

Arquero, J. L., Fernández-Polvillo, C., Hassall, T., & Joyce, J. (2015). Vocation, motivation and approaches to learning: a comparative study. *Education+ Training*, 57(1), 13-30.

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VOCATION, MOTIVATION AND APPROACHES TO LEARNING: A COMPARATIVE STUDY

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Abstract

Purpose – The individual characteristics of students can have a strong influence on the success of the adopted innovations in terms of their transferability and sustainability. The main objective is to compare the motivations and approaches to learning on degrees with differing vocational components.

Design/methodology/approach – Self-determination theory (SDT) and approaches to learning framework were used as theoretical background. Questionnaires were used to generate data. The sample was composed by 270 students enrolled on differing degrees in term of motivation (accounting and nursing).

Findings – The results reveal differences in the approaches to learning and motivation between nursing and accounting students. Nursing degree seem to attract more internally motivated students, presenting significantly higher scores in terms of deep approach and lower scores on surface approach. Significant relationships where found between motivation and approaches.

Research limitations/implications –Data are obtained from students studying at a specific university in two degrees.

Practical implications – Our result suggest that different degrees could attract students with different motivations and approaches to learning. Educators must be aware of which type of students are being attracted to their classrooms, because the inconsistencies between the students' motives and approaches, the way the contents are presented, the pedagogy and the assessment system could result in poorer learning and failure to transfer or sustain innovations

Originality/value – this paper adds to the very scarce literature linking motivation and approaches and comparative studies in terms of SDT. The implications for curriculum design and delivery and specifically for assessment design are of interest for educators.

Keywords - motivation; self-determination theory; approaches to learning, innovations

Paper type Research paper

1. INTRODUCTION

Among the challenges presented by The Bologna Process is to change to a learning model that is more focused on actively involving students in their learning (González *et al.*, 2012). It is hoped that such an approach will encourage students to become committed to life-long learning. As a consequence of this and previous pressures for change in accounting education by relevant stakeholders (see Hassall *et al.*, 2010 for a review) accounting teachers are adopting 'imported' innovations that have proved to be successful in other knowledge areas or in other contexts. For example Johnstone and Biggs (1998) and Milne and McConnell (2001) suggest adopting problem based learning (PBL) following its successful use in health sciences. Subotnik (1987) reflected upon

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what could be learnt from legal education. Similarly, McPhail (2001) reflected on what was being done in law, engineering and medicine to teach ethics in accounting.

However the individual characteristics of students can have a strong influence on the success of the adopted innovations in terms of their transferability and sustainability (Arquero *et al.*, 2012). Kyndt *et al.* (2011a) noted that the efforts made to induce meaningful learning by means of student-centred learning environments, such as PBL and student-activating teaching methods produced mixed results. Although several studies confirm that such environments have a positive influence on learning quality, surprisingly, other studies have observed the opposite effects and in many cases results have shown increases in surface approaches (evidence can be found in Gijbels *et al.*, 2005; Nijhuis *et al.*, 2005; Segers *et al.*, 2006 or Struyven *et al.*, 2006). Hytti *et al.* (2011) highlighted how students' motivation could affect the outcomes and satisfaction scores of a given programme. Internally motivated students needed a more flexible context whereas externally motivated students were more satisfied and showed more positive outcomes with a more rigid and controlled learning context.

In order to attain meaningful learning, an active involvement of students in their own learning process and a positive predisposition to learn is needed (Ausubel, 2000). The level of involvement will be influenced by the motivations of the students and the ways in which they are willing to manage learning tasks (approaches to learning).

Kyndt *et al.* (2011b) highlighted the rationale for studying both characteristics: it has been shown that motivation for learning and approaches to learning are both important predictors of students' learning outcomes and competences (see for example Deci and Ryan, 2004; Kember *et al.*, 1997; Trigwell and Prosser, 1991). They developed the hypothesis that motivation for learning can influence the perception of contextual characteristics of the learning environment and therefore can also have an indirect influence on students' approaches to learning. González-Cabanach (1997) suggests that the level of self-determination of students could be significantly related to the strategies adopted to manage learning tasks and therefore with their approaches to learning.

