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Active Methodologies in the Training of Future Health Professionals: Academic Goals and Autonomous Learning Strategies

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Received: 17 January 2020; Accepted: 14 February 2020; Published: 17 February 2020



Abstract: The learning of future health professionals is fundamental to the training of competent professionals. In this work, it was proposed to determine the correlation between academic goals and learning strategies in students enrolled from the first to the sixth semester in seven specialties of the Faculty of Health Sciences of the National University of Chimborazo. A correlational design was used in which the questionnaires for evaluation of academic achievement and strategies for autonomous learning strategies were applied. The resulting data were analyzed and interpreted using descriptive and non-parametric inferential statistical methods. The results suggested that the types of academic goals and autonomous learning strategies had a homogeneous pattern in most of the seven specialties studied. According to the Likert scale, category 3, which sometimes corresponds to the range of quantitative categories, was the predominant one. Finally, the correlation between autonomous work strategies and the types of academic achievement of the students in the sample was mostly weak or non-existent and direct.

Keywords: active methodologies; innovation actions in education; achievements; training; strategy; learning

1. Introduction

Human beings are under the influence of a set of processes that lead them to identify and establish certain purposes. Motivation helps improve the perspective of success in various learning activities, which is essential for adapting people to their environment and for modifying it if necessary [1,2].

In this matter, Ifinedo [1] mentions that the Bandura's social cognitive theory states that the learning process of individuals is directly related to their behavior, thoughts, feelings and social interactions, which are determined by environmental and psychological factors. This theory points out two essential categories in the cognitive development of the person, which are as follows.

- The perceived auto-efficiency, which is the judgement about the self-capacity to reach success through conscious actions.
- The expectations of results, which is the ability to foresee the consequences of self-actions.

The influence of motivational elements at school, the learning strategies and the academic outcomes have been documented by different authors [3,4]. The field of study on academic goals is important in order to improve the formative processes of professionals in different areas of knowledge.

The study of the different types of achievement goals constitutes an incursion into the field of motivation. The focus on these goals is for general purposes that offer differentiated significance for success [5]. The behavior of young people is intentional when it is aimed towards the scope of firmly defined purposes. These directly affect the fulfillment of the tasks of personal development according to the perspectives of wellbeing at the objective and subjective levels [6].

Different authors agree on the existence of two types of motivation, the extrinsic and the intrinsic, because the extrinsic one requires external incentives to perform the task, while the other one depends on stimuli inherent in the task itself, being focused on the task and not requiring external reinforcement. However, both can be linked at the same time and in the same context [2,7,8].

People learn more efficiently when they do something consciously. They have natural curiosity to know the phenomena that underlies and explains life. In this context, the motivation of individuals for this activity does not manifest with the same intensity in formal contexts of institutionalized education, as various research directly correlates motivation with school performance as motivation encourages people to set new goals and academic challenges [1].

Suárez Riveiro et al. [9] explain that students who are unable to manage their own motivation have high probabilities of academic failure, even if they make use of efficient learning strategies and vice versa. In this way, motivation and efficient learning strategies are necessary to guarantee personal success during professional training. As previously stated, in the educational environment where the research was developed and presented, it was possible to confirm the presence of environmental elements inherent to them.

In this area of study, some researchers, such as Fernández et al. [10] and Núñez et al. [11], report that the academic success of students in higher education depends largely on the extent of the degree of motivation, which impels them to become involved and to commit themselves to reaching the goal of becoming professionals in some area of knowledge. This coincides with the criteria of the authors of the book *Management of Human Talent: Approaches and Models* [12], for whom the academic achievements of future graduates constitute an important input to be considered during the design of contemporary university educational models.

Durán Aponte et al. [13] establishes that during the last two decades of the 20th century, different researchers stated two motivational factors or types of goals, “focused on learning” and “oriented to achievement.” In addition, the latter is shown through two trends that encourage the effort to study. One of them is focused on the pursuit of material goals such as good grades, decent employment or rewards, and another is in the scope of social recognition from peers, family members, teachers, etc.

