**LIÈGE** université

**ETHICAL FORUM**

*Learning Analytics at the bedside of a seriously ill patient called 'Assessment'*

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# What about Assessment?

▶ The primary functions of assessment are to take a **measure** of a given performance, to facilitate **judgment** about that performance, and to make a **decision** about it (Stufflebeam, 1981; Nitko & Brookhart, 2011)
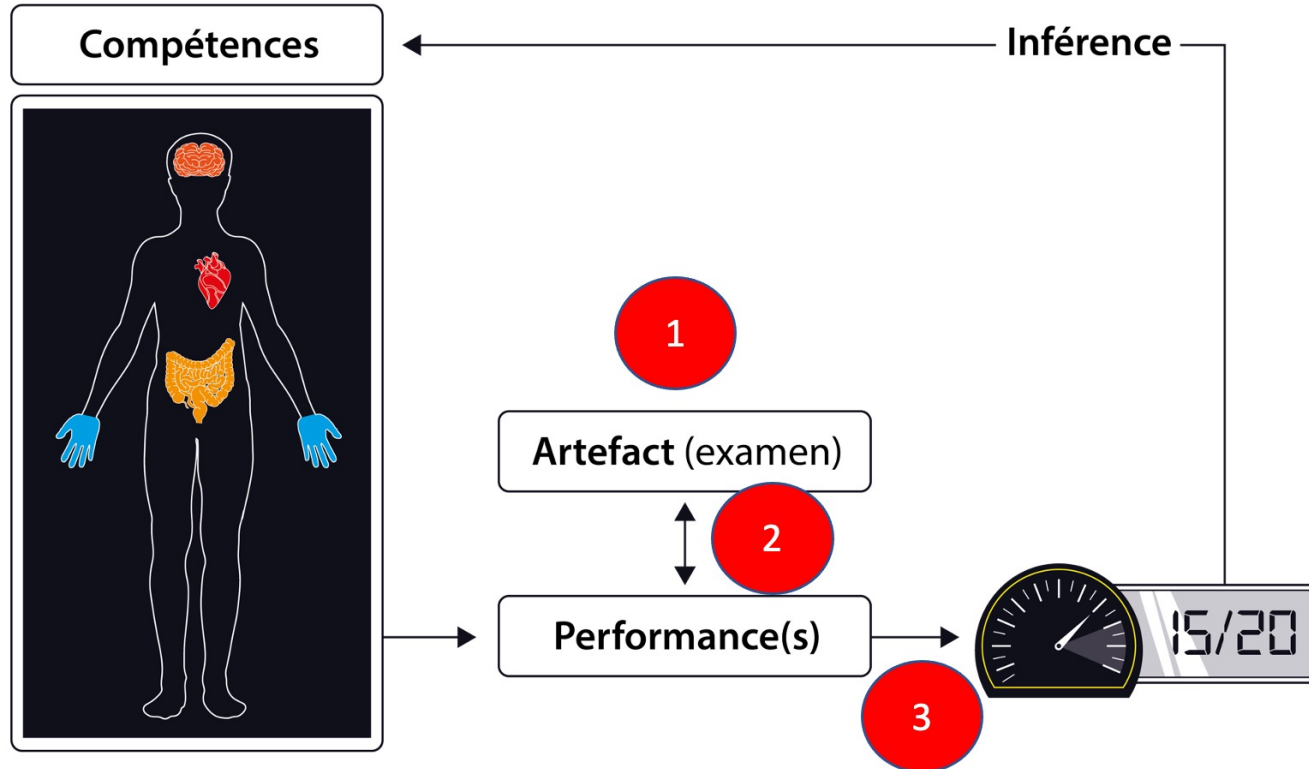
| • Measure | • Judgment | • Decision |
|---|---|---|

# What's "wrong" with assessment?



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# Assessment needs

a) Quality assessment tools (AERA, APA, NCME, 1999)

  - Validity of measure

b) Triangulation of data (Denzin & Lincoln, 2000)

  - Multiple opportunities for assessment, and diversification of assessment modalities  (Detroz, Malay & Crahay (2020)

c) A positive impact on learning (Nicol, 2009)

  - Assessment for Learning (Black & Wiliam, 1998, 2008; Nicol, 2009) :

