



Aalto-yliopisto

Assessment *for* and *of* Learning 2019

First Contact Session, 11.3.2019, 12:15 – 15:45

Theme 'What is the purpose of assessment. Relevant Concepts'

Viivi Virtanen, Pedagogical Specialist

2019 Spring 3 credits

- 3 contact sessions 27 h
- Reading at least 6 papers 27 h
- Individual, Project plan 27 h

2019 Autumn 2 credits

- Implementation of the project
- Reading + short report
- Sharing with community



What is assessment?

All forms of assessment provide estimates of the person's *current* status

results can be used for

**Judgemental
purposes**

Certification purposes

**Developmental
purposes**

Giving timely feedback
Supporting student learning
Enhance current and future
learning



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Brown, Bull, Pendlebury 1997 Assessing student learning in higher
education Routledge



There is no feedback from all jobs, either at all, or at least during the course. The feedback helps the student to understand if he has learned the right thing and where to develop it. Returning jobs to a "black hole" in order to make the performance mark really foolish !!!

BIZ Bachelor Student 2018

Programme today

At 12.15-14 Basics of Assessment

- *Introduction. Why and what to develop? Get to know each other*
- *Concepts of Assessment Discussion about the papers*

At 14.00-14.15 BREAK

At 14-16 Self-assessment

- *What we need for to (self-) assess own work or to peer-assess the others' work? Rubrics with examples*
- *Designing rubrics*
- *The main assignment for each participant.*

My story: Learning from errors



My interests concerning assessment in higher education



A project concerning assessment practices in biosciences 2010-2011, Data: teachers' interviews

- Halinen, K. Ruohoniemi, M., Katajavuori, N. & Virtanen, V. 2012. Life science teachers' discourse on assessment: a valuable insight into the variable conceptions of assessment in higher education *Journal of Biological Education* pp. 1-7; (MyCoursesMaterials)
- Postareff, L., Virtanen, V., Katajavuori, N. & Lindblom-Ylänne, S. 2012 Academics' conceptions of the purpose assessment and their assessment practices. *Studies in Educational Evaluation* 38, 3-4, 84-92. (MyCoursesMaterials)

Implementation of peer assessment Data: teacher- and peermarks; students' perceptions

- Asikainen, Virtanen, Postareff, & Heino, P. 2014. The validity and students' experiences of peer assessment in a large introductory class of gene technology. *Studies in Educational Evaluation*, (43) 197-205)

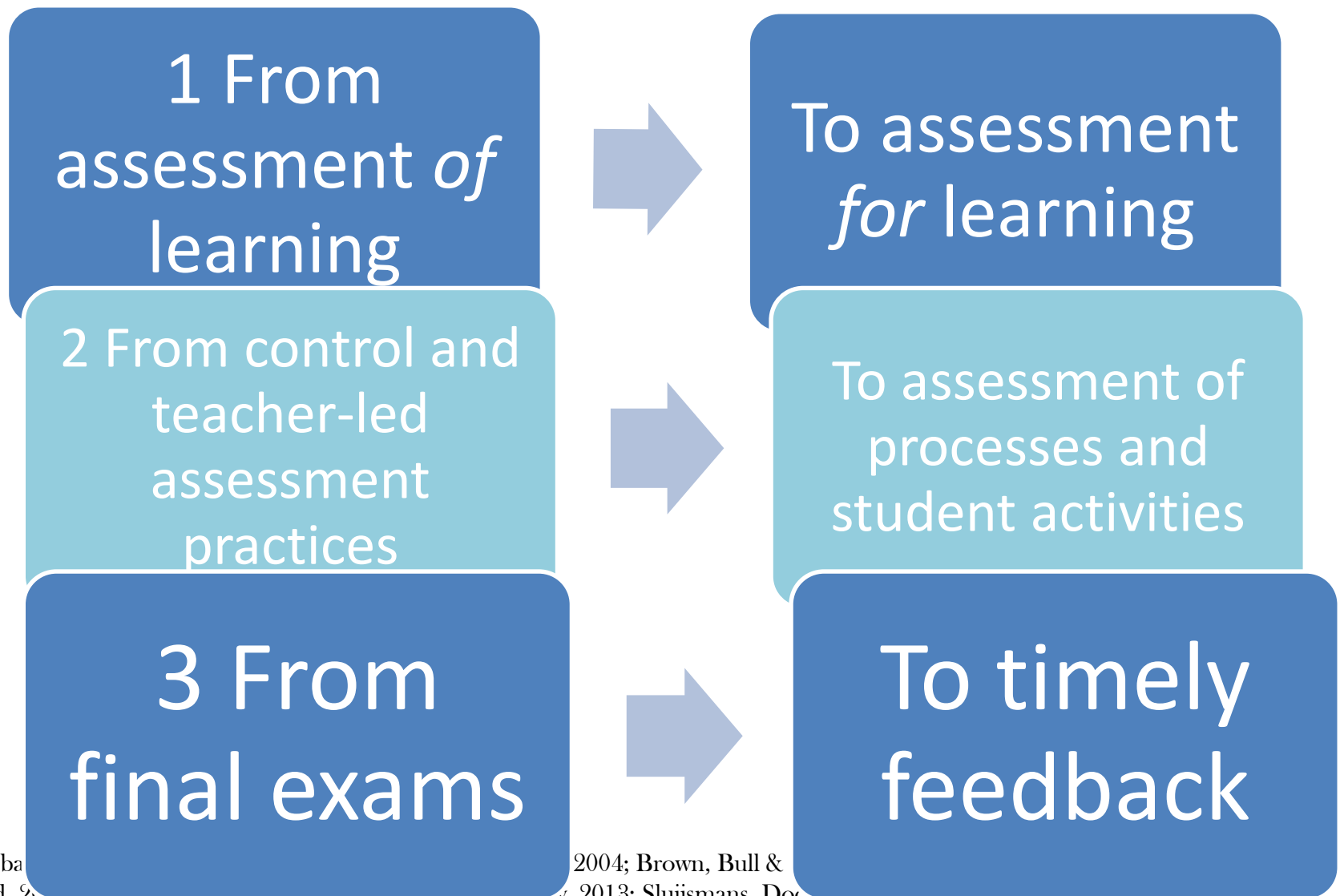
Implementation of diagnostic assessment Data: Open questions. Survey.

