

Project-based learning and peer learning in Food quality management (FQM)

Educational practices at Wageningen University

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Results of task 3.1 ASKFOOD

- 77 respondents from 22 different nationalities (2 not known)

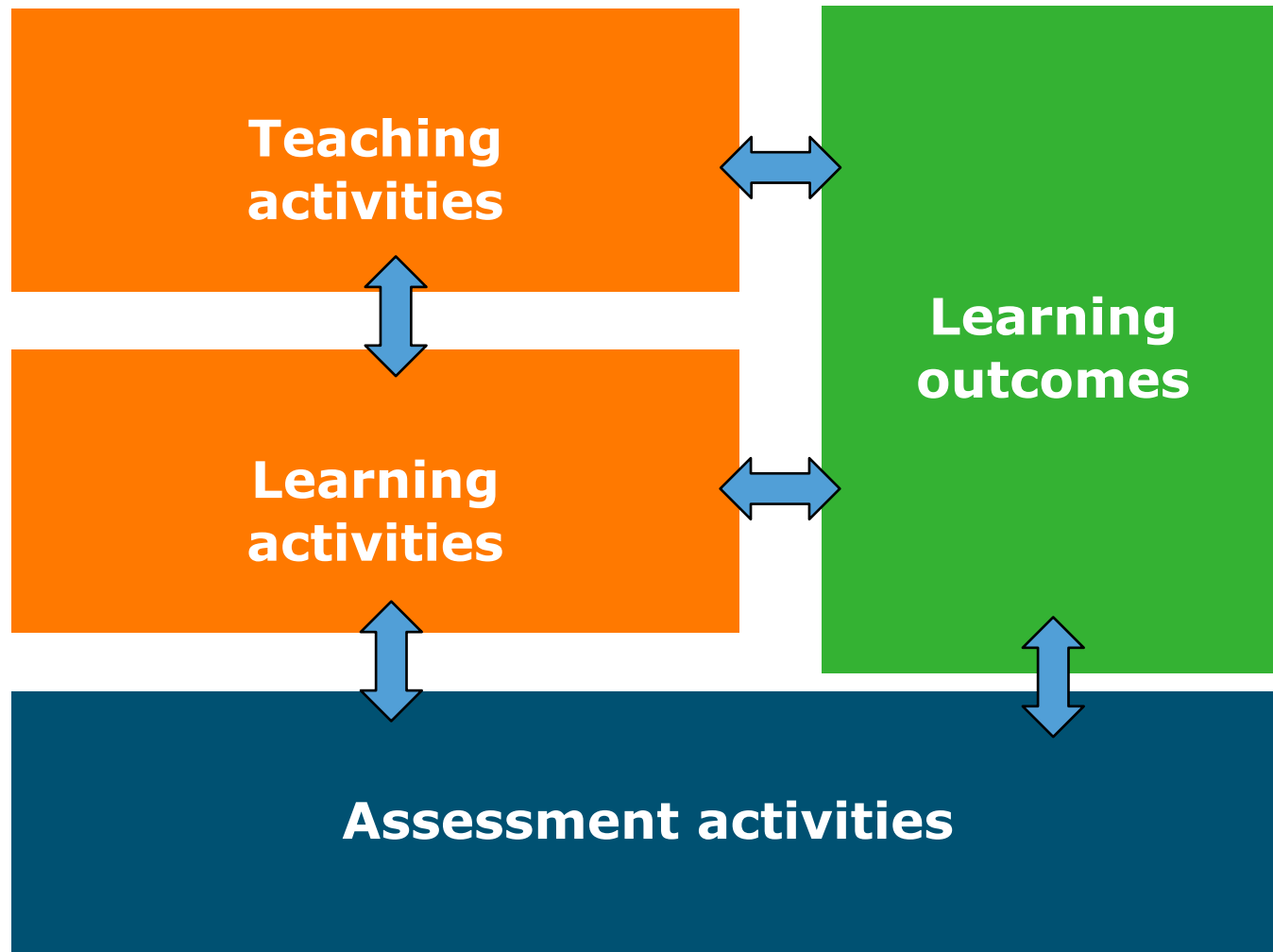
Teaching method	Number of respondents
Case studies	54
Peer learning	31
Flipped classroom	28
Blended training (MOOC/E-learning supported)	22
Gamification	9
Micro-learning	4
Serious gaming	2

MSc Food quality management

- *Constructive alignment*: Alignment between learning goals, teaching, learning, and assessment activities
- *Learning goals*: represent the cognitive level (see next slide)
- *Teaching*: Facilitating the learning process (student-centred)
- *Assessing*: feedback and feedforward (process & performance)

<https://www.wur.nl/nl/Onderwijs-Opleidingen/Master/MSc-opleidingen/MSc-Food-Quality-Management.htm>

