Exploring Student Expectations and Confidence in Learning Analytics

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Campus Velbert/Heiligenhaus

Outline

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- Motivation
- Study Design
- Results
- Conclusions
- Future & Discussion Points

Motivation

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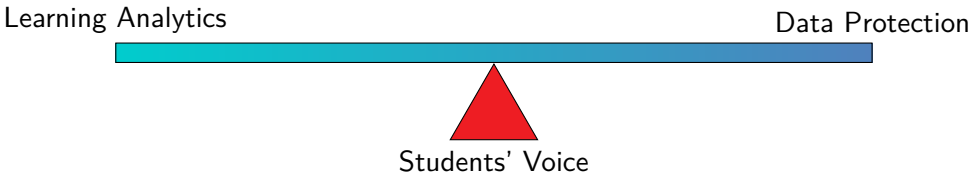
- Making use of educational big data: prospective field
- Growing demand for data protection regulations
- Most important stakeholders: students

$\Rightarrow$

Aim of this study

Investigating students' perspective on Learning Analytics and data protection with regard to their field of study.



Study Design

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- SELAQ: 12 statements
  - Data protection
  - LA Functionality
- Students evaluate from 1 to 7 for each statement their
  - Desire (D)
  - Expectation (E)
- Pen & paper in class
- $n = 553$
- 8 different study programs
- Fall 2022 and summer 2023

Student Expectation of Learning Analytics Questionnaire (SELAQ)

1	The university will ask for my consent before using any identifiable data about myself.
2	The university will ensure that all my educational data will be kept securely.
3	The university will ask for my consent before my educational data are outsourced for analysis by third-party companies.
⋮	⋮
10	The teaching staff will be competent in incorporating analytics into the feedback & support they provide to me.
11	The teaching staff will have an obligation to act (i.e., support me) if the analytics show that I am at risk of failing and underperforming or if I could improve my learning.
12	The feedback from the Learning Analytics service will be used to promote academic and professional skill development (e.g., essay writing and referencing) for my future employability.

(D) Ideally, I would like this to happen. (E) I expect this to happen in reality.

Response Averages

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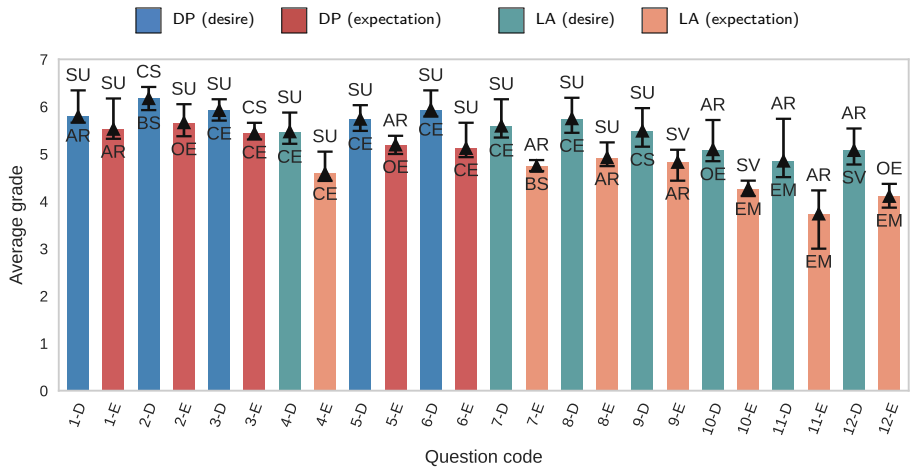

AR: Architecture
CE: Civil Engineering
EM: Electro-Mechanical Engineering
CS: Computer Science
SU: Sustainability
SV: Surveying
BS: Business Studies
OE: Other Engineering Courses

