



Implementing Learning Analytics & AI in Education

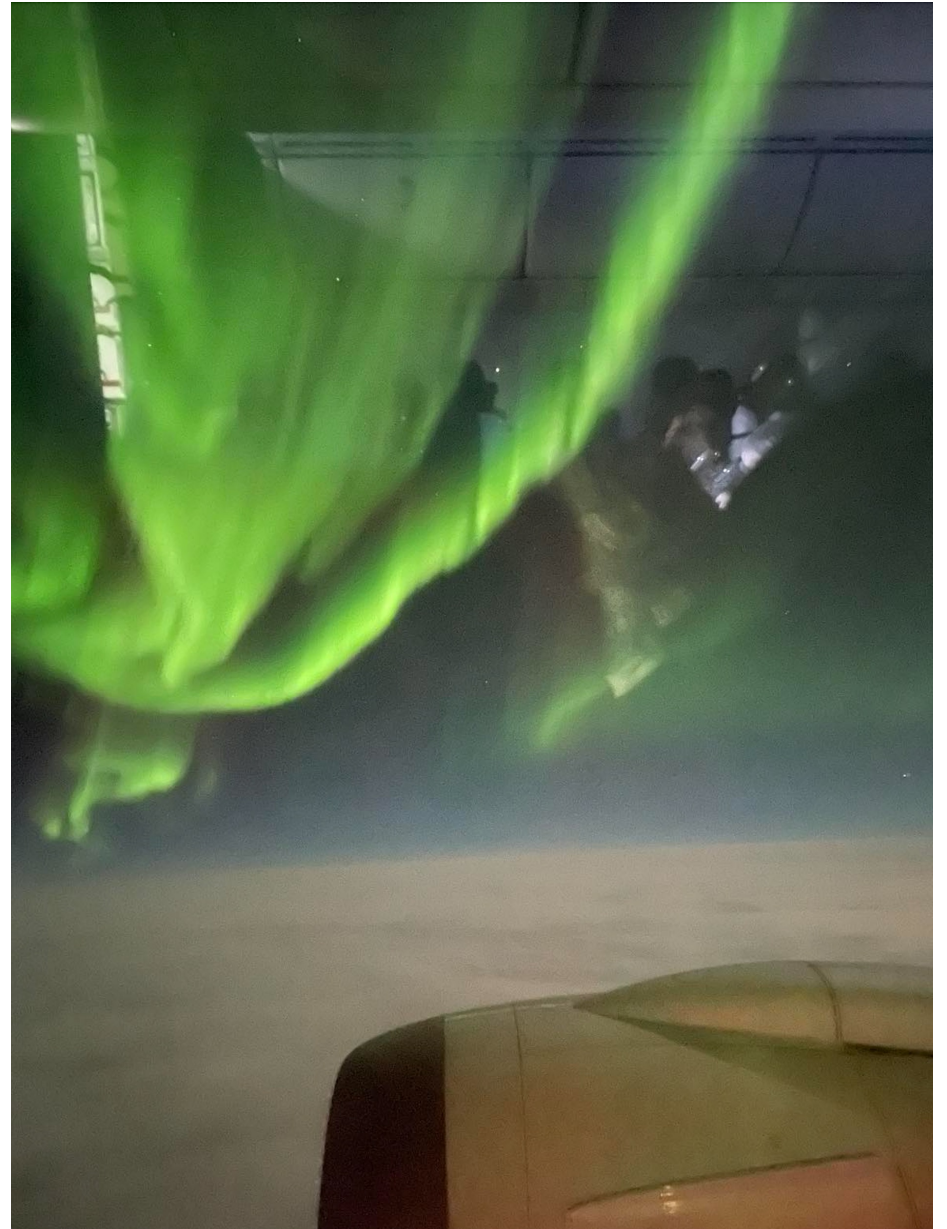
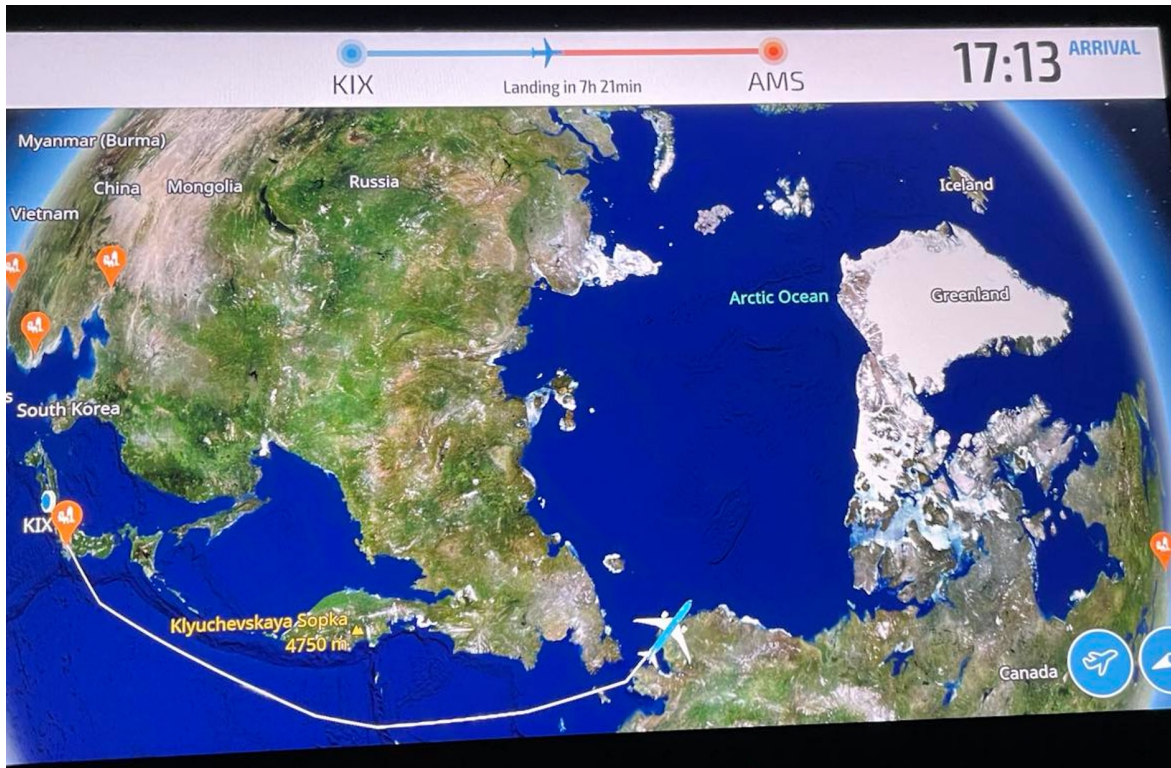
Barbara Wasson

Professor, Department of Information Science & Media Studies
Director, Centre for the Science of Learning & Technology

<http://slate.uib.no>

Online Education Symposium, Japan, April 2024





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University Museum of Bergen



UNIVERSITY
OF BERGEN

19 845 students
2600 academic staff
1600 administrative staff
64 bachelor programmes
97 master /professional programmes
90 nationalities
1300 exchange students



2016
Ministry
of
Education
& UiB

The screenshot shows the top part of the SLATE website. On the left is the SLATE logo, which consists of a stylized 'S' icon followed by the word 'SLATE'. To the right of the logo is a navigation menu with the following items: Home, Research (with a dropdown arrow), News & Events (with a dropdown arrow), People, Tools (with a dropdown arrow), and About (with a dropdown arrow). Below the navigation is a large teal banner with a white geometric pattern of lines and dots. The text on the banner reads 'CENTRE FOR THE SCIENCE OF LEARNING & TECHNOLOGY' in large white capital letters, with 'UNIVERSITY OF BERGEN' in smaller white capital letters below it. Underneath the banner, a line of text states: 'SLATE (Centre for the Science of Learning & Technology) is a leading research centre in the development of knowledge'.