In the words of Kyndt *et al.* (2011b): "no previous research has investigated the relationship between motivation for learning and students' approaches to learning" (p. 135). We found three other studies that, in some way, link motivation and approaches to learning. Focused on medical education, Delva *et al.* (2002) found those adopting a deep approach to learning seem to be internally motivated to learn, whereas external motivation is associated with surface approaches to learning. However, they did not use previously validated questionnaires, but a short instrument developed for that purpose. Kizilgunes *et al.* (2009) used a theoretical framework for motivation

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goal orientation (DeBacker and Crowson, 2006; Pintrich, 2000; Pintrich and Schunk, 2002) which refers to reasons why students engage in a task. There are two main types: performance-goal orientation (focus on demonstrating normatively high competence or ability, seeking recognition of accomplishments, avoiding looking dumb, and avoiding performing poorly) and mastery-goal orientation (focus on learning, understanding, mastering tasks, and personal improvement). Kizilgunes *et al.* (2009) summarized the learning approach in one measure (deep versus surface) using an instrument that did not measure the achieving approach (which is applicable to students that adapt their study strategies to the perceived context requirements in order to obtain academic success) even though one of the goal orientations is defined in terms of high performance. Their results show a positive relation mastery goal / learning approach and a low negative relation performance goal / learning approach. Finally, Kusrkar *et al.* (2013) linked *quality of motivation* (a variable that summarized the difference between internal-external motivation according to the Self Determination Theory in one variable) with *good study strategy* (a variable that summarized the difference between deep and surface learning). They found a link between autonomous motivation, study strategy and academic performance consistent with Kizilgunes *et al.* (2009) and Kyndt *et al.* (2011b). These studies did not take into account the achieving approach. This fact, and the reduction of the motivational variables to only one (in the case of Kusrkar *et al.* 2013) or the exclusion of the amotivation construct (or alienation, equivalent in goal orientation theory) in all of the reviewed studies, could hide relevant relationships.

Accordingly the first research question of this paper can be stated as follows:

Q1. What is the pattern of relationships between approaches to learning and motivation (as defined in the self determination theory)?

This study should add to the scarce literature on the topic because (I) we are considering the three approaches to learning (deep, surface and achieving) and (II) in respect of motivation, we are not summarising motivation into one measure, but considering internal, external and lack of motivation (*amotivation*, not considered in previous studies).

As has been stated above, both motivation and approaches to learning could be interrelated and have an impact on academic outcomes. Kyndt *et al.* (2011b) highlighted that prior research has shown that students from different disciplines can differ significantly from each other regarding learning approaches (e.g. Hayes and Richardson, 1995; Kember *et al.*, 2008; Smith and Miller, 2005). Specifically in accounting education, Booth *et al.* (1999) and Byrne *et al.* (2010) call for further studies to compare the learning approaches of accounting students to those in other disciplines. Guay *et al.* (2008) suggest that some motivations could be related to knowledge areas

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and, in their conclusions, Byrne *et al.* (2010) point to different motivations for students choosing different disciplinary areas as an explanation for differences in their approaches to learning.

Following this the second research question is stated as follows:

Q2. Are there differences in the motivations and approaches to learning of students enrolled in degrees with differing vocational components?

Following a similar approach to Hativa and Birembaum (2000) and Byrne *et al.* (2010), from the available careers we decided to choose two vocational areas that would be expected to differ substantially in terms of motivation: accounting and nursing.

There have been very few papers that have investigated the motivations of students who chose to study accounting. Byrne and Flood (2005) using the “Motives, Expectations and Preparedness for University” questionnaire with Irish students, Arquero *et al.* (2009) for Spanish students and Byrne *et al.* (2012) for several nationalities, all pointed out the strong influence of external motives on the choices made by students enrolling on business related degrees. Arquero *et al.*, (2006), using qualitative methodologies, reached a similar conclusion: future career prospects (salary, social position, etc.) were amongst the major motives for choosing such a degree. It is to be noted that the most repeated reason for students to have interest in a certain subject was the perceived utility in terms of links “with real world” and employment.