- Asikainen, Blomster, J. & Virtanen. EARli Congress paper 2017.

Implementation of self-assessment

- for summative purposes (University of Helsinki, Häsä, Jokke & Rämö, Johanna, & Virtanen Viivi 2019 see MyCourses Materials)
- for formative purposes (Aalto-University Kangaslampi, Riikka; see presentation slides in MyCourses Materials)

Assessment Culture is globally changing



¹Birenba
²Boud, 2004; Brown, Bull &
³Boud, 2000; Black ym., 2004; Bryan & Clegg, 2006; Sluijsmans, Dochy & Moerkerke, 1999
SEE Virtanen et al 2014 if you want to find the references)

To be honest, I would really appreciate more feedbacks or even correction sessions concerning labs and projects during the class. Sometimes, I really have the feeling that you produce something, spend a lot of time and efforts in a homework and just get a grade at random, 2 months after. Even sometimes after the exam and after the end of the course period. What for now? Why should we care? I did care a lot for grades, still do a bit to be true.

However, I am much more interested in learning.

I am curious and really, really love to learn. I hate it when I just receive a grade and not even a comment. I want to know what the teacher think about the performance. Above all, what I did wrong, all my mistakes so that I can learn from it, grow bigger, wiser from this experiences.

Right now, I have the feeling that those homeworks, those ongoing assignments are not here to help you learn but to assess your skills and understanding like a final exam would do. They become stressful and useless. Or else, it is the exam in the end that becomes superficial.

Master Student Aalto38 2018

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**Get to know each other and to set
our targets 30 min**

Learning to know each other 30 min

1. In pairs interviewing each other 2+2 min

- Name & Programme/Dicsipline & Anything personal you would like to tell.
e.g. your hobby

Own interests:

- 1) *Is there anything you would like to change in university learning/teaching in related to assessment?*
- 2) *Own targets what would you like to develop concerning assessment?*

2. Presenting the interviewed person for the group of four; 1 min/ person

3. Presenting your group to all others; one presents the names and say something about your targets if you share any etc.

Participants' Interests and targets

Some comments:

- **Automatic and continuous assessment**
- **How to assess process**
- **How to add assessment for learning...**

Obs. There was not a gap between the participants' and the course's targets

ILOs and Assessment in this course

Intended learning outcomes	(What to do) to pass
to identify the resources of assessment practices <i>in supporting learning process</i> ,	Participation in-class and readings; knowing the purposes of assessment, self assessment, peer assessment, assessment for life long learning, sustainable assessment
to analyse and compare various assessment and feedback methods in related to validity and reliability,	Participation in-class, readings, doing the assignments; The link between intended learning outcomes and 'what the student does' and assessment methods; can give justifications
to design self- or peer-assessment activities in own teaching,	Main assignment done (rubric and plan in 3 crs course) (+ 2 credits implementation and reflection)
(to evaluate the assessment and feedback practices in a programme or major and to participate in developing the practices)	Participation in the 3. contact session and the activities there (+ 2 credits sharing)
Other	

Project plan for to develop assessment in your course/in your major

- Is there a challenge or question concerning student learning and assessment that you would like to solve?
- How the students can get timely feedback during the course?
- Could you implement self-assessment or peer assessment activities? For grading or for developmental purposes?
- See guidelines in the last slide

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13-14 Designing assessment. Defining Concepts



Developing Assessment Practices

What is the
situation
now?

