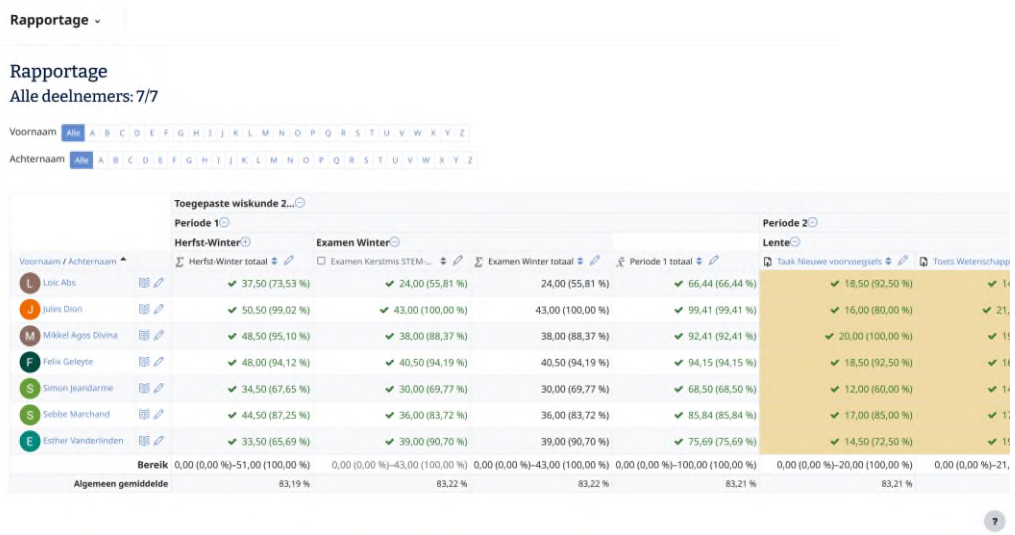


Context

- CAF Alignment
  - Employed the Common Assessment Framework (CAF) for structured self-assessment.
  - Aims to strengthen data-driven decision-making within school governance.

Context

- Key Challenge
  - Underutilized data in Moodle, leading to reliance on end-of-term grades instead of continuous learning insights.
  - Learning Process and Learning Gain are very important not points (mind shift)