Contrary to this, degrees that are more ‘service oriented’ tend to attract students with a strong internal motivation. Nursing could be considered as an example of such a degree. Boughn (2001), Boughn and Lentini (1999) and Nilsson and Stomberg (2008) identified “caring for others” as a main motivator for nursing students. Newton *et al.* (2009) identified four key themes that were common to all participants in their study: a desire to help, caring, a sense of achievement and self-validation. In the review of the literature Raines (2010) stated that intrinsic factors such as the desire to help or care for others and to contribute to society have been reported as the dominant factors influencing career choices in this context.

The remainder of this paper is organized as follows. The second section contains a brief theoretical background. The third section is devoted to the methodology, followed by the results section. Finally the discussion of the results, including implication, limitations and future lines of research are presented.

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2. THEORETICAL BACKGROUND: A BRIEF PERSPECTIVE

Approaches to learning

Although students approach their study in different ways, there appears to be only two major theoretical standpoints for the source of current learning process questionnaires (Entwistle and Waterston, 1988; Fox *et al.*, 2001):

- (I) the *information processing* (IP) position, originating from cognitive psychology, developing theoretical constructs about learning which apply irrespective of the learning environment and
- (II) the *students' approaches to learning* (SAL) position, which arose partly out of the dissatisfaction with the IP models and that assumes that the learning environment had a sound influence on the way students face learning tasks.

Biggs *et al.* (2001) state that IP theories seem “particularly inappropriate for such a context-dependent issue as student learning, where student strategy use is dependent upon a host of factors, such as students' values and **motives**, their perceptions of task demands, teaching and assessment methods, classroom climate, and so on” (p.134, bold added).

The empirical studies of Marton and Säljö (1976a and 1976b) and Marton *et al.* (1984) identified that students tend to adopt a “deep” approach or a “surface” approach to learning. Byrne *et al.* (2010) stated that a deep approach is characterised by a personal interest in learning. Students adopting this approach intend to understand the material; they interact critically with the contents and relate them to their prior knowledge and experience. In contrast, students adopting a surface approach present a low personal engagement in the learning process, focus on rote-learning the material in an unrelated manner and they are constrained by the specific task.

Consequently, deep learning is more likely to result in better retention and transfer of knowledge and lead to higher quality learning outcomes (Ramsden, 1992). Correspondingly, de Lange and Mavondo (2004) stated that regardless of methodological approach (e.g., qualitative or quantitative), published studies have collectively revealed that within higher education students' approaches to learning have an impact on learning outcomes and that the deep approach is associated with improved learning. Surface approaches to learning are likely to lead to lower quality learning outcomes.

As Byrne *et al.* (2010) indicate, subsequent research drew attention to the pervasive influence of assessment on student learning and a third approach was added: *strategic / achieving approach*

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(Entwistle and Ramsden, 1983; Biggs, 1987). This approach described students that try to obtain academic success by planning tasks, effort and time. Biggs (1988) points out that these students change their strategies to fit with the perceived characteristics of each specific course (including the assessment system) and will adopt a meaningful or rote learning approach as and when they perceive it as being necessary for success.

Entwistle (1979) and Entwistle and Hounsell (1979) indicate that although students do have a natural tendency towards a particular style of learning, their perception of a new context is nevertheless still an important factor. Biggs *et al.* (2001) state that it is inappropriate to categorise students as 'surface' or 'deep' learners on the basis of questionnaire responses; such categorisations would imply that the learning approach was a stable trait of the individual. These authors highlight that such questionnaire scores are a function of both individual characteristics and the teaching context. The teacher and the student are jointly responsible for the outcome: the teacher for structuring the enabling conditions and the learner for engaging with them. Thus an approach to learning describes the nature of the relationship between student, context, and task (Biggs *et al.*, 2001).

Marton *et al.* (1984) and Biggs (1987) suggest that deep and achieving approaches are related to higher grades and qualitatively better learning outcomes (also evidenced in Van Rossum and Schenk, 1984 and Watkins, 1983). Similarly the report *Student Approaches to Learning* (OECD, 2003) found relationships between approaches and academic results in OECD countries, irrespective of differences in culture and educational systems.

Self-determination and motivation

Cockley (2000) states that psychologists have had a long standing interest in assessing motivation and its role in educational outcomes. This interest is based on the relationship of motivation with educational outcomes such as curiosity, persistence, performance, etc. (Deci and Ryan, 1985).