Why?

What is the
purpose of
assessment?

What are the
values guiding the
practices?

What is
assessed?

Who acts as
assessor?
Sources?

What
methods to
use?

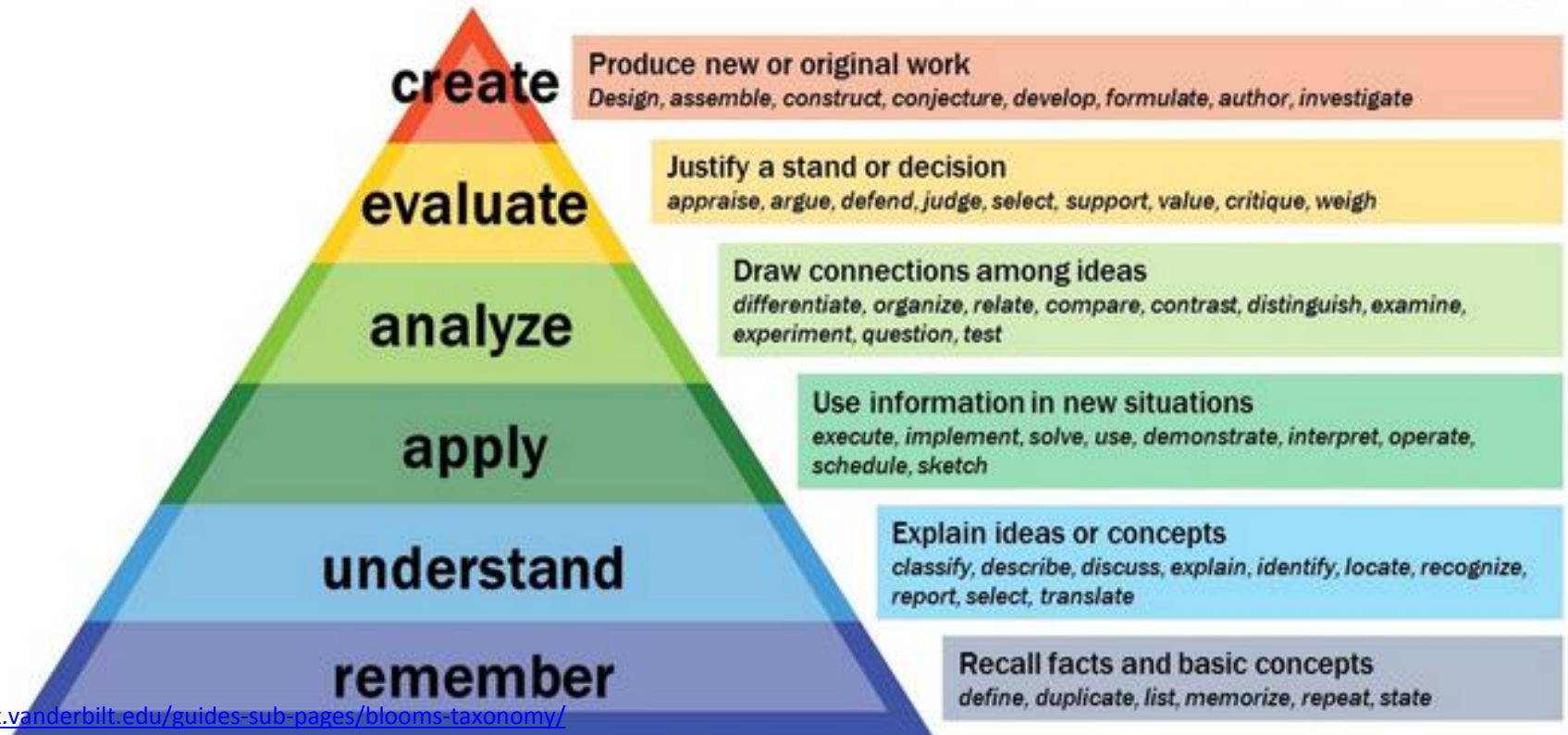
Sources	Instruments	Examples of Methods
Teacher Other teachers Assistants/Tutors Demonstrators Student self Student peers Mentors Employees	Implicit criteria - <i>Global</i> Explicit criteria - <i>Criteria referenced</i> - <i>Grading</i> - <i>Checklists</i>	Essays Lab reports Presentations Projects Group projects etc.

What level of understanding is assessed?

