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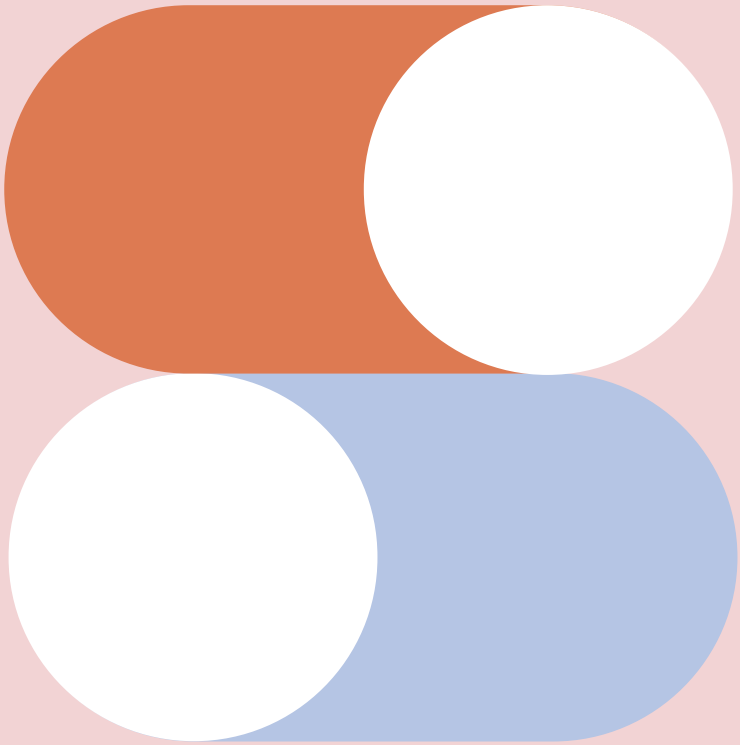

Two Years of Learning Analytics Best and Worst Practices.

Project Summary and Reflection

Summary

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Foreword

Over the course of 2024 and 2025, the Npuls Best & Worst Practices Learning Analytics team worked across educational sectors, institutions and disciplines to explore what it truly means to implement Learning Analytics (LA) in Dutch tertiary education. During this period, we produced a wide range of materials including blogs, research summaries, workshop reports, conference reflections, interviews and three thematic magazines. Each product was created for a specific audience, context or moment in time. You can find the **compendium** of this community-driven effort here and a scan of the **status of LA in 2025** here.

As the team concludes its task, I would like to acknowledge the hard work and encouragement of the current and former members of the Learning Analytics team, the support from within the Npuls domain, AI, student data, Surf and the wider community. You know who you are. On behalf of the team, thank you all.

Because the team consisted of international colleagues, this summary has been published in English. This document contains links to both the English and Dutch versions of the summary.

Future directions

The AI data centre boom, driven by over a trillion dollars in investment by 2028, is impacting AI tools and the pace of change in Dutch education. Learning Analytics (LA) helps mitigate risks and enhance the impact of these tools. LA optimises learning interventions using learner activity as the source of data, potentially improving AI interactions and providing benchmarks for learning optimisation and risk minimisation.

When discussing AI, we often think of ChatGPT and content creation. As the Dutch education sector matures, this consumer perspective will merge with a scalable enterprise perspective. This involves minimising costs, optimising models (even fine-tuning pretrained models), reducing risks and creating more complex AI workflows involving multiple tools and AI agents working toward a common goal. LA already interacts with many of the challenges to AI scaling: privacy, legality, ethics, the difficulties of extracting high-quality data, stakeholder management and learning design. We can learn from LA practitioners' prior experiences and allow these knowledgeable colleagues to illuminate the path forward.

Depending on priorities and resourcing, a talent-oriented approach would be to **nurture a closer connection** *between Npuls and the SURF Special Interest Group for Learning Analytics*, and to invest in projects that support the intersection between Enterprise AI and LA. Listen to the practitioners and help them to succeed, for in the coming months we will see a number of technological and commercial disruptions. Consider engaging the community in helping Npuls to navigate the opportunities and avoid immediate pitfalls, such as trusting unmonitored AI.