Through interdisciplinary research SLATE investigates the technological, pedagogical, interpretive, cultural, ethical, and legal aspects of learning analytics (LA) and artificial intelligence in education (AIEd), and promotes the responsible use of technology in education.

Visit us: <http://slate.uib.no>

The screenshot shows a grid of six news items on the SLATE website. Each item has a small image on the left and text on the right. The items are: 1. Seminar: UiB AI #6: Learning Analytics and Artificial Intelligence in Education, with a small image of a seminar poster. 2. Intervju: Postdoktor Anja Salzmann om Datareisen og personvern, with a small image of a person. 3. New Project Page: Remote Intelligent Access to Labs in Higher Education, with a small image of a project page. 4. March 30, 2023 PhD Defense Joakim Vindenes, with a small portrait of Joakim Vindenes. 5. March 17, 2023 Best Poster at LAK23 to Qinyi, André & Mohammad, with a small image of a poster. 6. March 30, 2023 Creativity, Learning & Technology: Palgrave Encyclopedia of the Possible now available!, with a small image of a book cover.



Annual Report 2023

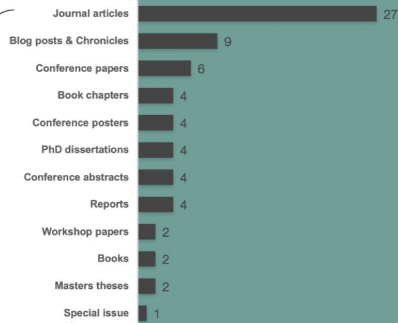


UNIVERSITY OF BERGEN



2023 in numbers

69 publications

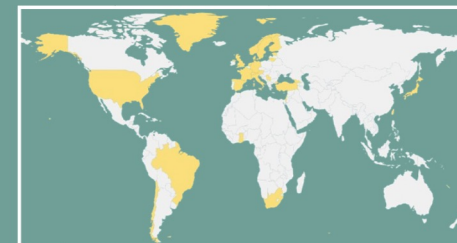


We worked on **35** projects
 We held **73** presentations
 We hosted **5** guest lectures
 We spoke on 2 podcasts

We organized **23** events:

- 8 workshops
- 10 courses
- 2 symposia
- 2 webinars
- 1 UiB AI seminar

SLATE collaborators across the globe in 2023
 45 unique institutions/organisations across 29 countries



Academia (70%)
 Public sector (17.5%)
 Private sector (12.5%)

AGENDA

- DigiTrans: LA of LMS Use at UiB
- Norwegian Expert Commission on Learning Analytics
- Council of Europe Expert Group on AI and Education
- Next steps for Implementing LA & AI

DIGITRANS: UIB TRANSFORMATION

- A. Organisation, Leadership & Innovation
- B. Adaptation to Online Teaching & Learning
- C. Learning Design in Online Courses
- D. Digital Student Behaviour

DIGITRANS: UIB TRANSFORMATION

C. Learning Design in Online Courses

How courses are structured in Canvas in H19, H20, H21?

Misiejuk, K., Ness, I. J., Gray, R., & Wasson, B. (2023). Changes in online course designs: Before, during, and after the pandemic. In *Frontiers in Education* 7 (1). DOI: <https://doi.org/10.3389/feduc.2022.996006>

COURSE SELECTION

- Bachelor program descriptions on uib.no
- 3rd semester
- 10-15 ECTS
- Fall: H19, H20, H21 in LMS Canvas



Arkeologi, bachelor, 3 år

Arkeologi er viktig for å gi mening til historiske stader og gjenstandar som kan seie oss noko om kor og korleis menneske har levd før oss.

Lengde	Ordinær	Primær	Opptakskrav	Studiepoeng	Start
3 år	Alle	Alle	GENS	180	Haust

Oppbygging

Bachelorprogrammet i arkeologi er eit treårig fulltidsstudium, som startar i august.

Alle bachelorstudentar må ta [Examen philosophicum](#) (ex.phil.) og [Examen facultatum](#) (ex.fac.) Du finn **detaljert vekeplan og anbefalt litteraturliste** på emnesidene.

Slik er studiet lagt opp:

1. semester:

- Ex.Phil. (10 studiepoeng)
- Ex.Fac. (10 studiepoeng)
- [ARK100](#) Innføring i arkeologi (10 studiepoeng)

2. semester:

- [ARK110](#) - Menneske, utvikling og samfunn: fra de første menneskene til slutten av bronsealderen ca. 500 f.Kr. (20 studiepoeng)
- Fordjuping i arkeologi i perioden fram til 500 f. Kr. (10 studiepoeng). Vel blant tre ulike tema: [ARK111/ARK112/ARK113](#)

3. semester:

- [ARK120](#) - Middelhavet, Nord-Europa og Norden frå ca. 500 f.Kr. til 1500 e.Kr. (20 studiepoeng)
- Fordjuping i arkeologi i perioden 500 f.Kr. - 1500 e.Kr. (10 studiepoeng). Vel blant tre ulike tema: [ARK121/ARK122/ARK123](#)

