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Paper

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Title: The relationship between high-impact educational practices at university and Learning approaches

Abstract (maximum of 150 words): Research on the relationship between learning approaches and variables such as the perceived impact of some university activities is limited. The present study analyses the relationship between Learning approaches (Student Process Questionnaire, SPQ) and high-impact educational practices (HIEPs). The sample consisted of 893 first and final-year university students of different degrees. As expected, the subscales correlate academic self-concept and self-efficacy positively with the deep approach, and negatively with the surface approach. The results show that students who maintain a deep learning approach obtain a more significant impact on their personal and professional development by HIEPs (especially conferences, workshops and service-learning activities). Women have a lower surface approach and social and humanities students have higher levels of the deep approach.

Key words (up to five): Approaches to learning; students; university; measurement; high impact educational practices

Text of paper (1,000-3,000 words, excluding references):

INTRODUCTION

The study of learning approaches began with the Gothenburg group and researchers in Australia, Hong Kong and the U.K. (Biggs, 1978; Entwistle & Ramsdem, 1983; Marton & Säljo, 1976a, 1976b). They developed a general theory on Student Approaches to Learning (SAL) based on their research. Later studies by Kember and Gow (1990) and Trigwell and

Prosser (1996) focused on university students due to the more advanced cognitive and emotional development required in the learning process.

After these pioneers, numerous studies have since reflected an interest in this field of research (Baeten et al., 2010; Barboyon & Gargallo, 2022; Biggs, 1978; Biggs et al., 2001; Entwistle & Ramsdem, 1983; Freiberg & Fernández, 2016; Monroy & Hernández-Pina, 2014; Nogueira dos Santos & Gomes, 2020; Soler et al., 2017, 2018; Takase & Yoshida, 2021; Torre, 2006; Zakariya et al., 2020; Zakariya & Massimiliano, 2022).

There are two learning approaches: the ‘deep approach’ and the ‘surface approach’. The deep approach involves understanding the content in depth and searching for connections between different fields studied, while the surface approach is focused on passing with minimal effort and memorising content (Torre, 2006). Newer perspectives suggest that learning is a cycle of feedback between motivation and learning strategies (Soler et al., 2018). When students have high self-efficacy, they are intrinsically motivated to use deep learning strategies that enhance their learning. On the other hand, when students have low self-efficacy, they tend to use surface learning strategies that do not utilise their prior knowledge or lead to meaningful learning.

The classical view of education involves analysing the motivations and learning strategies used in each approach. This is important because it helps us understand the learning process and reflect on teaching methods. Various authors have explored the relationship between teaching methods, student assessment, and course organisation in relation to certain learning approaches, such as Barboyon and Gargallo (2022), Monroy and Hernández-Pina (2014), and Soler et al. (2017).

Scientific studies since the 1970’s have focused on learning approaches and how different factors like gender, age, motivation, personality traits and preferred teaching methods

affect them. However, not many studies have focused on how learning approaches are related to other variables that are not typically associated with formal academic learning.

Monroy and Hernández-Pina (2014) suggest that by analysing variables related to academic learning such as those proposed by Baetan et al. (2010), it is possible to develop actions that improve the quality of education.

Ramsden's studies examined how the learning environment affects students' adoption of learning approaches (Ramsden, 1992). However, little attention has been given to whether students who perceive more impact on their personal and professional development have a particular approach. It is important to consider the relevance of the social and situational context in learning approaches, as contextual factors not directly related to the teaching-learning process can enhance or weaken them (González-Cabanach, 1997). Baetan et al. (2010) suggest that factors like workload and the learning environment can affect learning approaches, while Barboyon and Gargallo (2022) relate them to contextual control, social interaction and resource management. Monroy and Hernández-Pina (2014) consider that the subject and culture of a degree course also influence learning approaches.

While there are ways to connect learning approaches with contextual variables to improve student learning, there is little research on how students' perceptions of how universities affect them personally and professionally are linked to their approach to learning. Therefore, it is intended to combine these variables to determine if they impact the quality of learning and if certain activities can motivate students to adopt a deeper learning approach.