From an **enterprise perspective**, we suggest reviewing the digital streams generated by AI systems sponsored by Npuls and **asking SIG LA members for advice** on how to reuse these data sources to improve educational interventions. We should focus on establishing sector-specific **benchmarks to monitor** improvements in AI interactions with learners, allowing for comparison and a data-driven approach to best practices and policy.

Introduction: our starting point

- **Project launch.** The Best and Worst Practices Learning Analytics project was launched in January 2024 as part of the Npuls Transformation Hub on AI and Data.

- **Initial mandate.** The project's primary goal was to provide insight into Learning Analytics (LA) practices across vocational education and training schools (MBO), universities of applied sciences (HBO) and research universities (WO) in the Netherlands, as well as to facilitate the sharing of knowledge and to promote networking within the field of LA.

- **Approach.** The project's methodology was designed around extensive literature research, direct input from the educational community, interviews with educational institutions, dissemination of insights via easy-to-access magazines and blogs and facilitation of national events for knowledge-sharing and networking.

- **The team.** A cross-institutional team was formed with members representing the three educational sectors to ensure a comprehensive perspective. For MBO this was Annie Slotboom (Graafschap College), for HBO Symen van der Pas (Hogeschool Inholland) and for WO Anouschka van Leeuwen (Utrecht University), Manuel Valle Torre (Delft University of Technology) Alan Berg (University of Amsterdam) and Priyanka Pereira (University of Twente). The team was led by Anouschka. The team worked together with Luuk Terbeek, Coordinator AI and Data Literacy, Npuls.

Phase 1

Identifying needs and building foundations

- **Community input.** In early 2024, the team kicked off the project with a questionnaire distributed to all MBO, HBO and WO institutions with the purpose of identifying the community's priorities when it came to LA development and implementing best practices. From the responses, three key themes emerged as the most critical areas of focus:
  1. Providing students with insight into their own learning
  2. Giving teachers insight into student progress
  3. Predicting student dropout and study delays

  The team decided to cover the first two themes in Magazine 2 and Magazine 3 (see below).

- **Magazine 1 – Onwards to Success with Learning Analytics. An Overview of Facilitators and Barriers.** The first magazine (in English and Dutch), produced by the team and released in May 2024, served as a foundational guide for organisations embarking on their LA journey. The magazine combined insights from research as well as from Dutch and international colleagues to provide a comprehensive overview of the key facilitators and barriers that institutions encounter when implementing LA, such that these institutions can implement LA effectively and responsibly. First, a literature review of more than one hundred studies identified six themes that influence success: culture, frameworks, literacy and training, learning theory, ethics and legislation, and technical factors. The magazine also presented the experiences of the Data Platform Onderwijs (DPO) – a collaboration of sixteen MBO institutions that work together to make education data accessible and usable. Lastly, the magazine featured interviews with international experts who shared their experiences with the factors that influence the success of implementing LA.

- **First national meeting.** The project's first national meeting in June 2024 was organised in collaboration with the SURF SIG LA at Utrecht University. It brought together professionals from all sectors of tertiary education. The event featured presentations by speakers from each of these sectors. For MBO this was Marcel van Oorschot (Zadkine), for HBO Justian Knobbout (Hogeschool Utrecht) and for WO Ludo van Meeuwen (Eindhoven University of Technology). This was followed by a panel discussion between the speakers on the differences and similarities between the sectors. A key takeaway was the consensus that there are more similarities than differences in the LA challenges and opportunities across the sectors, highlighting the critical need for continued collaboration. After the panel discussion, attendees had the opportunity to display posters showcasing the projects at their own institutions. This community building activity allowed for knowledge-sharing and networking among institutions working on similar projects. It was also a chance to discuss differences in approach and how we can learn from each other.