Many conceptual perspectives have been proposed in order to offer a better understanding of academic motivation. A useful perspective based upon self-determination theory (SDT) developed by Deci and Ryan (1980, 1985) conceptualizes motivation as being intrinsically or extrinsically oriented (Cokley, 2000; Vallerand *et al.*, 1992); therefore students could present different motivations in a continuum from lack of control to self-determination (amotivation, external motivation through to internal motivation).

Ryan and Deci (2000, p. 70) affirm that "perhaps no single phenomenon reflects the positive potential of human nature as much as intrinsic motivation, the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacity, to explore, to learn". Therefore, **intrinsic**

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motivation (IM) refers to the act of doing something for itself and the pleasure and satisfaction derived from participation (Vallerand *et al.* 1992). An example of IM behaviour is students that go to class because they find it interesting to learn more about certain subjects.

Vallerand *et al.* (1989, 1992) postulated a tripartite taxonomy of IM: *to know* (performing an activity for the pleasure and the satisfaction experienced while learning, exploring or trying to understand something new), *to accomplish things* (engaging in an activity for the pleasure and satisfaction experienced when one attempts to accomplish or create something) and *to experience stimulation* (linked to sensory pleasure, or aesthetic experiences; when someone engages in an activity in order to experience stimulating sensations).

The term **extrinsic motivation** (EM) refers to the performance of an activity in order to attain some separable outcome (Ryan and Deci, 2000). Much of what people do after childhood is not intrinsically motivated (due to social pressures and responsibilities) but this does not mean that there is no self determination at all. There are three ascending levels of EM: external regulation, introjection and identification (Ryan and Deci, 2000 and Vallerand *et al.*, 1992).

The least autonomous EM behaviour is *external regulation* whereby activities are performed to satisfy an external demand or reward contingency, or to avoid a punishment. This is the type of EM that is more extensively described in the literature and that best represents EM. An example of this type of motivation is “I go to the university in order to have a better salary later on”.

Introjected regulation is a relatively controlled form of regulation in which activities are performed to attain ego enhancements (e.g. pride) or to avoid guilt or anxiety. Individuals begin to internalize the reasons for their actions, but the main reasons are still external. “I go to university because when I succeed in university I feel important” is an example of introjected regulation.

The more autonomous self-determined type of EM is regulation through *identification*. Identification reflects a conscious valuing of an external motive that is accepted as personally important and internalised. “I go to university because eventually it will enable me to enter the job market in a field that I like” is a reason that describes identification. Given the high level of self-determination of *identification* some authors, such as Kurkusar *et al.* (2013), integrate this construct with IM measures.

The least determined type of motivation is **amotivation** (the state of lacking the intention to act) whereby people either do not act or act without intent. It occurs as a result of not valuing the activity, not feeling competent to do it or not expecting it to yield a desired outcome (feelings of incompetence or expectancies of uncontrollability). The following sentence reflects amotivation: “I don't know why I came to university and frankly, I couldn't care less”.

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Reeve (2002), in his review of the literature, highlights that intrinsically motivated students tend to have greater success in education and are able to benefit from more autonomous teaching styles. Guay *et al.* (2008), in their analysis of the published research, confirmed the finding above: autonomous motivation is associated with increased retention and depth of learning and note that student drop-out rates are related to lower IM and higher amotivation.

3. METHODOLOGY

Participants

The sample is composed of 270 students from the University College of Osuna (University of Seville, Spain) enrolled on an accounting course (42.6% of the sample) and a nursing course (57.4% of the sample). The distribution of students by gender and degree is presented at table 1.