The achievements can be shown in two possible ways, which are the following [14]:

- The first one is oriented to the “domain” and it is characterized by the pursuit of learning, personal improvement and self-improvement through mastering the task and the development of competences.
- The second has a more extrinsic character as it is oriented towards “performance.” This is defined by the need to demonstrate skills and personal abilities to obtain the approval of third parties and secondary benefits, such as immaterial or material awards or financial assistance.

Durán Aponte et al. [13] maintain that students who emphasize the focus on the assessment towards the goal consider their skills and competences as sufficiently developed attributes that are used to solve the academic tasks that should be done by themselves. Then, this influences students’ confidence in their abilities making them enjoy challenges or cognitive challenges with greater commitment and enthusiasm.

In relation to the importance of the investigation about the objective of the study in question, López Mora et al. [6] highlight the results obtained by other researchers to conclude that a better understanding of the acts and behaviors of the students is needed. This can be studied through the early identification of their aspirations and goals.

According to Gámez et al. [15], the goals do not necessarily generate a behavior. However, the behaviors almost always are directed to reach a goal. In relation to those aimed at academic

performance Valencia Serrano et al. [16] establish that students who use self-learning strategies focused on planning, elaboration, organization, supervision and metacognitive control can more easily achieve the aims of the professional training processes.

The present investigative process started from the hypothesis that there is a significantly direct relationship between autonomous work strategies and academic goals in students enrolled in the first to sixth semester in the Faculty of Health Science at the National University of Chimborazo from the academic period of October 2018–February 2019.

The hypothesis outlined by the researchers is based on the arguments of Tan et al. [17], who consider that the presence of metacognitive traits in individuals facilitates the development of the ability to direct and control their own training process. Therefore, students tend to learn better when they know what and how to learn when they have high levels of autonomy because they can make conscious decisions regarding their knowledge, thoughts and actions. In addition, Garrote Rojas et al. [18] explain that learning is referred to as autonomous, self-directed, independent, etc., and contributes significantly to the achievement of the academic success of the students.

In view of the hypothesis that arises, the authors of the present research set out the objective of determining the correlation between academic goals and learning strategies in students enrolled from the first to sixth semester in the Faculty of Health Sciences at the National University of Chimborazo from the academic period of October 2018–February 2019.

2. Materials and Methods

A quantitative analysis of correlational, self-report type, based on the application of the survey technique, was developed to reach the proposed objective.

All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of the National University of Chimborazo (Project identification code 117-CI-20161130).

In total, 1235 students who were enrolled in from the first to the sixth semester of the study participated. There were seven majors in the Faculty of Health Science at the National University of Chimborazo, and it was from the academic period of October 2016–February 2017. The participants agreed to be surveyed and regularly attended teaching activities throughout the academic term where the instruments were applied. The participants were distributed throughout the majors as shown below.

- Medicine $n = 278$.
- Dentistry $n = 338$.
- Nursing $n = 186$.
- Physical and Sports Therapy $n = 138$.
- Clinical and Histopathological Laboratory $n = 137$.
- Clinical Psychology $n = 120$.
- Physical Education $n = 38$.

The instruments used for the collection of data were:

One of them is the Questionnaire for the Evaluation of Academic Goals (QEAG) [19], which was designed based on the Dweck theory by Hayamizu & Weiner at the beginning of the 1990s. It was subsequently translated and validated by a team led by Núñez in 1994 through a process in which they obtained values of α (alpha) of Cronbach that oscillated between 0.78 and 0.89 in the indicators established for the four dimensions of study related to the oriented goals: “for learning,” “for the self,” “for the valuation” and “for the achievement and reward.”

Another one is the Autonomous Work Strategies Questionnaire (AWSQ), designed and validated by López Aguado [20]. Its reliability analysis through the coefficient α (alpha) of Cronbach (0.898) set the corresponding dimensions of the types of strategies that are: “expansion,” “collaboration,” “conceptual structuring,” “planning,” “preparation for exams” and “participation.” The values of those dimensions are obtained through the calculation of the punctuation from the corresponding items as follows.

