



**HAL**  
open science

# THE PORTFOLIO AS A TOOL FOR ENHANCING REGULATION IN LEARNING AND ASSESSMENT PROCESSES

Laurent P. Ferrier, Sylvain Connac

► **To cite this version:**

Laurent P. Ferrier, Sylvain Connac. THE PORTFOLIO AS A TOOL FOR ENHANCING REGULATION IN LEARNING AND ASSESSMENT PROCESSES. Sciences in the flesh, embodiment in STEAM education 5-6 Dec 2023, Dec 2023, Paris, France. . hal-04330662

**HAL Id: hal-04330662**

**<https://hal.science/hal-04330662v1>**

Submitted on 8 Dec 2023

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial 4.0 International License

## FRAMEWORK

While academic stress is prevalent among students, there is a lack of research on learning methods that could contribute to its regulation (Faurie et al., 2106; Lassarre et al., 2003). Portfolios have gained significant attention in the past two decades, acknowledged as valuable tools for enhancing cognitive and regulation processes (Dévé et al., 2009).

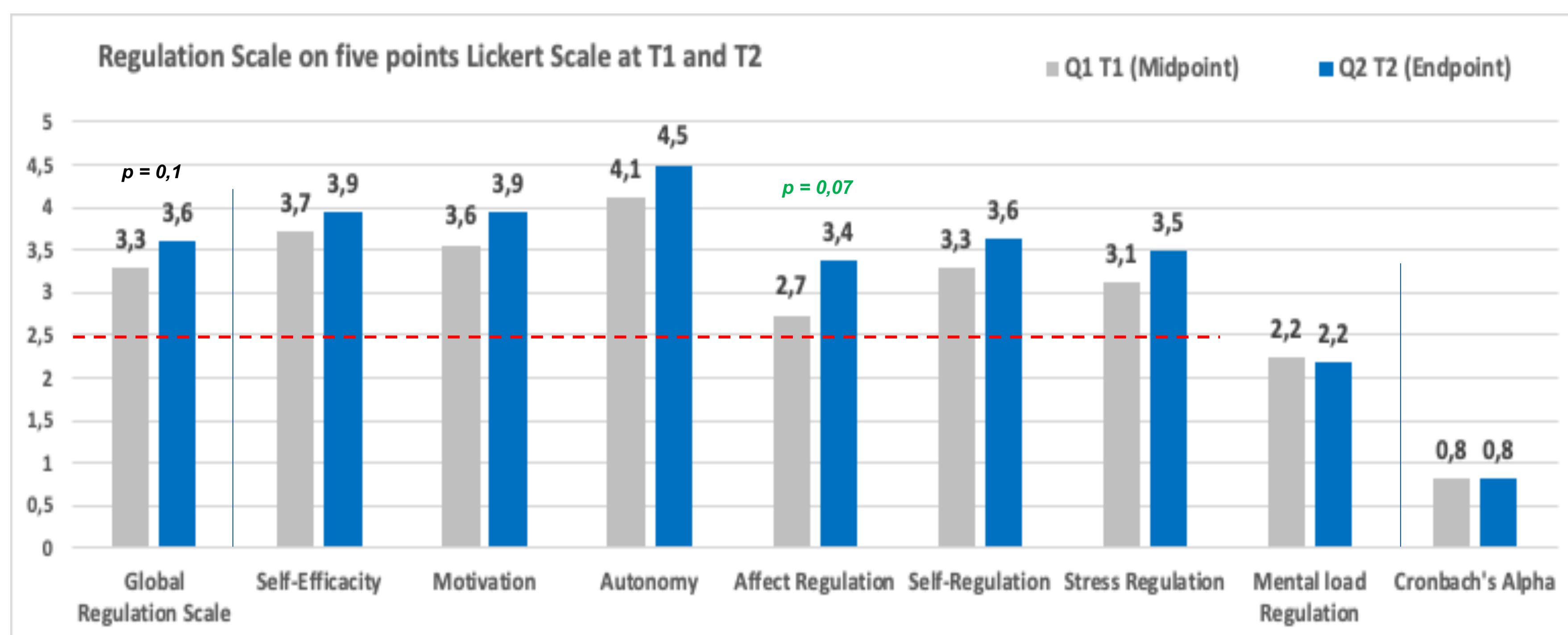
Deviating from traditional approaches and diminishing the importance of final knowledge testing, the portfolio emphasizes the dynamics of embodied processes in knowledge construction. By utilizing feedbacks and structured mediations, the portfolio reinforces the link between perception and action, providing the opportunity to regulate the learning processes (Fisher et al., 2020).