Table 1: Distribution of students by gender and degree

		Male	Female	Total
Accounting	n	42	73	115
	% on degree	36.5%	63.5%	100.0%
Nursing	n	34	121	155
	% on degree	21.9%	78.1%	100.0%
Total	n	76	194	270
	% on degree	28.1%	71.9%	100.0%

Instruments

Approaches to learning: New Study Process Questionnaire (N-SPQ-3f)

There are two short instruments validated in Spain to measure approaches to learning: R-SPQ-2f (originally developed by Biggs *et al.* 2001 and validated in Spain by Hernández Pina *et al.*, 2004) and the N-SPQ-3f (Fernández-Polvillo and Arquero, 2011) a revised and adapted version in Spanish of the R-SPQ-3f (Fox *et al.*, 2001). Given that the R-SPQ-2f does not facilitate the capture of scores on the achieving approach, the N-SPQ-3f was considered to be more appropriate for the present study. This instrument consists of 18 items (6 for each approach) to be answered on a 5-point scale from (1) “rarely true”, to (5) “usually true”. The internal consistency (Cronbach’s alpha) coefficients obtained during this study were 0.716 for deep approach, 0.734 for surface approach and 0.671 for achieving approach.

Motivation: Academic Motivation Scale

The level of self-determination was assessed by using the Spanish version (Núñez-Alonso *et al.*, 2005) of the Échelle de Motivation en Éducation / Academic Motivation Scale (Vallerand *et al.*, 1992).

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The instrument consists of 28 items each describing a reason why students go to university, scored on a 7-point scale from “not at all” to “exactly” with midpoint on 4 (moderately). It allows obtaining seven sub-scales (four items each): amotivation and the three sub-scales of EM and IM.

In this study the scores presented for each scale or subscale is the total sum (not divided by the number of items). Therefore, the theoretical range for each sub-scale and amotivation is 4-28 and 12-84 for EM or IM scales. This allows obtaining a composite variable, quality of motivation, similarly to Kusurkar *et al.* (2013).

The internal consistency coefficients obtained for this study were 0.732 for amotivation, 0.811 for EM and 0.896 for IM.

Procedure

The questionnaire was distributed in class time in the presence of the teaching staff in charge of the course and a member of the research team. Students were asked to provide sincere answers. The nonexistence of correct or incorrect responses, confidentiality, and the fact that the data would only be used for research purposes and would only be published only as aggregated data were highlighted.

Data were treated with the SPSS statistical software. Correlation analyses (Pearson) were performed to test relationships between variables. To tests for differences between groups of students, multiple analysis of variable (MANOVA) was used (which allows comparisons by degree and gender at the same time).

4. RESULTS

Relationships between approaches to learning and self determination

The first research question aimed to examine the relationships between the approaches to learning and the type of motivation. Table 2 presents the correlation analysis between the scales.

Table 2: Correlations motivation - approaches

		<i>Deep approach</i>	<i>Surface approach</i>	<i>Achieving approach</i>
<i>Amotivation</i>	Correlation coeff. Sig. (2-tailed)	-0.234 0.000	0.250 0.000	-0.183 0.003
<i>External regulation</i>	Correlation coeff. Sig. (2-tailed)	-0.201 0.001	0.347 0.000	0.044 n.s.
<i>External Motivation</i>	Correlation coeff. Sig. (2-tailed)	0.017 n.s.	0.218 0.000	0.232 0.000
<i>Internal Motivation</i>	Correlation coeff. Sig. (2-tailed)	0.511 0.000	-0.279 0.000	0.334 0.000

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Amotivated students tend to score lower in deep and achieving approaches and higher in surface approach thereby presenting the profile labelled by Duff (2004) as “ineffective learners”: relying mainly on rote learning and memorisation, and no interest at all on learning or achieving high grades.

The pattern of correlations between IM and approaches is the opposite. The stronger positive relationship appears between IM and deep approach. IM is positively correlated to the achieving approach and negatively with surface approach. This suggests that internally motivated students have an interest not only in learning but also to be rewarded by high grades.

At scale level there is no relationship between externally motivated students and deep approach. However, students scoring high in EM score high in surface and achieving approaches. These results indicate that if the learning context (specifically assessment) is not properly designed externally motivated students will try to obtain higher grades with the lowest level of engagement (using surface approach strategies), because those students are primarily interested in results *per se*. It is to be noted that examining the relationship between external regulation (the least self-determined EM sub-scale) with approaches that a different pattern arises: externally regulated students (even moved for external rewards) have no interest in achieving high grades and the higher they score on this type of motivation the more likely they are to present the ineffective learner profile (high surface, low deep approaches).