- Strategies of Extension factor: $\sum (8, 9, 14, 16, 18, 19, 25, 40, 45)/9$
- Strategies of Collaboration factor: $\sum (15, 21, 22, 23, 24, 26, 27, 31, 33, 37, 38)/11$
- Structuring conceptual strategies factor: $\sum (3, 5, 6, 7, 11, 13, 32, 43)/8$
- Planning strategies factor: $\sum (10, 12, 17, 39, 44) / 5$
- Exam preparation strategies factor: $\sum (20, 29, 34, 35, 36, 42)/6$
- Participation strategies factor: $\sum (1, 2, 4, 28, 30, 41)/6$

The dimensions included in both instruments are:

- Learning-oriented goals: this is the only dimension of intrinsic motivational nature within the instrument. These are associated with the desire to learn, develop and improve abilities. The indicators that lead to the determination of their status are “acquisition of competence and control” and “interest in the matter.”
- Self-oriented goals: these are oriented to reach satisfactory levels of self-assessment and can be established from the following indicators: “the personal implication defined by a defense of the self” and “the implication of searching for self-enlargement.”
- Goals aimed at assessment: these are aimed at demonstrating the capacity or protection of the personal image by seeking positive evaluations from others. The indicator that defined them is “the acquisition of social valuation.”
- Achievement of goals and rewards: This is aimed at receiving external compensation or not losing certain privileges. The established indicators for this dimension are “decent future work” and “avoidance of punishment.”
- Strategies of extension: they are related to the search and selection of information that complements the existing one in relation to the different study objects.
- Strategies of collaboration: this involves the use of group work to achieve cognitive goals common to all members.
- Structuring conceptual strategies: this is aimed at structuring systems of theoretical knowledge for better understanding, integration and application.
- Planning strategies: these are aimed at establishing mechanisms of organization and distribution of time and resources for more efficient application. Evaluation plays a fundamental role in this dimension.
- Exam preparation strategies: these are related to the systematization of the present knowledge for the micro-curricular document guides, from the point of view of obtaining good results for the evaluations at the end of the academic cycle or periods.
- Participation strategies: those focused on all the regular training activities such as classes, seminars and others, and support such as academic tutorials, clarification of doubts, etc., with the objective of efficiently exploiting the teacher’s guide.

The indicators and dimensions of both instruments were analyzed statistically using a Likert scale of five quantitative categories shown as follows:

- 1 = Never.
- 2 = Seldom.
- 3 = Sometimes.
- 4 = Many times.
- 5 = Always.

The methodology used during the investigative process was based on the theory presented by Ramírez Fernández [21], where several stages are established for these kind of studies.

Firstly, the researchers carried out a bibliographic review that allowed them to establish theoretical positions based on the analysis and systematization of the information collected regarding the object of study in question.

Then, the instrument was applied to the individuals of the study sample, whose resulting data were systematized in a database created in Microsoft Excel. This was later imported into the IBM SPSS program using the corresponding tests of its statistical package.

Finally, a quantitative analysis of the systematized data was carried out through statistics at a descriptive level such as relative and absolute frequencies as well as measurement tests with a central tendency depicted by means, medians and mode and a nonparametric inferential. (Pearson Correlation Test).

There are publications that show different scales of interpretation of the results for linear correlation tests. In this study the authors have based their research on the criteria of Martínez Ortega et al. [22]. Therefore, when the coefficient r is defined as 0, it indicates an absence of correlation; when r is between 0 and 1, it indicates various levels of a positive relationship, in which x increases as it increases and vice versa, and when r is between 0 and -1, the relationship is negative, in which x then increases and decreases, and vice versa.

The scale of correlation ranges independently from the sign of the values is as follows:

- 0–0.25: little or null
- 0.26–0.50: weak
- 0.51–0.75: moderate or strong
- 0.76–1.00: strong or perfect

3. Results

The selected instruments known as QEAG and AWSQ were applied to 1235 students of the seven academic majors in the Faculty of Health Science at the National University of Chimborazo. The distribution of the number of individuals by training area depended on the enrollment status in the academic period in which the research was conducted. The largest number of contributing respondents were from the Dentistry major, which represented 27.37%, of which 19.75% attended the first semester. Physical Education was the least represented with only 3.08% participation.

The analysis of the data obtained from the application of the AWSQ allowed us to observe that the corresponding study dimensions had a homogeneous behavior in the majors studied. Category 4 or “many times” predominated in the case of “learning-oriented goals,” while for the rest of the types of academic purposes investigated, it was the 3 value or “sometimes” that preponderated. The exception to that regularity was presented in the students of Dentistry given the fact that most of them felt the motivation for the “Learning-oriented goals” as 3 or “Sometimes.”

