CORRELATION BETWEEN LEARNING STRATEGIES, MOTIVATION AND ACADEMIC GOALS OF SECOND YEAR PHYSIOTHERAPY STUDENTS' AT UNIVERSITY OF VIGO

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Abstract

Introduction. Several are the aspects that could influence the teaching-learning process. Furthermore, those aspects should not be seen only as strict compartments, but also as communicating vessels between themselves, something that could lead to a modification in the degree of influence of each aspect on the total process.

Objective. To analyse the correlation between the learning strategies used, motivation and academic goals of second year physiotherapy at University of Vigo.

Method. Cross-sectional descriptive study. The Spanish versions of the Skaalvik goals questionnaire (SGQ) (1997) and the Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich et al. (1991) have been used. The study has been carried out at the beginning of the first semester of the academic course 2014-2015, and 48 second year Physiotherapy students' have participated in it. The average age was 20.28 ± 2.26 years.

Results. 56.25% of the participants were women. Regarding the SGQ, no significant correlation was observed between the scores achieved for any of the scales. In relation to the MSLQ, significant correlations were observed for multiple dimensions. Significant correlations were observed between the scales of the SGQ and different dimensions of the MSLQ.

Conclusions. As could be expected, on one hand, those second year Physiotherapy students at University of Vigo who appear to score high in motivation also do in learning strategies. Additionally, there seem to be high positive correlation between "task goals" and "intrinsic goal orientation", "self defeating goals" and "test anxiety", and high inverse correlation between "work avoidance goals" and "effort regulation". The results observed seem to require more studies to confirm data obtained.

Keywords: Academic Goals, Learning Strategies, High Education, Physiotherapy.

1 INTRODUCTION

The key feature that could explain the concept of "motivation" is the cause of a specific behaviour. We, as teachers, could make us the following question: Why does a student effort endeavours to study while other students prefer to have fun with their friends? Since the 1980s, research on self-regulated learning has stressed the importance of both motivational and cognitive components of classroom learning [1].

Learners are assumed to construct their own meanings, goals, and strategies from the information available in the "external" environment as well as information in their own minds (the "internal" environment) [2]. Several are the aspects that could influence the teaching-learning process. Furthermore, those aspects should not be seen only as strict compartments, but also as communicating vessels between themselves, something that could lead to a modification in the degree of influence of each aspect on the total process.

There are several instruments used to measure college students' motivational orientations, among them, the Motivated Strategies for Learning Questionnaire (MSLQ) is one of the most completed in the field. In the early 1980s, Bill McKeachie and Paul Pintrich, both professors at the University of Michigan, began developing the original version of the MSLQ for assessing students' motivation and learning strategies. The MSLQ was developed using a social cognitive view of motivation and self-regulated learning [1, 3].

In the case of the processes of motivation, it is established that behaviour is always goal oriented. These goals play an important part in the motivational process, as they define its content and direction

[4, 5]. Skaalvik [6] proposes four types of academic goals: task goals, self-enhancing goals, self-defeating goals, and work avoidance goals. Task goals are defined as “the desire to learn”, without thinking about external rewards. There are two ego-oriented goals, or of performance: self-enhancing goals in which the person wants to demonstrate his/her capabilities to others, and self-defeating goals, in which the person is not interested in negative judgements. The final goal is the goal of work avoidance, where the goal is to do the tasks with the least possible effort [6].

The objective of this study was to analyse the correlation between the amount of learning strategies used and motivation and academic goals of second year Physiotherapy at University of Vigo.

2 METHODOLOGY

2.1 Design

A cross-sectional descriptive study was developed.

2.2 Participants

48 second year Physiotherapy students’ have participated in the study. All the participants were voluntary and the average age was 20.28 ± 2.26 years.

2.3 Instruments

The Spanish versions of the Skaalvik goals questionnaire (SGQ) [6] and the Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich, Smith, García and McKeachie [7] have been used.

SGQ has 22 items which are scored in a five-point Likert scale from 1 being “Never” to 5 being “Always”. The questionnaire incorporates four dimensions: task goals (TG), self-enhancing goals (SEG), self-defeating goals (SDG), and work avoidance goals (WAG). The TG dimension includes items 3, 5, 9, 12, 16 and 19; SEG dimension includes items 1, 4, 14, 17 and 20; SDG dimension includes items 6, 8, 10, 11, 15, 18 and 21; and WAG dimension includes items 2, 7, 13 and 22 [6].