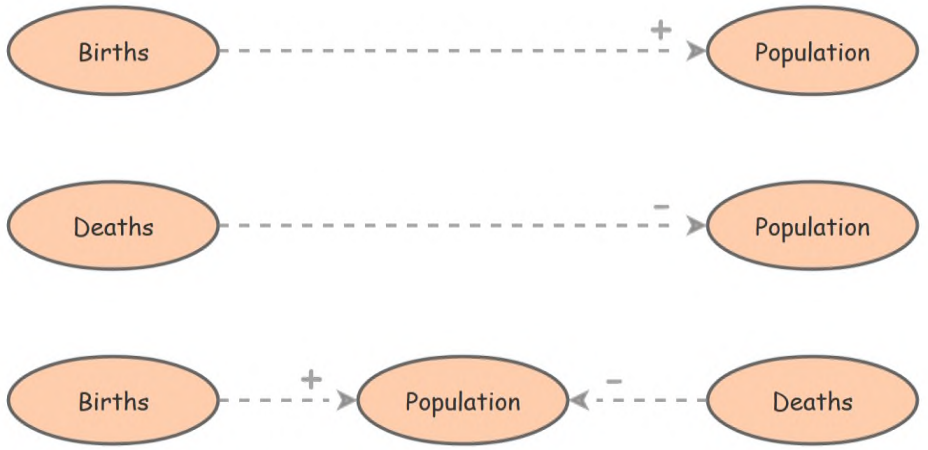


Background of the Case

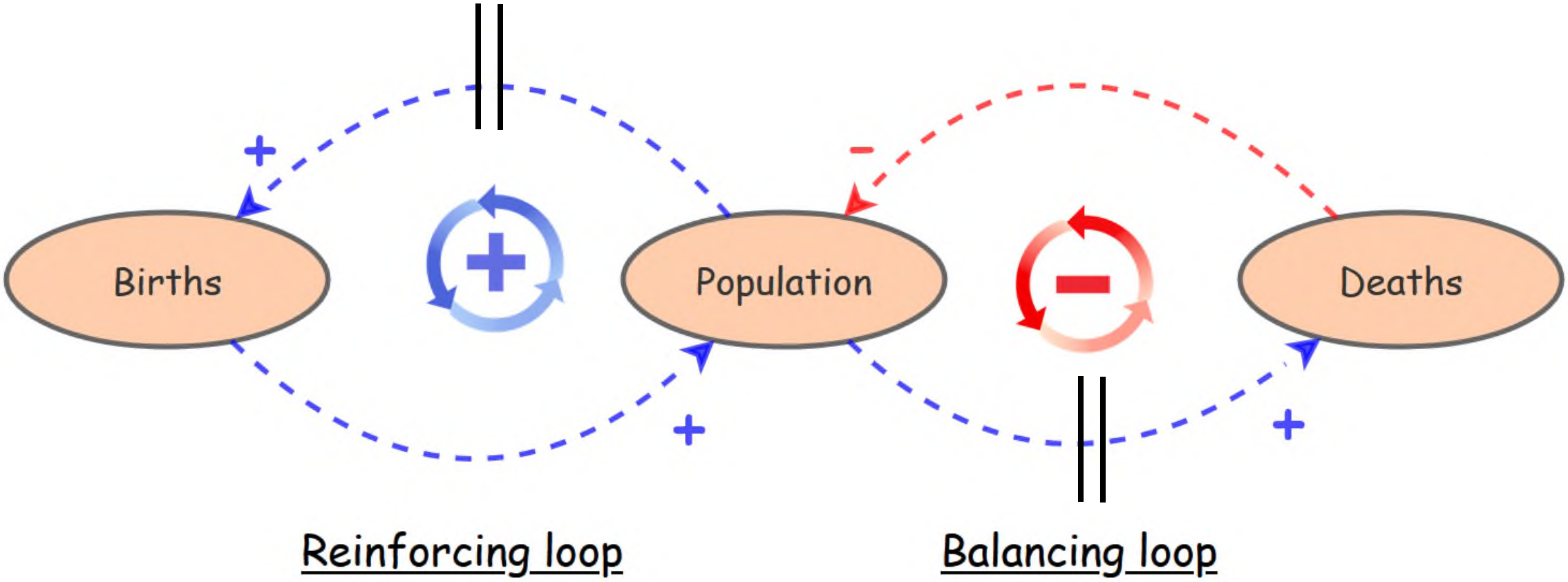
- Initial Observations
  - Final grades dominated deliberations; limited use of learning analytics for early intervention.
  - Existing LMS (Moodle) stored vast student activity data but was rarely accessed systematically.
- Motivation for Leertrac
  - Enhance student support via real-time analytics and reduce isolated, publisher-driven systems.
  - Promote teacher autonomy and open-source educational resources.
- Systems Thinking Approach
  - Integration of Causal Loop Diagrams (CLDs) to visualize feedback loops influencing student motivation, engagement, and performance.

What is a Causal Loop Diagram?