Kilgo et al. (2015) and Trogden et al. (2023) state that effective teaching practices can encourage deep learning, but high-impact educational practices (HIEPs) are more effective in promoting student engagement and retention of knowledge. The Association of American

Colleges and Universities also recognises HIEPs as highly effective in preparing students for their future careers.

Various authors including Conefrey (2021), Kilgo et al. (2015), Kuh (2008) and Trogden et al. (2023) have identified several HIEPs that include first-year seminars, academic learning communities, active and collaborative learning projects, undergraduate research, study abroad, Service and Learning, internships and final projects.

Kuh (2008) believes that HIEPs are successful because they demand effort and determination to encourage communication with peers and teachers, expose students to diverse ideas and people, and provide opportunities for learning both inside and outside the classroom. However, there is limited research on how these practices impact the quality of university education.

In the context of previous literature that aimed to collect a wide range of variables related to university education, this article was born of one interest, to analyse the relationship between learning approaches and the impact perceived by students of certain aspects of university on their personal and professional development. These aspects are contextual issues that have not received much attention in the field of learning approaches (Monroy & Hernández-Pina, 2014) and address areas of interest for higher education, such as HIEPs.

Methods

The research employed a non-experimental, cross-sectional design (ex-post-facto) and quantitative methodology. The approach used in constructing the scale is hypothetical-deductive, firstly based on theoretical sources, and subsequently by carrying out a construct validation based on a two-factor structure.

Participants

The total sample consisted of 893 undergraduate students at the Universidad Pontificia Comillas of Madrid. The study was applied to first-year (58.1%) and final-year students (41.9%), with 623 women (69.8%) and 270 men (30.2%) (Table 1). Information was collected from students in the fields of Humanities and Social Sciences (255), Translation, Communication and International Relations (102), Nursing and Physiotherapy (79), Law (148), Economics (230) and Engineering (79).

Instruments

The instrument used was an adaptation and translation into Spanish of the Student Process Questionnaire (R-SPQ-2F) by Biggs et al. (2001) carried out by Torre (2006). Each approach was reduced to six items to have a shorter scale of 12 items, which sufficiently captures the differences in the uses of the approaches. Three items were selected for the Motive and Strategy subscales (Biggs et al., 2001).

One item has also been included to measure academic self-concept, defined as the place they think they would occupy in the class if they took into account their grades, measured on a scale from 1 (at the bottom of the class) to 5 (at the top of the class). Another self-efficacy item is defined as the difficulty of the course, what he/she is learning, and given their abilities, what he/she thinks they will do well on completion of the course, on a scale of 1 (strongly disagree) to 7 (strongly agree). The questionnaire includes an item referring to the hours of study per day (from less than 1 hour to more than 4 hours). In addition, the extent to which the students consider that certain activities carried out at, or through, the university (subjects, lectures and seminars, Learning and Service, international placements and internships) affect their professional and personal development, was assessed on a scale of 1 (not at all) to 4 (very much).

Procedure

The questionnaire was carried out between February and March 2021. The students were selected through non-probabilistic convenience sampling, and the instruments were administered to all students in the first and last years of the degrees described above who attended class on the day of application. To preserve the data's integrity and obtain more accurate and reliable results, the initial sample of 1,069 subjects was reduced to a final sample of 893 students, excluding those participants who had not answered all the questions in the questionnaire. Once the university's Ethics Committee had approved the research (reference 21-10-2020), the academic heads of the different degree courses were contacted to deliver the questionnaires in an online format in the classrooms. Before this, discussion groups were held with lecturers, managers and students to analyse their concerns and experiences at university in a more open and in-depth manner, and to focus better on the questions in the questionnaire. Consent to participate in the survey was given via an online form, and participation in the study was voluntary.

Conclusion and discussion

This study shows that adopting a learning approach responds to various factors, of either contextual or cultural nature, which could be promoted in and by the university community. This paper highlights the importance of giving more consideration in curricula to extracurricular activities such as conferences, workshops and service-learning activities, which are related to a deeper learning approach and are perceived by students to have a substantial impact on their personal and professional development, even if they do not have a significant effect on students' academic results.