The indicators “competency acquisition” and “interest in the subject” were established to determine the status of the “learning-oriented goals” dimension. In addition to what was defined as “decent future work,” there was a value of 4.0 (many times) according to the median and the inherent mode of the totality of the study sample, and it is depicted in Table 1 as follows.

Table 1. Description of the types of academic achievements of the study.

Trials <i>n</i> = 1235	Aims:						
	Learning	Self	Value	Reward			
Mean	3.67	3.20	3.34	3.38			
Median	4.00	3.25	3.29	3.38			
Mode	4.00	3.00	3.00	3.00			
Trials <i>n</i> = 1235	Skill Acquisition	Interest in the Subject Matter	Self-Defense	Self Enlargement	Social Value	Future Work	Avoid Punishment
Mean	3.68	3.67	3.19	3.21	3.34	3.53	3.23
Median	4.00	4.00	3.17	3.50	3.29	4.00	3.25
Mode	4.00	4.00	3.00	3.00	3.00	4.00	3.23

Source: AWSQ applied by the authors in the investigation environment.

The values of the means were 3.67, the medium 4.0 and the mode 4.0. They indicated that the “academic goals guided to the learning” were the ones that more frequently motivate the students of the sample for the completion of the educational tasks. On the other hand, those “oriented to the self” figures were closer to 3.0 in terms of the same measures of central tendency shown on Table 1. Those features indicate the prevalence of those interviewed that selected the option “almost always” for that dimension.

A Pearson’s correlation test, shown in Table 2, allowed us to determine the existence of a moderate or strong positive linear correlation among the types of academic goals characteristic of the extrinsic motivational elements, such as to social valuation, to self and to reward. This fact is worth considering since the performance of actions directed to these sort of goals could influence the students’ level of academic success during their professional training.

Table 2. Correlation among the types of academic goals explored in the study sample.

Goals guided to: (n = 1235)	Learning	Self	Value	Reward
Learning	–	–	–	–
Self	0.127	–	–	–
Value	0.216	0.692 **	–	–
Reward	0.260 *	0.534 **	0.626 **	–

*. Weak positive linear correlation; **. Moderate or strong positive linear correlation. Source: AWSQ applied by the authors in the investigation environment.

In this research, the data obtained from the application of the AWSQ facilitated the exploration of the way in which the students of the sample develop their self-learning. Six types of self-learning strategies were analyzed. It was observed that no one type was more relevant than the others. On the other hand, they are applied indistinctly according to the needs of the training process, which could be corroborated by the observation that in all the study dimensions, the category 3 or “sometimes” prevailed, and it is depicted on Table 3.

Table 3. Description of the strategies of autonomous work.

Trials n = 1235	Strategies of					
	Extension	Collaboration	Conceptual Structuring	Planning	Preparation for Exams	Participation
Mean	3.24	3.09	3.13	3.04	3.24	3.16
Median	3.22	3.09	3.13	3.00	3.17	3.17
Mode	3.00	3.00	3.00	3.00	3.00	3.00

Source: AWSQ applied in the study environment.

Speaking about the relationship between self-learning strategies that was the object of the research, it has shown the existence of a “moderate or strong positive linear correlation” among them all, as is seen in Table 4. This was a result that confirmed the hypothesis that students in this educational context do not focus on the use of a particular strategy, but integrate them all during self-learning activities.

In the context of training health professionals where the research was developed, it can be said that the correlation between the strategies of autonomous work and the types of academic goals of the students in the sample were mostly “scarce or null and positive.” The two exceptions to this regularity are the expansion strategies in relation to learning-oriented goals and the conceptual structuring strategies with respect to reward-oriented goals, in which values were very close to the lower limit of the “weak and positive” scale range (Table 5). These findings suggest that students who look for academic goals that lead to learning prefer to use extension strategies, but those who focus their learning on conceptual structures are motivated by the possible rewards obtained according to their academic results.

Table 4. Correlation between the types of autonomous work strategies explored in the study sample.

