# Examining the role of instructional practices into the transition to Higher Education :

## *A MIXED STUDY*

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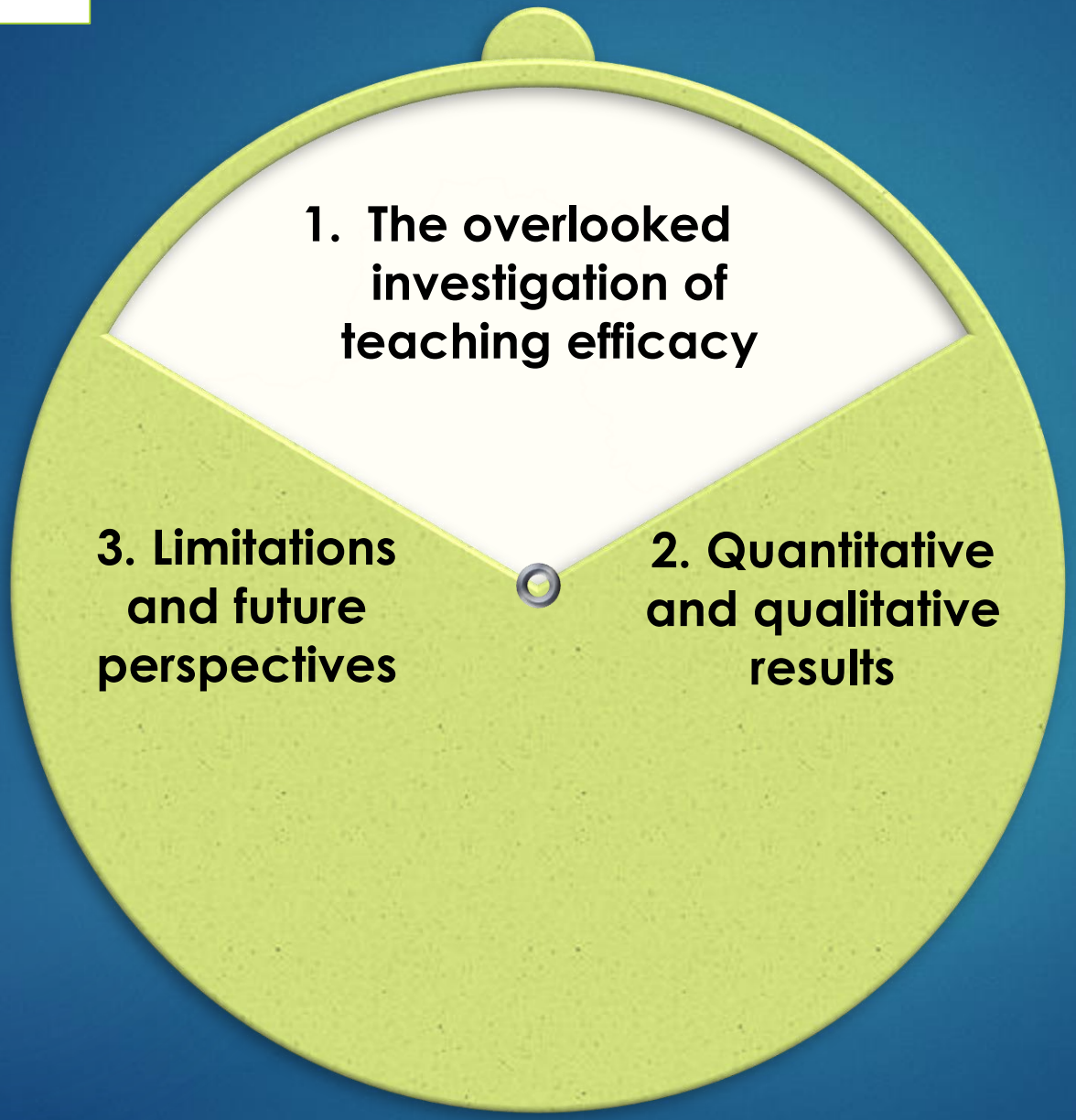
# Structure:



