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Learning approaches and high-impact educational practices at university: a proposal for a reduced scale of the student process questionnaire

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ABSTRACT

Research on the relationship between learningapproaches and variables such as the perceived impact of some universityactivities is limited. The present study proposes a reduced Student Process-Questionnaire (SPQ) to relate learning approaches to high-impact educationalpractices (HIEPs). The sample consisted of 893 first and final-year universitystudents of different degrees. As expected, the subscales correlate academicself-concept and self-efficacy positively with the deep approach, andnegatively with the surface approach. The results show that students whomaintain a deep learning approach obtain a more significant impact on theirpersonal and professional development by HIEPs (especially conferences, workshops and service-learning activities). Women have a lower surface approachand social and humanities students have higher levels of the deep approach.

KEYWORDS

Approaches to learning; students; university; measurement; high impact educational practices

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 & Säljö, 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 et al., 2020; Soler et al., 2017, 2018; Takase & Yoshida, 2021; Torre, 2006; Zakariya & Massimiliano, 2022; Zakariya et al., 2020).

There are two learning approaches: the 'deep approach' and the 'surface approach'. The deep approach involves understanding the content in depth and

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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 Baeten 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). Baeten 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 two interests. Firstly, it presents a proposal for a reduced scale to measure learning approaches based on the Biggs SPQ scale (deep and surface) and the Spanish adaptation of Torre (2006), so as to be applied together with another set of instruments without making the questionnaire excessively long. This would be in line with multiple studies whose purpose is to present validated proposals for reduced instruments, such as those of Zakariya et al. (2020) and Zakariya and Massimiliano (2022), who published a reduced version of the SPQ in English. In addition, it analyses 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

In this paper, 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). The criterion for

Table 1. Distribution of the total sample.

Study area	Man	Woman	Total
Human and Social Sciences	50	205	255
	19.6%	80.4%	100.0%
	18.5%	32.9%	28.6%
Translation, Communication and I.R.		84	102
	17.6%	82.4%	100.0%
	6.7%	13.5%	11.4%
Nursing and Physiotherapy		65	79
	17.7%	82.3%	100.0%
	5.2%	10.4%	8.8%
Law		101	148
	31.8%	68.2%	100.0%
	17.4%	16.2%	16.6%
Economic Sciences	91		230
	39.6%	60.4%	100.0%
	33.7%	22.3%	25.8%
Engineering	50	29	79
	63.3%	36.7%	100.0%
	18.5%	4.7%	8.8%
Total	270	623	893
	30.2%	69.8%	100.0%
	100.0%	100.0%	100.0%

selecting these items was that they had the highest communalities and importance as the corresponding factor in previous studies, and that they conceptually integrated the different nuances to define them adequately.

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 October 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.

Data analysis

Content validation (literature review) and construct validation (item-total correlation, reliability, factorial structure) procedures were developed to respond to the first objective. Following Lorenzo-Seva (2022), to carry out the construct validity study of the instrument, two equivalent random samples were obtained from the total sample (KMO first sample = 0.849: KMO second sample: 0.855: Coefficient S = 0.993; being close to 1, they were considered equivalent samples according to the author). With the first sample, the underlying structure of the items of the scale were analysed in an exploratory way, and with the second sample, this structure was found to adjust to what is postulated in the theory and is maintained by a different but comparable sample by age, centre, and sex.

The first sample comprised 419 students (58.7% first-year and 41.9% final-year students). In terms of gender, the sample was composed of 298 (71.1%) women and 121 men (28.9%). Information was collected from students with degrees in the scientific field of Humanities and Social Sciences (128), Translation-Interpreting and International Relations (47), Engineering (34), Economics (103), Law (66) and Nursing and Physiotherapy (41).

The second sample comprised 449 students, 56.3% from the first year and 43.7% from the final year. Looking at the gender distribution, there were 302 women (67.3%) compared to 147 men (32.7%). Information was collected from students in the fields of Social and Human Sciences (110), Translation-Interpreting and International Relations (49), Engineering (40), Economics (118), Law (85) and Nursing and Physiotherapy (47).