As in numerous studies on learning approaches, it has corroborated that the deep approach is related to high academic self-concept, self-efficacy, and many hours of study (although to a lesser extent). Conversely, the surface approach is related to fewer study hours and, to a lesser extent, academic self-concept and self-efficacy following the trend of multiple research studies by such as Baeten et al. (2010) and others that can be consulted in the systematic review conducted by Monroy and Hernández-Pina (2014). This is in line with research associating the use of one approach or another with academic performance, such as Nogueira Do Santos and Gomes (2020), Soler et al. (2017) and Takase and Yoshida (2021). Students who adopt a deep learning approach concentrate on the meaning of what is learnt, organise the information better, develop critical thinking, show learning regulation abilities and have a clear goal that they pursue, adopting specific learning strategies. By contrast, students who adopt a surface approach to learning use memorisation and reproduction of learning material as the main strategy; they learn disconnected facts to pass exams, with a low level of reflection.

Although Takase and Yoshida (2021) with the SPQ, and García-Berbén et al. (2005), with a Spanish version of the R-SPQ-2F, observed that men obtain higher scores in surface focus and women in deep focus, in agreement with this research, there are studies such as Monroy and Hernández-Pina (2014) and Alsayed et al. (2021) that do not clearly find gender differences in the use of the approaches, and the differences are not conclusive in comparative studies between different countries (Arquero et al., 2010). Based on this study, it would be interesting to consider gender differences when carrying out learning activities oriented to the development of a deep approach to learning in both men and women.

In this sense, some differences have also been found depending on the area of knowledge, although the effects are smaller, in line with the results found in the work of

Watkins and Hattie (1985) and Nelson et al. (2005): namely, while surface learning is more common in science degrees, the deep approach is more common in humanities. The results show that surface learning is more commonly adopted by students of Law, Economics and Engineering. In contrast, the deep approach to learning is more common in Nursing and Physiotherapy, and social science students. However, the impact of the academic subject does not always seem to be conclusive, given the low magnitude of the effect. Other studies, such as that of Olmedo-Moreno and Buendía-Eisman (2000), have shown that university students, whether in technical subjects, humanities or social sciences, do not show significant differences in learning approach, so any differences found should be taken with caution.

Two variables were addressed that have not been studied much before, related to students' perceptions of the activities that can impact their personal and professional development. Given that university activity is not limited solely to classroom training, this research included not only curricular activities (degree courses and internships) but also other activities, such as Learning and Service (L.S.), international placements and conferences and seminars, which can be considered as HIEPs, as described by Conefrey (2021), Kuh (2008), Kilgo et al. (2015), and Trogden et al. (2023), among others. The results are striking for the consistent and positive relationship between the various activities (except international placements) and the deep approach to learning, while the surface approach shows negative associations with the perceived impact of the given activities.

In other words, students who maintain a deep focus obtain a greater impact from these kinds of experiential activities on their personal and professional development. In comparison, those with a surface focus receive less impact on their learning. Along these lines, Miller et al. (2018) suggest that, even after allowing for a range of demographic and institutional factors, participation in HIEPs is a significant predictor of future career plans and early employment

attainment. Participation in HIEPs can give students a career-related advantage through the development of transferable skills and increased learning opportunities, that positively impact potential employers. Likewise, Kuh (2008) shows that studying abroad is a positive and significant predictor of intercultural effectiveness, and internships are a positive and significant predictor of inclination towards research, lifelong learning and socially responsible leadership.

In line with the definition of Soler et al. (2018), attention should be paid to activities that are not so focused on curricular content but can provide feedback to maintain intrinsic motivation and thus increase students' deep focus. This is consistent with this study because students who adopt a deeper approach perceive more significant impact from conferences and seminars on their whole development. Recognising the importance of some activities in developing a deeper approach to learning, international placements stand out as an activity that all types of students, regardless of their approach to learning, value for their impact on their university life experience.

All this leads us to think that there is a wide variety of contextual elements in learning approaches that are not solely attributable to the student's own learning skills. In addition to other variables previously reviewed (Monroy & Hernández-Pina, 2014), such as the amount of curricular work, the conceptions and teaching methods of the teachers or the characteristics of the degree programme itself, this study found that other activities can influence the way students learn. Therefore, these contextual factors allow teachers and other university staff to intervene in certain aspects that affect the use of a deep learning approach. These findings are also in line with the studies of Baeten et al. (2010), who argue that when there is a perceived significant impact on the personal and professional development by university tasks, there is a tendency towards a greater use of deeper approaches.

