IS RELIGION INDEPENDENT OF STUDENTS' APPROACHES TO LEARNING?

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Abstract: In the advancement of our understanding of the nature and development of student learning, learning approaches (LA) take center stage, usually differentiated (Biggs, 2001) as Surface (SA), Deep (DA) and Achieving (AA). These styles are conditioned by aspects of the context and the student, but religion has not been studied. This study was designed *ex post facto* using correlation, discrimination and regression analysis, and its results indicated an association between religion and LA. DA was associated with an experience of and interest in spirituality. However, SA and AA were related to measurements of religious orientation and beliefs. Existential wellbeing was inversely related to deep approaches and positively to surface and achieving approaches. Religion showed a limited capacity to discriminate among different LAs.

Key words: religion, spirituality, learning approaches, university students

Is Religion Independent of Students' Approaches to Learning?

Learning approaches (LA) are one of the most important individual differences in how students carry out the study processes. LAs describe *forms of understanding*, i.e., surface (SA), deep (DA), achieving (AA), which differ in *processing level* and in the learning strategies and motivations associated with them (Marton, Säljö, 1997). Each person uses

more than one approach, and to different degrees, depending on their perception of the situation. SA (Biggs, Watkins, 1995) involves an extrinsic motive and generally memoristic learning strategies, lacking elaboration and the search for meaning. DA is strategic, metacognitive, and intrinsically motivated, and uses high level abstract (and meaningful) processing. In AA, the motivation lies in the search for social recognition for the academic results obtained. The superficial or deep strategy used will be the one which maximizes the opportunity for success in a given task.

LAs result from the influence of *presage factors* (i.e., student characteristics in interaction with the learning environment) on learning *processes*, which in turn will determine the *products* of the learning (Biggs, Watkins, 1995). Personality (Chamorro-Premuzic, Furnham, 2008), intelligence (von

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Stumm, Furnham, 2012), and values (Tarabashkina, Lietz, 2011) are the best known student presage factors. However, the fact that these dimensions rarely explain more than 50% of the variance in LA (see Chamorro-Premuzic, Furnham, 2008; von Stumm, Furnham, 2012) suggests that other factors may also be related.

Religion and LAs

Although we are not aware of previous research, religion has been related to cognition (see Paloutzian, Park, 2005), learning styles and the understanding of concepts. Religiousness was inversely related (Westman, Alexander, 2004) with deep learning styles in non-religious subjects, analytical skills in dealing with geometrical, numerical and verbal symbols, an abstract concept of divinity, and (Westman, Kamoo, 1990) understanding of complex transcendental concepts (e.g., death). No differences between the sexes were observed.

THIS STUDY

Is there a relationship between religion and LA? From intuitive reasoning and the available theoretical knowledge we postulate the following hypotheses:

(H1) Given that students are agents who intentionally direct their behavior towards achieving goals consistent with a given belief system, and that these influence the strategies used (Biggs, 2001; Biggs, Watkins, 1995), measurements of religious belief and motivation could be related to LA.

(H2) Insofar as religious understanding is symbolic and there is a genuine interest in religion, this will be associated with DA vs. SA.

(H3) The relationship observed between religion and achievement in other studies (e.g., Sang, Puig, Clark, 2007) could be transposed to LAs.

(H4) We expect an affirmative response to the question about the descriptive capacity of religion to distinguish between students with a preference for a certain LA.

METHOD

Design, Participants and Procedure

An *ex post facto* design was used with a sample of 75 men and 226 women with an average age of 25.9 (SD = 6.29, range 19-55), born in Spain and enrolled in different Education degree courses. They all took part in an anonymous, voluntary survey, answering a questionnaire with the different measurements, in a random order among classes. In religious terms, they identified themselves as "Practising Catholics" (11%), "Non-practising Catholics" (39.9%), "Evangelists" (2%), "Other religion" (1%) and "Non-believers" (46.1%).

Measurements

Learning approaches. The Spanish adaptation by Barca (1999) of the Biggs SPQ, equivalent to the original, was used to measure three LAs (surface, deep, achievement) and two orientations to the achievement approach (surface or deep).