While there have been important conceptual shifts, few studies have thoroughly examined the effect of portfolios, particularly on regulation processes, even though it has been recognized as effective in regulating motivation, stress, self-efficacy and emotions (Tochel et al., 2014).

Preliminary results from a mixed-methods (qualitative and quantitative) cross-sectional and longitudinal study (Boéchat-Heer, 2018; Lassarre et al., 2003) show compelling evidence supporting the use of portfolios as an enactive and socio-constructivist tool allowing regulation in learning and assessment processes.

## RESULTS

### Q1 T1 and Q2 T2 – Quantitative cross-sectional and longitudinal approach



Importantly, for Q1 T1 and Q2 T2, most values surpass the standard on the regulation scale (2.5;  $\chi^2 p < .05$ ), while participants assessed each item in comparison to other teaching methods. Furthermore, there is an increase at T2 (endpoint) compared to T1 (midpoint) for each item, demonstrating the positive impact of the portfolio on regulation processes.

Similar trends are observed at the 100-degree level (VAS) for Regulation (up-middle) and Load (down-middle), showing an increase of self-regulation from T1 to T2 and a decrease of stress (below the average, 50) from T1 to T2.

A global increase in regulation is noted from T1 to T2 (up-right), while the global residual load appears to be negative in T1 and continues to decrease in T2 (down-right)

### Individual interviews – Qualitative approach



Key concepts are primarily center on self-regulation, emotion, stress regulation, workload management, organization, and collaboration.

The link between perception and action is also well represented, emphasizing the practical and dynamic aspects of portfolio functioning.

Participants strongly highlight feedback's role as a powerful tool for regulating stress and emotion and enhancing self-efficacy in the learning and evaluation processes.

Participants emphasize the importance of understanding errors and the remediation offered by feedback during the process. They also highlight the feeling of pleasure, positive emotions, and the development of their ability to envision themselves as future professionals.

*The portfolio, I experienced it (...) it really brought me a lot. It's tangible, it gives meaning (...). It's lived experience. (...) It's true that with the portfolio, there is no stress (...) because we know that there will be feedback afterwards. (...) We have a little stress, but it's nothing compared to regular exams (...). Then, (...) we wait for the feedback (...), we have to act (...) but understanding your mistake, I think that's even more important. (...) We are really 200% into it (...)*

## PORTFOLIO APPLICATION CONTEXT

The training and assessment portfolio has been studied within a cohort of third-year undergraduate students in educational sciences and for an entire semester just before the orientation for the master which is a particularly stressful situation.

The portfolio's core consists of various prescribed pieces, preprogrammed over time, which can be completed either individually or as part of a group.

Throughout the process, students receive both vertical (from the teacher) and horizontal (from peers) feedback, forming retroactive structured mediations that facilitate regulation processes.