The KMO and Bartlett's test of sphericity were analysed to ensure sample adequacy. An Exploratory Factor Analysis (EFA) was carried out using the Principal Component extraction method and Promax rotation. Subsequently, a Confirmatory Factor Analysis (CFA) was carried out to assess the fit of the two-factor structure. For this purpose, the polychoric correlation matrix and the Weighted Least Squares Means and Variance (WLSMV) parameter estimation method were used due to the response levels (1 to 5) of the questionnaire items. To assess the model's fit to data, the absolute fit indicators $\chi 2$ and $\chi 2$ between their degrees of freedom (df) were taken, given the sensitivity of $\chi 2$ to sample size (Fujikoshi, 2000). When $\chi 2/df$ ranges from one to three, it is a good indicator of fit. In addition, other descriptive indices that do not depend so much on sample size were calculated: the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA), with TLI > 0.90 and SRMR < .08 considered as good indicators (Cho et al., 2020; Xia & Yang, 2019).

McDonald's Omega was used to analyse the scale's internal consistency since the scale of the items is ordinal, and there are fewer than seven response options. The correlation coefficient between the item and the total on the scale was estimated if the item was removed (Pearson's r) and McDonald's Omega was used if the item was eliminated from the scale to assess the adequacy of each item. The correlations between the factors and variables related to learning (hours of study, academic self-concept, self-efficacy) were also evaluated using Pearson's correlation to analyse criterion validity.

Means were contrasted according to gender and academic year using the student's t-test, Cohen's d to calculate the effect size, factorial ANOVA to analyse the interaction between gender and faculty, and eta2 to calculate the magnitude of differences. Pearson correlations were performed between the approaches and the perceived level of impact of university activities. The assumptions of homogeneity of variances were analysed through Levene and normality with Shapiro-Wilk, and non-parametric tests (Mann-Whitney U and Kruskal-Wallis) were performed when they were not met to confirm the findings.

IBM SPSS and JAMOVI 2.2.5 were used to perform the analyses, and values where $p < .05$ were considered significant.

Results

The scale's reliability and internal consistency were assessed in the sample of 419 students, obtaining a McDonald's Omega with a reliability of 0.741 for the deep approach (Table 2) and 0.735 for the surface approach (Table 3).

Once Bartlett's sphericity ($p < .001$) and the Kaiser-Meyer-Olkin index (KMO = 0.849) had been analysed with satisfactory results, factor analysis was carried out using the Principal Components method to study the underlying structure of the scale in an exploratory way. Analysing the communalities obtained, which in most cases were greater than 0.40, there were 10 of the items with communalities close to 0.50 or higher, as seen in Table 4.

Table 2. Reliability of the deep approach.

	Mean	SD	Item-rest correlation	McDonald's ω
3. Studying academic subjects can sometimes be as exciting as reading a good novel or watching a good film.	3.59	1.062	0.418	0.717
4. I ask myself questions about important issues until I fully understand them.	3.92	0.872	0.436	0.715
7. I work hard in my studies because I find the subjects interesting.	3.75	0.854	0.533	0.689
8. I spend a lot of my free time looking for more information on interesting topics that have been discussed in different classes.	2.75	1.063	0.532	0.69
10. I go to most classes with questions I would like to find answers to.	3.02	1.008	0.456	0.712
11. It is very important for me to have a look at most of the recommended readings that have to do with classes.	2.93	1.139	0.474	0.707
Scale	3.33	0.66		0.741

Table 3. Reliability of the surface approach.

	Mean	SD	Item-rest correlation	McDonald's ω
1. My goal is to pass the course by doing as little work as possible.	1.91	1.005	0.455	0.698
2. I only seriously study what is given in the lectures or what is in the detailed syllabuses of the subjects.	3.06	1.115	0.445	0.699
5. I feel that I can pass most assessments by memorising key points rather than trying to understand them.	2.44	1.140	0.237	0.751
6. I generally limit my study to what is specifically asked for, because I think it is unnecessary to do extra things.	2.41	0.970	0.619	0.651
9. I don't think teachers should expect students to spend a lot of time studying things that are not going to come up in the exam.	3.12	1.132	0.485	0.694
12. I don't see the point in learning content that probably won't make it into the exam.	2.30	1.010	0.511	0.693
Scale	2.54	0.686		0.735

Table 4. Rotated matrix and item communalities.