Strategies for: (<i>n</i> = 1235)	Extension	Collaboration	Conceptual Structuring	Planning	Preparation for Exams	Participation
Extension	–	–	–	–	–	–
Collaboration	0.665 **	–	–	–	–	–
Conceptual structuring	0.602 **	0.622 **	–	–	–	–
Planning	0.608 **	0.632 **	0.621 **	–	–	–
Preparation for exams	0.583 **	0.570 **	0.572 **	0.587 **	–	–
Participation	0.591 **	0.597 **	0.585 **	0.526 **	0.572 **	–

** Positive or moderate strong linear correlation. Source: AWSQ applied in the study environment.

Table 5. Correlation between autonomous work strategies and the types of academic goals in the study sample.

Strategies:	Aims:			
	Learning	Self	Value	Reward
Extension	0.265 *	0.167	0.173	0.214
Collaboration	0.110	0.250	0.252	0.161
Conceptual structuring	0.145	0.199	0.235	0.309 *
Planning	0.137	0.212	0.216	0.205
Preparation for exams	0.199	0.168	0.198	0.225
Participation	0.172	0.182	0.199	0.215

*. Weak positive linear correlation. Source: AWSQ and QEAG applied in the study environment.

4. Discussion

Taking into account the findings, the research carries out the following analysis.

Firstly, the distribution of the participants was heterogeneous regarding their career, although those with better job opportunities prevailed. This finding confirms the Pulido Rull et al. [23] investigation developed at the Intercontinental University in Mexico City. In this case, similar regularities were observed, and they stated that the distribution of the sample according to the majors and semester that participants studied was influenced by the work opportunities in the respective fields, the capacity of the institutional academic offers and the indexes of school retention, among other factors.

Secondly, in the present study, the highest values corresponded to the indicators inherent to intrinsic motivation, which was similar to Gámez et al. [15], who describe similar results regarding the prevalence of “learning-oriented goals” in their study population. The observed regularity points to the fact that characteristic elements of intrinsic motivation constitute the main force that challenges the investigated student population for the achievement of their academic goals. This represents an important factor to keep in mind for education personnel during the planning and execution of teaching strategies. In the same way, the Chilean investigators, Bitran et al. [24], highlight that the students who comprised their study sample declared “a lot of interest” in the academic activity to be developed in such a way that it guarantees the motivation for learning. As a consequence, they emphasized the importance of practical activities, the appropriate selection of the academic tutors, collaborative work and problem solving.

Thirdly, the particular situation observed in the major of Dentistry is an apparent lack of motivation in the learners, which constitutes a phenomenon that it has been observed in other learning scenarios of students being trained in this profession [25]. This is due to the existence the unclear academic goals that are reflected on their study strategies. In this respect, Hernández Barrios et al. [26] affirm that the

first phase of the process of cognitive self-regulation is defined by the establishment of concrete goals that regulate the ways to reach them.

Fourthly, the interpretation of the global results of the AWSQ revealed that most of the students that took part in the investigation stated that their formative process takes into account several types of academic goals, and not one specific goal as in the finding shown by Valencia Serrano et al. [27] For these authors, the way in which young people establish their academic goals depends on the socioeconomic and affective conditions, the characteristics of the educational environment, the learning situations and the teaching methodology. Therefore, when facing certain tasks, they are not always motivated by the scope of a single aim towards a specific purpose, but rather by a varied set of purposes.

Fifthly, the authors of the present research can conclude “goals oriented to learning” are intrinsic in nature, which is what, according to Daura [28], guarantees greater effectiveness for self-regulated learning and observed similar results to those expressed in the previous paragraph. Therefore, it can be said that motivation driven by interest in the professional field of university education contributes to better control over stressful situations that occur during the teaching-educational process, since they favor the establishment of more effective strategies for academic purposes.

It is important to point out that other researchers obtained similar results than those obtained in this one and are the following. Rodríguez et al. [29] established that high levels in “learning-oriented goals” and those aimed at “obtaining a decent future job” are commonly associated with success in academic performance. This does not usually happen for those students whose training process is mainly motivated for the scope of “self-oriented” and “avoidance of punishment” purposes.

