Structure, Agenda

10 min introduction to **stakeholders** for LA (Marcus)
10 min best **practices** NPULS (Manuel)
10 min TUE Cases and challenges in **adoption** (Esther)
10 min **Strategies** forward (Anouschka)

10 min forming groups and activity instruction
20 min describe your challenge according to models
20 min pitches plenary and discussion
#1 Introducing different Stakeholders in Learning Analytics

Marcus Specht (TUD, CEL)
Stakeholders in LA

“One specific change that Learning Analytics will trigger in Dutch education is...”

Figure 3: Seven clusters solution with labels

Researchers on Learning Analytics

Share resources, knowledge, conditions and expertise

- More fundamental research questions about higher education
- Always based on a well-defined research question

- Interpretation of data (self-fulfilling prophecy)

- Culture of collaboration and sharing
- Both small-scale, short term and large-scale, long term research

Erasmus University Rotterdam
Make it happen.
Students on Learning Analytics

Watch out for "verschooling"

Needs

- Assisted goal-setting
- Guidance & mentorship (nudge)
- Best study methods/successful study techniques
- More customizing own curriculum -> not one fixed curriculum for everyone
- Performance progress

Concerns

- Healthy study/life balance
- 'Verschooling'
- Room for personal development
- We also need the input of the 'low-performing' students on learning analytics. Include them as well!
- Too many people with access to my data
- Students still have their own responsibility to grow and develop in their studies.

Conditions

- One central system / integrated
- Student & teacher involvement
- Use learning analytics in a positive direction, not "against students"

Erasmus University Rotterdam
Make it happen.
Teachers on Learning Analytics

Our focus should be on the learner

- Facilitate students & help students to get the most out of themselves
- Personalized learning paths
- Facilitate teachers in using learning analytics: provide training
- Provide dashboards and standard reporting
- Insight in individual learning needs
- Oversight of frequent errors in formative tests

- Need to understand the data: so involve e.g. students for interpretation
- Insight in progress of students in a course

- Drawing the wrong conclusions
- Learning is more than assessments!

Needs

- Involve the hard working but failing student

Conditions

- Open up Canvas Learning analytics!

- Student & teacher involvement
- Use the scientific process in creating learning analytics and dashboards
The Quantified Self

- QUESTIONING
- AWARENESS
- EXPERIMENTATION
- MEASURING
- DATA COLLECTION
- CHANGE

https://quantifiedstudent.nl/
Supporting the Learner

**Reflection** support with data from your traces

Peer assessment and review for **judgement**

Developing **expertise** and mental models
Supporting the Teacher

Scalable analytics and assessment

Augmenting the learning environment

Enhancing feedback for mental models
Supporting the Machine

Multimodal datasets for model dev.

Expert Training for real-time feedback

Sequence analysis of collaboration sets
#2 Best Practices of Learning Analytics - Npuls

(Anouschka, Manuel)
About us

• Npuls pilothub Studiedata and AI
• Mission: provide inspiration for LA
• First theme: Barriers and Facilitators of LA Adoption
• Second theme: LA Insights for Students and their learning process
Barriers and Facilitators of LA Adoption

- Literature Review: 6 Themes
- MBO: Data Platform Onderwijs
- International Community: LAK24
Literature Review

- Culture
- Frameworks
- Literacy and Training
- Learning Theory
- Ethical and Legal
- Technical
DPO - Educational Data Platform partnership

- 16 MBO Institutions
- Data Analytics: Operation & Management vs Learning
- Flexible student trajectories and multiple educational platforms/applications result on data integration challenge
- DPO can help to share solutions to technical barriers, but institutional culture remains a challenge
Expert Opinions: LAK24

Suggestions on:
- Management buy-in
- Privacy regulations
- Bottom up versus top down
Next steps

- Magazine coming out soon
- LA Event on June 18
- Next theme: student-facing LA
#3 Adoption of Learning Analytics

Esther Ventura-Medina (TUb)
Learning Analytics (LA) adoption in Higher Education – European perspective