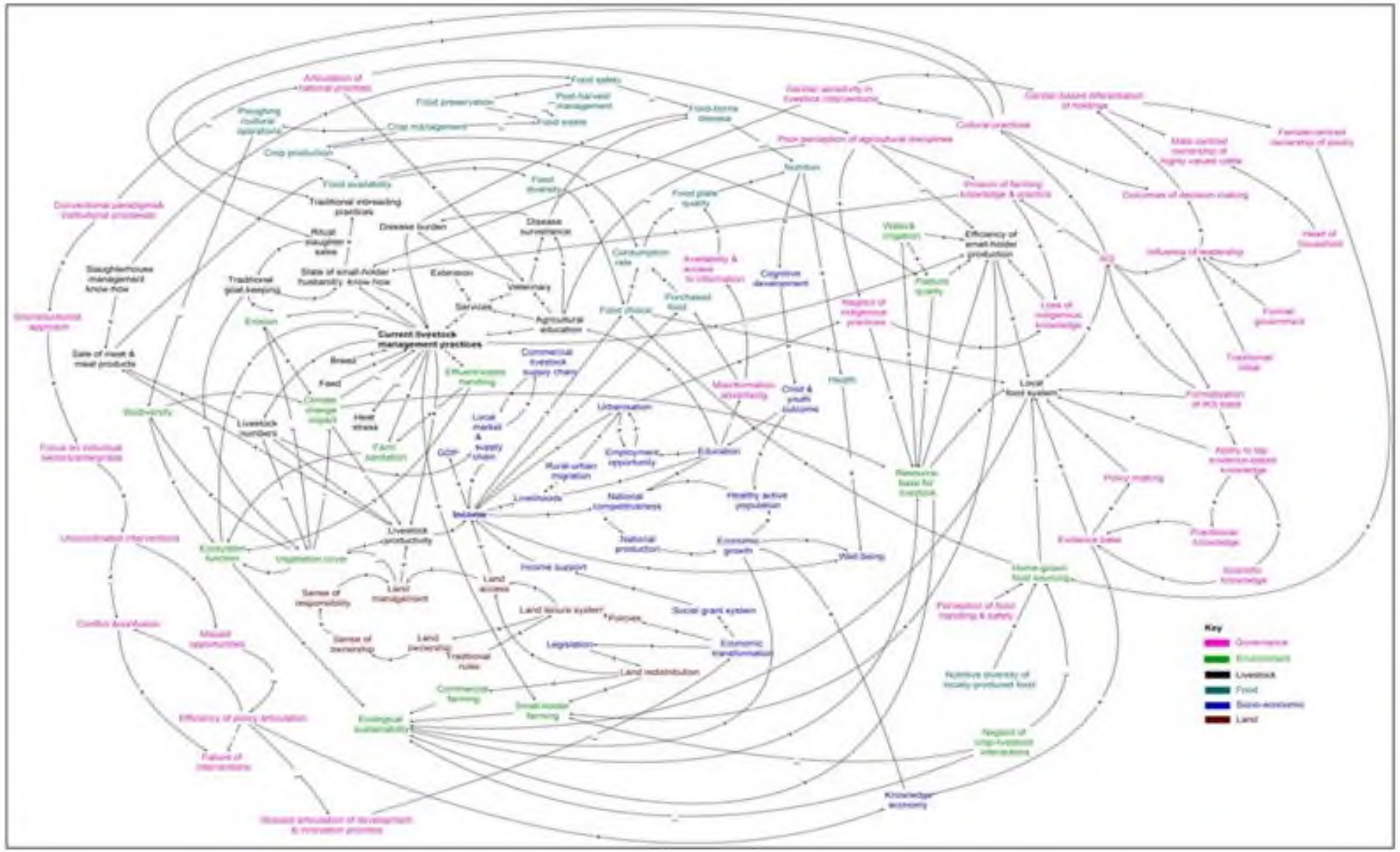
- A **causal loop diagram (CLD)** is a **visual tool** used in **systems thinking** to illustrate the **feedback loops** between different variables in a system. Each arrow in a CLD indicates how one variable influences another, highlighting whether the effect is **reinforcing** (moving in the same direction) or **balancing** (moving in the opposite direction).