Religion. The short version of the *Expression of Spirituality Inventory* (McDonald, 2000) was used. Its scales (of 6 Likert items worth 5 points, range 0-4) measure five different expressions of spirituality: Experiential/Phenomenological, Cognitive Orientation towards Spirituality, Existential Well-being,

Paranormal Beliefs, and Religiosity. The adaptation, made following the ITC guidelines, showed acceptable adjustment indices (Hu, Betler, 1995) of the sample data of the original version ($\chi^2(395) = 797.4$, $p < 0.001$, GFI = 0.87, AGFI = 0.82, CFI = 0.91, RMSEA = 0.053, 90% CI .046 – .059). Five factors explained 64% of the variance (Range, Cronbach's α .60 - .92).

It also used the dimensions Exclusion vs. Inclusion of transcendence (E/I) and Symbolic vs. Literal understanding of religious matters (S/L) from the *Post-Critical Belief Scale* (Hutsebaut, 1996) in its original 33-item version (7-point Likert Scale 1-7) previously used by Muñoz-García and Saroglou (2008).

Intrinsic, extrinsic and quest orientations were measured (Spanish adaptation by Ramírez de la Fe (2006) of the *Religious Orientation Scale* of Batson and Ventis (1982)) (31 items, 9-point Likert Scale 1-9, Cronbach's α .92, .76 and .83, respectively).

Data Analysis

Following the recommendations of Hair et al. (1999), the main components were analyzed with a varimax rotation with all the dimensions of religiosity in order to reduce multicollinearity. The 9 factors of the final structure explained 67.68% of the variance: religiosity (REL), experiential/phenomeno-

Table 1. Averages, typical deviations and Pearson's correlation between measurements of religion and learning approaches

	M(SD)	Learning Approaches			Types of ALA	
		SA	DA	AA	S	D
REL	47.48 (26.93)	.24**	-.00	.18**	.26**	.10
QRO	16.78 (7.68)	.17**	.06	.09	.16**	.09
EWB	4.27 (3.64)	.24**	-.22**	-.09	.07	-.18**
PAB	5.93 (3.99)	-.04	.00	-.06	-.07	-.04
ER-S	5.43 (3.67)	.34**	-.06	.14*	.29**	.05
ER-NS	29.26 (11.12)	.26**	-.09	-.00	.14*	-.05
COTS	13.49 (6.19)	.06	.15*	.14*	.13*	.17**
E/P	5.84 (5.62)	.03	.13*	.01	.03	.08
S/L	0 (1.00)	-.06	.19**	-.08	-.09	.06
M		42.75	49.58	42.24	85.00	91.83
SD		6.22	7.51	7.91	11.28	13.41
R ²		.16	.15	.08	.10	.09

Notes: Types of ALA = Types of achievement learning approach, SA = Surface approach, DA = Deep approach, AA = Achievement approach, S = Surface, D = Deep, REL = Religiosity, QRO = Quest religious orientation, EWB = Existential well-being, PAB = Paranormal beliefs, ER-S = Extrinsic Religiosity -Social, ER-NS = Extrinsic religiosity non-social, COTS = Cognitive orientation toward spirituality, E/P = Experiential/Phenomenological Dimension, S/L = Symbolic vs. Literal religious comprehension.

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

logical dimension (E/P), cognitive orientation towards spirituality (COTS), existential wellbeing (EWB), quest religious orientation (QRO) and extrinsic religious orientation (social and non-social, ER-S and ER-NS, respectively), paranormal beliefs (PAB), and symbolic vs. literal thinking (S/L). Range, Cronbach's α .73 - .93.

RESULTS

In the correlation analysis (Table 1) SA and AA shared their association with Religiosity and Extrinsic Social orientation. However, while AA was also related to an interest in spirituality only, existential wellbeing and

quest religious orientation were shown to be associated with SA. DA was related to low existential wellbeing, religious experience, interest in spirituality and a symbolic understanding of religiosity.

The percentage of variance explained by the discriminant functions reached a maximum value of about 10% (Table 2) situated in deep approaches.