# A survey on assessment practices in Higher Education on the French-speaking part of Belgium

**Comprendre et améliorer les pratiques d'évaluation des acquis des étudiants dans l'enseignement supérieur**

Coordinateurs du projet :
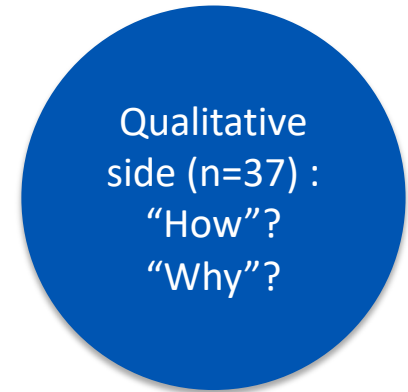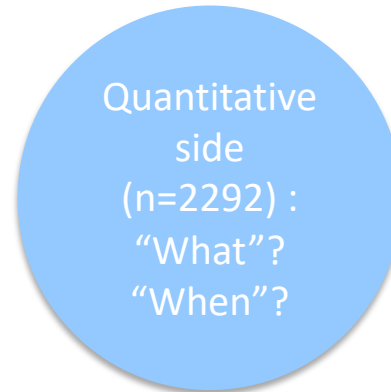Pascal DETROZ et Marc ROMAINVILLE

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Recherche financée par le ministère de l'enseignement supérieur
de la Fédération Wallonie-Bruxelles

UNIVERSITÉ DE NAMUR     FÉDÉRATION WALLONIE-BRUXELLES     Université de Liège

Quantitative side (n=2292) : "What"? "When"?

Qualitative side (n=37) : "How"? "Why"?

What are teachers' assessment practices and what are the reasons for them?

# Some interesting results

**Tableau 9 : Périodes d'évaluation, selon le type d'établissement.**

| | Universités N=665 | | Hautes Écoles N=759 | |
|---|---|---|---|---|
| Uniquement en cours de quadrimestre | 43 | 6,5 % | 58 | 7,6 % |
| En cours ET en fin de quadrimestre | 286 | 43,0 % | 351 | 46,3 % |
| Uniquement en fin de quadrimestre | 336 | 50,5 % | 350 | 46,1 % |

N=738
N=1323

**Tableau 12 : Types de modalités d'évaluation, selon le type d'établissement.**

| | Hautes Écoles N=662 | | Universités N=588 | |
|---|---|---|---|---|
| Examen écrit | 457 | 69,0 % | 399 | 67,9 % |
| Questions fermées (seules ou non) | 187 | 45,5 %[6] | 143 | 38,3 % |
| Questions ouvertes (seules ou non) N=411 et 373 | 405 | 98,5 % | 330 | 88,5 % |
| Examen oral | 228 | 34,4 % | 232 | 39,5 % |
| Travail de fin de quadrimestre (y compris présentation, projet, portfolio…) | 188 | 28,4 % | 166 | 28,2 % |

# Some interesting results

**Tableau 137 : Types de retour fourni aux étudiants lors d'un examen écrit, selon le type d'établissement.**

| | Hautes Écoles N=897 | | Universités N=609 | |
|---|---|---|---|---|
| 1. Communication à chaque étudiant de sa note (ou sa réussite/échec) | **496** | **55,3 %** | **425** | **69,8 %** |
| 2. Communication d'une note détaillée (par partie, par chapitre, par critère…) à chaque étudiant | **168** | **18,7 %** | **153** | **25,1 %** |
| 3. Organisation d'une consultation des copies | 774 | 86,3 % | 509 | 83,6 % |
| 4. Remise d'un feedback individualisé qui analyse précisément les réponses de l'étudiant | **95** | **10,6 %** | **46** | **7,5 %** |
| 5. Remise d'un feedback individualisé qui analyse précisément les réponses de l'étudiant ET suggestion de pistes concrètes d'amélioration | 130 | 14,5 % | 72 | 11,8 % |
| 6. Réalisation d'une correction collective visant à communiquer les réponses correctes | **73** | **8,1 %** | **73** | **12,0 %** |
| 7. Réalisation d'une correction collective visant à communiquer ET expliquer les réponses correctes[13] (638 et 352) | **93** | **14,6 %** | **55** | **9,0 %** |
| 8. Aucun feedback n'est rendu aux étudiants | 25 | 2,8 % | 20 | 3,3 % |

# What does the survey reveal about the quality of assessments? (Detroz & Romainville, 2017)

▶ Data triangulation is not really the norm
  - Most teachers only assess students' achievements in the examination
  - Teachers try to diversify the modalities of questioning, but not in a wide range of possibilities

▶ Moreover, the quality is not always there
  - Concessions are made with regard to the validity of the measure (e.g., not penalizing errors in the MCQs), particularly when teachers feel that the assessment does not allow for a detailed evaluation of the targeted skills
    › Exposure to assessment bias in both oral and written form

▶ Most feedback is not supportive of learners' self-regulation
  - Only the grade/score in most cases
  - Specific feedback with suggestions for improvement is very scarce.