MSLQ is a self-report instrument designed to assess college students' motivational orientations and their use of different learning strategies for a college course. There are essentially two sections to the MSLQ, a motivation section, and a learning strategies section. The motivation section consists of 31 items that assess students' goals and value beliefs for a course, their beliefs about their skill to succeed in a course, and their anxiety about tests in a course. The learning strategy section includes 31 items regarding students' use of different cognitive and metacognitive strategies. In addition, the learning strategies section includes 19 items concerning student management of different resources. There are 81 items on the 1991 version of the MSLQ. The Items of the MSLQ are scored in a seven-point Likert scale from 1 being "not at all true of me" to 7 being "very true of me" [7].

2.4 Timing and Procedure

The study has been carried out at the beginning of the first semester of the academic course 2014-2015. Both questionnaires were fulfilled in a classroom with the previous agreement in timing with the students. Students had the necessary time (individual needs) to complete each of the questionnaires. After its completion, the questionnaires returned to the researchers in order of analysing data.

2.5 Statistical Analysis

A descriptive statistical analysis was done. Differences by gender for each subscale of the both instruments used were calculated using non-parametric tests. Pearson correlation index was calculated between the subscales of both questionnaires. Statistical analysis was done using SPSS, version 22.

3 RESULTS

56.25% of the participants were female. The average age was 20,31±2,67 years. Significant differences were observed by gender for the “Self-efficacy for learning and performance” (SELP) dimension of the motivation scale of the MSLQ (F: 5,00±0,47 and M: 5,53±0,85 $p<0,05$), and for SDG of the SGQ (F: 2,79±1,09 and M: 2,09±0,79 $p<0,05$).

Regarding the SGQ, no significant correlation was observed between the scores achieved for any of the scales. In relation to the motivation scale of the MSLQ, significant positive correlation were observed between the scores achieved for “intrinsic goal orientation” (IGO) and “task value” (TV), IGO and SELP, TV and “control of learning beliefs” (CLB), TV and SELP, CLB and SELP and significant inverse correlation was observed between “test anxiety” (TA) and SELP. In relation to the learning strategies scale of the MSLQ, significant positive correlations were observed for multiple dimensions (see table 1).

Table 1. Correlations between the different dimensions of the MSLQ.

		IGO	EGO	TV	CLB	SELP	TA	REH	ELA	ORG	CT	MSR	TSE	ER	PL	HS
IGO	Pearson	1	-,173	,523**	,256	,292*	-,048	-,041	,330*	,248	,221	,359*	,076	,329*	,064	,158
	Sig. (bilateral)		,240	,000	,079	,044	,746	,784	,022	,089	,131	,012	,606	,022	,666	,283
EGO	Pearson	-,173	1	-,046	,011	-,015	,255	,420**	-,015	-,047	,102	,052	-,054	-,075	,069	,135
	Sig. (bilateral)	,240		,756	,940	,920	,081	,003	,917	,752	,491	,726	,713	,611	,641	,361
TV	Pearson	,523**	-,046	1	,340*	,386**	-,227	,065	,544**	,365*	,268	,575**	,265	,571**	,139	,241
	Sig. (bilateral)	,000	,756		,018	,007	,120	,661	,000	,011	,065	,000	,069	,000	,347	,100
CLB	Pearson	,256	,011	,340*	1	,286*	-,275	-,156	,175	,182	,016	,095	,056	,048	,123	,114
	Sig. (bilateral)	,079	,940	,018		,048	,059	,290	,234	,215	,913	,520	,707	,745	,406	,440
SELP	Parson	,292*	-,015	,386**	,286*	1	-,403**	,037	,433**	,270	,291*	,358*	,055	,328*	,195	,236
	Sig. (bilateral)	,044	,920	,007	,048		,005	,803	,002	,063	,045	,012	,712	,023	,184	,106
TA	Pearson	-,048	,255	-,227	-,275	-,403**	1	,077	-,116	-,029	-,111	-,112	,063	-,006	-,106	-,035
	Sig. (bilateral)	,746	,081	,120	,059	,005		,602	,434	,843	,453	,449	,669	,969	,474	,815
REH	Pearson	-,041	,420**	,065	-,156	,037	,077	1	,159	,196	,323*	,224	,023	-,061	,162	,320*
	Sig. (bilateral)	,784	,003	,661	,290	,803	,602		,280	,182	,025	,127	,878	,680	,272	,026
ELA	Pearson	,330*	-,015	,544**	,175	,433**	-,116	,159	1	,757**	,607**	,678**	,236	,506**	,352*	,445**
	Sig. (bilateral)	,022	,917	,000	,234	,002	,434	,280		,000	,000	,000	,106	,000	,014	,002
ORG	Pearson	,248	-,047	,365*	,182	,270	-,029	,196	,757**	1	,408**	,563**	,191	,328*	,459**	,375**
	Sig. (bilateral)	,089	,752	,011	,215	,063	,843	,182	,000		,004	,000	,194	,023	,001	,009
CT	Pearson	,221	,102	,268	,016	,291*	-,111	,323*	,607**	,408**	1	,516**	-,016	,228	,273	,612**
	Sig. (bilateral)	,131	,491	,065	,913	,045	,453	,025	,000	,004		,000	,917	,119	,060	,000
MSR	Pearson	,359*	,052	,575**	,095	,358*	-,112	,224	,678**	,563**	,516**	1	,366*	,482**	,243	,379**
	Sig. (bilateral)	,012	,726	,000	,520	,012	,449	,127	,000	,000	,000		,011	,001	,096	,008
TSE	Pearson	,076	-,054	,265	,056	,055	,063	,023	,236	,191	-,016	,366*	1	,433**	-,232	-,167
	Sig. (bilateral)	,606	,713	,069	,707	,712	,669	,878	,106	,194	,917	,011		,002	,112	,258
ER	Pearson	,329*	-,075	,571**	,048	,328*	-,006	-,061	,506**	,328*	,228	,482**	,433**	1	,198	,168
	Sig. (bilateral)	,022	,611	,000	,745	,023	,969	,680	,000	,023	,119	,001	,002		,177	,255
PL	Pearson	,064	,069	,139	,123	,195	-,106	,162	,352*	,459**	,273	,243	-,232	,198	1	,577**
	Sig. (bilateral)	,666	,641	,347	,406	,184	,474	,272	,014	,001	,060	,096	,112	,177		,000
HS	Pearson	,158	,135	,241	,114	,236	-,035	,320*	,445**	,375**	,612**	,379**	-,167	,168	,577**	1
	Sig. (bilateral)	,283	,361	,100	,440	,106	,815	,026	,002	,009	,000	,008	,258	,255	,000	