Approaches to learning and motivation: comparative analyses

The second research question aimed to compare motivations and approaches of students enrolled in two, *a priori*, different careers.

Table 3 presents the MANOVA analysis of deep approach scores by degree and gender.

Table 3: Deep approach. Descriptives and MANOVA sig. by gender and degree

	<i>Accounting</i>		<i>Nursing</i>	
	Mean *	Std.Dev.	Mean *	Std.Dev.
Male	20.50	3.99	21.62	3.89
Female	20.77	4.03	21.69	3.71
Total	20.67	3.99	21.67	3.74
MANOVA sig. of F				
Degree: .043; Gender: n.s.				

* Theoretical range: 6 to 30

The results indicate that accounting students, regardless of gender, scored significantly lower in deep approach ($p < 5\%$). In contrast, accounting students score significantly higher in surface approach (table 4). In this case, the difference is higher as well as the level of significance ($p < 1\%$). Although female students of accounting present the highest average score in surface approach

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(18.12) and female students of nursing the lowest (14.54), there are no significant differences by gender.

Table 4: Surface approach. Descriptives and MANOVA sig. by gender and degree

	<i>Accounting</i>		<i>Nursing</i>	
	Mean *	Std.Dev.	Mean *	Std.Dev.
Male	17.50	4.80	16.44	4.22
Female	18.12	4.69	14.54	4.11
total	17.90	4.72	14.96	4.20
MANOVA sig. of F				
Degree: .000; Gender: n.s.				

* Theoretical range: 6 to 30

Table 5 presents the analysis for achieving approach. For this approach, scores are very similar. Male accounting students present the highest score (20.59) but there are no significant differences by degree or gender.

In comparing the motivation, table 6 presents the results for internal motivation. Accounting students present lower levels in IM than nursing students (51.43 vs. 58.25, $p < 1\%$). There is no difference on IM due to gender.

Table 5: Achieving approach. Descriptives and MANOVA sig. by gender and degree

	<i>Accounting</i>		<i>Nursing</i>	
	Mean *	Std.Dev.	Mean *	Std.Dev.
Male	20.59	4.34	19.82	4.34
Female	19.16	4.14	19.86	3.98
total	19.69	4.25	19.85	4.05
MANOVA sig. of F				
Degree: n.s; Gender: n.s.				

* Theoretical range: 6 to 30

Table 6: IM. Descriptives and MANOVA sig. by gender and degree

	<i>Accounting</i>		<i>Nursing</i>	
	Mean *	Std.Dev.	Mean *	Std.Dev.
Male	52.12	12.26	58.15	8.27
Female	51.03	12.13	58.27	12.67
total	51.43	12.14	58.25	11.83
MANOVA sig. of F				
Degree: .000; Gender: n.s.				

* Theoretical range: 12 to 84

Accounting students and male students present slightly higher scores on EM (table 7), however, these differences, at scale level, are not statistically significant.

EM included three sub-scales, two of them considered autonomous in some way. The sub-scale that best represented the essence of EM is external regulation. As table 8 shows, male accounting students present the highest scores in external regulation (24.29) in comparison with female nursing

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students that present the lowest score (20.44). Differences by career are significant at 1% differences by gender are only significant at 10%.

Table 7: EM. Descriptives and MANOVA sig. by gender and degree

	<i>Accounting</i>		<i>Nursing</i>	
	Mean *	Std.Dev.	Mean *	Std.Dev.
Male	62.71	12.62	62.03	13.70
Female	61.23	13.57	58.52	15.72
total	61.77	13.19	59.29	15.32

MANOVA sig. of F
Degree: n.s.; Gender: n.s.

* Theoretical range: 12 to 84

Table 8: External regulation. Descriptives and MANOVA sig. by gender and degree

	<i>Accounting</i>		<i>Nursing</i>	
	Mean *	Std.Dev.	Mean *	Std.Dev.
Male	24.29	3.89	21.32	4.76
Female	22.90	4.59	20.44	4.80
total	23.41	4.38	20.63	4.79

MANOVA sig. of F
Degree: .000; Gender: .074

* Theoretical range: 4 to 28

Analysing the differences between EM and IM scores (i.e. EM minus IM) for the students on each of the degrees it can be seen that there are clear dissimilarities (table 9). Nursing students show similar levels of EM and IM (59.29 vs. 58.24) but when those scores are compared for accounting students the levels are extremely different: EM 61.77 vs. IM 51.42. The mean difference for accounting students is ten times the difference found in nursing students.