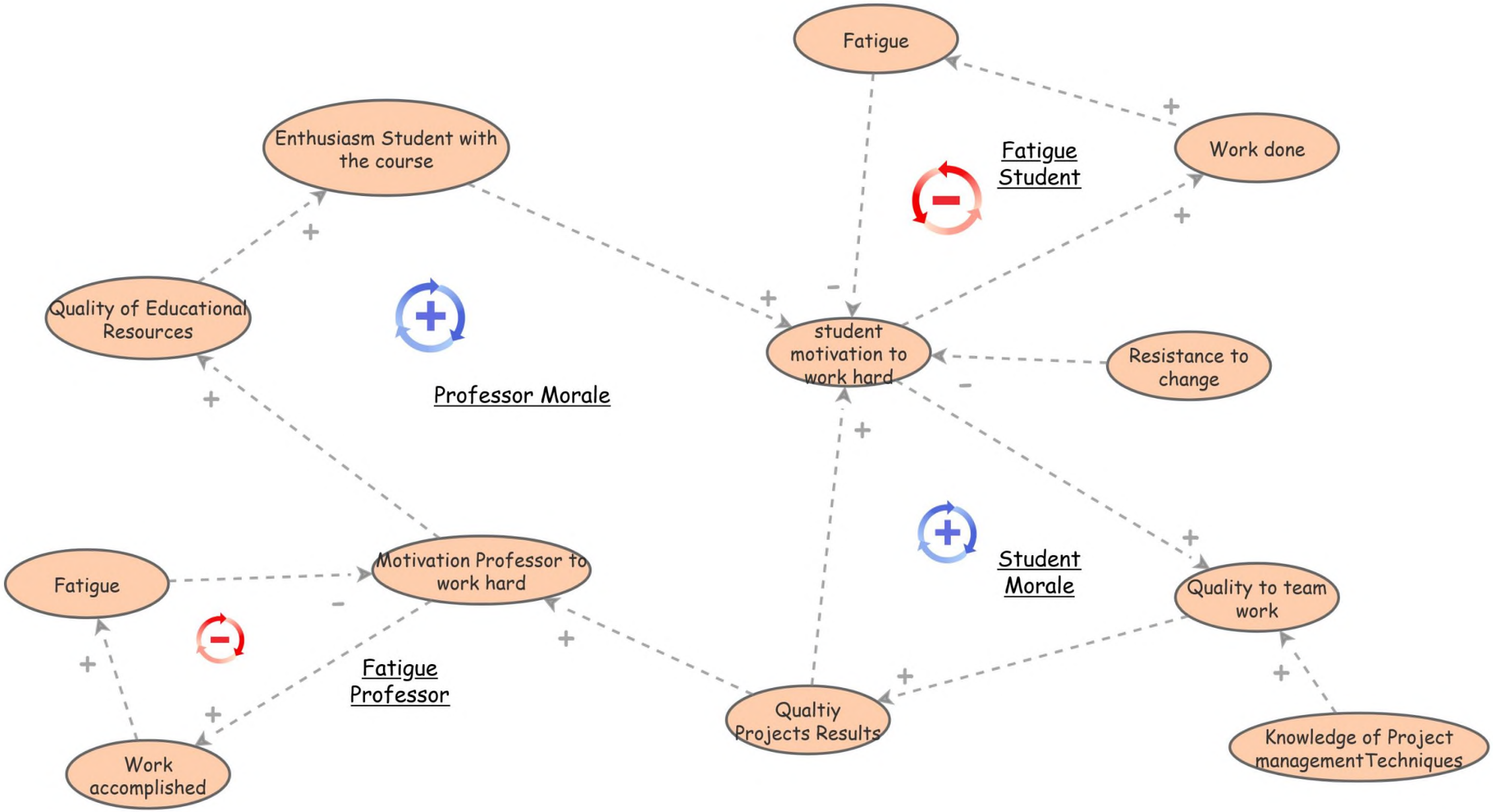
What is a Causal Loop Diagram?