Concerning the limitations of this study, although it has employed a large sample in different study areas, it was carried out in only one university in Spain; in future research, it would be interesting to analyse these variables in more higher education institutions from different Spanish regions and from different countries as well.

References:

- Alsayed, S., Alshammari, F., Pasay-an, E., & Dator, W. L. (2021). Investigating the learning approaches of students in nursing education. *Journal of Taibah University Medical*. 16(1). 43-49. <https://doi.org/10.1016/j.jtumed.2020.10.008>
- Arquero, J. L., González-González, J. M., Hassall, T., Joyce, J., Germanou, E., & Asonitou, S. (2010). The approaches to learning of European accounting students. *EuroMed Journal of Business*, 5(3), 345-362. <https://doi.org/10.1108/14502191011080854>
- Baeten, M., Kyndt, E., Struyven, K., & Dochy, F. (2010). Using student-centered learning environments to stimulate deep approaches to learning: Factors encouraging or discouraging their effectiveness. *Educational Research Review*, 5(3), 243-260. <https://doi.org/10.1016/j.edurev.2010.06.001>
- Bandalos, D. L., & Finney, S. J. (2018). Factor analysis: Exploratory and confirmatory. In G. R. Hancock & R. O. Mueller (Eds.), *The Reviewer's guide to quantitative methods in the social sciences* (2nd ed., pp. 1-25). Routledge.
- Barboyon, L., & Gargallo, B. (2022). Métodos centrados en el estudiante. Sus efectos en las estrategias y los enfoques de aprendizaje de los universitarios. Teoría de la Educación [Student-centred methods. Their effects on university students' strategies and learning approaches]. *Revista Interuniversitaria*, 34(1), 215-237. <https://doi.org/10.14201/teri.25600>
- Biggs, J. B. (1978). Individual and group differences in study processes. *British Journal of Educational Psychology*, 48(1), 266-279. <https://doi.org/10.1111/j.2044-8279.1978.tb03013.x>
- Biggs, J., Kember, D., & Leung, D. Y. (2001). The revised two factor study process questionnaire: R-SPQ-2F. *British Journal Educational Psychology*, 71(Pt 1), 133-149. <https://doi.org/10.1348/000709901158433>
- Cho, G., Hwang, H., Sarstedt, M., & Ringle, C. M. (2020). Cutoff criteria for overall model fit indexes in generalised structured component analysis. *Journal of Marketing Analytics*, 8(4), 189-202. <https://doi.org/10.1057/s41270-020-00089-1>
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159. <https://doi.org/10.1037//0033-2909.112.1.155>
- Conefrey, T. (2021). Supporting first-generation students' adjustment to college with high-impact practices. *Journal of College Student Retention: Research, Theory & Practice*, 23(1), 139-160. <https://doi.org/10.1177/1521025118807402>
- Entwistle, N., & Ramsdem, P. (1983). *Understanding student learning*. Croom Helm.
- Freiberg, A., & Fernández, M. M. (2016). Enfoques de Aprendizaje según el R-SPQ-2F: Análisis de sus propiedades psicométricas en estudiantes universitarios de Buenos Aires [Learning Approaches in Argentinian University Students, according to R-SPQ-2F: Analysis of their Psychometric Properties]. *Revista Colombiana de Psicología*, 25(2). <https://doi.org/10.15446/rcp.v25n2.51874>
- Fujikoshi, Y. (2000). Transformations with improved chi-squared approximations. *Journal of Multivariate Analysis*, 72(2), 249-263. <https://doi.org/10.1006/jmva.1999.1854>
- García-Berbén, A. B., Fuente-Arias, J., Justicia-Justicia, F., & Pichardo-Martínez, M. C., (2005). Análisis del aprendizaje del Profesorado en formación: ¿pertenecen sus enfoques de aprendizaje a un continuo? [Analysis of trainee teachers' learning: are their learning approaches in a continuum?]. *Revista Interuniversitaria de Formación del Profesorado*. 19(3), 255-268. <https://www.redalyc.org/articulo.oa?id=27411927012>