Constructive alignment teaching

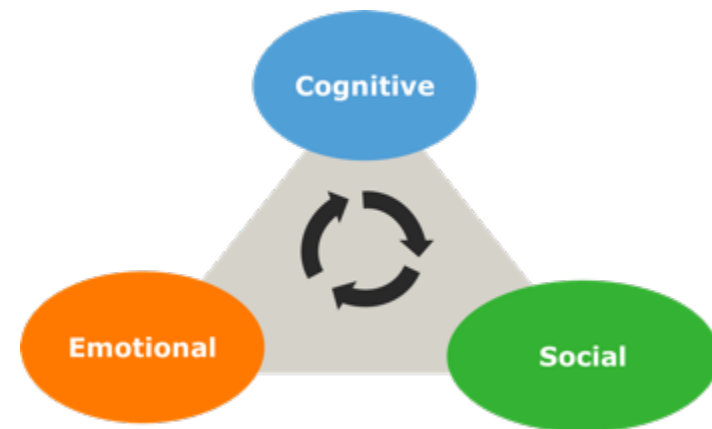


MSc Food quality management (2 yrs)

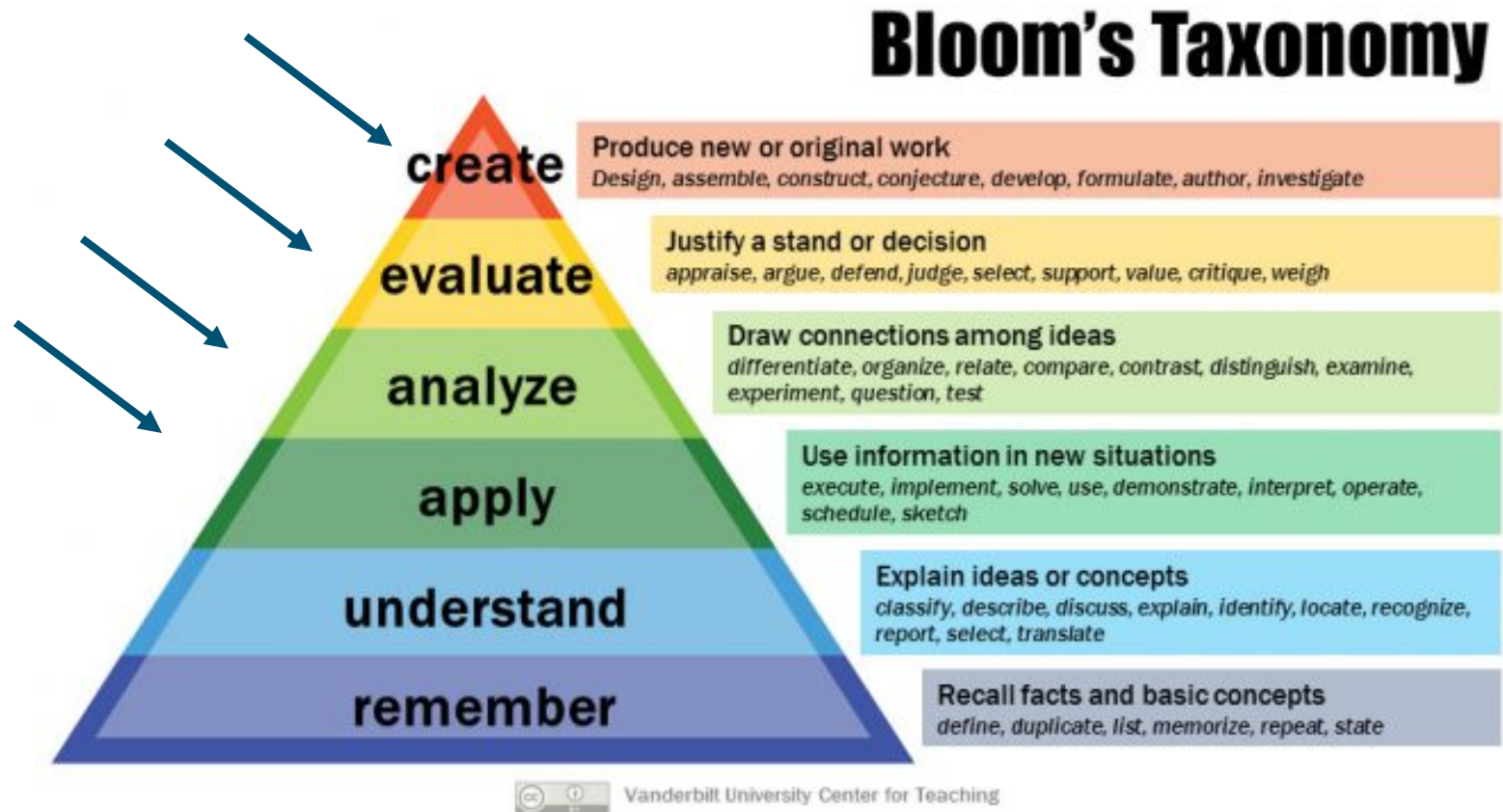
- *Interdisciplinary*: Techno-managerial approach



