

avans
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Predicting student success in Dutch Higher education

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Context

Avans University of Applied Sciences

Facts and figures

- 3 locations in the Netherlands
- 19 faculties
- 26,000 students
- 2,200 employees
- 3,600 diplomas each year
- 5 central service units, including:

Learning and Innovation Centre

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Context

Team 'Student Success' (1)

- **Goal:** To *enable* faculties to reach their desired level of student attrition rate.
- **Our team:** Both educational scientists and researchers.



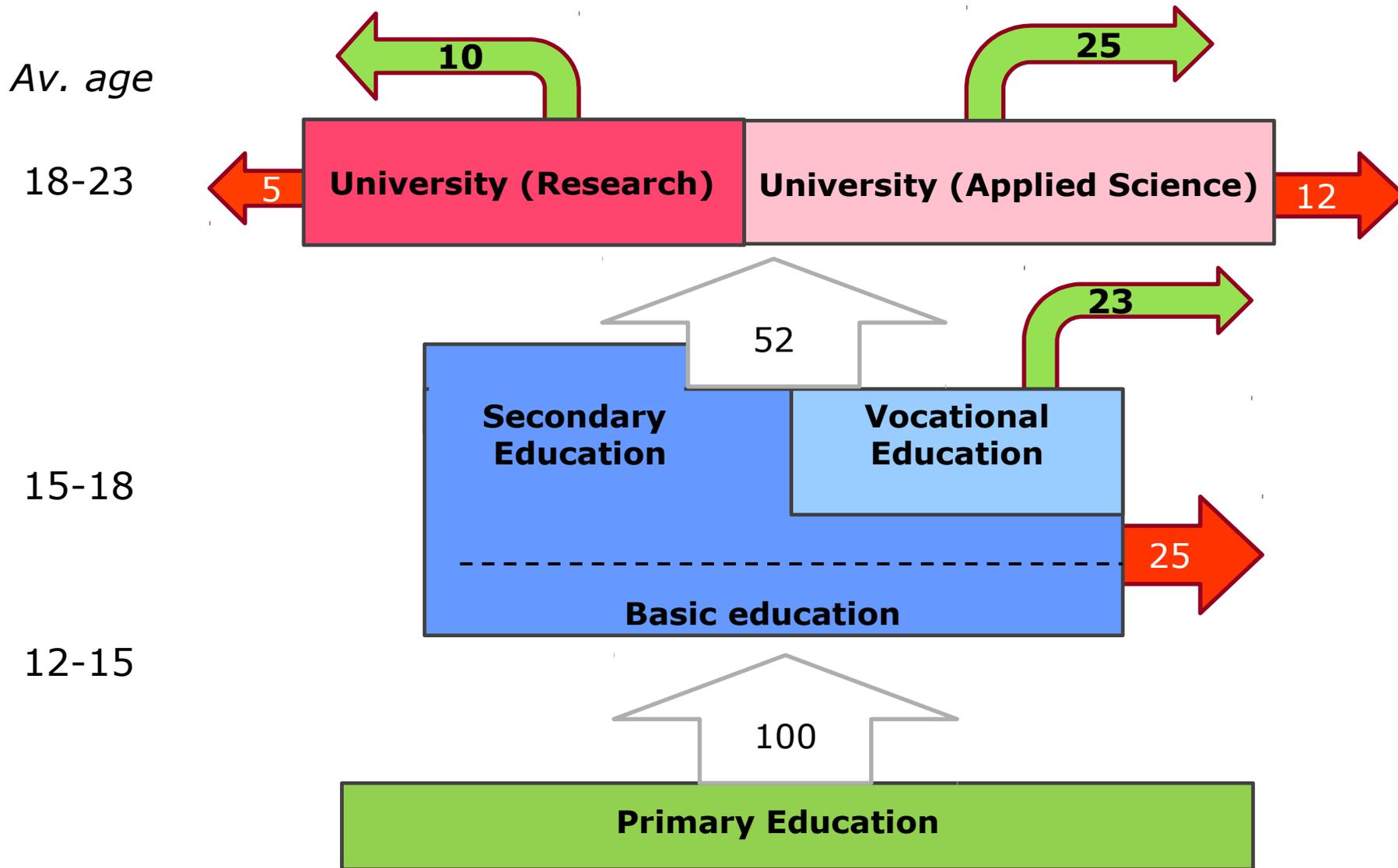
Context

Team 'Student Success' (2)

- **Approach:**
 - *Building evidence*
 - *Choosing initiatives*
 - *Implementing initiatives*
 - *Evaluating*
- **Target group:** Both management and practitioners.