COURSE SELECTION

106 courses

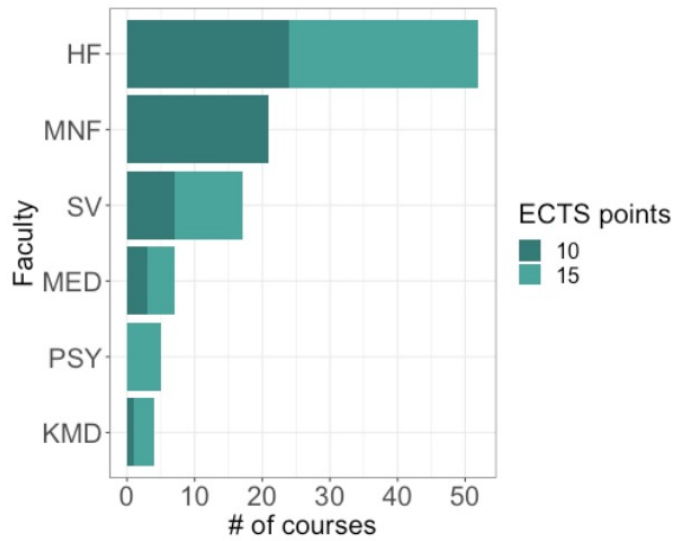


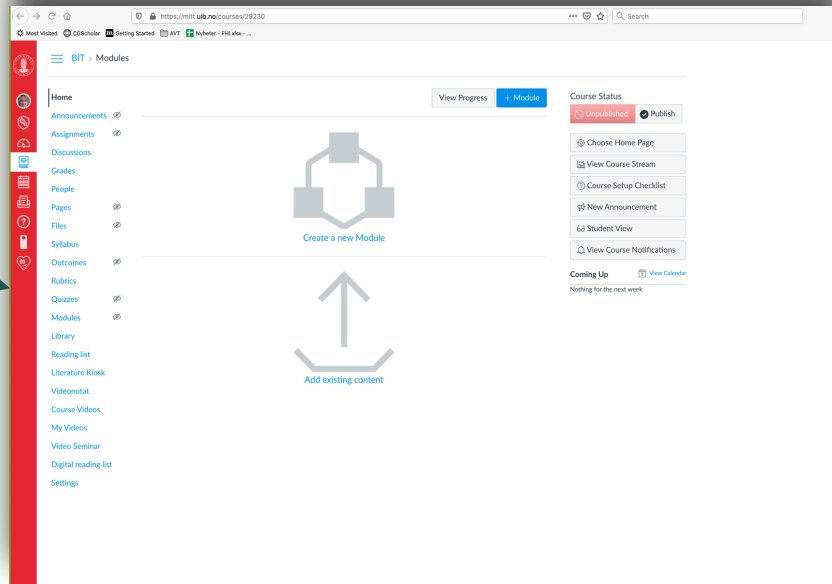
Table 1. The frequency of courses by faculty and ECTS credits

	10 ECTS	15 ECTS	Total
HF	24	28	52
MNF	21	0	21
SV	7	10	17
MED	3	4	7
PSY	0	5	5
KMD	1	3	4

Fig. 1. Distribution of courses by faculty and ECTS credits

CANVAS COURSES

features in a
Canvas course



LMS Activity Categorisation

CANVAS features

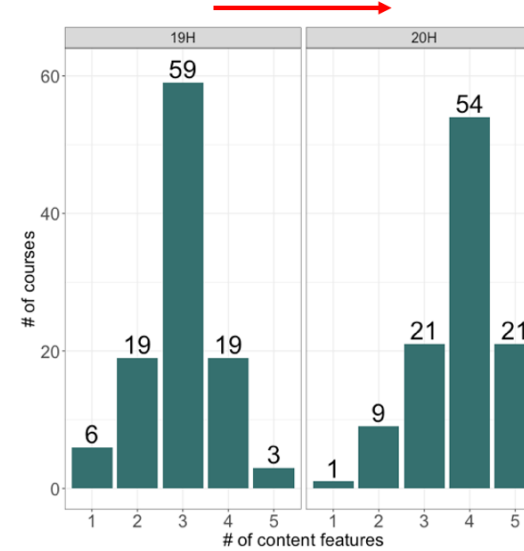
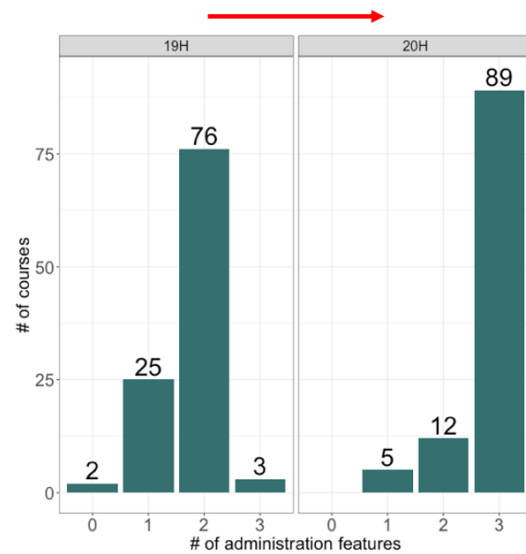
Whitelock-Wainwright, A., Tsai, Y. S., Lyons, K., Kaliff, S., Bryant, M., Ryan, K., et al. (2020). Disciplinary differences in blended learning design: a network analytic study. In Proceedings of LAK'20, 579–588. New York Association for Computing Machinery (ACM).

Administration	Announcement, People, Grades
Content	Files, Syllabus, Pages, Modules, Videos
Activities	Discussions, Quizzes, Assignments

Administration

Announcement, People,
Grades

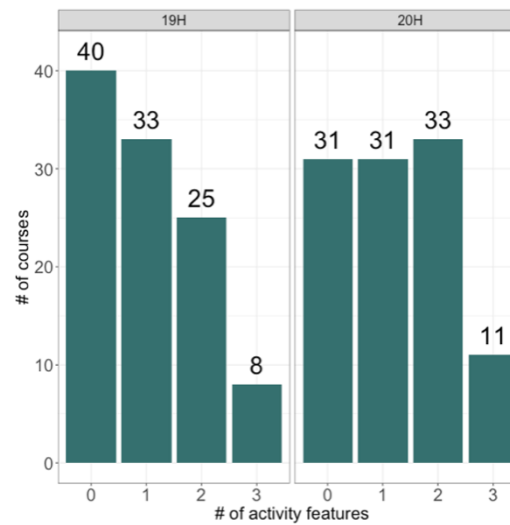
mean H19 = 1,75
mean H20 = 2,79



Content

Files, Syllabus, Pages,
Modules, Videos

mean H19 = 2,94
mean H20 = 3,8



Activities

Discussions, Quizzes,
Assignments

mean H19 = 1,01
mean H20 = 1,23

IMPLEMENTATION RATES: H19, H20, H21 ALL COURSES (n= 106)

TABLE 4 Implementation rates of features per semester.

Feature type	Canvas feature	Course frequency			
		F19	F20	F21	
Administration	People	0.03	0.95*	0.20	← Increased all 3 years
	Grades	0.44	0.47	0.58	
Content	Files	0.92*	0.90*	0.90*	←
	Syllabus	0.99*	0.95*	0.95*	
	Pages	0.70*	0.80*	0.73*	
	Modules	0.25	0.44	0.55	
	Videos	0.07	0.69*	0.58	
Activity	Discussions	0.30	0.5	0.44	←
	Assignments	0.16	0.23	0.21	
	Quizzes	0.55	0.49	0.62*	

***over 60% of courses implemented the feature**

IMPLEMENTATION RATES: H19, H20, H21 FEATURES – PER FACULTY

 Increase all three years

 significant increases H19 -> H20

TABLE 7 Implementation rates of features per semester and faculty.