The capacity of the estimated functions to classify students correctly according to religious variables was about 60% on average. AA and SA could be attributed to socially oriented religious orientation, although SA also required existential wellbeing. Discriminating subjects with DA required a greater

Table 2. Discriminant analysis of learning approaches by religious variables

DV	Wilk's Λ	E	Var	CAC	% CC	F	CVC		C ^a	
SA(†)	.925, $\chi^2 = 16.53$, p < .001	.081	7.45	.273	63.0	F(2,213) = 8.60, p < .001	EWB	.588	L-SA	-.296
							ER-S	.770	H-SA	.270
DA(†)	.901, $\chi^2 = 22.03$, p < .001	.110	9.86	.314	57.3	F(4,211) = 5.78, p < .001	COTS	-.655	L-DA	.329
							EWB	.551	H-DA	-.329
							ER-O	.863		
							QRO	-.608		
AA(†)	.960, $\chi^2 = 8.70$, p = .003	.042	4.00	.200	59.1	F(1,214) = 8.91, p = .003	ER-S	1.000	L-AA	-.209
									H-AA	.197
D/A(†)	.920, $\chi^2 = 6.01$, p = .014	.087	8.01	.283	59.8	F(2,213) = 9.29, p < .001	COTS	1.046	L-D/A	-.032
							PAB	-1.046	H-D/A	.286
S/A(†)	.935, $\chi^2 = 14.36$, p < .001	.070	6.50	.255	61.2	F(1,214) = 14.89, p < .001	REL	1.000	L-S/A	-.275
									H-S/A	.251

Notes: ^a Two levels of every independent variable were specified (above and below the mean, High [H-] and Low [L-] respectively). DV = Dependent variable, E = Eigenvalue, Var = Percentage of variance explained, CAC = Canonical correlations; % CC = % of Correct classifications. (†) = F-to-enter = 3.84; (*) = p < .001, CVC = Coefficients of the canonical variables, C = Centroids. SA = Surface approach, DA = Deep approach, AA = Achieving approach, D/A = Deep/Achieving approach, S/A = Surface/Achieving approach, ER-S = Extrinsic religiosity-social, ER-NS = Extrinsic religiosity-nonsocial, EPD = Experiential/phenomenological dimension, REL = Religiosity, COTS = Cognitive orientation toward spirituality, EWB = Existential well-being, PAB = Paranormal beliefs, S/L = Symbolic vs. Literal comprehension, QRO = Quest religious orientation

number of variables, showing a greater dependence on motivational dimensions in the form of religious orientation (quest and low non-social extrinsic orientation) and spiritual interest. Religiosity was characteristic only of a surface oriented achievement approach. However, deep-oriented AA was associated with an interest in spirituality and low paranormal beliefs.

DISCUSSION

The results obtained confirmed the relationship existing between measurements of religion and learning approaches (Hypothesis 1), and a certain discriminatory capacity of religion to differentiate among students with given learning approaches (Hypothesis 3), although the predictive value of religion was lower than that shown by personality, intelligence or values in other studies (Hypothesis 4). In contrast with Westman and Alexander (2004), measurements of religion were related with general (non-religious) study and learning processes (Hypothesis 2), in this case surface and achievement oriented. However, deep approach was shown to be associated with experience, the search for wellbeing, interest in spirituality and symbolic understanding of religion, suggesting a lesser influence of intrinsically religious beliefs and motives, and a greater influence of religious experience and way of life, which might contradict the study by Westman and Kamoo (1990), where religion was associated with concrete thought. Differences in the measurements used and in the religious positioning of the sample could account for the differences indicated. Other studies should complete these results with samples of other religions and measurements of religious practice, and study the combined effect of mea-

surements of religion, personality, intelligence and values on learning approaches.

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JE NÁBOŽENSTVO NEZÁVISLÉ OD PRÍSTUPU ŠTUDENTOV K UČENIU?

A. Muñoz - García

Súhrn: Spolu s prehľbovaním našich vedomostí o charaktere a vývoji učenia u študentov sa do popredia dostávajú prístupy k učeniu (LA), ktoré sa zvyčajne delia (Biggs, 2001) na povrchové (SA), hĺbkové (DA) a snaživé (AA). Tieto štýly sú formované aspektmi kontextu a študenta, ale náboženský aspekt sa nikdy neštudoval. Štúdiu sme navrhli ex post facto použitím korelácie, diskriminácie a regresnej analýzy, a jej výsledky poukázali na spojitosť medzi náboženstvom a LA. DA sa spájalo so skúsenosťou s a so záujmom o spiritualitu. SA a AA sa však spájali s mierami náboženskej orientácie a presvedčení. Existenciálna životná pohoda sa nepriamo spájala s hlbokými prístupmi a pozitívne s povrchovými a snaživými prístupmi. Náboženstvo prejavilo obmedzenú schopnosť rozlišovať jednotlivé LA.