Indicators	Component 1		Uniqueness
9	0.766		0.489
12	0.743		0.498
6	0.705		0.405
1	0.606		0.596
5	0.548		0.773
3	0.485		0.609
10	0.316	0.863	0.433
8		0.685	0.507
11		0.603	0.549
7		0.583	0.510
3		0.538	0.661
4		0.508	0.662
% Variance	22.6	21.6	
Total	44.2%		

The execution of the EFA yielded a factorial solution composed of two factors that explained 44.2% of the variance. Suppose the percentage of variance explained by each factor is analysed separately: in this case, the deep approach explains 43.6% and the surface approach 43.2%, higher percentages than those found by Freiberg and Fernández (2016), who obtained 35.1% of variance explained for the two factors. When analysing the rotated matrix, by means of the Promax rotation process, a structure is obtained in which the two factors, deep and surface focus, appear coherently, as suggested by the sedimentation graph and the parallel analysis (Figure S1).

Subsequently, CFA was performed to determine which latent factors explain the covariation between the items, testing whether the two-factor solution fits adequately. The second sample of 449 students was used for the CFA.

The results obtained indicate a good fit for the theoretical model proposed in the SPQ scale of approaches to learning, so that the results of 2.83 obtained in χ2/df, 0.919 in the case of the CFI, 0.900 for TLI, 0.044 SRMR and a 0.063 value of RMSEA, are considered acceptable according to the criteria proposed by the authors cited above (Table 5).

Furthermore, the items used to measure the different latent variables present adequate standardised factor loadings for each of them, all (except one) being equal to or higher than 0.50 (Bandalos & Finney, 2018). This can be seen in Table 6, which illustrates the theoretical model proposed for the scale, showing the covariances between the dimensions and the standardised weights of each item.

As can be seen in Table 7, this model establishes statistically significant correlations between the two factors, which are statistically significant, negative, and moderately high, according to Cohen's (1992) criteria ($r = -.487$; $p < .001$). Furthermore, continuing

Table 5. CFA Adjustment Ratios.

				RMSEA 90% CI			
IFC	TLI	SRMR	RMSEA	Lower	Upper	AIC	BIC
0.919	0.9	0.0442	0.0639	0.052	0.0761	14671	14823
χ^2	**df**	**p**					
150		<.001					

Table 6. Item factor loadings.

Factor	Indicator	Estimate	S.E.	Z	p	Stand. Estimate
Factor 1	1	0.541	0.048	11.29	<.001	0.555
	2	0.681	0.0544	12.53	<.001	0.603
	5	0.292	0.0618	4.73	<.001	0.248
	6	0.718	0.0469	15.31	<.001	0.714
	9	0.655	0.0547	11.98	<.001	0.586
	12	0.632	0.0501	12.6	<.001	0.613
Factor 2	3	0.595	0.0503	11.85	<.001	0.575
	4	0.525	0.0433	12.13	<.001	0.586
	7	0.616	0.0427	14.43	<.001	0.676
	8	0.684	0.0508	13.48	<.001	0.639
	10	0.574	0.0512	11.22	<.001	0.549
	11	0.576	0.0564	10.2	<.001	0.508

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

Table 7. Correlations between approaches and learning-related variables $N = 892$.

	Surface approach	Deep approach
Deep approach	−0.487***	-
Study hours	−0.216***	0.183***
Academic self-concept	−0.190***	0.293***
Self-efficacy	−0.191***	0.213***

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

with the analysis of criterion validity and in line with other studies, Table 7 shows statistically significant relationships ($p < .001$) between approaches and hours of study; one item on academic self-concept and one item on self-efficacy, although of low magnitudes, are positive relationships with the deep approach and negative with the surface approach.

The relationship with performance measures such as academic self-concept measured through the item 'What place do you think you would occupy in the classes if you took into account the grades?' is statistically significant and positive with both approaches. With the surface approach, the relationship is negative and low ($r = -0.19$); with the deep approach, it is positive and tends to moderate ($r = 0.29$, Table 7).