Features	Semester	HUM (n =50)	AMD (n =4)	MED (n =7)	MNS (n =19)	PSY (n =5)	SS (n =17)
Grades	F19	0.38	0	0.29	0.42	0.6*	0.76*
	F20	0.44	0	0.14	0.63*	0.4	0.65*
	F21	0.5	0	0.14	0.68*	0.6*	1*
People	F19	0	0	0.29	0.05	0.4	0
	F20	0.9*	1*	1*	1*	1*	1*
	F21	0.16	0.75*	0.57	0.16	0.4	0
Files	F19	0.92*	1*	0.86*	0.84*	1*	1*
	F20	0.92*	1*	0.71*	0.79*	1*	1*
	F21	0.86*	1*	0.86*	0.84*	0.8*	1*
Syllabus	F19	1*	1*	0.86*	1*	1*	1*
	F20	1*	0.75*	0.86*	0.95*	1*	0.94*
	F21	0.94*	1*	0.86*	0.94*	1*	1*
Pages	F19	0.63*	0.5	1*	0.52	1*	1*
	F20	0.82*	0.25	1*	0.52	1*	1*
	F21	0.76*	0.5	0.86*	0.47	1*	0.88*
Modules	F19	0.16	0.5	0.57	0.26	0.2	0.29
	F20	0.38	0.25	0.71*	0.53	0.8*	0.35
	F21	0.48	0.25	0.86*	0.63*	0.6*	0.59
Videos	F19	0.06	0	0.14	0.16	0	0
	F20	0.64*	0.25	0.29	0.84*	0.6*	0.94*
	F21	0.5	0.75*	0.14	0.79*	0.4	0.48
Discussions	F19	0.22	0.25	0.14	0.42	0.4	0.47
	F20	0.44	0.5	0.14	0.63*	0.6*	0.65*
	F21	0.52	0.5	0	0.47	0.6*	0.29
Quizzes	F19	0.14	0	0.42	0.16	0.2	0.12
	F20	0.22	0	0.29	0.42	0.2	0.06
	F21	0.22	0	0	0.32	0.4	0.12
Assignments	F19	0.56	0.25	0.29	0.42	0.8*	0.76*
	F20	0.42	0.25	0.29	0.58	0.6*	0.71*
	F21	0.56	0	0.14	0.74*	0.8*	0.94*

*High overall implementation: over 60% of courses at a faculty in a semester implemented a feature.

CHANGES DUE TO THE PANDEMIC

- Increased availability of tools (nationally & locally) to support hybrid/online teaching & learning
 - Zoom (Nordic installation), Teams, Kaltura, video streaming solutions
- More hybrid teaching solutions
- More support mechanisms for teaching staff (technical & pedagogical)
- Getting the data for learning analytics is difficult, if not impossible (e.g., no Zoom, Teams or Kaltura data)



Ekspertgruppen for digital læringsanalyse



Ekspertgruppen for digital læringsanalyse

[Mandat](#) [Møter](#) [Innspill](#) [Medlemmene](#) [Sekretariatet](#) [Delrapporten](#)



Ekspertgruppen for digital læringsanalyse

Ekspertgruppen skal gi Kunnskapsdepartementet bedre grunnlag for beslutninger om digital læringsanalyse i grunnopplæringen, høyere utdanning og høyere yrkesfaglig utdanning. Gruppen skal vurdere pedagogiske, etiske, juridiske og personvernmessige spørsmål ved bruk av digital læringsanalyse, og gi råd om behov for utvikling av regelverket og innspill om god praksis.

Gruppen overleverte sin første delrapport 1. juni 2022. Denne redegjør for hva læringsanalyse er, og hvilke implikasjoner det kan ha for norsk utdanning i dag og i nær framtid. For å belyse disse spørsmålene har ekspertgruppen løftet fram fire dilemmaer, som synliggjør hvor det er behov for mer kunnskap, bevissthet og refleksjon. Les mer om rapporten under menyvalget "Delrapporten".

laringsanalyse.no



MANDATE

The expert group shall provide the Ministry of Education with a **better basis for decisions about learning analytics and adaptive teaching and assessment tools** in *basic education, higher education and higher vocational education*, and **advise on the need for regulation** and **input for policy development and measures** from the Ministry of Education and underlying agencies (e.g., Directorates).

EXPERT COMMISSION

Marte Blikstad-Balas, Professor	Department for Teacher Education and School Research, University of Oslo (<i>task force leader</i>)
Monica Andreassen, Teacher	Science & mathematics, Langnes skole, Tromsø
Einar Duenger Bøhn, Professor	Department of Religion, Philosophy and History, University of Agder
Ann-Tove Eriksen, Dept. Director	Directorate for Higher Education & Competence
Michail Giannakos, Professor	Department of Computer Science, NTNU
Hedda Huse, Dept. Director	Directorate for Education and Training
Malcolm Langford, Professor & Director	Department of Public and International Law, University of Oslo & Director, Centre for Experiential Legal Learning (CELL)
Eirin Oda Lauvset, Lawyer	Data Protection Officer, Asker Municipality
Per Henning Uppstad, Professor	Norwegian Centre for Reading Education and Research (national centre), University of Stavanger
Barbara Wasson, Professor & Director	Department of Information Science & Media Studies, University of Bergen & Director, Centre for the Science of Learning & Technology (national centre)

(*Ministry of Education, Secretariat: Hilde Hultin, Jon Lanestedt, Øystein Flø Baste*)

Teacher organisations	Utdanningsforbundet, Norsk Lektorlag, Skolenes landsforbund, Skolelederforbundet
Pupil & Student organisations	Elevorganisasjonen, Norsk studentorganisasjon, Organisasjon for Norske Fagskolestudenter
Municipalities	Asker, Lillestrøm, Lørenskog, Oslo, Surnadal (IKT-ORKidé-samarbeidet), Voss, Møre og Romsdal, Vestfold og Telemark, Vestland og KS
Universities and Colleges	Norges miljø- og biovitenskapelige universitet (NMBU), Norges teknisk-naturvitenskapelige universitet (NTNU), Samisk høgskole, Universitetet i Bergen, Universitetet i Oslo, Universitetet i Stavanger, Universitetet i Sørøst-Norge og UiT Norges arktiske universitet
EdTech suppliers, sellers, and industry organisations	BS Undervisning, Cappelen Damm, Cyberbook, Conexus, Disputas, Fagbokforlaget, Gyldendal, Hypatia, Kikora, LearnLab og IKT-Norge
Legal group	Jon Christian Fløysvik Nordrum, Mona Naomi Lintvedt, Sebastian Schwemer, Emily Weitzenboeck, Malgorzata Cyndecka og Trude Haugli
Others	Sametinget



Kunnskapsdepartementet

Rapport

Læringsanalyse – noen sentrale dilemmaer

Delrapport fra ekspertgruppen for digital læringsanalyse



<https://laringsanalyse.no/>

Learning Analytics - Some Central Dilemmas Midway Report

1 June 2022



FOUR DILEMMAS

Dilemma 1: The need for information vs The need for data protection

Dilemma 2: Learning as an Individualised process vs Social process

Dilemma 3: Centralisation vs Autonomy

Dilemma 4: Competence Needs vs Competence Reality

LEARNING ANALYTICS – SOME CENTRAL DILEMMAS

Legal Issues (17 pages!)

