

## Survival of students with different learning preference

Case study with boring and complex algorithmic course and easy and interesting AI course

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## Motivation of the study

- Different students prefer different learning methods.
- We study the learning types of students.
- We compare whether how the learning type correlates to performance in three graduate level courses.

## Learning types in VARK

- Visual (sight)
- Aural (hearing)
- Read/Write
- Kinesthetic

Neil D Fleming:

*Teaching and Learning Styles: VARK Strategies*

<http://www.vark-learn.com/english/index.asp>

## Case study with three courses

- Design and Analysis of Algorithms (DAA)
- Artificial Intelligence (AI)
- Image Analysis (IMA)

## Statistics of the three courses included in the study

Course	Teacher	Period	Credits	Students
DAA	Fränti	Spring 2004	4 cu	32
AI	La Russa	Spring 2004	3 cu	12
IMA	Fränti	Fall 2003	3 cu	17

## A sample question in VARK

Do you like makaroonijauhelihalaatikko?

? I have to hear it before eating. (A)

? I have to touch it. (K)

? Only if I can experience its production..(K)

**Figure 1. An example question. Modalities in brackets are not shown to user.**

## Sample results of non-students

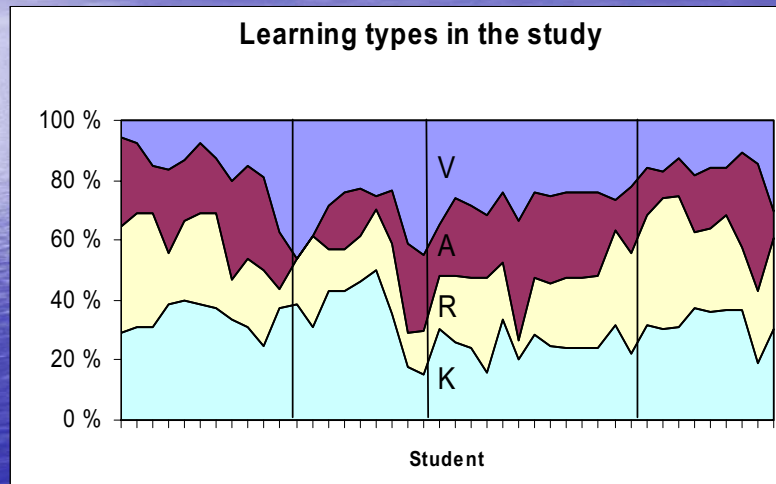
	V	A	R	K
Professor (Human Sc.)	4	2	<u>10</u>	7
Professor (Comp. Sc.)	<u>5</u>	4	2	3
Researcher (key person)	<u>8</u>	4	4	6
Researcher	4	<u>5</u>	4	3
Researcher	5	<u>8</u>	4	7
Project manager	<u>6</u>	3	3	5
Project worker	4	2	5	<u>7</u>
Project worker	3	6	6	<u>7</u>

## Correlations of VARK parameters

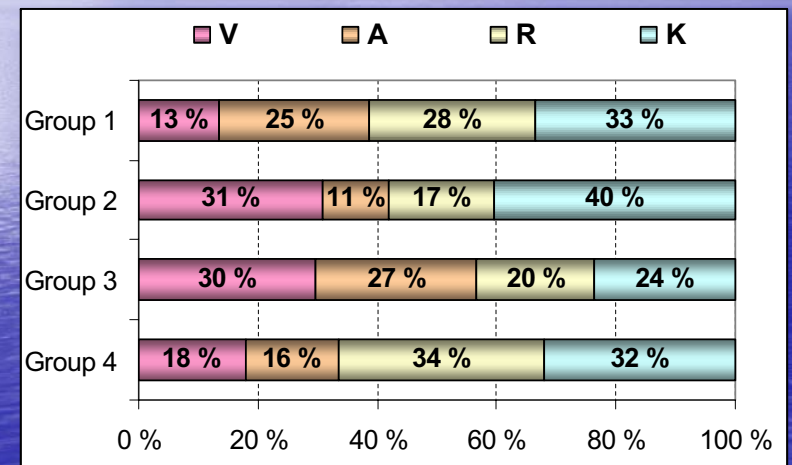
	V	A	R	K
V	1.00			
A	0.14	1.00		
R	-0.07	0.05	1.00	
K	0.03	-0.11	0.27	1.00

No observable correlations between variables

## VARK profiles of the students



## Average profiles of four groups



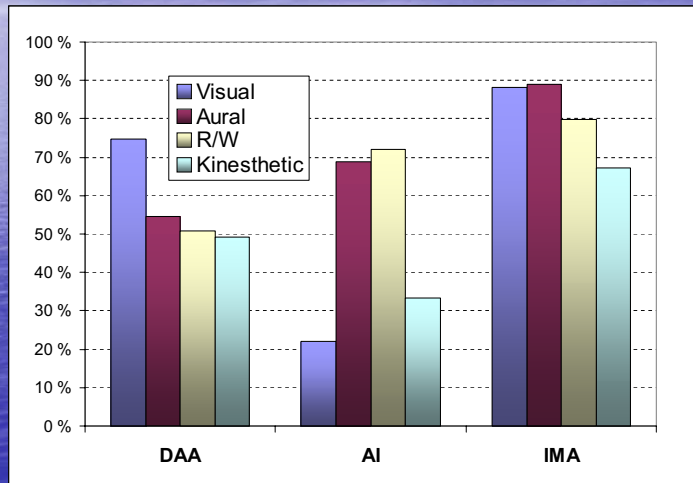
## Scores of the four groups

	Finnish students	DAA	AI	IMA
Group 1	80 %	14	1.0	<b>27</b>
Group 2	50 %	15	0	19
Group 3	46 %	<b>21</b>	1.8	<b>29</b>
Group 4	50 %	15	2.1	21

## Correlation of VARK parameters and final results

	DAA	AI	IMA
V	0.15	-0.18	0.05
A	0.12	0.14	<b>0.47</b>
R	0.01	0.47	-0.16
K	-0.33	-0.57	<b>-0.44</b>

## Average scores of different learning types



## Conclusions 1

- Aural people do somewhat better in Image Analysis.
- Kinesthetic learners performing worst in AI
- Students having Visual preference perform well in DAA.

## Conclusions 2

- Learning preferences same for academics and students (23%, 21%, 24%, 31%)
- The "successful" average student's profile seems to be in tact with teacher's