Regarding the less autonomous type of motivation (see table 10), accounting students present higher levels of amotivation than nursing students at a significant level ($p < 1\%$). In this case, the differences due to gender are also significant ($p < 1\%$): male students scored higher in amotivation. It should be noted that these scores are low for all groups (the theoretical range is 4 to 28).

Table 9: Comparison EM-IM. Descriptive statistics and t-test

		<i>Mean</i>	<i>St.Dev.</i>	<i>t-test Sig.</i>
<i>Diff. EM-IM</i>	Account.	10.35	12.96	.000
	Nursing	1.04	14.01	

Table 10: Amotivation. Descriptives and MANOVA sig. by gender and degree

	<i>Accounting</i>		<i>Nursing</i>	
	Mean *	Std.Dev.	Mean *	Std.Dev.
Male	6.50	3.88	6.12	3.30
Female	5.79	2.84	4.64	2.04
total	6.05	3.26	4.97	2.44

MANOVA sig. of F
Degree: .008; Gender: .005

* Theoretical range: 4 to 28

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To present a summarized result (table 11) we followed the approach of Kusrkar *et al.* (2013) by calculating the *quality of motivation* score (in our case considering also amotivation) and *good study strategy* score (deep score minus surface score).

Nursing students present a significantly higher quality of motivation (37.80 vs. 26.97, $p < 1\%$) and a significantly higher good study strategy score (6.71 vs. 2.77, $p < 1\%$) than accounting students. The correlation between these two variables is also significant (0.606, $p < 1\%$).

Table 11: Summarized scores. Descriptives a t-test sig. by degree

		Mean	St.Dev.	t-test Sig.
<i>Quality of motivation</i> *	Accounting	26.97	13.86	.000
	Nursing	37.80	12.82	
<i>Good study strategy</i> **	Accounting	2.77	7.19	.000
	Nursing	6.71	6.54	

* Theoretical range: -68 to +100, midpoint: +16

** Theoretical range: -24 to +24, midpoint: 0

5. DISCUSSION

Kyndt *et al.* (2011b) highlighted that prior research has shown that students from different disciplines can differ significantly from each other regarding learning approaches. Entwistle and Tait (1990) and Malaney (1986) state that students choose to study academic disciplines that suit their approach to learning and personal characteristics. It can be seen that there are clear dissimilarities in the motivations for students choosing different disciplinary areas (Byrne *et al.*, 2010). Correspondingly Guay *et al.* (2008) suggest that some motivations could be related to knowledge areas. Both motivation for learning and approaches to learning, are important predictors of students' learning outcomes and competences (e.g., Deci and Ryan, 2004; Kember *et al.*, 1997; Trigwell and Prosser, 1991) and can influence the perception of contextual characteristics of the learning environment (Kyndt *et al.*, 2011b). Therefore being aware of differences associated to careers and relationships between both students' characteristics is a key factor to develop adequate learning environments.

Initially the paper proposed two research questions: the first focusing on the relationships motivation (in terms of SDT) – approaches to learning, the second looking for differences in two degrees that, a priori, could differ in motivation.

Our results indicate that accounting students who selected their degree because of the professional status, prospective of good jobs, higher salaries, etc. (Arquero *et al.*, 2006 and 2009; Byrne and Flood, 2005 and Byrne *et al.*, 2012) present a *lower quality of motivation* (lower IM, higher external regulation, higher amotivation) and lower *good study strategy* (difference deep – surface approaches) than nursing students who appear to be motivated by a desire to help, caring, a sense of

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achievement and self-validation (e.g. Newton *et al.*, 2009; Nilsson and Stomberg, 2008; Raines, 2010).

The relationship analyses indicate that highly internally motivated students are more likely to develop a deep approach, to avoid a surface approach and also to look for the recognition of high grades. In contrast, amotivated students do not present any interest in knowledge *per se* (deep approach) or in high grades (achieving approach). In fact the relationship is negative and they opt for a memoristic (surface) approach.