- González-Cabanach (1997). Concepciones y enfoques de aprendizaje [Learning concepts and approaches]. *Revista de Psicodidáctica*, 4, 5-39. <https://www.redalyc.org/articulo.oa?id=17517797002>
- González, J. L., Del Rincón, B., & Del Rincón, D. A. (2011). Estructura latente y consistencia interna del R-SPQ-2f: Reinterpretando los enfoques de aprendizaje en el EEES [Latent structure and internal consistency of the R-SPQ-2f: reinterpreting the approaches to learning within the EHEA]. *Revista de Investigación Educativa*, 29(2), 277-293. <https://revistas.um.es/rie/article/view/112431>
- Kember, D., & Gow, L. (1990). Cultural specificity of approaches to study. *British Journal of Educational Psychology*, 60(3), 356-363. <https://doi.org/10.1111/j.2044-8279.1990.tb00952.x>
- Kilgo, C. A., Ezell Sheets, J. K., & Pascarella, E. T. (2015). The link between high-impact practices and student learning: some longitudinal evidence. *Higher Education*, 69(4), 509-525. <https://doi.org/10.1007/s10734-014-9788-z>
- Kuh, G. D. (2008). High-impact educational practices: What they are, who has access to them, and why they matter. *Association of American Colleges and Universities*, 14(3), 28-29. <https://www.aacu.org/publication/high-impact-educational-practices-what-they-are-who-has-access-to-them-and-why-they-matter>
- Lorenzo-Seva, U. (2022). SOLOMON: a method for splitting a sample into equivalent subsamples in factor analysis. *Behavior Research Methods*, 54(6), 2665-2677. <https://doi.org/10.3758/s13428-021-01750-y>
- Marton, F., & Säljö, R. (1976a). On qualitative differences in learning: 1 Outcome and process. *British Journal of Educational Psychology* 46(1), 4-11. <https://doi.org/10.1111/j.2044-8279.1976.tb02980.x>
- Marton, F., & Säljö, R. (1976b). On qualitative differences in learning: 2 Outcome as a function of the learner's conception of the task. *British Journal of Educational Psychology*, 46(2), 115-127. <https://doi.org/10.1111/j.2044-8279.1976.tb02304.x>
- Merino, C., & Pradhan, R. K. (2013). Validación estructural del R-SPQ-2F: Un análisis factorial confirmatorio [Structural validity of R-SPQ-2F: a confirmatory factor analysis]. *Revista Digital de Investigación en Docencia Universitaria*, 7(1), 111-127. <https://doi.org/10.19083/ridu.7.190>
- Miller, A. L., Rocconi, L. M., & Dumford, A. D. (2018). Focus on the finish line: does high-impact practice participation influence career plans and early job attainment? *Higher Education*, 75(3), 489-506. <https://doi.org/10.1007/s10734-017-0151-z>.
- Mokhtar, S. B., Chon, G.S., Husain, M. Y., & Rahman, S. (2010). The Bahasa Melayu R-SPQ-2F: A preliminary evidence of its validity. *Procedia-Social and Behavioral Sciences*, 7, 151-155. <https://doi.org/10.1016/j.sbspro.2010.10.022>
- Monroy, F., & Hernández-Pina, F. (2014). Factores que influyen en los enfoques de aprendizaje universitario. Una revisión sistemática [Factors affecting student approaches to learning. a systematic review]. *Education XX1*, 17(2). <https://doi.org/10.5944/educxx1.17.2.11481>
- Munshi, F. M., Al-Rukban, M. O., & Al-Hoqail, I. (2012). Reliability and validity of an Arabic version of the revised two-factor study process questionnaire R-SPQ-2F. *Journal Family and Community Medicine*. 19(1). 33-7. <https://doi.org/10.4103/2230-8229.94010>
- Nelson, T.; Shoup, R., & Kuh, G. D. (2005, May 29-June 1). *Deep learning and college outcomes: do fields of study differ?* [Paper presentation] Indiana University Center for Post-secondary Research. Annual Meeting of the Association for Institutional Research, San Diego, CA, United States.