GDPR + National Education Laws

1. Anonymised data and personal information
2. Legal basis for processing personal data
3. The Constitution and the European Convention on Human Rights the convention (ECHR)
4. The Personal Data Protection Regulation and the main legal basis
5. The Personal Data Protection Regulation and other legal bases
6. Special categories of personal data and secondary use
7. Reuse of personal data for new purposes
8. Minimising risk
9. Built-in privacy protection
10. Development of certification and behavioural norms
11. Assessment of privacy consequences and reduction of high risk
12. Data subjects' rights and participation
13. Processing and storage of personal data in third countries
14. Regulation of individual automated decisions
15. The Procurement Act and the purchase of digital resources

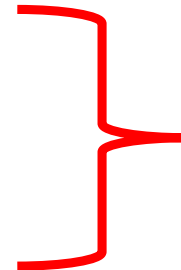




Learning, where did you go in all the hustle and bustle? Use of pupil and student data to promote learning

NOU (Norwegian Public Report)

6 June 2023



Pedagogical

Legal

Ethical

Infrastructure & Support

Competence needs



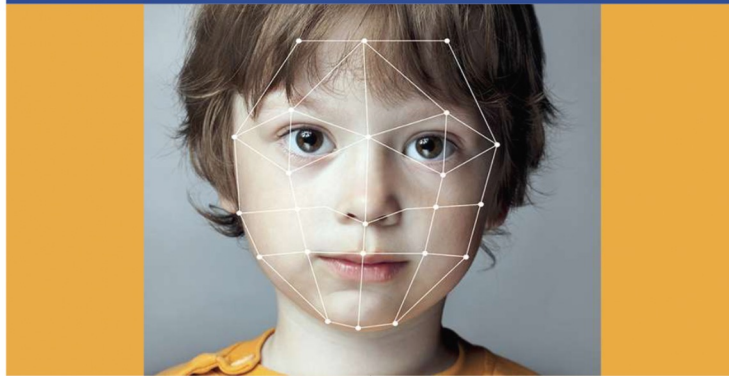
COUNCIL OF EUROPE EXPERT GROUP

AI AND EDUCATION

<https://www.coe.int/en/web/digital-citizenship-education/artificial-intelligence>

ARTIFICIAL INTELLIGENCE AND EDUCATION

A critical view through the lens of human
rights, democracy and the rule of law



Provisional edition



A thorough and critical overview of the
use of artificial intelligence in education

**HUMAN RIGHTS
DEMOCRACY
RULE OF LAW**

**Wayne Holmes,
Jen Persson,
Irene-Angelica Chounta,
Barbara Wasson &
Vania Dimitrova (2022)**

<https://rm.coe.int/artificial-intelligence-and-education-a-critical-view-through-the-lens/1680a886bd>

Some **challenges** for AI and education

- Almost all current commercial student-supporting AI tools:
 - **undermine student agency** (and can amount to surveillance)
 - **disempower teachers** (and parents)
 - **automate poor pedagogic practices**
(e.g. instructionism and e-proctoring exams)
 - **do not ‘save teacher time’ nor ‘personalise learning’**
 - have **little evidence** for their efficacy

THE STATE OF ARTIFICIAL INTELLIGENCE AND EDUCATION ACROSS EUROPE



Key take aways from the Council of Europe Survey

The Council of Europe has been examining the impact of Artificial Intelligence (AI) on human rights, democracy, and the rule of law. As part of the "AI and Education" project, Council of Europe carried out a survey in September-October 2022. This survey aimed to gather data from its member states to enable a better understanding of the connections between AI and education, and existing strategies on AI and education.

Key take aways: In the education sector, more specifically, it is necessary for member states to establish AI policies and strategies dedicated to educational aspects to ensure respect for the fundamental values of the Council of Europe, rather than relying solely on general AI frameworks to regulate the use of AI systems in education.

Members of the Council of Europe Expert Group on Artificial Intelligence and Education
Irene-Angelica Chounta, Vania Dimitrova, Paulo Nuno Vicente, Malgorzata Cyndecka, Wayne Holmes, Lidija Kralj, Jen Persson, Barbara Wasson

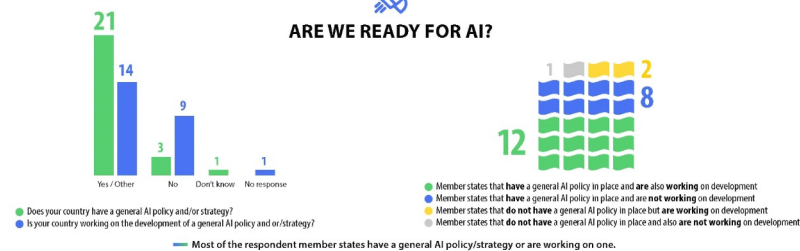
SURVEY OBJECTIVES

- Identify promising policies and/or strategies on AI and education
- Identify promising practices in relation to learning with AI, learning about AI, and preparing for use of AI
- Facilitate the Council of Europe work in developing appropriate policy and legal instruments to ensure responsible, fair, accountable, ethical, and transparent use of AI in education.

SURVEY STRUCTURE

Profile	Policies/Strategies	Current Practices	Regulation
Information about the respondents	<ul style="list-style-type: none"> General AI Learning with AI Learning about AI Preparing for AI 	<ul style="list-style-type: none"> Learning with AI Monitoring Preparing for AI 	<ul style="list-style-type: none"> Regulation Monitoring AI Evaluation

ARE WE READY FOR AI?



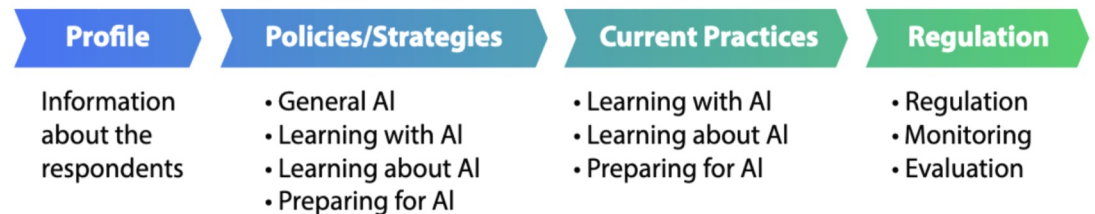
USE OF AI IN EDUCATION

AI Literacy (Technical skills)	AI Literacy (Human aspects)	Using AI to learn about learning	Learning with AI
National policies emphasise enhancing teachers' digital skills and AI competence across education levels, stressing the need for ongoing teacher training.	Curricula should encompass not only AI technology but also the ethical, social, and societal dimensions. Preparation for parents and teachers about children's rights/risks posed by AI is acknowledged, as well as the importance of discussing ethical considerations in AI education.	There's a call for research on adopting learning progress assessments in self-directed learning and considering ethical and data protection concerns. Data analysis systems are recommended for educational administrators to make informed decisions.	Personalised learning is a common theme in national policies, often involving collaboration with private sector experts. There's an emphasis on AI-supported education for individualised learning paths, and some countries encourage awards for AI-innovative teachers.