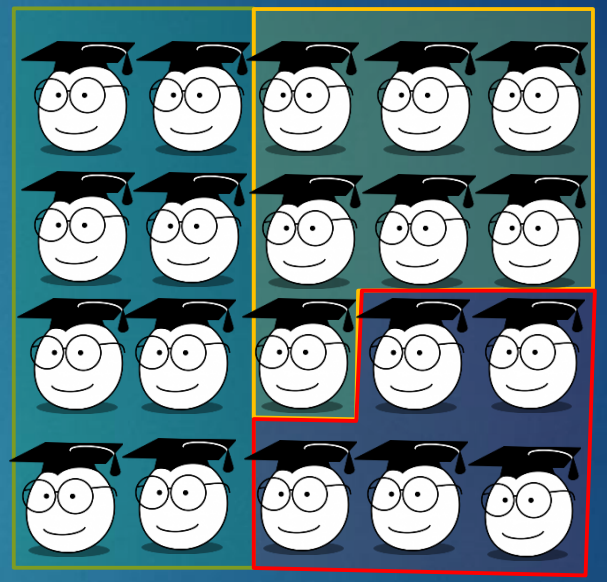

1. The overlooked investigation of teaching efficacy
2. Quantitative and qualitative results
3. Limitations and future perspectives

# 1.a. Transition to HE is challenging



- A challenging transition
  - In Belgium (De Clercq & Perret, 2021):
    - Fail the year (+/- 41%)
    - Leave university (+/- 22%)

- Important number of adjustment challenges (Trautwein & Bosse, 2017)
  - Facing heightened academic requirements
  - Conciliating various aspects of daily-life
  - Developing an autonomous learning
  - Managing the competition
  - Dealing with new administrative rules
  - Building a new social network



# 1.b. The importance of the learning environment



- **An extended investigation of the individual predictors of academic achievement** (Richardson, Abraham & Bond, 2012)
  - Background characteristics
  - Motivation
  - Engagement

  **Explain +/- 35% of academic achievement**

- **The promising perspective of the features of the learning environment** (De Clercq, Galand & Hospel, 2021)
  - **Could explain +/- 15% of academic achievement**
    - **Studies about the course experience** (CEQ; Cano, Pichardo, Berbén, & Fernández-Cabezas, 2021)
    - **Situational variables related to interest** (Quinlan, 2019)
    - **Literature about active learning and teaching** (Prince, 2004)
    - **Descriptive observations of teaching practices** (TDOP; Hora, 2015/ Duguet & Morlaix, 2012)

# 1.b. 3 limitations of the current investigations



1. **Studies on active teaching and learning**
   - Don't focus on the specific dimensions of teaching practices
   - Didn't identify the effects of these dimensions of teaching on student's achievement

2. **Studies on the course experience**
   - Are based on student's perspective → not a reliable measure of the actual learning environment (Marsh et al., 2012)
   - Are used at the individual level → lack of multi-level investigation of the effects of the aggregated course experience (Lüdtke, Robitzsch, Trautwein, & Kunter, 2009)

3. **Descriptive observations of teaching practices**
   - Are not based on a strong theoretical model
   - Are mainly descriptive

# 1.c. Learning from the models of instructional quality



1. **Classroom Assessment Scoring System** (CLASS; Pianta & Hamre, 2009)
2. **Three Basic Dimensions of instructional quality** (Baumert & Kunter, 2013; Praetorius, Klieme, Herbert & Pinger, 2018)

| | |
|---|---|
| **1. Socio-emotional support** | |
| ○ **Consideration for students perspective** | The teacher allows choice, is sensitive to students needs/ feelings and encourage students ideas to give their opinion |
| ○ **Teacher proximity** | The teacher generates a positive climate (positive affect, respect, proximity), gives constructive feedbacks and encourages students. |
| **2. Classroom Organisation** | |
| ○ **Discipline management** | The teacher uses strategies to prevent misbehavior and to promote compliance |
| ○ **Productivity** | The teacher maximises learning time and avoid disruption |
| ○ **Participation management** | The teacher uses strategies to maintain students attention, to enhance interest and to promote their active participation |