Daura [28] obtained similar regularities in his study with respect to the observed values regarding the correlation between the types of academic goals shown on Table 2 as well as “little or no correlation” between academic goals linked to extrinsic motivation and those linked to intrinsic motivation.

Panadero et al. [30], based on the socio-cognitive theory of Bandura, argue that personal goals, the perception of self-efficacy and the expectations of results are the main sources of motivation for the individual to self-regulate during the fulfillment of learning activities. The latter states that the will, effort and clarity of the objectives alone are not sufficient for the attainment of academic aspirations on the students’ part. They need to develop efficient strategies that allow them to regulate their own cognitive process.

A study conducted with undergraduate students at the Faculty of Education of Albacete in the University of Castilla, La Mancha published by Garrote Rojas et al. [18] contained results that also reflected the homogenous behavior of the different autonomous learning strategies and was equally around all of the average categories of the scale used. In this environment, students also expressed the simultaneous use of various strategies for the fulfillment of academic tasks during the training process.

Uribe Meneses [31] applied the AWSQ in Nursing students at the University of Pamplona. The observed results also indicated that the students used different strategies of autonomous work at the same level, but they did it more frequently than the students of the sample used in the present study.

Taking into consideration the relationship between the self-learning strategies shown on Table 4, it is important to highlight that the researchers Granados López et al. [32]. observed the same behavior of these dimensions in their study. Their results also showed the existence of a “moderate or strong positive linear correlation” among all the autonomous work strategies analyzed by these authors.

The analysis of the results published by Navea Martín [33], who conducted a study where the relationship between autonomous work strategies and academic goals were investigated, using the scale proposed in the present investigation allowed us to observe a similar predominance of values located in the “little or no and positive” relationship ranges. This evidenced that the regularities are interestingly coincident in at least two learning environments.

Finally, although there are the similarities with the studies mentioned above, the empirical results of our research found that the relationship between specific strategies and certain academic goals in the training environment where the research was carried out was “weak, scarce or null,” although “direct” and with predominant values of bilateral significance. This finding differs with some theoretical

references, such as Schunk et al. [34] and Torrano et al. [35], which state that the autonomous learning of students is significantly related to the motivation and academic goals.

This contradiction between this theory and this research results indicates that it would be recommended that we carry out more studies in relation to this matter. The authors consider that an absolute theoretical positioning is not viable due to the particular features that individuals, social contexts and scholar contexts have shown.

In addition, for future research related to the phenomenon studied, the authors recommend the realization of a comparative analysis between the two tendencies in which motivation is manifested that are intrinsic and extrinsic, as well as establishing the incidence of these and self-learning strategies in academic success. Possible ways could be established to potentiate the development of intrinsic motivation in the students from these results.

The main limitation of this study was the limited diversification in the participants in terms of type of professionals in training and number of universities included given the fact that all of them were from the area of Health Sciences at the same university.

5. Conclusions

- The “academic goals oriented to learning” were the ones that most frequently motivated the sample students to fulfill the teaching tasks. In this case, the selection of the option “almost always” by the students involved in the study was predominate.
- Pearson’s correlation test showed the existence of a “moderate or strong positive linear correlation” between the types of personal academic goals and the extrinsic motivational elements. However, there was “little or no correlation” between the academic goals linked to extrinsic motivation and those linked to intrinsic motivation.
- The correlation between the self-learning strategies that were the object of the research resulted in a “moderate or strong positive linear correlation” among all participants.
- The correlation between the strategies of autonomous work and the types of academic goals of the students in the sample was mostly “scarce or null and positive.”