Phase 2

Diving deeper and building community

- **Magazine 2 – Supporting Students with Learning Analytics.** The second magazine (in English and Dutch), published in November 2024, focused on student-facing learning analytics (SFLA). First, what was known about SFLA from the literature was summarised. The different forms of SFLA, such as descriptive feedback, personalised learning paths and dashboards, were also described. In addition, the benefits and challenges of SFLA were detailed – the key benefits being improved agency, engagement, reflection and performance – emphasising that SFLA empowers students. This was followed by a brief look into students' perceptions of and expectations from SFLA. Second, the magazine presented two success stories of SFLA implementation in the international context and six interviews with Dutch institutions who had implemented SFLA and who shared the lessons they learned along the way. Third, the magazine delved into the integration of (Generative) AI in SFLA, recognising its potential but stressing the importance of transparency and human oversight.

- **Magazine 3 – Supporting Teachers with Learning Analytics.** The third magazine (in English and Dutch), published in March 2025, was centred on teacher-facing learning analytics (TFLA). First, an explanation of TFLA was provided. Not only were the benefits of such systems presented (enabling teachers to make data-informed decisions, adapt their instructional practices and optimise teaching strategies so as to implement timely and targeted interventions for better student outcomes), but also a description of how these systems bring about these benefits. A three-step approach for teachers to prepare for and use LA detailed how to determine what you are looking for, determine what the data means and determine what to do with the LA. Since external factors can affect this implementation by teachers, the main ones (ethics and transparency, technical infrastructure and regulations, and management support and policy) were addressed. Second, the magazine presented three interviews with Dutch colleagues who had implemented TFLA and who contributed insights from their experiences.

- **Data & AI Community Day:** In October, 2024, the Npuls Transformation Hub *AI and Data* organised a community day for anyone working in Dutch tertiary education interested in data and/or AI. The entire team attended the event, where they met and collaborated with colleagues from the other Npuls teams as well as from the community at large. The team also facilitated one of the breakout sessions, during which they presented the completed and upcoming work and asked the attendees for input on what they would like the team to focus on.

Phase 3

Addressing the rise of AI and considering the importance of privacy and ethics

- **New team members.** At the end of 2024, Anouschka, Annie and Symen left the team to continue their Npuls journey as members of other projects. Priyanka took over from Anouschka as the Project Lead. Early in 2025, the team was joined by Wasif Muhammad (HBO – Hogeschool Inholland), Dennis Schakel (Secondary Education – Almende College) and Koen Verschuren (HBO – HAS Green Academy). Unfortunately, Wasif soon left the team to pursue a new career opportunity that presented itself.

- **Learning Analytics & Knowledge Conference.** Recognising the growing influence of AI, the project expanded its scope. At the 15th International Learning Analytics & Knowledge Conference (LAK25) in Dublin in March 2025, the team led a workshop on "Exploring Best Practices for Integrating Gen AI into Learning Analytics Dashboards". Many dashboard pilots do not survive the rigours of full deployment, and best practices for strengthening the LA feedback cycle within interactive LLM dashboards increase the opportunity for success. Therefore, we worked in groups to discuss and refine such best practices, with some of the key ones being AI literacy, data privacy, co-creation and human-in-the-loop approach. The workshop was attended by about 40 participants from all over the world. Aside from organising the workshop, the team also participated in the entire conference, thereby gaining valuable insights – including about the future of LA.

- **Research on teachers' and students' opinions on data collection and processing.** One of the main factors that can hinder implementation of LA and AI is concerns regarding privacy and ethics. Therefore, in March 2025, the team launched a new research project to better understand what teachers and students think about the collection and processing of education data for the purpose of learning analytics. The research aimed to investigate the discrepancies between data that is useful, data that teachers and students perceive as useful, and data they are willing to share. The immediate benefits of the project include a better insight into teachers' and students' awareness of learning analytics as well as their concerns regarding privacy and data security. This insight is helpful to institutions, especially policy advisors, as they make critical decisions regarding whether and how to adopt, scale up and promote the sustained use of learning analytics. It can also help them better prepare for and plan the necessary measures to deal with students' and teachers' reactions to the implementation.