Bloom's Taxonomy

by Patricia Armstrong, Assistant Director, Center for Teaching

Bloom's Taxonomy



The Accuracy and Consistency of an assessment

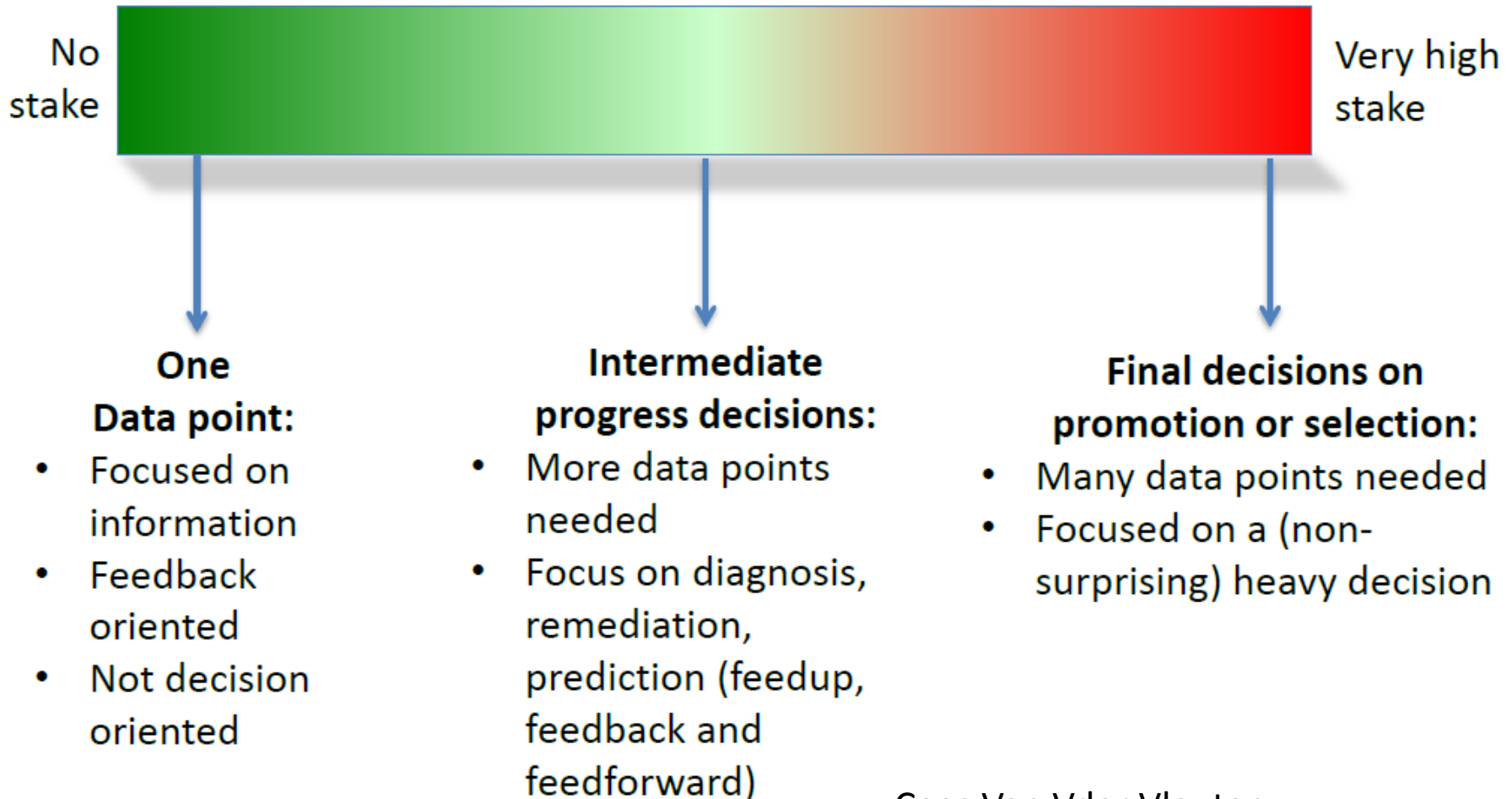
Validity

- Form of truth-seeking
- Match between what is intended to be measured and what is measured
- Appropriateness