Livestock-derived food system in South Africa



https://europepmc.org/article/MED/32879750



https://www.researchgate.net/figure/Causal-Loop-Diagram-shows-the-main-feedback-loops_fig1_321106328

Process Behind Their Creation

- **Observation & Data Gathering**: Collect qualitative or quantitative information about the system.
- **Team Brainstorm**: Involve multiple stakeholders (teachers, administrators, students, etc.) to capture different viewpoints.
- **Drafting the Diagram**: Sketch the variables and arrows on a whiteboard or paper; mark the polarity of each link.
- **Validation**: Discuss the draft with the team, ensuring it accurately represents real-world relationships.
- **Iteration**: Refine and simplify. Add or remove variables as new insights emerge.
- **Use in Decision-Making**: Identify loops that are critical to success or risk. Develop strategies to reinforce positive loops or break negative cycles.

https://www.researchgate.net/figure/Causal-Loop-Diagram-shows-the-main-feedback-loops_fig1_321106328

IMPLEMENTATION

Parents

Learner

Teacher

Learning Manager

participates in courses

LeerID

Moodle Learning Platform

config

xAPI Connector

Platform Core DB

Internal Logstore

Database

Moodle Learning Platform

xAPI Learning Statements

API to retrieve AI-processed metrics

Data store and AI engine