Context

Dutch Educational System (1)



Context

Dutch Educational System (2)

Higher education:

- BSA / Minimum credit requirement
- Resit (culture)
- Commuter colleges

Context

Policy

- On a national level: performance agreements, on themes:
 - ***Student success***
 - *Quality of education*
 - *Positioning/profiling the education*
 - *Research*
 - *Valorisation*

- Within the institution: Hippocampus program, goals:
 - *75% of students will meet the minimum credit requirement (52 ects) in year 1.*
 - *All programs have a graduation rate of 90% for student who have made it to the second year of the program.*

The current research project

Predictors for student success

- Project aims:
 - *Identifying predictors for **student success** in the Avans-context*
 - *In order to enhance retention in the future*

Research method

Method (1)

- Literature review to identify predictors of student success
- Predictor extracted from student administration system:
 - *previous education*
- Predictors translated into questionnaire:
 - *education of the parents*
 - *engagement*
 - *social and academic integration*
 - *procrastination*
 - *perceived academic control*
 - *conscientiousness*
 - *motivation*

Research method

Method (2)

- Quantitative data analysis for two faculties:
 - *Faculty of Industry & Informatics (AI&I), N=198*
 - *Faculty of International Studies (ASIS), N=214*
- Independent variables
 - *from questionnaire and registration system*
- Dependent variables
 - *<<How to measure student success?>>*

Research method

How to measure student success? (1)

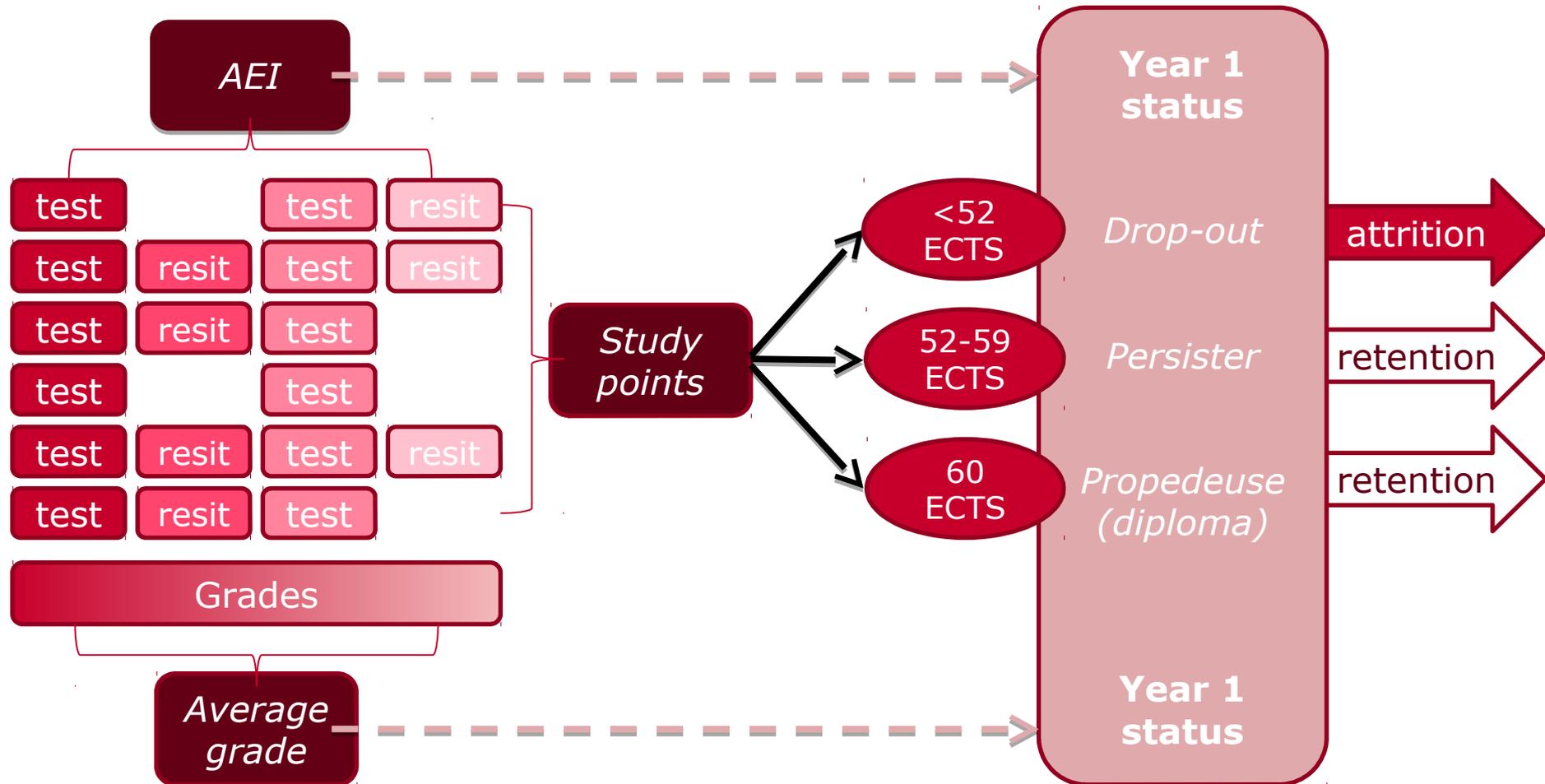
- Common measures:
 - *GPA or average grade*
 - *Study points*
 - *Year 1 status*