Reliability

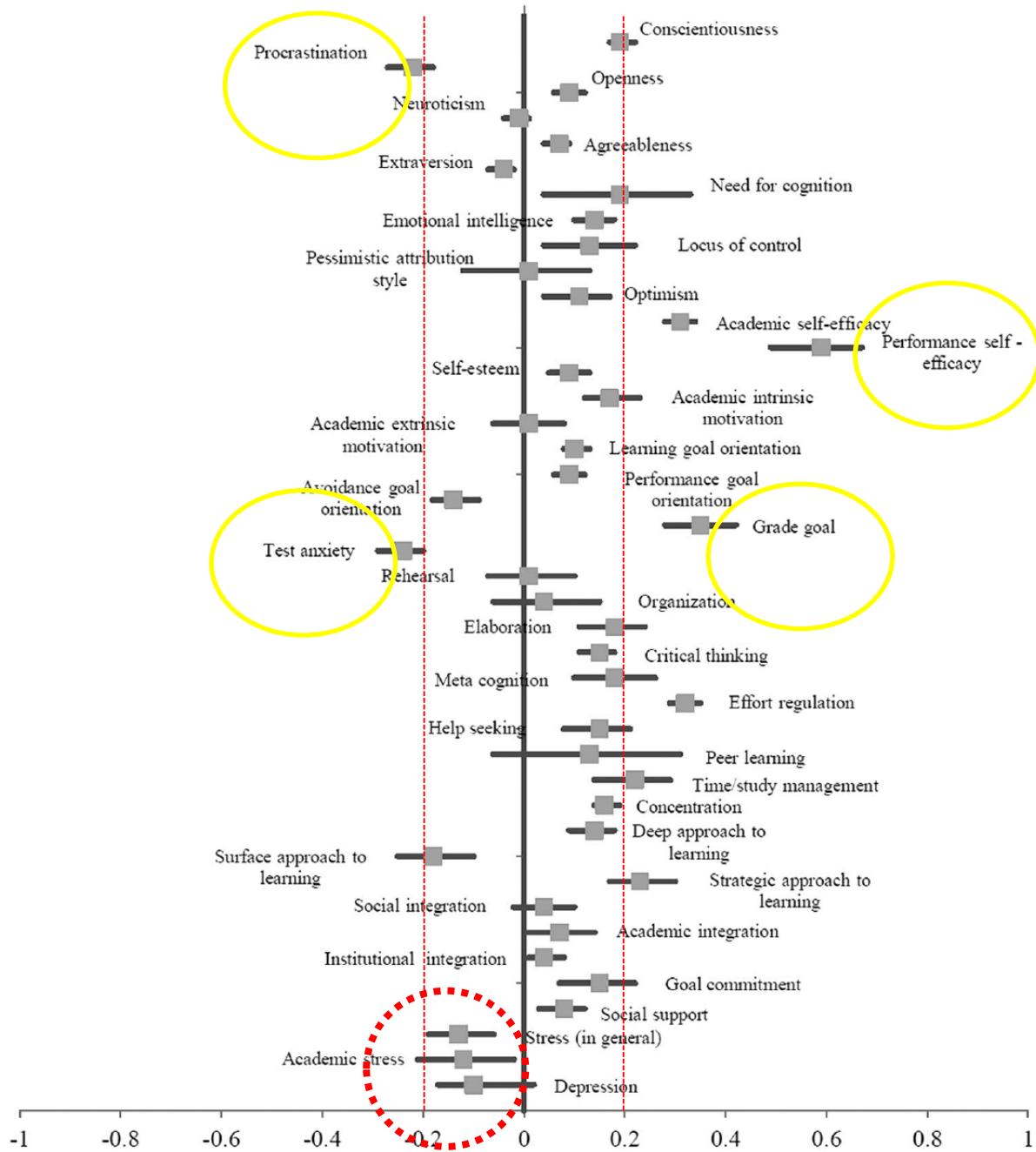
- Concistency
- Reduce the errors
- Measure of agreement
- Agreement between assessors
- Agreement within assessor

Continuum of stakes, number of data point and their function



A blue-tinted photograph of a festival scene. In the foreground, a woman with long blonde hair, wearing a sequined jacket, has her arm around a woman in a white top and sunglasses who is laughing. To the right, a man in a dark jacket and cap looks on. In the background, a large white 'A!' sign is visible against a wooden building, with other festival-goers and structures under a clear sky.

What drives learning?



Richardson et al. 2012
 Psychological Correlates of
 University Students' Academic
 Performance: Meta-analysis

Figure 1. Results of the primary meta-analyses for the non-intellective correlates of GPA: r^+ and 95% confidence intervals.

6.
Do you
procrastinate?

4.
Are you having
test anxiety?

8.
Are you smart enough?
(Test intelligence: $r=0,20$)



Do you have enough prior knowledge?
High school GPA: $r=0,40$
and see Hailikari 2009.