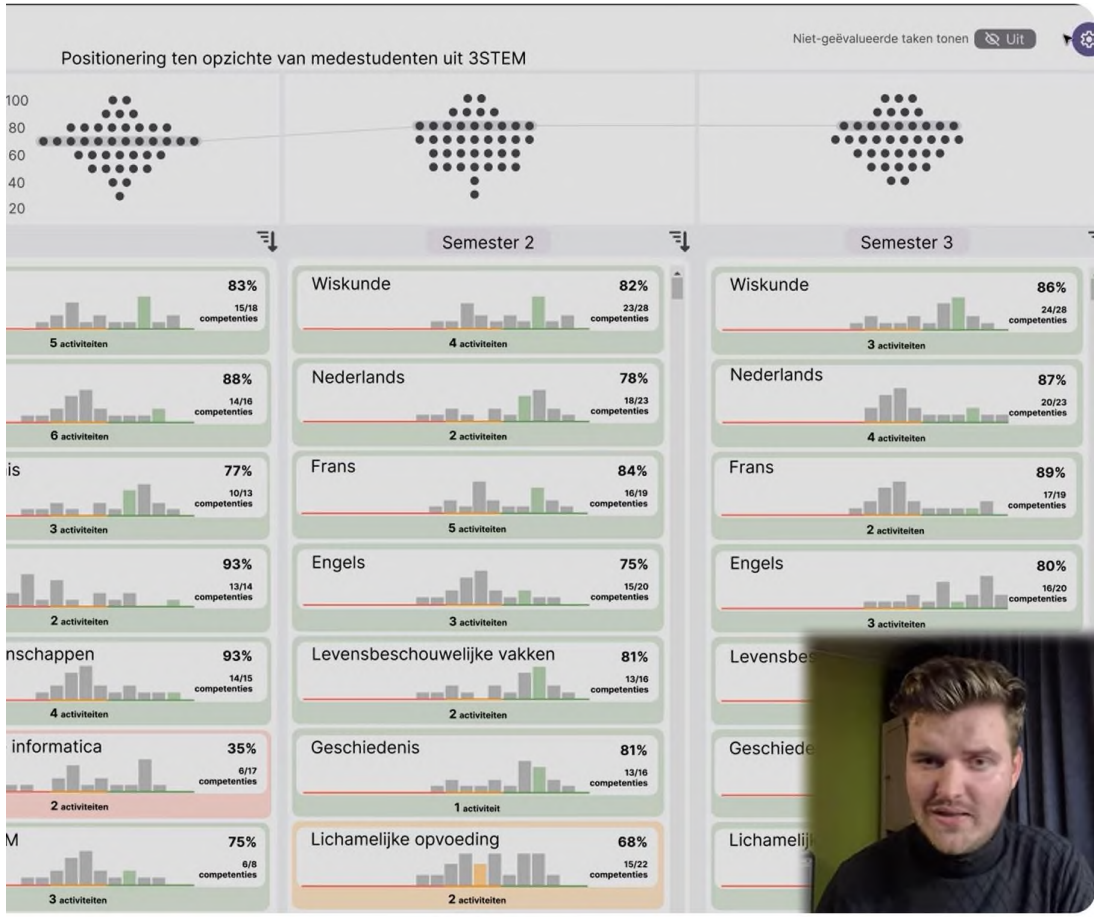
Learning Record Store

AI

moodle

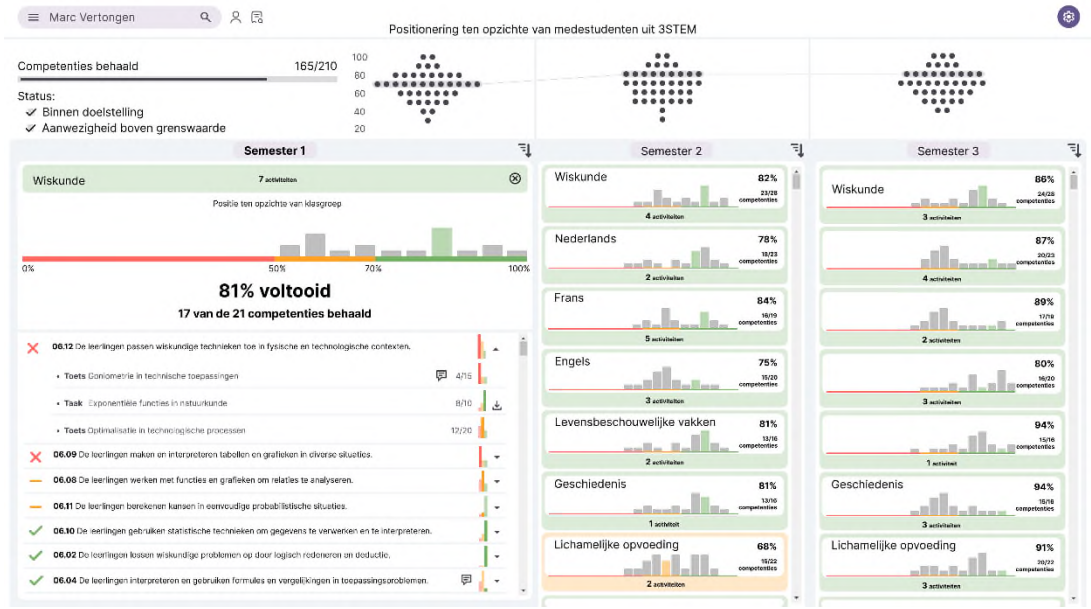
Process/Dynamics (1/2)

- Planning & Needs Assessment
  - Conducted CAF self-evaluation to identify data gaps and clarify objectives.
  - Engaged teachers, administrators, and external experts in workshops.



Process/Dynamics (1/2)

- Defining Objectives & Mobilizing Resources
  - Developed interactive dashboards for competency tracking, engagement metrics, and bottlenecks/alerts.
  - Collaborated with GO! CVO Antwerpen, KU Leuven (Augment – Computer Sciences), and Eummena vzw for technical assistance.



Process/Dynamics (1/2)

- Defining Objectives & Mobilizing Resources
  - Developed interactive dashboards for competency tracking, engagement metrics, and bottlenecks/alerts.
  - Collaborated with GO! CVO Antwerpen, KU Leuven (Augment – Computer Sciences), and Eummena vzw for technical assistance.

- Dashboard Development & CLD Integration
  - Built three Moodle-integrated dashboards connected to a Learning Record Store (LRS).
  - Used CLDs to understand systemic relationships (e.g., engagement → performance → motivation).

Process/Dynamics (2/2)

- PHASE 1: PILOT TESTING & FEEDBACK (cycles)
  - Small-scale pilot -> Feedback via surveys /focus groups.
  - Refined dashboard design & teacher training.