The State of Artificial Intelligence and Education Across Europe: The results of A Survey of Council of Europe Member States

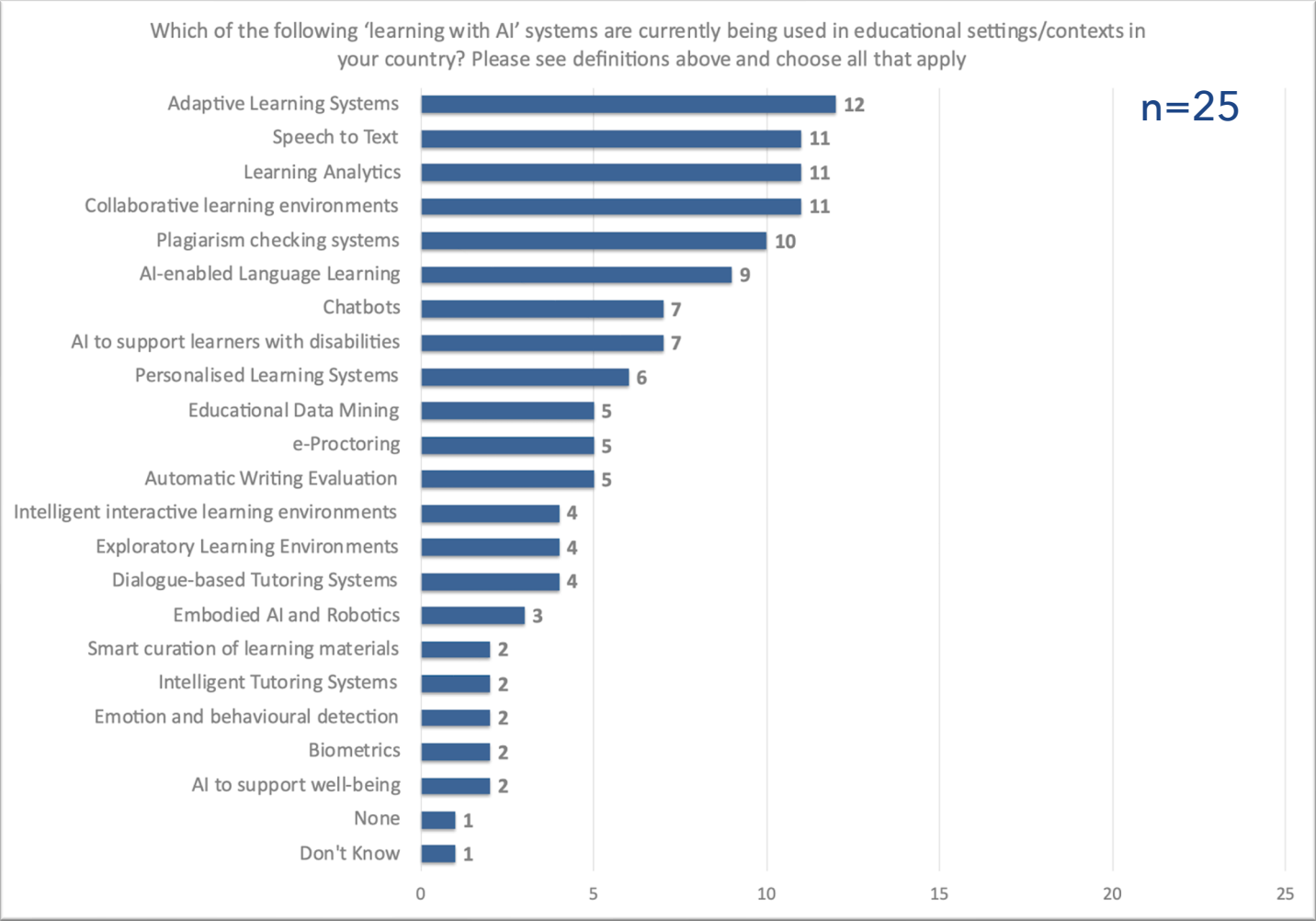
Irene-Angelica Chounta, Vania Dimitrova, Paulo Nuno Vicente, Malgorzata Cyndecka, Wayne Holmes, Lidija Kralj, Jen Persson, Barbara Wasson
Council of Europe, AI&ED Expert Group

SURVEY STRUCTURE



PRE- CHATGPT

Adaptative, collaborative, language learning and learning analytics tend to be the most common AI systems used in educational contexts.

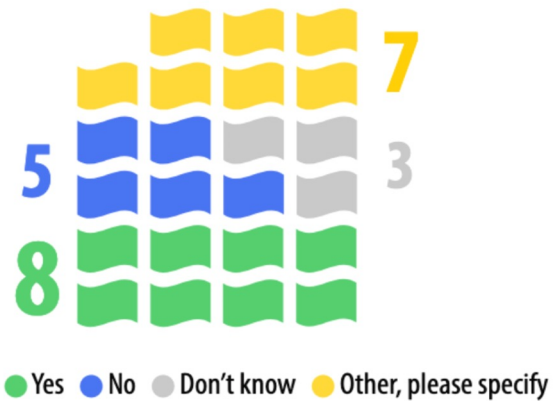




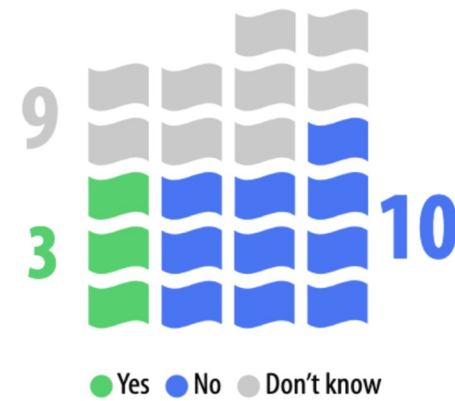
FORESIGHT FOR TOMORROW

Concerning: policy implementation and strategy on teaching and learning about AI

Does your ministry or other national/
state body have a specific policy/
strategy on teaching/learning about
AI technologies?
(23 responses)