Results show that the level of EM does not appear to have a relationship to the deep approach. However EM is positively correlated with surface and achieving approach scores. Therefore, at a scale level analysis, externally motivated students tend towards academic success (positive correlation EM-achieving approach) but using rote learning strategies if possible. Looking at external regulation, the least autonomous type of motivation and the one that best represents EM, the relationship to surface approach is even stronger than for the EM scale and now there appear a negative correlation with deep approach score. Furthermore, the correlation with achieving scores is close to zero and not significant. Therefore, externally regulated students are neither motivated by academic success nor interested in learning *per se* and tend to adopt rote learning strategies.

These results have important implications for educators. If a degree, or subject, is attracting students with high external regulation levels (such as the degrees that are oriented to business, accounting, etc.) it is highly likely to expect students to adopt a surface (or at best an achieving) approach to learning. Therefore, these students' characteristics and their effects should be taken into account when developing the learning context (pedagogy, assessment, etc.). Lucas and Meyer (2004) highlight that course design should involve raising the awareness of students about the subject, and understanding the motivations and beliefs that led to them choosing the course. It should be expected that innovations trying to engage students by a call to their desire to learn contents in depth will be successful. These students when enrolling on university degree are attracted by the job opportunities, prospective salary, perceived usefulness of the course content (in terms of employability). These are the key factors that determine the interest in the subject and the expected level of effort.

The results point to a serious constraint for those topics/modules where for students the perceived relevance to professional practice is unclear (for example theoretical or 'pure' subjects such as statistics, economics and law). This may also occur with certain theoretical content within specific modules that in broad terms are perceived as relevant (Arquero *et al.*, 2006). Similarly de Lange and Mavondo (2004) highlight that students learning approaches and motivation are related to the

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perceived value of the course and the usefulness of a subject for accounting students is defined in terms of “connection to real world” and “practice” (Arquero *et al.*, 2006). Recent changes to the funding of higher education in some European countries, from public financing to direct charges to students, have heightened the importance of the perceived relevance in terms of future employability (Hassall, 2012). Students are now viewing higher education as a purchasing decision and will compare the costs and benefits with a notion of external success (Prowse and Delbridge, 2013).

The relationship between assessment and approaches to learning has been a persistent topic in the literature. Ramsden (1992) highlighted the impact that the assessment system has in defining the context and influencing students' behaviour. Among others Smith and Miller (2005) noted how some types of assessment could lead to higher levels of a deep approach, whereas others could result in a higher surface approach. If some degrees tend to attract high EM students, which implies higher levels of surface and achieving approach, the effect of the assessment method is crucial. If the assessment system is not carefully designed, students with high EM do not have any incentive to make the effort required to attain meaningful learning. These students have no interest in learning the content per se. A good way to engage them is through linking the contents to their motivations and as they are interested in passing the subject and obtaining good grades, the assessment must be designed to avoid students that rote learn to pass.

In contrast for students with high IM, the consideration of Vansteenkiste *et al.* (2004) should be taken into account: extrinsic goals, with their focus on external indicators of worth would distract students from the learning activity and thus result in poorer learning; whereas intrinsic goals involving learning in the service of inherent psychological needs and growth tendencies should facilitate learning. The design of a learning context that is aligned with students' motivations and approaches could prevent internally motivated students obtaining worse results than externally motivated students (as reported by Prowse and Delbridge, 2013).

6. CONCLUSIONS

Due to pressures from normative changes and/or relevant stakeholders, educators in several disciplines, such as accounting, are integrating pedagogical innovations that proved to be successful in other contexts or areas. However different degrees attract students with different motivations and approaches to learning. Educators must be aware of which type of students are being attracted to their classrooms, because the inconsistencies between the students' motives and approaches, the way the contents are presented, the pedagogy and the assessment system could result in poorer learning and failure to transfer or sustain innovations.

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Limitations and prospective

Students participating in this study are enrolled in one university and in only two degrees. Therefore, generalization of the results, although consistent with the previous literature, should be done carefully. Further research, covering more degrees and universities is needed.

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