* Significant correlation for the level 0,05 (bilateral). ** Significant correlation for the level 0,01 (bilateral). IGO: intrinsic goal orientation. EGO: extrinsic goal orientation. TV: task value. CLB: control of learning beliefs. SELP: self-efficacy for learning and performance. TA: test anxiety. REH: rehearsal. ELA: elaboration. ORG: organization. CT: critical thinking. MSR: metacognitive self-regulation. TSE: time and study environment. ER: effort regulation. PL: peer learning. HS: help seeking.

Significant correlations were observed between the scales of the SGQ and different dimensions of the MSLQ (see table 2).

Table 2. Correlations between the scales of SGQ and MSLQ.

		IGO	EGO	TV	CLB	SELP	TA	REH	ELA	ORG	CT	MSR	TSE	ER	PL	HS
TG	Pearson	,542**	,129	,451**	,200	,198	,140	,082	,350*	,343*	,258	,285*	-,119	,271	,260	,372**
	Sig. (bilateral)	,000	,384	,001	,174	,177	,342	,579	,015	,017	,076	,050	,420	,063	,074	,009
SEG	Pearson	,026	,405**	-,062	,002	,000	,253	,235	,109	,008	,336*	,137	,080	,161	,118	,147
	Sig. (bilateral)	,859	,004	,676	,989	,999	,082	,107	,461	,957	,020	,352	,587	,275	,425	,318
SDG	Pearson	,031	,107	-,129	,020	-,246	,641**	-,073	,021	,145	-,231	-,150	-,080	-,070	,006	-,099
	Sig. (bilateral)	,832	,470	,382	,891	,092	,000	,623	,888	,326	,114	,310	,587	,635	,968	,504
WAG	Pearson	-,441**	,310*	-,411**	,005	-,443**	,342*	,059	-,383**	-,204	-,122	-,357*	-,174	-,513**	-,008	,017
	Sig. (bilateral)	,002	,032	,004	,973	,002	,017	,689	,007	,165	,408	,013	,236	,000	,955	,910

* Significant correlation for the level 0,05 (bilateral). ** Significant correlation for the level 0,01 (bilateral). TG: task goals. SEG: self-enhancing goals. SDG: self-defeating goals. WAG: work avoidance goals. IGO: intrinsic goal orientation. EGO: extrinsic goal orientation. TV: task value. CLB: control of learning beliefs. SELP: self-efficacy for learning and performance. TA: test anxiety. REH: rehearsal. ELA: elaboration. ORG: organization. CT: critical thinking. MSR: metacognitive self-regulation. TSE: time and study environment. ER: effort regulation. PL: peer learning. HS: help seeking.