Research study

Esther Ventura-Medina\textsuperscript{a}, Caroline Vonk\textsuperscript{b}, Ludo van Meeuwen\textsuperscript{c}

\textsuperscript{a}Applied Physics and Science Education | Eindhoven School of Education, \textsuperscript{b} 4TU.CEE, \textsuperscript{c} General Affairs
LA workshops Research study

Research study objectives:

1. sharing the current state of the art on LA adoption at different levels within institutions in different countries,
2. comparing different institutional approaches paying attention to the contextual differences and,
3. exploring through different scenarios challenges and opportunities for adoption and scale-up,
4. drawing conclusions for future directions on research and development.
Research setting

- Ethical approval ERB2024ESOE1.
- 2 Workshop @
  - TU/e (26 participants)
  - LAK2024 (19 participants)
- Participants: Teacher/Education support/Policy perspective – voluntary participation distributed ~equally in groups

Scenarios:
1. Student Digital well-being
2. Empowering educators
3. Student performance

Data: Discussions captured via flipcharts & notes
Ongoing...

- Meta-analysis including field notes and speakers' presentations
- Cross-institutional comparison
- Conclusions and further research questions

For more information contact e.ventura.medina@tue.nl
#4 Strategies forward - Utrecht University

Anouschka van Leeuwen (UU)
How do LA projects initiate?
Top-down-bottom-up approach

Top-down
Learning analytics policy
Proper technical infrastructure
Collaborations and dependencies

Bottom-up
Projects are initiated by students and staff within the faculties.

How do LA projects initiate?
Top-down-bottom-up approach

**Top-down**
- Learning analytics policy
- Proper technical infrastructure
- Collaborations and dependencies

**Bottom-up**
- Projects are initiated by students and staff within the faculties.

---

Top-down-bottom-up approach

Team LA

Corporate offices

Employee has a LA project idea

Collaboration

Roadmap

Central ITS

Information security officers

Faculty Privacy Officers

Faculties

LA result (dashboard)

Team LA

Maintenance
The roadmap
Learning analytics policy

Goals of learning analytics
# Workshop Challenge

Describe a case from your organisation for Learning Analytics with the given dimensions of stakeholders, practices, adoption and strategy!
Who are your SH?
What are important values for them?
What do they gain?
What are their problems at the moment?
Frameworks & LA buy in.

What are barriers of adoption?
What are drivers of adoption?
Effects & Scalability

Do you have an overview of current practices?
Do you know the literature?
5 Themes:
- Culture
- Literacy
- Theory
- Ethical & Legal
- Technical

What is your policy?
Is there space for experimentation?
How is the support system in your institution?
<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Practices</th>
<th>Adoption</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Technical</td>
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</tr>
</tbody>
</table>
Stakeholder references and further readings


Adoption: references and further readings


Practices: references and further readings


Strategies Forward: references and further readings

# Example Cases for Workshop
TU Delft Cases: LLL

- Lecturer Support: **ELAT** in Edx courses for path analysis in Extension School LifeLong Learning
- Personal Reflection with performance indicators
TU Delft Case: Course Tools

- **SkillCircuits**, choosing your path and monitoring, used in BSc (500+) student courses

**Badges support on Answers**

<table>
<thead>
<tr>
<th>Badges v1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>+7</td>
</tr>
<tr>
<td>-0</td>
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</tbody>
</table>

Today we have added support for badges to the Answers platform. Badges serve as a reward when you are helping out the community.

At the time of writing, the following badges can be earned:

<table>
<thead>
<tr>
<th>Badge</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Autobiographer</td>
<td>Complete your profile and upload a profile picture</td>
</tr>
<tr>
<td>First Question</td>
<td>Ask your first question</td>
</tr>
<tr>
<td>First Answer</td>
<td>Contribute your first answer</td>
</tr>
<tr>
<td>Self Learner</td>
<td>Answer your own question with an answer that others find useful</td>
</tr>
<tr>
<td>Teacher</td>
<td>Help another community member with a good answer to their question</td>
</tr>
<tr>
<td>Top Contributor</td>
<td>Every two weeks the top contributor for each course will be awarded this</td>
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<tr>
<td></td>
<td>badge (if the course has sufficient contributions)</td>
</tr>
</tbody>
</table>

Additionally, some badges have bronze, silver and gold variants.