Group size and lack of time are the most important factors in teachers' choices
  - Standardized testing starting from 125 students
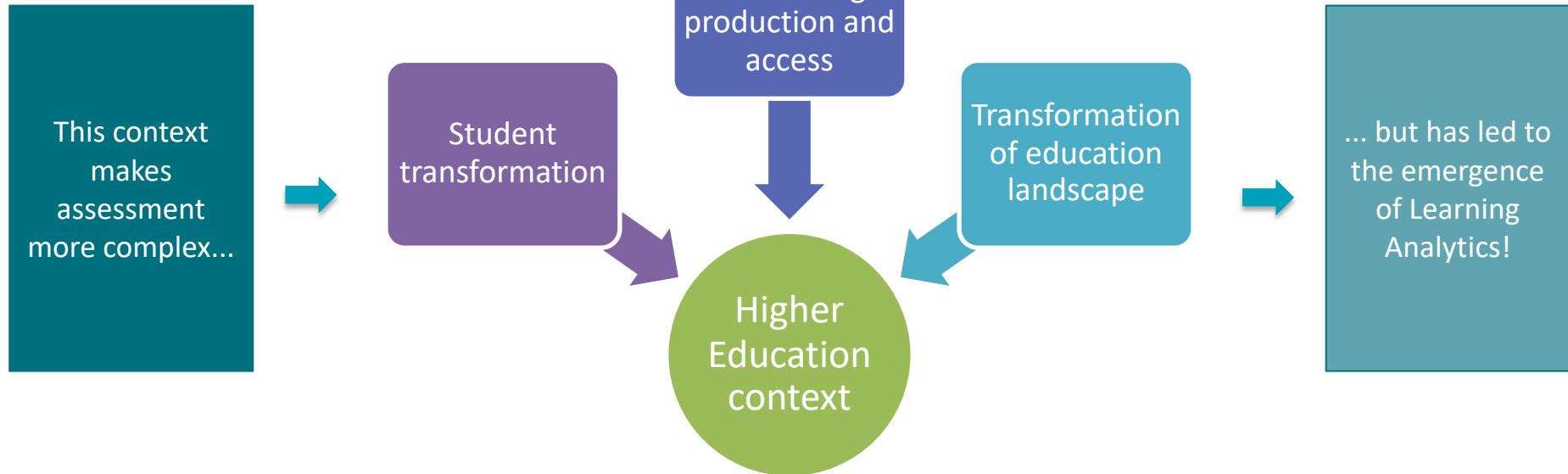
# Anyway, teachers want to do well!

▶ *"[...] teachers are concerned with constructing fair, equitable, valid and reliable assessments..."* (Detroz & Romainville, 2017)

**Tableau 199 : Attitudes des enseignants face à l'évaluation : améliorer l'apprentissage à l'Université.**

| Universités | Pas du tout d'accord | | Pas d'accord | | Plutôt pas d'accord | | Plutôt d'accord | | D'accord | | Tout à fait d'accord | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Évaluation processus** L'évaluation fait partie intégrante du processus d'enseignement/apprentissage. | | | | | | | | | | | | |
| | | | 6 | 1,1 % | 10 | 1,8 % | 89 | 16,3 % | 205 | 37,5 % | 236 | 43,2 % |
| Un des buts de l'évaluation est de faciliter le progrès de l'étudiant en cours d'apprentissage. | | | | | | | | | | | | |
| | 2 | 0,4 % | 7 | 1,3 % | 31 | 5,7 % | 153 | 28,3 % | 227 | 42,0 % | 120 | 22,2 % |

# What if context is both the problem and the solution?

This context makes assessment more complex...

Student transformation

Transformation of knowledge production and access

Transformation of education landscape

... but has led to the emergence of Learning Analytics!