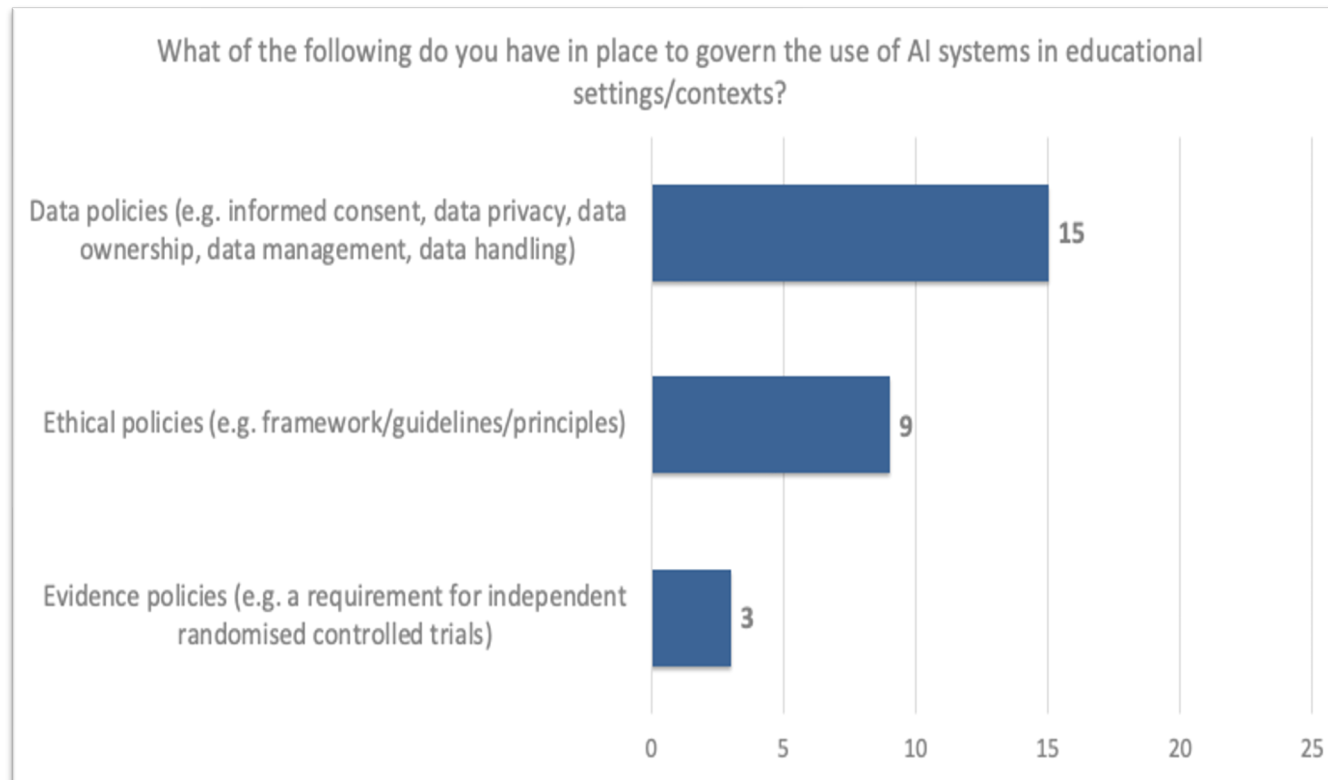


Is there a specific budget
allocated to the development,
implementation and monitoring
of this policy/strategy?
(22 responses)



Member states are working to some extent on AI teaching and learning policies, but without a specific budget dedicated to their development.

Data policies are the most common governance mechanism for the use of AI in education contexts.





CONCLUSION

AI&ED policies need to take into account the fundamental values of the Council of Europe.

01

AI policies and strategies specific to education sector

Most member states have established general policies and strategies for the use of AI or are in the process of doing so. However, AI and education is not addressed as a special or distinct case, due to the absence of specific policies.

04

Need for a broad view on AI Literacy

It's imperative to support member states to equip their citizens with the necessary competences to use AI responsibly and understand its implications on daily life.

02

Monitoring and regulation particularly in education

There is a need for joint and orchestrated efforts at national and European levels to establish supervisory and regulatory actions that will protect education stakeholders from the potentially negative or harmful consequences of AI.

05

Active involvement of the key stakeholders

Key stakeholders, such as educators, parents and learners, should be actively involved and consulted in the development of such policies and strategies for specific purposes since they are directly and explicitly affected by them.

03

Evidence on the implications of using AI in education

There is a lack of sufficient evidence and research to demonstrate the implications of using AI systems in education.

06

Capacity of member states to respond

Out of 46 Council of Europe member states invited to the survey, 25 provided valid responses, representing just over half. While survey length and topic may have impacted participation, the response rate still reflects member states' capacity to engage with the subject.

Further dialogue with member states will ensure broader understanding of their evolving engagement with AI and education.

COUNCIL OF EUROPE



CONSEIL DE L'EUROPE

Legal Instrument on Regulating
the use of
Artificial Intelligence Systems in Education

Preparatory
Study

Policy Toolkit for Learning with and
about Artificial Intelligence

Governance – Competences- Education

European Review Framework to
assess AI systems used for educational
purposes and/or in educational systems

SUMMARY: MY REFLECTIONS

WE NEED

Competence development

LA/AI-competence: technical and social aspects

Infrastructure & Support

national digital infrastructure, data management, standards & common solutions

Legal & Regulatory work

→ Council of Europe's work on possible elements of a legal framework for AI

(<https://rm.coe.int/possible-elements-of-a-legal-framework-on-artificial-intelligence/1680a5ae6b>)

NEED RESEARCH-BASED AI FOR EDUCATION

PEDAGOGICAL INNOVATION IS NECESSARY

ASSESSMENT INNOVATION IS NECESSARY



THANK YOU!



A teal-colored hexagon with the text "Learning with AI" inside in white.

Learning with AI

Many technologies

Speech to Text

Text to Speech

Text to Animations

Machine Vision

Face Recognition

Searching

Planning

Scheduling

Generative AI

(text, images, animations ...)

etc.



Learning with AI

Administrative systems

Admission Systems
Plagiarism detection
Summative assessment
Dropout prediction
Course recommendation
Support for well-being

For teachers

Automatic feedback generation
Forum monitoring
Essay scoring
Quiz generation
Lesson planning
Rubric generation
Smart curation of learning materials

For learners

Intelligent tutoring systems (adaptive...)
Dialogue-based tutoring
Exploratory Learning Environments

Essay generation
Essay critiquing

Chatbots
Learning Companions

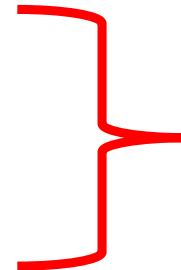
Language learning apps
Collaborative Learning support



Learning, where did you go in all the hustle and bustle? Use of pupil and student data to promote learning

NOU (Norwegian Public Report)