- **Answers**: Learning network for value creation
UT Cases - Mathematics Bridging Course

- **Student** gets insight into their (expected) knowledge level

- **Teachers** get an overview of the whole class and can adapt lessons to class level

- Can be built for any course, limited by **data availability** (which is guided by university **vision/policy**) and **support resources**
TU Eindhoven Cases

- **Unobtrusive measurement of self-regulated learning**, portable across blended courses

- **Teach the teacher** to facilitate teachers’ application of LA interventions for personalized learning

- **First student-facing dashboards**
Support/Extra
LA Maturity Model

- Level 1: Ad hoc, LA adopted by personal initiative
- Level 2: Initial, LA adopted in a wider coverage
- Level 3: Structured, LA adopted also by senior management
- Level 4: Systematic, LA adopted as part of the organization culture

<table>
<thead>
<tr>
<th>Category</th>
<th>Process areas</th>
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<tr>
<td><strong>Data management</strong></td>
<td>Data acquisition (DA)</td>
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<tr>
<td></td>
<td>Data quality (DQ)</td>
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<td></td>
<td>Data ownership (DO)</td>
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<td></td>
<td>Infrastructure (INF)</td>
</tr>
<tr>
<td><strong>Administration and training</strong></td>
<td>Funding (FUN)</td>
</tr>
<tr>
<td>(subsequently readjusted to Governance</td>
<td>Leadership (LEA)</td>
</tr>
<tr>
<td>and training)</td>
<td>Stakeholders’ identification and involvement (SII)</td>
</tr>
<tr>
<td></td>
<td>Communication (COM)</td>
</tr>
<tr>
<td></td>
<td>Stakeholders’ training (STR)</td>
</tr>
<tr>
<td><strong>Pedagogical support</strong></td>
<td>Pedagogical planning of solutions (PPS)</td>
</tr>
<tr>
<td></td>
<td>Support in interpreting results (SIR)</td>
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<td></td>
<td>Result-based intervention (RBI)</td>
</tr>
<tr>
<td><strong>Data analysis</strong></td>
<td>Development of own solutions (DOS)</td>
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<td></td>
<td>Acquisition of ready-made solutions (ACQ)</td>
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<td></td>
<td>Evaluating the effectiveness of solutions (EVA)</td>
</tr>
<tr>
<td><strong>Legislation, privacy, and ethics</strong></td>
<td>Legislation, privacy, and ethics (LPE)</td>
</tr>
</tbody>
</table>
Human-Centred Learning Analytics

Source: http://outwitly.com/
Group work activity

Problem  Data  Visuals  Implement

https://miro.com/app/board/uXjVObFIKK8=/?invite_link_id=515197280753
Define and describe a problem

- Identify at-risk students
- Increase student retention
- Support students’ in choosing effective learning strategies
- Improve student engagement and satisfaction
- Understand instructor effectiveness
- Determine course effectiveness and identify areas for curriculum improvement
Define and describe a problem

Who will use the analytics?
What will they use the analytics for?
When will they use the analytics?
How will they use the analytics?
What meaning will the analytics have for users?

How will you know that you *successfully* solved the problem?
Identify information & data

What information do you need to know in order to work on solving the problem?

What data can give you this information?

Where can you find this data?
## Identify information & data

**VLE/MOOC logs:**
- Assignments
- Calendar
- Content
- Social
- Video
- Assessment
- Sessions

**External content:**
- Surveys
- Wearables, sensors
- Mobile applications
- Social Networks
How can you visualise this information in an intuitive way fitting your users?

Do you need to customise the visualisation for different sets of users?

Think about the problem, what is the context? and the framing?
Prototype in your system

What features are currently available in your learning environment?

How can you use those features to solve your problem?

What is missing between the current state and your visualization?
Plan an evaluation

How do you plan to evaluate the design of your analytics?

How can you measure the success?
Where will you get this data from?
Combining results