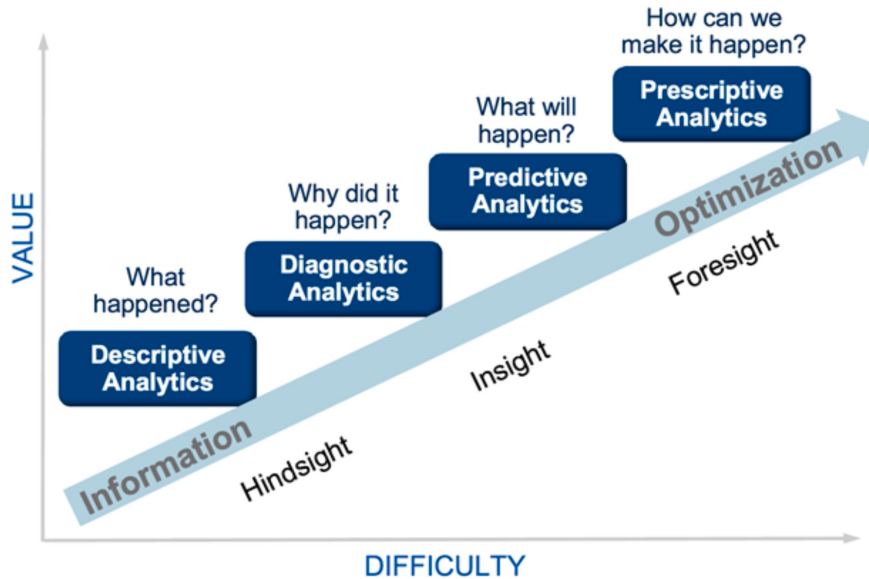Higher Education context

# The rise of Learning Analytics

▶ *« Learning analytics is the measurement, collection, analysis and reporting of data about learners and their contexts, for the purpose of understanding and optimising learning and the environments in which it occurs. »* (Long & Siemens, 2011)

- Measurement
- Collection
- Analysis
- Reporting

- Understanding

- Optimising

- Measure

- Judgment

- Decision
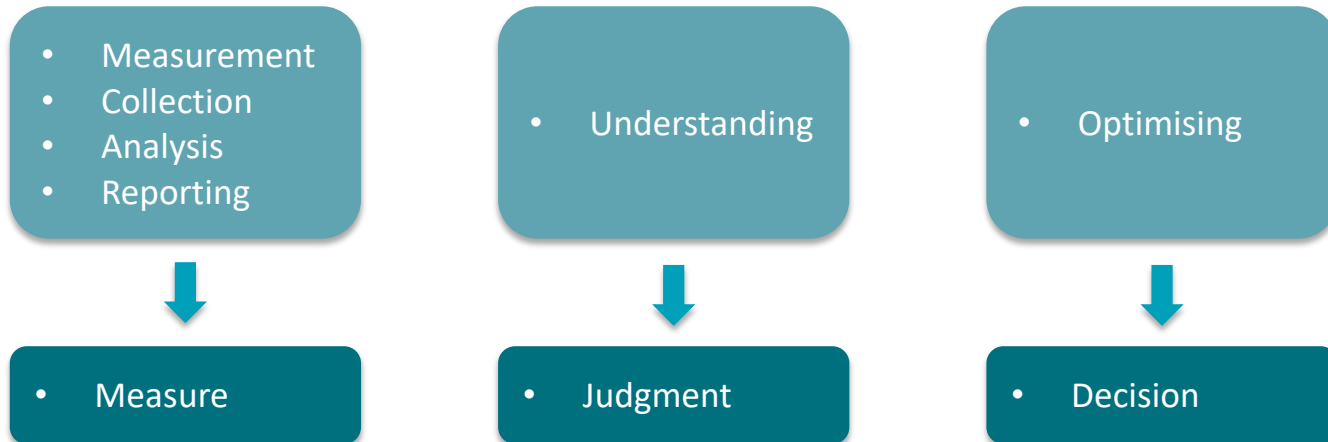
# The rise of Learning Analytics

▶ Functions (Bonnin & Boyer, 2017):



Figure 1 – Analytics (from Gartner) in Bonnin & Boyer (2017)

▶ Main applications (Sclater, 2017):

- Visualization of indicators through a dashboard

- Early alert systems and identification of students « at risk »