4 DISCUSSION

In the current study, there were not observed significant differences for most of the dimensions of the MSLQ and the scales of the SGQ by gender for Physiotherapy students at University of Vigo, except for the SELP dimension of the motivation scale of the MSLQ (higher for male), and for SDG of the SGQ (higher for female). There were not observed significant correlations between the scales of the SGQ. However, significant correlations were observed for different dimensions of the scales of motivation and learning strategies of the MSLQ, calling attention to the high positive correlation between TG and IGO, SDG and TA, and to the high inverse correlation between WAG and ER.

Overall the MSLQ appears to be a very sound instrument, due to the fact it has been used by hundreds of researchers in numerous countries around the world. Additionally, the MSLQ appears to be a very useful, flexible tool that can be adapted for many purposes by researchers, instructors, and students alike [3]. Smith, Duda, Allen and Hall [8] in their study with 475 students from two large universities in United Kingdom used three questionnaires, SGQ among them, to measure approach avoidance goal orientations. Those authors observed that their result highlighted a degree of convergence between the subscales tapping the same constructs across the three instruments and suggested that the subscales are measuring similar constructs.

In the study by Navea-Martín [5] with 103 second year Nursing students at a private university using the SGQ, it was observed a high average score for TG (4,5±0,37) and for WAG an average score of 2,4. Those results are similar to ours (TG: 4,40±0,41 and WAG: 2,42±0,62), with a sample similar to ours, and they could mean, as also commented by Navea-Martín [5], that almost the entire sample said they have goals in their learning task. This author also comment that when questionnaires are completed in the classroom in the presence of the teacher who usually teaches the subject, students always express knowledge in itself as the objective of their learning, even if their motivation is really another. Navea-Martín [5] also observed a significant correlation between TG and SEG, but such significant correlation was not observed in our study.

The results observed in our study, and also in other in the same line, should be interpreted with caution because each questionnaire, in itself, has its limitations. Self-report instruments can be developed that are valid and reliable, but there are limitations in their use. As indicated by Pintrich [2], self-report questionnaires can assess aptitudes or propensities to use self-regulatory strategies or different approaches to learning; however, it is clear that self-report questionnaires are not very good at capturing the actual events or on-going dynamic processes of self-regulation. The same author also note that other more process-oriented measures are required such as stimulated recall, on-line measures, traces, observations, reaction times, and other experimental methods to actually measure self-regulatory events, but also say that some of these measures have less practical utility than self-report questionnaires, so questionnaires still have a role to play in research on self-regulated learning [2].

5 CONCLUSIONS

As could be expected, on one hand, those second year Physiotherapy students at University of Vigo who appear to score high in motivation also do in learning strategies. Additionally, there seem to be high positive correlation between “task goals” and “intrinsic goal orientation”, “self defeating goals” and “test anxiety”, and high inverse correlation between “work avoidance goals” and “effort regulation”. The results observed seem to require more studies to confirm data obtained.

REFERENCES

[1] Wolters, C.A., Pintrich, P.R. (1998). Contextual differences in student motivation and self-regulated learning in mathematics, English, and social studies classrooms. Instructional Science 26, pp. 27–47.

[2] Pintrich, P.R. (2004). A Conceptual Framework for Assessing Motivation and Self-Regulated Learning in College Students. Educational Psychology Review 16(4), pp. 385-407.

[3] Artino Jr., A.R. (2005). Review of the Motivated Strategies for Learning Questionnaire. University of Connecticut. Avaliable from: http://files.eric.ed.gov/fulltext/ED499083.pdf

[4] Suárez, J.M., Fernández, A.P. (2004). El aprendizaje autorregulado: variables estratégicas, motivacionales, evaluación e intervención. Madrid: UNED.

[5] Navea-Martín, A. (2012). A Study of the Academic Goals of College Nursing Students. Psicología Educativa 18(1), pp. 83-80.

[6] Skaalvik, E.M. (1997). Self-enhancing and self-defeating ego orientation: Relations with task and avoidance orientation, achievement, self-perceptions, and anxiety. Journal of Educational Psychology 89(1), pp. 71-81.

[7] Pintrich, P.R., Smith, D.A.F., García, T., McKeachie, W.J. (1991). A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ). Ann Arbor, MI: National Center for Research to Improve Post secondary Teaching.

[8] Smith, M., Duda, L., Allen, J., Hall, H. (2002). Contemporary measures of approach and avoidance goal orientations: Similarities and differences. British Journal of Educational Psychology 72, pp. 155–190.