

Teaching practices and academic success in higher education: a multilevel analysis

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Introduction



- Transition to HE litterature → **lack of consideration of the role of TP** (De Clercq et al., 2021; Mastrokoulou et al., 2022)
- Post-pandemic consequences → **Lecture hall crisis** (Uekusa, 2023)
 - Reinforce teaching effectiveness (Lalle & Bonnafeous, 2019)
 - What is the real added-value of in-class TP for student achievement and learning? (Mamani-Benito et al., 2024; Peraya & Paquelin, 2023)



De Clercq, M., Galand, B., Hospel, V., & Frenay, M. (2021). Bridging contextual and individual factors of academic achievement: a multi-level analysis of diversity in the transition to higher education. *Frontline Learning Research*, 9(2), 96-120. doi: <https://doi.org/10.14786/flr.v9i2.671>

Rationales



Several works on TP in HE

- Teachers' approaches to teaching (Trigwell et al., 2005)
- Active teaching and learning (Kozanitis & Nenciovici, 2023)
- Course experience (Wilson et al., 1997)



Some limitations :

- ✓ Most studies are based on self-reported measures (Harrison et al., 2022; Esterhazy & Gijbels, 2021)
- ✓ The role of specific TP are not always clear (Duguet, 2015)



Theoretical model of TP in HE and observational tools :

- ✓ **JUST TEACH** → 4 categories of TP (Jacquemart et al., 2024)
- ✓ French validation of three dimensions of TP (Duguet et De Clercq, 2025)

Jacquemart, J., De Clercq, M., & Galand, B. (2024). The black box revelation of instructional practices: a mixed study of the transition to Higher Education. *European Journal of Higher Education*, 1-22.

<https://doi.org/10.1080/21568235.2024.2327315>

Theoretical Framework

In-class TP:



« *The sum of teacher's actions and interactions with the students/ teacher's observable behaviors during a class or a lecture* » (Duguet, 2014; Jacquemart et al., 2024).

Three Basic Dimensions (TBD) (Praetorius, Klieme, Herbert et al., 2018).



3 dimensions of TP to support teaching effectiveness :

- Classroom management
- Student support
- Cognitive activation

Classroom Assessment Scoring System (CLASS)

(Pianta & Hamre, 2009 ; Pianta, Hamre & Mintz, 2012).



3 main learner-teacher interaction domains :

- Emotional support
- Classroom organisation
- Pedagogical support

Just Teach – theoretical four dimensional framework of TP

(Jacquemart, De Clercq & Galand, 2024)



4 dimensions :

- Classroom management
- Socio-emotional support
- Pedagogical support
- Cognitive activation

Jacquemart, J., De Clercq, M., & Galand, B. (2024). Understanding classroom teaching practices in higher education: A conceptual framework. *Formation et profession: Revue scientifique internationale en éducation*, 31, 1. <https://doi.org/http://dx.doi.org/10.18162/fp.2023.861>

Our theoretical framework

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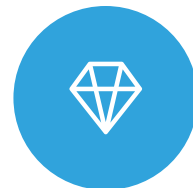
3 categories of TP – observation tool validated in French



Instructional support: TP that foster the understanding of the lesson's content (Vansteenkiste, Sierens, Goossens et al., 2012)



Emotional support : TP that provide a positive and supportive climate for students during the lesson (Praetorius et al., 2018)



Autonomy support: TP that support interest, motivation, **and involvement** during the lesson (Pianta, Hamre & Mintz, 2012)

Duguet, A., & De Clercq, M., (2025). Crossing perspectives on teaching practices in lectures: analysis, validation, and comparison of three measurement instruments. *Mesures et évaluation en éducation*, 48(2). 58-90 <https://doi.org/http://dx.doi.org/10.18162/fp.2023.861>

Aim of the study



What is the impact of TP on academic achievement beyond individual and course's characteristics ?



H1 : Past performance will be the stronger predictors of academic achievement among background variables.

H2: Student's engagement will remain a direct predictor of academic achievement.