# 1.c. Learning from the models of instructional quality



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| | |
|---|---|
| **3. Instructional Support** | |
| ○ **Differentiated support** | The teacher adjusts pacing to specific difficulties of the students, ensures that every student understands, takes time to answer to specific questions |
| ○ **General support** | The teacher has a clear language and has clear expectations. He provides structure. |
| **4. Cognitive Activation** | |
| ○ **Higher-order thinking** | The teacher questions the students, asks for justification and proposes problem resolutions |
| ○ **Metacognition support** | The teacher asks the students to explain their way of thinking, to think out loud, takes time before giving the solution to a problem. |

# 2.a. Quantitative Method



- **Sample**
  - **N = 932 first-year students from 20 courses**
  - **64,2% of female**
- **Measures**
  - **Background characteristics** (De Clercq et al., 2017)
    - **Past performance, gender age, SES**
  - **Instructional environment** (De Clercq & Jacquemart, 2021)
    - **Instructional features: seniority, n. of students, n. of ECTS, teaching format**
    - **Teaching practices: Consideration fo students' perspective, proximity, Productivity and discipline, Participation and Management, Instructional support & Cognitive activation** (a=.74 -.87)
  - **Psychosocial variables** (De Clercq et al., 2021)
    - **Self-efficacy beliefs, course value, Surface learning, Deep learning, procrastination, negative emotion** (a=.72 -.90)
  - **Course performance** (mark out of 20)

# 2.a. Quantitative Method



- **Procedure** *(Mplus 8)*
  - **Estimator: robust maximum likelihood (FIML)**
  - **Multilevel analysis (MLM) allow for 2 levels of analysis**
    - Level 1: student level→ as regular linear regression (within variance)
    - Level 2: course level → variables aggegated by programs (between variance)
- **6 steps analytical procedure**
  - **M0**→ Empty model  on course performance
  - **M1**→ M0+ Background variables (level 1)
  - **M2**→ M1 + Instructional features (level 2)
  - **M3**→ M2 + Instructional practices (Level 2)
  - **M4**→ M3 + Psychosocial variables (Level 1)

# 2.b. Results of M0 and M1

M0 → M1 → M2 → M3 → M4

| Parameters | Coefficients |
|---|---|
| **MO** | |
| **IIC** | **0,275** |
| **M1** | |
| Intercept | 11,608 (0,63) |
| **A. Level 1 Background variables** | |
| 1. Gender | -0,024 |
| 2. Age | 0,034 |
| 3. Past performane | **0,271*** ** |
| 4. Socioeconomic status | **0,181*** ** |

*p<.05;**p<.01;***p<.001

**27,5 % of performance variance between the courses**

**Within variance explained: 11,4%**

# 2.b. Results

M0 > M1 > M2 > M3 > M4



| Parameters | Coefficients |
|---|---|
| **M3 = M2 + Teaching practices** | |
| Intercept | 11,680 (0,35) |
| **A. Level 1 Background variables** | |
| … | Same effect |
| **B. Level 2 Instructional practices** | |
| 3. Teacher seniority | **-0,34**** |
| 4. Teaching format | **0,63***** |
| 1a. Cons. for stud. perspective | **0,38***** |
| 1b. Teacher proximity | **0,35**** |
| 2a. Productivity & Discipline | -0,22 |
| 2b. Participation Management | 0,18 |
| 3. Instructional support | **0,49***** |
| 4. Cognitive activation | 0,13 |

**Within variance explained: 11,6%**

**Between variance explained: 89,1%**

# 2.b. Results

M0 > M1 > M2 > M3 > **M4**



| **M4 = M3 + Psychosocial variables** | |
|---|---|
| Intercept | 11,690 (0,32) |
| **A. Level 1 Background variables** | |
| … | Same effects |
| **B. Level 2 Instructional practices** | |
| T. seniority + format | Same effects |
| 1a. Cons. for stud. perspective | **0,23*** |
| 2a. Productivity & Discipline | **-0,23*** |
| 2b. Participation Management | **0,35*** |
| 3. Instructional support | **0,42***** |
| **3. Level 1 Psychosocial variables** | |
| 2. Procrastination | **-0,25***** |
| 3. Self Efficay Beliefs | **0,33***** |
| 4. Surface approach to L. | **-0,09*** |

