

# Towards the adaptation of the learning patterns model in Primary Education: an explanatory study

Wednesday 23 July 2025 08:45 (15 minutes)

## Abstract

This study explores the transferability of Vermunt's (1998) learning patterns model (that focuses on learning conceptions, motivational orientation, regulation strategies, and cognitive processing strategies) in Primary Education. Traditionally used in Higher Education, this model is less explored in other educational contexts, creating a gap in the literature that this research aims to address.

The research involves a mixed-methods approach (S-QUAN->qual) and includes 218 students from three public primary schools in the Murcia region (Spain). Participants are students in 4th, 5th, and 6th grades, with a balanced gender distribution. Quantitative data were collected using the adapted version (Martínez-Fernández et al., 2015) of the Inventory of Learning Patterns of Students (ILS). Qualitative data were gathered through three focus groups with a subsample of 25 participants; where students shared their views on learning, motivations, and strategies, through activities involving collage and drawing.

Through robust exploratory factor analysis, we detected that younger students' learning patterns differ significantly from those of adults, with distinct factor structures emerging. For instance, the regulation strategies component showed clear differentiation between self-regulation, external regulation, and lack of regulation. However, other components revealed significant differences. In the learning conceptions component, there was no solid belief about learning as knowledge construction; instead, items from this subscale integrated into the conceptions of learning as use and knowledge increase. Motivational orientations also varied, with a new "challenge-orientation" emerging. This orientation reflects a motivation to tackle difficult tasks, demonstrating one's abilities. This finding aligns with previous research by Severiens and Ten Dam (1997), who identified a similar orientation in Secondary Education for adults with a history of academic failure.

In terms of processing strategies, the factor structure simplified into two types: concrete/deep processing, that involves elaboration and structuring of content, as well as transferring learning to other contexts and problem-solving (which aligns with Hattie and Donoghue's (2016) deep learning and transfer consolidation phase); and superficial processing, that includes memorization, rehearsal, and some elements of critical processing.

Random forest cluster analysis on ILS scores revealed that the largest group in the sample could not be characterized yet by a specific pattern. However, a distinct cluster of students with an undirected (UD) pattern was identified, clearly differentiated from meaning/application-oriented (MD/AD) and reproduction-oriented (RD) groups.

Qualitative analyses suggested the need to reformulate some ILS items and expand the teacher stimulation subscale to include families. Emotional aspects also emerged as significant, with students referring to regulation and processing strategies as ways to control stress and manage emotions. This highlights the importance of considering emotional factors in learning patterns, as suggested by Ahmedi and Martínez-Fernández (2023).

Overall, this research provides valuable insights into the applicability of Vermunt's learning patterns model in primary education. It highlights the need for further adaptation of the model and the instruments to better suit younger students' unique learning processes and developmental stages. The findings underscore the importance of integrating emotional and contextual factors into the model to provide a more comprehensive understanding of primary students' learning patterns.

## Keywords

learning patterns; Primary Education; mixed-methods

**Primary author:** CIRASO-CALÍ, Anna

**Co-authors:** Dr QUESADA-PALLARÈS, Carla (Universitat Autònoma de Barcelona); Dr MARTÍNEZ-FERNÁNDEZ, J. REINALDO (Universitat Autònoma de Barcelona)

**Presenter:** CIRASO-CALÍ, Anna

**Session Classification:** Session 2 : "Innovative methods in Measurement and Evaluation"

**Track Classification:** Design/Research methods: Design/Research methods