- PHASE 2: FULL IMPLEMENTATION & TRAINING
  - Rolling out system school-wide (hands-on workshops)
  - Ensuring GDPR compliance & access policies

Results/Outcome (1/2)

- Improved Teacher Adoption
  - It is assumed that over 80% of teachers will regularly consult the dashboards for performance monitoring.
  - Shift from final-grade focus to continuous, data-informed evaluations.

- Early Intervention & Student Support
  - 30% increase in proactive interventions (extra tutoring, personalized learning plans).
  - Alerts flag students at risk based on declining engagement or repeated low scores.

- Reduced Data Retrieval Time
  - Dashboards provide real-time insights, cutting data collection time by ~60%.
  - More time allocated to pedagogy and mentoring instead of manual data gathering

Results/Outcome (2/2)

- Holistic Decision-Making
  - Integration of formative assessments, engagement metrics, and CLDs in deliberations.
  - More nuanced understanding of student progress beyond summative grades.

- Teacher-Created Digital Content
  - 15% rise in teacher-authored course materials on Moodle (two years)
  - Movement away from publisher-driven textbooks toward open-source and AI-supported resources.

- Future Outlook
  - Annual review cycle for continual dashboard improvements.
  - Plans to integrate with the Student Information System (SIS) for even richer data profiles.

Lessons Learned & Key Recommendations (1/2)

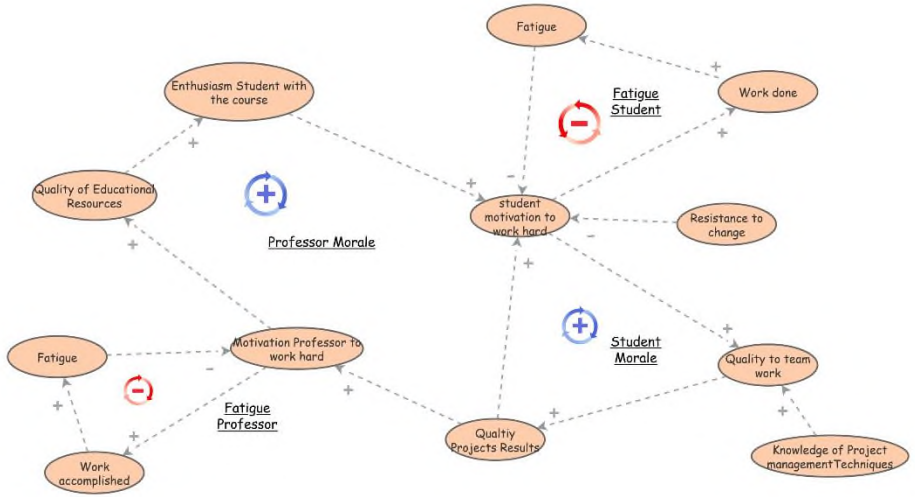
- Embrace CAF Self-Assessment
  - A structured review of existing practices (e.g., data use, teacher involvement) is crucial before implementing technological changes.

- Foster Stakeholder Engagement
  - Involve teachers, students, and external partners from the planning stage.
  - Encourage co-creation for greater buy-in and smoother adoption.

- Invest in Data Literacy & Ongoing Training
  - Transitioning to data-driven methods requires continuous professional development.
  - Clarify that analytics are aids, not absolute determinants of student performance.

Lessons Learned & Key Recommendations (2/2)

- Adopt Systems Thinking
  - Causal Loop Diagrams reveal underlying feedback loops, guiding more holistic interventions (Complex Adaptive Systems).



- Champion Open-Source & Collaboration
  - Leverage platforms like Moodle for adaptability and cost-effectiveness.
  - Share solutions and learn from other schools/organizations pursuing data-driven strategies.

Contact Details

- Project Manager/Contact Person:
  - Name : Marc Rabaey
  - Email : directie@gito-overijse.be
  - School : GITO Overijse, Belgium

- CAF Support
  - Name : Ingeborg Maes
  - Email : ingeborg@insightful.be
  - Company: Insightful, Belgium

POLAND25.EU

Thank you!