6 June 2023



Pedagogical

Legal

Ethical

Infrastructure & Support

Competence needs

10 Recommendations for Higher Education

15.8 Ekspertgruppens anbefalinger

- Ekspertgruppen anbefaler at det i samarbeid med sektorene utvikles overordnede nasjonale retningslinjer for god og forsvarlig læringsanalyse. De nasjonale retningslinjene må kunne tilpasses til lokale forhold. Retningslinjene bør minst omfatte disse tiltaksområdene:
 - personvern
 - medvirkning
 - åpenhet
 - valgfrihet
 - anskaffelser
- Ekspertgruppen anbefaler at en statlig aktør utvikler og forvalter de overordnede retningslinjene for god og forsvarlig læringsanalyse i tett samarbeid med sektoraktører som Universitets- og høgskolerådet og Nasjonalt fagskoleråd. Ekspertgruppen understreker at ansvaret for god og forsvarlig læringsanalyse ligger hos institusjonene.
- Ekspertgruppen anbefaler at de overordnede retningslinjene revideres jevnlig i lys av den raske teknologiutviklingen og minimum hvert femte år.
- Ekspertgruppen anbefaler at retningslinjene omfatter både fellesløsninger, lokale ressurser og ressurser som er fritt tilgjengelige på nett.
- Ekspertgruppen anbefaler at en statlig aktør bygger opp et støttesystem for å hjelpe lærestedene med å utarbeide risikoanalyser, personvernkonsekvensvurderinger (DPIA) og databehandleravtaler. Den statlige aktøren skal også hjelpe lærestedene i forbindelse med anskaffelsesprosesser og systemutviklingsprosjekter.
- Ekspertgruppen anbefaler at retningslinjene forklarer hva som utgjør god læringsanalyse som fremmer studentenes læring.
- Ekspertgruppen anbefaler at kompetanse i læringsanalyse inkluderes i opplæringstilbud for pedagogisk basiskompetanse i høyere utdanning og høyere yrkesfaglig utdanning. I tillegg anbefaler ekspertgruppen at læringsanalyse inngår i ulike kurstilbud rettet mot undervisere, ledere og støttepersonell som bistår undervisere, og som deltar i kvalitetsarbeid.
- Ekspertgruppen anbefaler at lærerutdanningen sikrer at nyutdannede lærere har nødvendig kompetanse i læringsanalyse og kunnskap om kunstig intelligens. Institusjonene må vurdere hvordan de kan ivareta slik kompetanse i undervisningen og i læringsutbyttebeskrivelser.
- Ekspertgruppen anbefaler at det utlyses midler til innovasjon, forskning og utvikling på digitale læringsressurser som har funksjonalitet for læringsanalyse og adaptivitet, og midler til å forske på bruken av slike ressurser i autentiske læringssituasjoner.
- Ekspertgruppen anbefaler at institusjonene sørger for at studentene får tilpasset og forståelig informasjon slik at de kan ta stilling til spørsmål om læringsanalyse. Videre er anbefalingen at institusjonene jevnlig evaluerer om studentene opplever at institusjonene ivaretar retten de har til medvirkning.



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from Noun Project

Student Influence

The use of learning analytics requires that **students gain as thorough an insight** as possible into **which data and analysis methods** are used, and **how they are used**, so that they can **benefit from the insights** the analysis provides **into their own learning and academic progression.**

Transparency (necessary for trust from the students)

Guidelines should require that educational institutions provide:

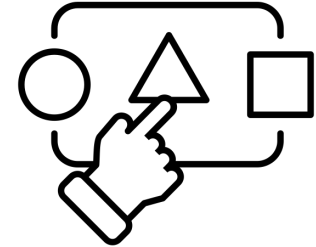
- **which data** is collected from **which sources**
- **how** they may be **combined** with other data
- **what** the data is actually used for
- the extent to which the individual student can be identified
- **who** has access to the data
- **when** data collection takes place
- **when** they can use digital resources without anything being tracked at an individual level



Created by Hervindjuice
from Noun Project

Freedom of Choice

The decision on which resources with learning analytics functionality should be available to all lecturers in HE is within the institution's framework - and the students' freedom of choice. **Lecturers** should have access to various resources to **safeguard their freedom and responsibility to organise content and teaching methods**. The scope of students' freedom of choice with respect to learning analytics should be linked to **whether information about them is actually anonymised (dilemma: aggregated & deidentified data vs individual follow-up of the individual student)**



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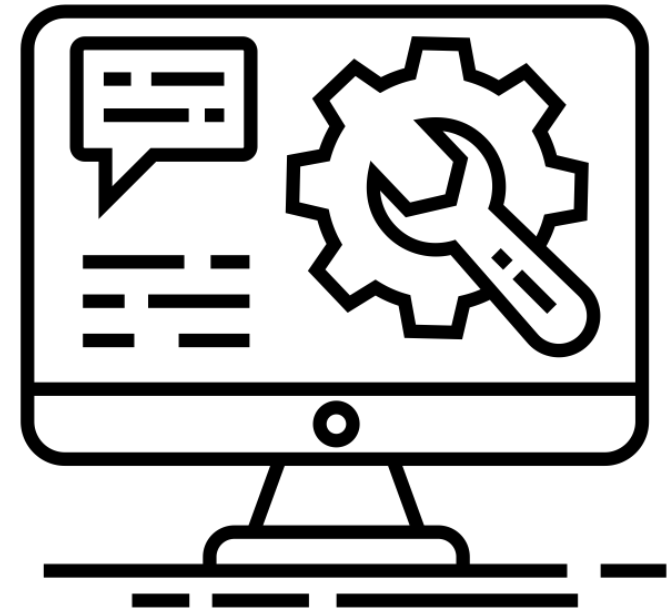
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Procurement

Representatives from the sectors confirmed that the **possibilities for learning analysis** have not been **specifically considered when purchasing resources** for the sector. Need to support the sectors in **drawing up requirements for learning analyses in tender processes** and specification for requirements for **inbuilt privacy and information/data security**.

Support system

The expert group recommends that a state actor builds a **support system** to help educational institutions prepare risk analyses, data protection impact assessments (DPIA) and data processing agreements. The state actor should also help the educational institutions in connection with **procurement processes** and system development projects.



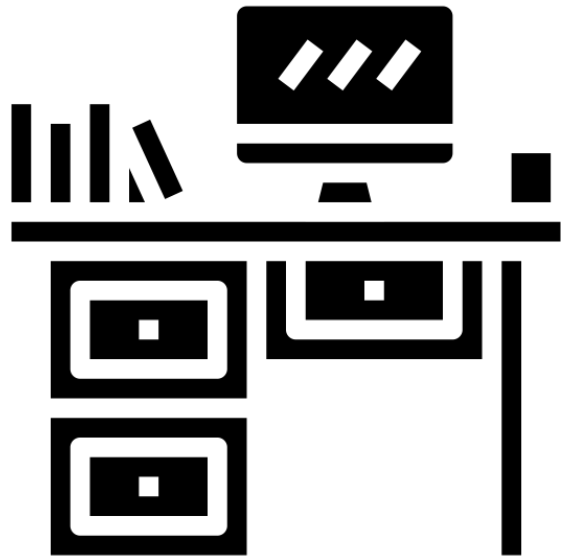
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Competence

The expert group recommends that **competence in learning analytics** be included in training programmes for basic pedagogical competence in higher education and higher vocational education. In addition, the expert group recommends that learning analytics be **included in various course programmes** aimed at teachers, managers and support staff who assist teachers and who participate in **quality work**.



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Teacher education

The expert group recommends that **teacher education programmes ensure that newly qualified teachers have the necessary expertise in learning analytics and knowledge of artificial intelligence.** The institutions must consider how they can safeguard such competence in the teaching and in learning outcome descriptions.

Funding

The expert group recommends that **funding be announced for innovation, research and development** of digital learning resources that have functionality for learning analytics and adaptivity, and funding for research into the **use of such resources in authentic learning situations.**



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Information to students

The expert group recommends that the institutions **ensure that students receive customised and comprehensible information** so that they can consider questions about learning analysis. Furthermore, the recommendation is that the institutions **regularly evaluate whether students feel that the institutions meet their right to participation.**

We need a larger body of experience that shows different effects of learning with AI & in the use of AI to understand learning (LA)

**(Discipline based)
(Human-AI collaboration)**