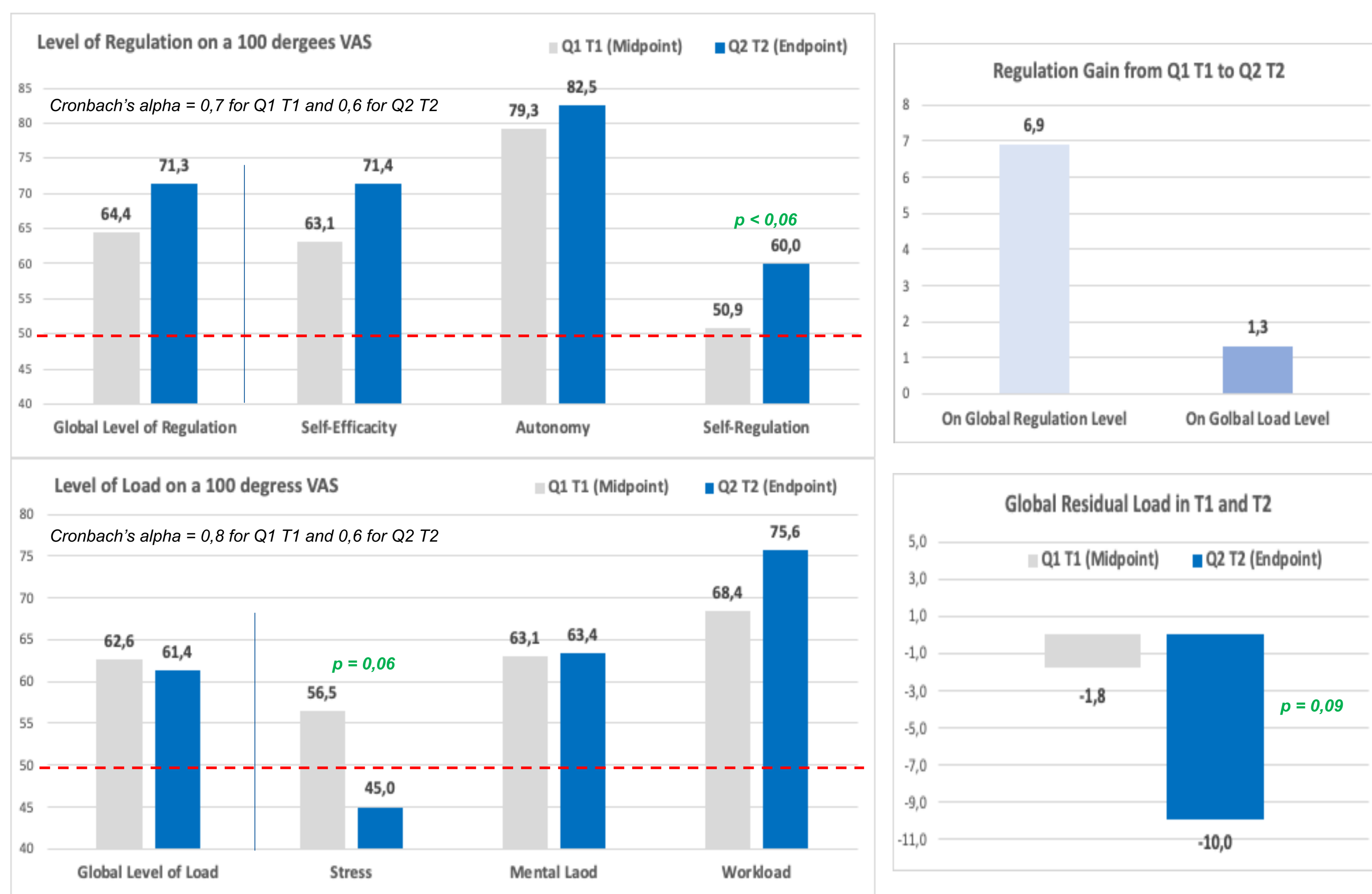
Students are allowed three opportunities prior to the final assessment of each portfolio component.

## PARTICIPANTS & METHOD

All participants (100% female, M = 21.1, SD = 1.8) were novices and unfamiliar with the portfolio

1. Motivations from the pedagogical contracts - Start of the course - January 2023 100% (n=97)
2. Questionnaire 1 T1 - April – Midpoint 52,3 % (n = 34)
3. Questionnaire 2 T2 – May/June – Endpoint 47,1 % (n = 16)
4. Appraisal of the portfolio – June 100 %
5. Individual interviews – June/July 25 % (n = 4)

Qualitative  
Quantitative  
Cross-sectional  
Longitudinal



The residual stress (difference between stress and workload levels) reveals a negative value in T1 and continues to decrease in T2 (respectively, -11.9 in T1 and -30.6 in T2). This result strongly supports our hypotheses regarding the positive impact of the portfolio on regulation processes because residual stress is known to be significant in students (Lassarre et al., 2003).

## DISCUSSION & CONCLUSION

The preliminary results presented demonstrate clear effects of the portfolio on regulation processes, both in quantitative cross-sectional and longitudinal measures, as well as in qualitative data. This study has limitations (sample weakness, effect sizes...) and needs to be continued to gather more evidence in support of our hypotheses.

The portfolio we studied is a specific type known as a training and assessment portfolio, overseen by a highly experienced professor with over ten years of development and implementation of this method. Simply using and developing portfolios does not guarantee a reduction in academic stress among students.

Instead, the formalization of the method and the consistent use of feedback as a structured mediation to understand errors and develop self-regulation and self-efficacy appear to be key factors in reducing academic stress and enhancing regulation processes.

In this sense, the portfolio can be seen as an enactive and socio-constructivist tool to enhance regulation in learning processes.