- **Second national meeting.** The project's second national meeting in May 2025 was held at the Social Impact Factory – Aan de Gracht in Utrecht. It was attended by motivated and enthusiastic professionals from tertiary education in the Netherlands — a well-balanced mix of teachers, researchers, technical staff and policy advisors. The meeting focused on the collection and processing of data for LA and AI in tertiary education in the Netherlands. The team members gave a number of presentations, detailing their completed work and plans for the future, emphasising why good data is more important than ever, delving into the different kinds of data and features for LA and AI, and talking about teachers' and students' opinions on the collection and processing of their data. Guest speaker Milan Gomes (Master of Educational Science and Technology student at the University of Twente) brought home the implications of the European AI Act for LA in education. After lunch, a panel discussion was held on questions about students' understanding of data collection and processing for LA and AI. Finally, a co-design workshop was facilitated during which participants worked together in groups to identify problems in data collection and processing for LA and AI, identify stakeholder needs in relation to these problems, and develop (potential) solutions to mitigate the problems. In addition to the presentations and other sessions facilitated by our team, there were valuable contributions from those who attended as well.

Phase 4

Synthesising insights and setting up future work

In this phase, the team summarised the three key takeaways from their two years of working on the project and put together valuable resources to make these insights available in practice.

1. There are a number of LA projects in the Netherlands, but there is no central repository or inventory of projects, for knowledge-sharing and networking.
- A call to fill in a national survey on LA was published, with the results of the ongoing survey used to continuously update a publicly-available national dashboard. The dashboard can serve as a helpful reference for anyone who wants to know what is happening in the field of LA in the Netherlands, also for inspiration for their own projects.
- An active community, where people not only talk about their projects but also share their experiences with working on them, is essential. One way to do that is through short but informative blogs, like the one Lianne Roozen wrote to share her experience with implementing LA in the school she works at.

2. The project's journey mirrors the evolution of the field itself – from viewing LA as a tool for dashboards to understanding it as the essential "human-in-the-loop" framework for guiding and aligning (Gen)AI.
- The importance of LA in (Gen)AI was best summarised by the "Confused Expert" analogy. This argument posits that GenAI is a powerful but unguided medium, not a solution. The LA cycle**,** grounded in pedagogical data, clear metrics and a feedback loop, is an essential framework for guiding AI responsibly and effectively in an educational context. Effective AI will need better data and guiding practices, not the other way around.
- A workshop on using GenAI for lesson design, reinforced with LA, was delivered for the teachers at Almende College and was well received. Based on the feedback, an improved version of the workshop has now been developed and can be delivered at other institutions.

3. While the technological possibilities of LA and AI are increasing by leaps and bounds, ethics and privacy remain non-negotiable. Teachers' and students' awareness of how and why their data is being collected and processed, as well as their willingness to share their data, is essential for successful implementation. Since concerns over ethics and privacy can present an obstacle, demonstrating clear, tangible value to both teachers and students – and getting them on board – is critical.