- Provision of recommendations

- Adaptive learning

- Inform Learning Design

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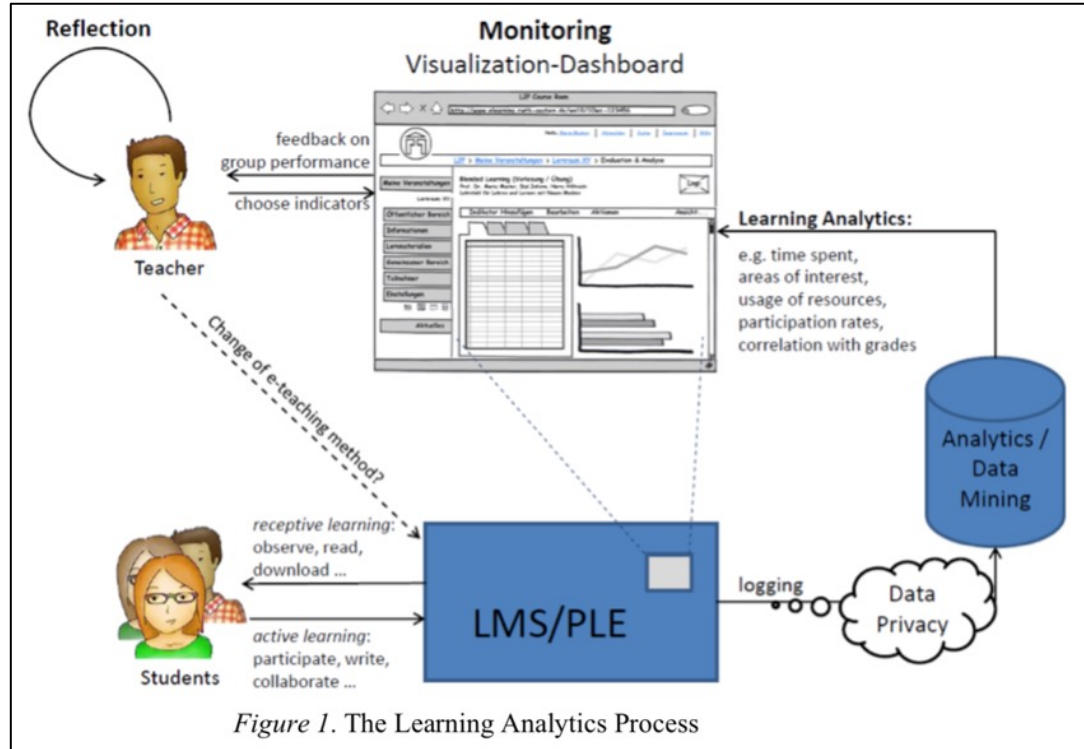# The cycle of Learning Analytics



Figure 1. The Learning Analytics Process

# Expectations

▶ **Added value in assessment:**

- **Objectivity** of data

  › *« learning analytics, with its ability to track so many more variables than traditional assessment, seems to […] be an exciting opportunity to shift practice and put it on a really firm **empirical basis and evidence base**. »* (Buckingham Shum *in* Sclater, 2017)

- **Continuity** in the collection of **various data**

  › Variety of data (performance, use of available resources, predictors of success in higher education, etc.)

- More **effective feedback**

  › Learning Analytics **minimizes the delay** between the capture of data and its use (Elias, 2011)

  › *« […] augmenting existing assessment structures through the **augmentation of feedback** […] processes for effective assessment. »* (Knight, 2020)

# Learning Analytics to support self-regulated learning

For education scientists, it is clear that **Learning Analytics** fits in nicely with the **self-regulated learning** approach (Butler & Winne, 1995; Zimmermann, 2000; Panadero, 2017)



*"Learning analytics process model"*, Verbert *et al.* (2013)

This approach **actively engages** the learner

*"Use **digital technologies** to support and add value to the implementation of good assessment and feedback practices"* (Nicol, 2009)

# Concerns

▶ **Limitations of Learning Analytics in assessment:**

- A wide variety of factors involved in learning and its assessment

- Limited view on students' activity
  › *« There are not enough data points in the world to **adequately** capture the **complexities** and **nuances** of who a student is… »* (Selwyn, 2018)

- Ethical dimension to consider
  › *« Concerns about ethical issues have emerged as possibly the **biggest barriers** to the uptake of learning analytics in educational institutions. »* (Sclater, 2017)

- A need for « data literacy » on teachers' side
  › *« **Ability to navigate** the, often quantitative, information that they are provided with »* (Knight, 2020)

- Concerns about the amount of information to be processed by students and the effect of the predictive function on student motivation and persistence

# To conclude this presentation but to pursue the reflection

▶ The added value of Learning Analytics for assessment is a **complex but promising** issue (Bonnin & Boyer, 2017)

▶ However, according to Viberg's (2018) findings, **empirical evidence** of effectiveness, moreover, on a **large scale**, is still needed from the field of Learning Analytics

▶ What is needed for students to **interpret the data effectively**? (Corrin & de Barba, 2015)

Thank you for your kind attention

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