- Nogueira dos Santos, M., & Gomes, C. M. (2020). Testing the hypothesis that the deep approach generates better academic performance. *International Journal of Development Research*, 10(12), 42925-42935. <https://doi.org/10.13140/RG.2.2.11397.17124>
- Olmedo-Moreno, E. V., & Buendía-Eisman, L. (2000). Estrategias de aprendizaje y procesos de evaluación en educación universitaria [Learning strategies and assessment processes in university education]. *Bordón: Revista de Pedagogía*, 52(2), 151-163. <https://dialnet.unirioja.es/servlet/articulo?codigo=54662>
- Ramsden, P. (1992). *Learning to teach in Higher Education*. Routledge.
- Soler, M. G., Cárdenas, F. A., Hernández-Pina, F., & Monroy, F. (2017). Enfoques de aprendizaje y enfoques de enseñanza: origen y evolución [Approaches to learning and teaching: origin and evolution]. *Educación y Educadores*, 20(1), 65-88. <https://doi.org/10.5294/edu.2017.20.1.4>
- Soler, M. G., Cárdenas, F. A., & Hernández-Pina, F. (2018). Enfoques de enseñanza y enfoques de aprendizaje: perspectivas teóricas promisorias para el desarrollo de investigaciones en educación en ciencias [Teaching and learning approaches: theoretical perspectives to develop research in science education]. *Ciência & Educação*, 24(4), 993-1012. <https://doi.org/10.1590/1516-731320180040012>
- Stes, A., De Maeyer, S., & Van Petegem, P. (2013). Examining the cross-cultural sensitivity of the Revised Two Factor Study Process Questionnaire (R-SPQ-2F) and validation of Dutch version. *PLoS ONE*, 8(1), Article e54099. <https://doi.org/10.1371/journal.pone.0054099>
- Takase, M., & Yoshida, I. (2021). The relationships between the types of learning approaches used by undergraduate nursing students and their academic achievement: A systematic review and meta-analysis. *Journal of Professional Nursing*, 37(5), 836-845. <https://doi.org/10.1016/j.profnurs.2021.06.005>
- Torre, J. C. (2006). *La autoeficacia, la autorregulación y los enfoques de aprendizaje en estudiantes universitarios* [Doctoral dissertation, Universidad Pontificia Comillas]. <https://dialnet.unirioja.es/servlet/tesis?codigo=105907>
- Trigwell, K., & Prosser, M. (1996). Changing approaches to teaching: a relational perspective. *Studies in Higher Education*, 21(3), 275-284. <https://doi.org/10.1080/03075079612331381211>
- Trogden, B. G., Kennedy, C., & Biyani, N. K. (2023). Mapping and making meaning from undergraduate student engagement in high-impact educational practices. *Innovative Higher Education*, 48(1), 145-168. <https://doi.org/10.1007/s10755-022-09608-7>
- Watkins, D., & Hattie, J. (1985). A longitudinal study of the approaches to learning of Australian tertiary students. *Human Learning: Journal of Practical Research & Applications*, 4(2), 127-141. <https://psycnet.apa.org/record/1987-14084-001>
- Xia, Y., & Yang, Y. (2019). RMSEA, CFI, and TLI in structural equation modeling with ordered categorical data: The story they tell depends on the estimation methods. *Behavior Research Methods*, 51(1), 409-428. <https://doi.org/10.3758/s13428-018-1055-2>
- Xie, Q. (2014). Validating the revised Two-Factor Study Process Questionnaire among Chinese university students. *The International Journal of Educational and Psychological Assessment*, 16(1), 4-20.
- Zakariya, Y. F., Bjørkestøla, K., Nilsena, H. K., Goodchild S., & Lorås, M. (2020). University students' learning approaches: An adaptation of the revised two-factor study process questionnaire to Norwegian. *Studies in Educational Evaluation*, 64, Article 100816. <https://doi.org/10.1016/j.stueduc.2019.100816>

Zakariya, Y. F., & Massimiliano, B. (2022). Short-form of revised two-factor study process questionnaire: Development, validation, and cross-validation in two European countries. *Studies in Educational Evaluation*, 75, Article 101206. <https://doi.org/10.1016/j.stueduc.2022.101206>