- New measure:
 - Assessment Efficiency Index*

$$AEI = \frac{\# \text{ passed tests}}{\# \text{ total tests}}$$

Research method

How to measure student success? (2)



Research method

The predicting value of AEI

AEI per period per Year 1 Status, *Avans Total, 2008-2010*

Year 1 status	N	Total	P1	P2	P3	P4
Propedeuse	947	.9324	.8971	.8869	.9058	.9045
Persister	1545	.7698	.7909	.7646	.7531	.7554
Academy switcher	243	.5381	.6104	.5586	.5295	.5231
Program switcher	62	.6332	.7520	.6957	.6473	.6952
Drop out	959	.6132	.6517	.6048	.5825	.6151

Your reflections on AEI

- What are your thoughts about the Assessment Efficiency Index?
- Would AEI be useful in your institution?

Research method

Method (summary)

- Literature review to identify predictors of student success
- Which predictors work in the Dutch context?
- Predictors translated into questionnaire

- Quantitative data analysis for two faculties:
 - *Faculty of Industry & Informatics (AI&I), N=198*
 - *Faculty of International Studies (ASIS), N=214*
- Independent variables
 - *from questionnaire and registration system*
- Dependent variables:
 - ***Average grade (1st attempt & resits)***
 - ***Assessment Efficiency Index***

Results

Results Faculty AI&I

- Average grade and AEI had a strong correlation ($r=.90$, $p<.001$).
- Some expected indicators did not match our data: for instance 'Social Integration' and 'Education of parents'.
- 20% of variance in **Average grade** ($p<.001$) explained by:
 - 'average grade of previous education'
 - 'active participation'
 - 'attending class' (Surprisingly negatively correlated)
- 18% of variance in **AEI** ($p<.001$) explained by:
 - 'average grade of previous education'
 - 'active participation'

Results

Results Faculty ASIS (1)

- Average grade and AEI had a strong correlation ($r=.93$, $p<.001$).
- More expected indicators did match our data, however some did not match as well: for instance 'Education of parents'.
- 38% of variance in **Average grade** ($p<.001$) explained by:
 - 'contact with students outside school'
 - 'attending class'
 - 'procrastination' (negatively correlated)
 - 'average grade of previous education'

Results

Results Faculty ASIS (2)

- 43% of variance in **AEI** ($p < .001$) explained by:
 - *'contact with students outside school'*
 - *'attending class'*
 - *'procrastination' (negatively correlated)*
 - *'academic control'*
 - *'average grade of previous education'*

Future steps

Future steps faculties

- Further research:
 - *Repeat analysis with Year 1 Status as dependent variable*
 - *Analyze grades of specific courses in previous education, for instance mathematics.*

- Enhance student success based on faculty-specific findings. For example:
 - *Include relevant predictors in intake procedures*
 - *Paying close attention to students with low previous education grades.*
 - *Stimulating active participation of students.*
 - *Using Assessment Efficiency Index (AEI) as an early warning indicator for students throughout Year 1.*

Future steps

Future steps team 'Student Success'

- How to use the results in enhancing student success?

Predicting future students' success based on...

- *Predictors that we can intervene on: based on actual end results from previous students.*
- *Early warning indicators (such as AEI) for students throughout Year 1.*

- Further examine AEI's predicting value
 - *Will the use of AEI as a factor for Average grade (AEI*AVG) be an even better 'early warning indicator'?*

Discussion

- Who has experience in taking resits into account when calculating average grades?
- Do you think we have missed any predictors in our research?

Thank you

For any follow up questions or remarks, please contact us:

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