According to gender (Table S1), there are statistically significant differences in the two approaches ($p < .05$), but they are higher in the surface approach (d = 0.28) in favour of men, and lower in the deep approach (d = 0.16) in favour of women.

Analysing the differences according to the study area (Table S2), there appear to be differences in the surface approach ($p < 0.001$), although the differences are low according to the effect size between Nursing and Physiotherapy, with lower values than Law, Economics Sciences and Translation, Interpreting and International Relations. In the deep approach, the differences are also low and in favour of Social and Human Sciences, Nursing, and Physiotherapy, as opposed to Engineering, Economics Sciences and Law, which have lower scores. A factorial ANOVA was carried out to analyse the interaction between sex and area of knowledge in the approaches, and no statistically significant differences appeared either in the surface approach ($F = 0.331$; $p > .05$; $eta^2 = 0.002$), or the deep approach ($F = 1.050$; $p > .05$; $eta^2 = 0.006$).

Regarding the relationship between the use of learning approaches and the perceived impact on subjects' personal and professional development, Service Learning (S.L.), internships and international placements (Table S3), statistically significant positive relationships may be observed with the deep approach and negative ones with the surface approach. The relationship between the deep approach and the perceived impact of the degree subjects, as well as of the conferences and workshops and Service Learning, are the highest and statistically significant ($p < .01$), close to $r = 0.30$, both in professional development and in the perceived impact at a personal level, and negative and close tor = −0.25 with the surface one. Furthermore, there is little relationship between the perceived personal and professional impact of international stays with both approaches, the only statistically significant relationship being with the surface approach at the personal level ($r = -0.149$) and with the deep approach at the professional level ($r = 0.129$). However, both are of very low magnitude. When the averages were analysed (Table S4), it was found that what has the most significant impact are international stays, internships and subjects, both personally and professionally.

Discussion

By means of two objectives, this research has sought to contribute to the study of learning approaches within the university context. Firstly, it has provided a reduced scale with adequate levels of reliability and validity to measure the level of use by university students of surface and deep learning approaches. Secondly, the scale has been related to contextual variables that have been little studied and contributes to broadening the importance of variables that are not necessarily directly linked to the learning activity, but which nevertheless have a high impact.

Regarding the first objective of this study, the literature review confirmed the need for reduced versions of instruments for a wide variety of variables. It is advisable to reduce the scales of interest when conducting studies in which it is desirable to integrate different instruments that assess a vast number of variables that account for the contextual complexity in which academic learning takes place. In this case, through the above process, it has been able to show criteria that support the reliability and validity of the reduced SPQ scale. The EFA shows us a two-factor scale in line with the original scale, while the CFA has allowed us to conclude that the expected two-factor model is confirmed, obtaining satisfactory fit indices.

Within the framework of research on learning approaches, two lines of work currently coexist, as suggested by Freiberg and Fernández (2016): those that focus on analysing the bifactorial structure (surface and deep) (Mokhtar et al., 2010; Munshi et al., 2012; Stes et al., 2013), and others who have focused on verifying a hierarchical dimensional structure that includes, firstly, motives and strategies and, secondly, approaches (González et al., 2011; Merino & Pradhan, 2013; Xie, 2014). This study has used the bifactor model, which shows that students tend to have a predominant type of approach, so that those who score high in surface approach would score low in the deep approach, and vice versa.

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 dos Santos et al. (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.

Regarding the second objective of the study, 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.

Conclusion

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. Furthermore, as proposed in this work, the development of a reduced scale makes it possible to establish more significant connections with other variables in university life. This article also 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.

Future research may establish a connection with other aspects considered to be of interest, such as the influence of specific university factors on personal and professional development, analysing those who are thinking of dropping out, the feeling of pride and identification with the university, the balance students feel between

curricular and extracurricular activities, their perception of their academic and professional future, the aspects they take into account when choosing a job, salary expectations and, more recently, the perceived impact of COVID-19 on their university experience.

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Data availability statement

The data generated and analysed during the study are available on request.

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