- *Learning*: constructive, cumulative, self-regulated, goal-oriented, authentic, in collaboration, and individual process of gaining knowledge, making meaning to it, and skills development
- *Three dimensions*



Project-based learning



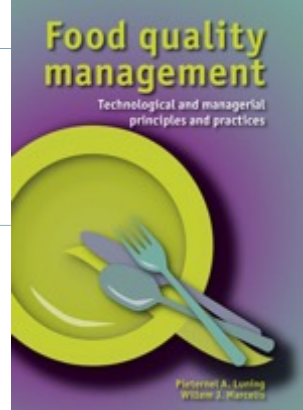
- Work-based learning, authentic learning, problem-based learning, wicked problems, challenging real world tasks

Example 1: Course Food quality management



How to satisfy consumers with high quality food?

Example 1: Basic principles of FQM



- Basic details of the course
 - 6 ECTS, master, majorly food background
 - Lectures on technological and management principles
 - Teacher-team from technology and management

- Interdisciplinary teaching methods
 - Structure of the book
 - Examples of connecting technology and management
 - Five assignments to practise the analytical&synthetic
 - Teachers can switch between the disciplines

Example 1 of project-based learning

- *Learning goal:* Apply the technological and managerial concepts and principles to analyse food quality management problems with the techno-managerial approach
- *Teaching:*
 - Written en plenary explanation on the approach
 - Elaboration of the five successive assignments
 - Plenary discussion and explanation per assignment
- *Learning:* Practise every assignment, verify in class
- *Assessment:* Similar to the last assignment, 40% counting
- *Handout:* See fifth (last) assignment in this course

Example 2: Course Food quality management research principles



What are the best solutions providing the complex problem situation?

Example 2: Research principles in FQM

- Basic details of the two courses
 - 12 ECTS, master, majorly food background
 - Interdisciplinary research activities in FQM
 - Teacher-team from technology and management

- Interdisciplinary teaching methods
 - Iterative assignments linking the disciplines
 - Clear milestones on what to deliver
 - Multiple examples showing the plausible connections
 - Teachers can switch between the disciplines
 - Combination of lectures, tutorials, and work-sessions

Example 2 of project-based learning

- *Learning goals:*
 - Analyse complex problems in food quality management from different perspectives to define a research aim and research questions;
 - Analyse possible technological and managerial factors contributing to the food quality problem.
- *Teaching:* Written en plenary lectures, tutorials, teacher consultation, assignment introduction
- *Learning:* In teams on every assignment together
- *Assessment:* The assignments are feedback and forward assessed, the final report counts
- *Handout:* Short descriptions of issues in FQM to research

Research results on project-based learning

The perceived degrees of contribution

Learning elements:

- To what extent did the **assignment introductions** facilitate you in achieving the intended learning outcomes?
- To what extent did the **assignment descriptions** facilitate you in achieving the intended learning outcomes?
- To what extent did the **food problem description** facilitate you in achieving the intended learning outcomes?
- To what extent did the **assignments report writing** facilitate you in achieving the intended learning outcomes? *

1. Very low extent	2. Rather low extent	3. Neutral	4. Rather high extent	5. Very high extent
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0

3

5

14

4

0

1

3

17

5

1

6

8

8

3

0

0

1

14

10

Spelt et al., (2015)

Questions?



Peer learning

- Learning from and with each other, by e.g.:
 - Working together in teams
 - Critically reviewing of each others' work



Brand new lecture room (Forum-building)



Example of peer learning I

- *Learning goals:*
 - Apply techno-managerial approach and common research skills;
 - Advance critical attitude towards own research skills
- *Teaching:* Written and plenary instruction on how to assess each other work using the assignment assessment forms
- *Learning:* 2 teams team up to assess each others' work
- *Assessment:* Individual self-assessment
- *Handout:* Assessment form of one assignment

Example of peer learning II

- *Learning goal:* To improve your academic skills
- *Teaching:* Plenary instruction on how to share your research findings and how to interact
- *Learning:* Actively involvement in the sharing by active listening and questioning
- *Assessment:* N.A.
- *Handout:* N.A.



Research results on peer learning

The perceived degrees of contribution					
Assessment elements:	1. Very low extent	2. Rather low extent	3. Neutral	4. Rather high extent	5. Very high extent
To what extent did the plenary feedback facilitate you in achieving the intended learning outcomes?	1	2	7	7	9
To what extent did the peer feedback facilitate you in achieving the intended learning outcomes?	1	3	13	9	0
To what extent did the individual feedback facilitate you in achieving the intended learning outcomes?	0	0	3	6	17

Questions?



Thank you!

Please ask if you would be interested in more details of the course materials or you are interested in literature sources on these topics. No problem to help you on your way



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