1.
Do you trust yourself
as a learner?

2.
Are good grades import for
you?

3.
Can you regulate
your effort when you
face challenges?

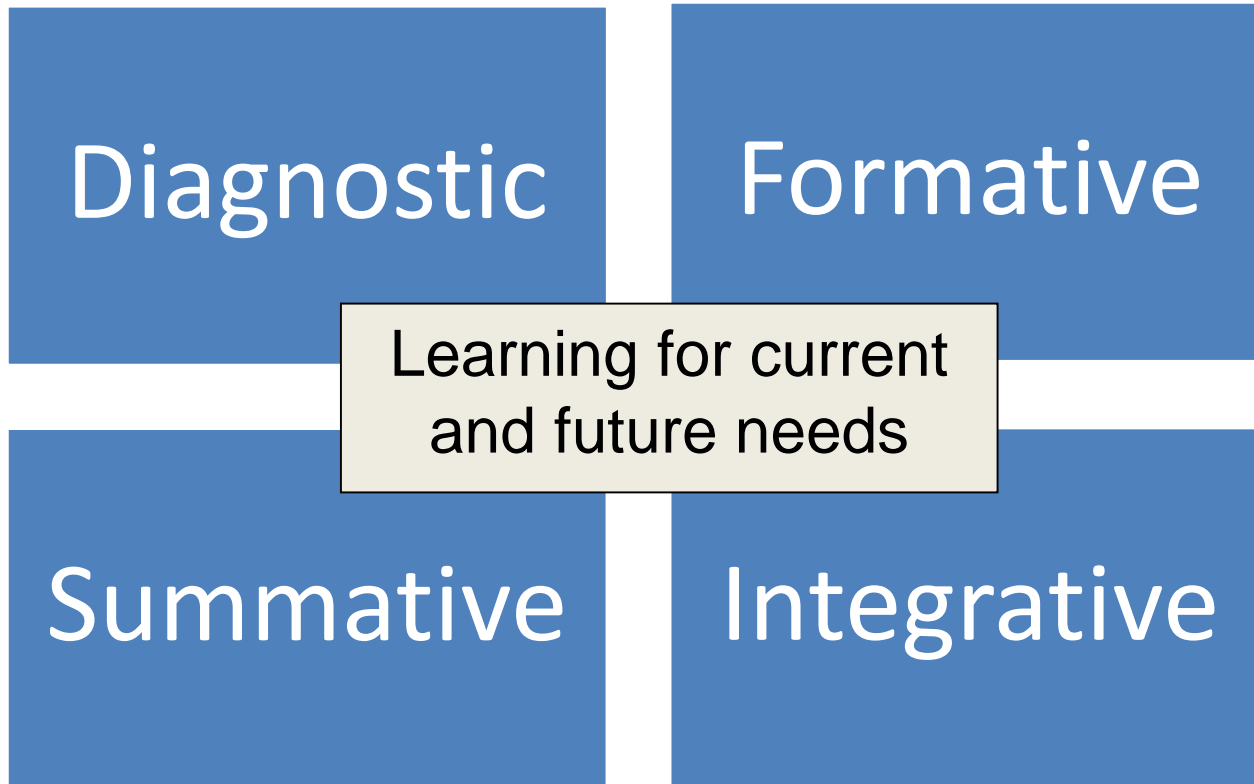
7.
Can you manage
your time?

5.
Can you regulate your
learning technique?

Richardson et al. 2012
Psychological Correlates of
University Students' Academic
Performance: Meta-analysis

Figure 1. Results of the primary meta-analyses for the non-intellective correlates of GPA: r^+ and 95% confidence intervals.

Four different purposes of assessment



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Input from the papers

Input from the papers – Group working 30 min

1 Define the concepts

First by yourself write down 5 min

- Then with the others 10 min from other groups.
- Come back to the original group for sharing: define the concepts together.
- Discuss and give e.g. one example with method and situation for each, based on your experiences as a teacher or student. 5 min

2 What are the main points or conclusions of the papers you read? Have a round. Anything to be used for to develop assessment in your courses? 10 min

ASSESSMENT PRACTICES FOR CURRENT AND FUTURE LEARNING

- Demand of variety to assessment methods: rewarding also for doing, for the process, for creativity (What are the ILOS).
- Also self-assessment for to understand the standards and criteria.
- *Current evaluation methods don't always support learning; focus is on performance. Students feel they don't get enough feedback to be able to learn and develop.*

Current Themes in Higher Education Assessment

Professionalism and how it is assessed

Competence-based assessment

EPAs Entrustable professional activities

Sustainable Assessment

Assessment for Lifelong-learning

Sustainable Feedback

Evaluative Judgements

Assessment Programme

Advanced Assessment Course (Medical Education) London 2013

Professional Development in Assessment, Earli European Association for Learning and Instruction Sig1 Assessement Congress, Madrid 2014



BREAK
15 minutes

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Promoting learning with self-assessment and using assessment rubrics

Case: Self-assessment in a university course

- students work together with the support of the teacher
- feedback from the teacher and peers
- students practise self-assessment
- award their own grades



Assessment Rubric

- a document that articulates the expectations for an assignment by listing *the criteria*, or what counts, and describing *levels of quality (standards)* from excellent to poor.

	PASS	POOR	GOOD	EXCELLENT
Knowledge Skill Professional practice				

Assessment Rubric

C
R
I
T
E
R
I
A

Quo-
tient
struc-
tures

Mathe-
matical
discus-
sions

- a document that articulates the expectations for an assignment by listing *the criteria*, or what counts, and describing *levels of quality (standards)* from excellent to poor.