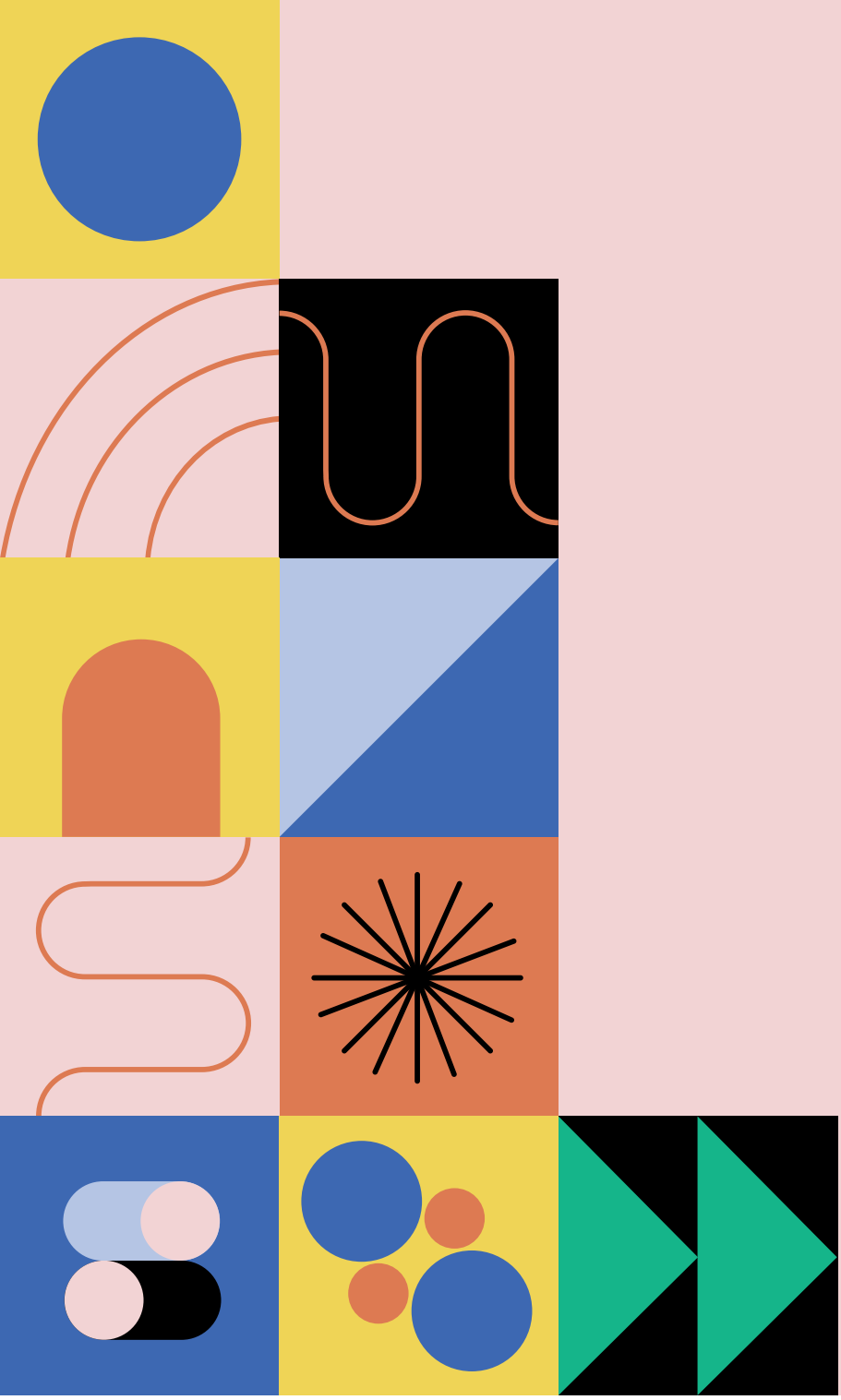
- The first phase of the research on teachers' and students' opinions on data collection and processing was conducted at LAK25. Ten LA experts were interviewed, resulting in a lot of information and some very interesting points that provide input and considerations for the design and implementation of LA and AI systems at institutions in the Netherlands and further afield. The experts' opinions were summarised in a blog, with a full report also available.
- To gain additional insights into the potential issue of ethics and privacy in the Dutch context, we interviewed Prof. Kim Schildkamp. Her wealth of experience with data from school environments and other educational settings spans over 20 years and was evident in the valuable input she provided.

Conclusion

Over two years in 2024 and 2025, the Learning Analytics project by Npuls in the Netherlands delivered:

1. A synthesis of the most critical areas to focus on in the field of LA
2. Three practical magazines focused on foundations, students and teaching staff
3. Two national meetings that successfully bridged the MBO, HBO, and WO sectors
4. A breakout session at the Npuls AI and Data Community Day
5. An international workshop on integrating GenAI into LA dashboards
6. The foundation for a major research project on ethics and privacy
7. A national survey on LA in the Netherlands
8. A contribution to an active community for sharing LA projects in the Netherlands
9. Substantiation for the incorporation of LA in GenAI systems
10. A workshop on using GenAI for lesson design, reinforced with LA

- The project concluded with a webinar in December 2025, during which the team presented a summary of the work they had done over the course of the project.



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