Results: Clustering Analysis & Decision Tree

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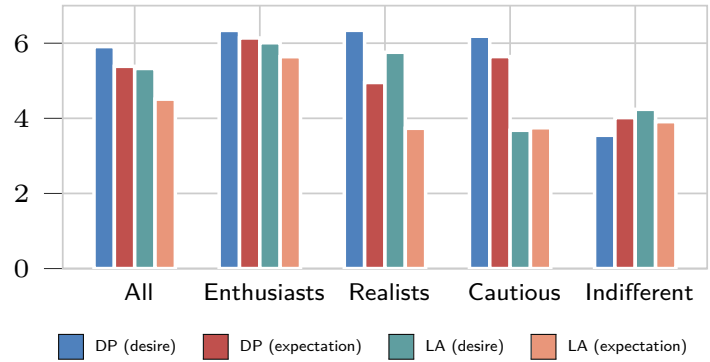
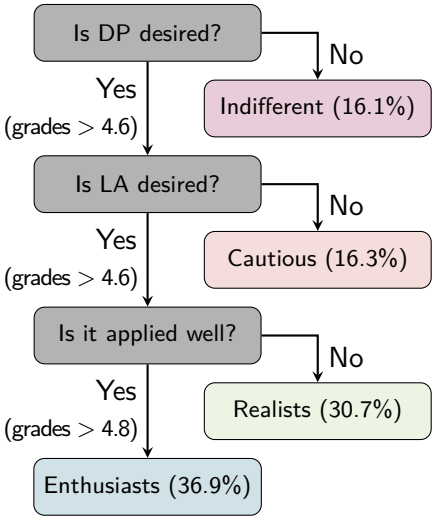
- PCA was used to reduce 24 dimensions to 3.
- Through K-Means Clustering four groups were constructed.





Results: Study Programs

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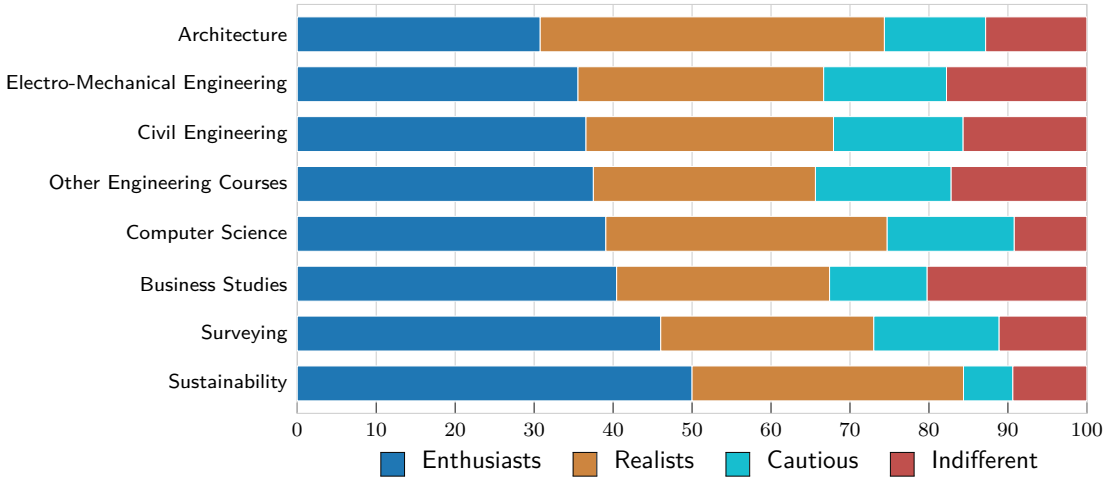

Conclusions

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- Four explainable groups found
- Distinct distribution of groups among study programs
- Group-awareness may facilitate approaching Learning Analytics with students
  - Enthusiasts: Guarantee robustness of service and promised features
  - Realists: Reinforce institution's digital competence, foster transparent communication
  - Cautious: Detailing LA's benefits, emphasizing rigor of Data Protection
  - Indifferent: Combination of strategies
- Trust in lecturers

Future & Discussion Points

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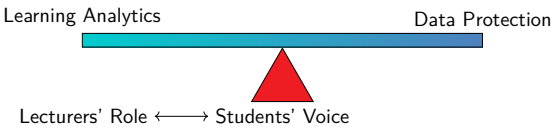
- Addressing concerns of cautious students
- Strategies to enhance the engagement of indifferent students
- Investigate distribution of groups in other domains (e.g., humanities, social sciences)
- Mediating role of lecturers



Thank you!