**Within variance explained: 32,4%**

**Between variance explained: 89,1%**

# 2.a. Qualitative Method



- Focus Group
  - 8 groups of 5 students (40 participants)
  - Retrospective look about the first-year at the university
  - 60% of female
  - 90 minutes of interview
- Analysis
  - Thematic analysis (Braun & Clarke, 2006)
  - 5 major themes
    - Teacher's care
    - Non-verbal attitudes
    - Teacher's flexibility and structure of the learning
    - An interactive and entertaining lesson
    - A consistent evaluation

# 2.a. Qualitative Method



- Teacher's care
  - In 3 focus groups, strong agreement as a key driver of engagement

  **"I remember one of our teacher who often said « I know this moment of the year is difficult for you so I really would like to know how you are doing right now»[…] The simple fact to know that your teacher cares about you and is aware of our difficulties gives you the motivation to attend the course, to involve in it and to talk with him.»**

- Non-verbal attitudes
  - Appeared in the 5 focus groups and strong agreement
  - Teacher eloquence & contagious passion for the topic

  **« The simple fact that you have a teacher who loved her lesson, She was so passionate by the course. As for me it was enough to attend the course, for being involved and to interact with her during the lesson. […] The more the teacher was charismatic in his way of speaking, of animating the lesson, the more I paid attention to the lesson. »**

# 2.a. Qualitative Method



- Teacher's flexibility and structure of the lecturing
  - In 5 focus groups strong agreement as the main driver of success
  - Importance of a structured lesson BUT with important flexibility from the teacher

    **"When he asked question and we weren't able to answer, he really took the time to help us. He asked us all the time if we had questions, He told us that it didn't bother him to re-explain, that it was an entire part of his job. That was really helping"**

- An interactive and entertaining lesson
  - In 3 focus groups and medium agreement
  - Having beautiful slides, moment of interactions, timely pauses and a comprehensive syllabus

    **«During the philosophy course the teacher talked without break during 2 hours and it was so difficult to follow. I didn't understand anything and decided to stop to attend this course»**

# 2.a. Qualitative Method



- A consistent evaluation
  - In 4 focus groups and strong agreement
  - Importance of continuous evaluation

    **"What really made the difference was, at the end of each hour, the teacher proposed a Wooclap (interactive quiz). It was just some small questions about what we saw, it just last about 15 minutes, but it was really helpful to test myself on the content. "**

  - Explicit expectations and consistency between the learning tasks and the evaluation

    **«As students we learn to adjust to very diverse and various requirements. We learn to adjust to the specific expectations of each teacher [...] We are in a context where the teachers expect something very specific from us and we have to meet those expectations because they are the judges of our success. This is the reason why knowing teacher's expectation is so important »**

# 3.a. Conclusion



- **Instructional practices provide a complementary perspective on academic achievement**
  - **27,5% achievement variation among the courses**
  - **Mainly explained by teaching practices (89,1%)**
    - Active teaching format have a positive impact on achievement
      - Interaction, beautiful slides, timely pauses…
    - Teacher seniority and productivity and discipline have a surprising negative impact on achievement
    - Instrutional support is the most important
      - Provision of Structure but with flexibility (differentiated support)
    - Participation management is crucial for engagement
      - Non verbal attitudes, the role of eloquence and passion
    - Consideration for students' perspective matters (driver for engagement)

# 3.b. Limitations and Future Research



- **Only a broad investigation of instructional practices**
  - Is instructional quality generic or subject-specific? (Schlesinger & Jentsch, 2016)
  - What about the assessment methods?
    - Lack of information on the assessment → marks are not based on the same criterion
  - **Further investigation among similar teaching features is needed**

- **What about the self-reported measure of teaching practices?**
  - Based on teacher self-reported questionnaire and student self-reported experiences → Reliability (Praetorius et al., 2018)
  - Which dimensions can be measured through self-reported measures / observation?
  - **An observation protocol of teaching practices will complement the self-reported questionnaire**

# Thank you for watching!

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Some related references:


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