Levels of Quality

Prerequisites

I can determine the cosets of a subgroup.
I can view a quotient group as a group and handle its elements like in any other group (e.g. determine inverse elements and powers).
I know how normal subgroups and quotient groups are related.
I can check in several different ways whether two cosets coincide.

I can formulate precise questions when I do not understand something.
I can talk about my solutions to other people.

Skills corresponding to grade 1

I can calculate with cosets. I can, for example, determine the elements of the quotient group $\mathbb{S}_4 / \langle (1234) \rangle$. I can also determine the elements of the subgroup generated by $(12) \langle (1234) \rangle$.
I can view cosets as equivalence classes, and know which equivalence relation defines them.
I can determine elements of a quotient ring and know how ideals and quotient rings are linked.

I present my solutions to other people.
I take part in mathematical discussions with my peers.

Skills corresponding to grade 3

I calculate with cosets fluently.
I can check whether an equivalence relation is compatible with a binary operation.
I know why the equivalence relation needs to be compatible with a binary operation when defining a binary operation for equivalence classes.

When talking to other people, I listen to them and react accordingly.
When talking to others about my mathematical thinking, I try to concentrate on the main ideas instead of technicalities.
I give feedback to others when their solutions are discussed.

Skills corresponding to grade 5

I can deduce the definitions of normal subgroup and ideal from the concept of binary operation compatible with an equivalence relation.

I give constructive feedback to others so that they can improve their work. I can find something positive and meaningful to say in other people's work.
I can summarise my solutions clearly, briefly and precisely.
When discussing with other people I can take their position and feelings into consideration. I try to make the conversations meaningful to all parties.

Video (not open without a Helsinki University account)

Johanna Rämö University of Helsinki

DISA Project (digital self-assessment) Find the publications concerning the project through <https://disa.cs.helsinki.fi/>

(in the lower part of the page Background ' a study on self-assessment')



Self-assessment in large classes in mathematics

First-year lecture course

Students did assignments in Moodle(MyCourses)

Got feedback about the assignments from peers and the teacher

Assessed their learning in the middle and in the end of the course – gave themselves the grade based on rubrics

Preliminary results show:

- Self-assessment was valid – reflected students learning well
- Students learned more deeply, were more motivated to learn and dropouts decreased

*Learning for
oneself and not for
the exam!*

Think by yourself

- Think about the last time when your performance was evaluated or assessed **and feelings were involved**
- How did you feel before the assessment? How about during the assessment? How about afterwards?
- Do you think that the assessment gave a truthful picture of your real skills?

Discuss with your group

- Share your experiences with your group
- Write down the feelings people in your group have experienced

Evaluative judgement

“The capability to make decisions about the quality of work of self and others”

(Tai et al. 2017, 5, in Boud et al. 2018. Developing Evaluative Judgement in Higher Education. Routledge.)



Learning objective matrix

- Contains both content and generic skills

http://www.mv.helsinki.fi/jramo/algebra2/tavoitematriisi_alg2.html

<https://disa.cs.helsinki.fi/courses/matrix/1>

	Prerequisites	Skills corresponding to grade 1	Skills corresponding to grade 3	Skills corresponding to grade 5
Quotient structures	<p>I can determine the cosets of a subgroup.</p> <p>I can view a quotient group as a group and handle its elements like in any other group (e.g. determine inverse elements and powers).</p> <p>I know how normal subgroups and quotient groups are related.</p> <p>I can check in several different ways whether two cosets coincide.</p>	<p>I can calculate with cosets. I can, for example, determine the elements of the quotient group $\mathbb{S}_4/\langle(1234)\rangle$. I can also determine the elements of the subgroup generated by $(12)\langle(1234)\rangle$.</p> <p>I can view cosets as equivalence classes, and know which equivalence relation defines them.</p> <p>I can determine elements of a quotient ring and know how ideals and quotient rings are linked.</p>	<p>I calculate with cosets fluently.</p> <p>I can check whether an equivalence relation is compatible with a binary operation.</p> <p>I know why the equivalence relation needs to be compatible with a binary operation when defining a binary operation for equivalence classes.</p>	<p>I can deduce the definitions of normal subgroup and ideal from the concept of binary operation compatible with an equivalence relation.</p>
Mathematical discussions	<p>I can formulate precise questions when I do not understand something.</p> <p>I can talk about my solutions to other people.</p>	<p>I present my solutions to other people.</p> <p>I take part in mathematical discussions with my peers.</p>	<p>When talking to other people, I listen to them and react accordingly.</p> <p>When talking to others about my mathematical thinking, I try to concentrate on the main ideas instead of technicalities.</p> <p>I give feedback to others when their solutions are discussed.</p>	<p>I give constructive feedback to others so that they can improve their work. I can find something positive and meaningful to say in other people's work.</p> <p>I can summarise my solutions clearly, briefly and precisely.</p> <p>When discussing with other people I can take their position and feelings into consideration. I try to make the conversations meaningful to all parties.</p>

What did the students think?