H3 : Among TP, instructional support will be the most important predictor of academic achievement

Method – measures and sample



Independant variables

- ✓ **Background variables**
 - ✓ Gender, SES, past performance, paid job
- ✓ **Engagement** (Heilporn et al., 2020 ; Leduc et al., 2018)
 - ✓ Cognitive, emotional, behavioral (24 items; $\alpha = 0,82-0,92$)
- ✓ **Course's characteristics**
 - ✓ class size, teacher's seniority, teacher's pedagogical training, Lecture/tutorial hours ratio
- ✓ **Teaching practices** (Duguet & De Clercq, 2025)
 - ✓ Emotional, instructional, autonomy support (26 items; $\alpha = 0,71-0,82$)



Dependant variables

- ✓ Academic Achievement → GPA (mark out of 20)

Sample

- ✓ 884 bachelor students and 20 teachers/ lectures at the university
- ✓ Systematic observation of a 1 to 3 hours lesson for each lecture

A quick focus on the three dimensions of TP



Dimensions of TP	Example of TP
Emotional support	The teacher is supportive and cheerful
	The teacher takes time to listen to students concerns
	The teacher shows an open-minded attitude by accepting the views, opinions and ideas expressed by students
Instructional support	The teacher gives feedback to the students
	The teacher provides guidance or instructions on lesson organisation
	The teacher provides activities that encourage students to think critically
Autonomy support	The teacher speak in an engaging manner
	The teacher tries to make the course content interesting for students
	The teacher gives students a range of options

Results – multilevel analysis



ICC 22.5%

Total R^2 for academic achievement =
23,93%

- Past performance is the main individual predictor of AA
- Study time is positively related to AA
- Teacher's continuous educational training has a positive effect on AA
- Instructional support is the TP the most strongly related to AA

	Model 1		Model 2		Model 3		Model 4	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Intercept	9,798***	1,089	8,747	1,499	8,618	1,472	8,613	1,555
1. Background variables (Level 1)								
Gender	-0,070	0,052						
Study Year (L1, L2, L3)	0,093	0,087						
Socioeconomic status	0,069	0,060						
Paid job	-0,112**	0,033	-0,108**	0,038	-0,102*	0,041	-0,102*	0,042
Past performance	0,325***	0,054	0,320***	0,052	0,314***	0,052	0,317***	0,051
2. Student's engagement (level 1)								
Cognitive			-0,088	0,087				
Behavioral (studytime)			0,211*	0,100	0,212*	0,104	0,217*	0,100
Behavioral (attendance)			-0,027	0,059				
Emotional			-0,001	0,099				
3. Course and teacher's characteristics (level 2)								
Teacher's seniority					0,057	0,111		
Teacher's initial training					-0,113	0,214		
Teacher's continuing training					0,353*	0,173	0,382*	0,190
Class size					-0,290*	0,190	-0,238	0,220
Lecture/tutorial hours ratio					-0,130	0,280		
4. Teaching practices (level 2)								
Emotional support							-0,187	0,449
Instructional support							0,462*	0,240
Autonomy support							-0,179	0,243
Intra-class R^2	13,8%		17,4,0%		17,4%		17,4%	
Inter-class R^2	0%		0%		22,8%		29,0%	
Likelihood	-627,210		-621,380		-619,713		-614,671	

Take home messages



⊗ The well documented role of past performance and study-time

- ✓ Past performance is documented as the strongest individual predictor of AA
 - ✓ The role remains after controlling for TP in the Belgian open access educational system
- ✓ Behavioral engagement is one of the most direct correlates of AA
 - ✓ Studytime is a significant predictor of AA, not attendance, deep processing strategies and anxiety

- ⊙ Teachers continuous pedagogical training has a significant role on AA
- ⊙ Instructional support remains the most important TP for AA

Take home messages



- ⊖ The well documented role of past performance and study-time
- ⊗ **Teachers continuous pedagogical training has a significant role on AA**
 - ✓ 22,5% of AA variance occur at the course's level → the learning environment deserves more attention
 - ✓ Continuous pedagogical training goes beyond initial pedagogical training and class size
 - **The more teachers' continues to pedagogical training the best students achieve academically**
- ⊖ Instructional support remains the most important TP for AA

Take home messages



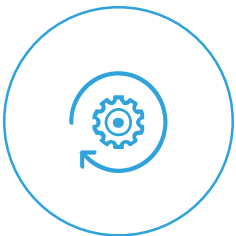
- ⊙ The well documented role of past performance and study-time
 - ⊙ Teachers continuous pedagogical training has a significant role on AA
 - ⊗ **Instructional support remains the most important TP for AA**
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- ✓ **Consistent with previous studies on the provision of structure (Olivier et al., 2020)**
 - Important predictor of engagement, learning and AA (Galand & Tobaty, 2022)

Limits & implications



Limits

- ✓ **Only one lesson of observation, no idea of TP variability accross the lessons.**
- ✓ **No information on:**
 - The indirect effects of TP on AA → through engagement (Theis et al., 2025; Duguet & De Clercq, 2025)
 - The combined effects of TP → TP profiles
 - The differentiated effects of TP on different profiles of students



Implications

- ✓ Encourage teachers to **continusly reeinforce their professional development.**
- ✓ **Use observational tools as a pedagogical device** to help teachers to identify and improve the provision of structure (Blondeau, 2018).

Thank you for listening



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