*"Now I didn't focus on memorising things. Instead, I focused on **understanding** the topics, so that in the future, if necessary, I can use them / re-learn them quickly."*

More information in the blogs

- **Kumpula opettaa:** [blogs.helsinki.fi/kumpula opettaa](https://blogs.helsinki.fi/kumpula-opettaa)
- **Hel of a lesson:** blogs.helsinki.fi/helofalesson

Johanna Rämö and DISA group (Digital Self-Assessment)

Group work: Design an assessment matrix

- In your group, first, choose a situation in which one needs to assess learners' skills
 - a course in university, or other formal education, workplace, etc.
- What kind of learning objectives are there?
- Design a matrix
- Plan together how self-assessment can be used in to assess the learning outcomes in that situation?

- The figures of group works will be submitted to MyCourses in the area of first contact session



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BEFORE NEXT 2. CONTACT SESSION

- 1. Read two papers*
- 2. Write a short plan concerning your project plan and submit it into MyCourses Assignments*

References

- Asikainen, Virtanen, Postareff, Heino (2014). The validity and students' experiences of peer assessment in a large introductory class of gene technology. *Studies in Educational Evaluation*, (43) 197-205
- Biggs, J. & Tang, C. 2010 Teaching for quality learning at university. Textbook.
- Birenbaum, M. (1996). Assessment 2000: Towards a pluralistic approach to assessment. Teoksessa M. Birenbaum & F. J. R. C. Dochy (toim.), *Alternatives in assessment of achievement, learning processes and prior knowledge* (s. 3–30). Boston: Kluwer.
- Black, P., Harrison, C., Lee, C., Marshall, B. & William, D. (2004). Working inside the Black Box: Assessment for learning in the classroom. *Phi Delta Kappan*, 86 (1), 9–21.
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- Durette, B., Fournier, M. & Lafon, M. (2016) The core competencies of PhDs, *Studies in Higher Education*, 41:8, 1355-1370.
- Kearney et al. Our materials
- Sadler, P., & Good, E. (2006). The impact of self- and peer-grading on student learning. *Educational Assessment*, 11(1), 1–31.
- Segers, M. & Dochy, F. (2006). Enhancing student learning through assessment: Alignment between levels of assessment and different effects on learning. *Studies in Educational Evaluation*, 171-179.
- Sluijsmans, D. & [Prins, F. 2006. A Conceptual Framework for Integrating Peer Assessment](#) in [Teacher Education](#). *Studies in Educational Evaluation*, 32,1 6-22.
- Sluijsmans, D., Dochy, F., & Moerkerke, G. (1999). Creating a learning environment by using self-, peer-, and co-assessment. *Learning Environments Research*, 1(3), 293–319.
- Virtanen, V., Postareff, L. & Hailikari, T. 2015 Millainen arviointi tukee elinikäistä oppimista? *Yliopistopedagogiikka*. 22, 1, 1-11. (Abstrat in English How to reform assessment practices for lifelong learning?)
- Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin*, 138(2), 353-387. <http://dx.doi.org/10.1037/a0026838>
- Tai et al. 2018, 5, in Boud et al. 2018. Developing Evaluative Judgement in Higher Education. Routledge.

1. To read for the second contact session about peer assessment

see [MyCourses Second Contact Session](#)

Asikainen, Virtanen, Postareff, & Heino, P. 2014. The validity and students' experiences of peer assessment in a large introductory class of gene technology. *Studies in Educational Evaluation*, (43) 197-205

Accepted version of Sridharan, B., Tai, J. and Boud, D. (published online 25 August 2018). Does the use of summative peer assessment in collaborative group assessment inhibit good judgement? *Higher Education*, DOI: [10.1007/s10734-018-0305-7](https://doi.org/10.1007/s10734-018-0305-7)

Does the use of summative peer assessment in collaborative group work inhibit good judgement?

2. Project plan - First draft

Product: Assessment rubrics for (own) course, and a short plan how to use it with a description what are the assessment practices of the course. Some literature references.

Think about: How the students can get timely feedback during the course? How the assessment rubrics could be used for self-assessment or peer assessment?

FOR NEXT TIME

-First, select the course

-Think about the questions: Is there a challenge or question concerning student learning and assessment that you would like to solve? Could you implement self-assessment or peer assessment activities? For grading or for developmental purposes?

-Write a short plan and your thoughts at present: What is the project you will work with? What to develop concerning assessment? Tell also, what kind of questions you have in your mind?

-Submit your plan to the discussion area which is open for all participants in this course.

If that is not a meaningful task, please, feel free to do something else. It must be aligned with the intended learning outcomes of the course, and time, but there are no other restrictions...

Don't hesitate to contact me in issues concerning
assessment/student learning/teaching/well-being
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