Author Contributions: All authors worked in the research process and in the writing of the article. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Ifinedo, P. Examining students’ intention to continue using blogs for learning: Perspectives from technology acceptance, motivational, and social-cognitive frameworks. *Comput. Hum. Behav.* **2017**, *72*, 189–199. Available online: <https://www.sciencedirect.com/science/article/pii/S0747563216308779> (accessed on 12 May 2018). [CrossRef]
2. Vermunt, J.D.; Donche, V. A Learning Patterns Perspective on Student Learning in Higher Education: State of the Art and Moving Forward. *Educ. Psychol. Rev.* **2017**, *29*, 269–299. Available online: <https://link.springer.com/article/10.1007/s10648-017-9414-6> (accessed on 10 January 2018). [CrossRef]
3. Regueiro, B.; Rodríguez, S.; Piñeiro, I.; Estévez, I.; Ferradas, M.; Suárez, N. Diferencias en la percepción de la implicación parental en los deberes escolares en función del nivel de motivación de los estudiantes (Differences in the perception of parental involvement in school duties depending on the level of motivation of students). *Eur. J. Investig. Health Psychol. Educ.* **2015**, *5*, 313–323. Available online: <https://formacionasunivep.com/ejihpe/index.php/ejihpe/article/view/134> (accessed on 3 January 2018). [CrossRef]
4. Valle, A.; Regueiro, B.; Rodríguez, S.; Piñeiro, I.; Freire, C.; Ferradas, M.; Suárez, N. Perfiles motivacionales como combinación de expectativas de autoeficacia y metas académicas en estudiantes universitarios (Motivational profiles as a combination of self-efficacy expectations and academic goals in university students). *Eur. J. Educ. Psychol.* **2015**, *8*, 1–8. Available online: <http://www.elsevier.es/es-revista-european-journal-education-psychology-235-pdf-S1888899215000082> (accessed on 19 January 2018). [CrossRef]

5. Cáceres Alvarado, L.; Nieto Gutiérrez, J. Desarrollo de un cuestionario tridimensional de metas de logro en deportes de conjunto (Development of a three-dimensional questionnaire of achievement goals in joint sports). *J. Behav. Health Soc. Issues* **2013**, *5*, 41–53. Available online: <http://www.journals.unam.mx/index.php/jbhsi/article/view/38725/pdf> (accessed on 16 January 2018). [CrossRef]
6. López Mora, C.; González Hernández, J.; Garcés de los Fayos Ruiz, E.J.; Portoles Ariño, A. Versión reducida del cuestionario CMA de Metas para Adolescentes (CMA-R) (Reduced version of the CMA Teen Goals Questionnaire (CMA-R)). *Rev. Investig. Educ.* **2017**, *35*, 445–464. Available online: <http://revistas.um.es/rie/article/view/226461/213991> (accessed on 21 January 2018). [CrossRef]
7. León, J.; Núñez, J.L.; Domínguez, E.G.; Martín-Albo, J. Motivación intrínseca, autoconcepto físico y satisfacción con la vida en practicantes de ejercicio físico: Análisis de un modelo de ecuaciones estructurales en el entorno de programación (Intrinsic motivation, physical self-concept and satisfaction with life in practitioners of physical exercise: Analysis of a model of structural equations in the programming environment). *Rev. Iberoam. Psicol. Ejerc. Deporte* **2013**, *8*, 35–53. Available online: <http://www.redalyc.org/articulo.oa?id=311127595003> (accessed on 11 January 2018).
8. Domínguez Alonso, J.; Pino Juste, M.R. Motivación intrínseca y extrínseca: Análisis en adolescentes gallegos (Intrinsic and extrinsic motivation: Analysis in Galician adolescents). *Int. J. Dev. Educ. Psychol.* **2016**, *1*, 349–358. Available online: <http://www.infad.eu/RevistaINFAD/OJS/index.php/IJODAEP/article/view/380/314> (accessed on 13 January 2018). [CrossRef]
9. Suárez Riveiro, J.M.; Fernández Suárez, A.P.; Rubio Sánchez, V.; Zamora Menéndez, Á. Incidencia de las estrategias motivacionales de valor sobre las estrategias cognitivas y metacognitivas en estudiantes de secundaria (Incidence of motivational value strategies on cognitive and metacognitive strategies in high school students). *Rev. Complut. Educ.* **2016**, *27*, 421–435. Available online: <http://www.ingentaconnect.com/content/doi/11302496/2016/00000027/00000002/art00002> (accessed on 21 January 2018).
10. Fernández, E.; Bernardo, A.; Suárez, N.; Cerezo, R.; Núñez, J.C.; Rosario, P. Prediction of use self-regulation strategies in higher education. *An. Psicol.* **2013**, *29*, 865–875. Available online: <http://revistas.um.es/analesps/article/view/analesps.29.3.139341/152051> (accessed on 18 January 2018). [CrossRef]
11. Núñez, J.C.; Amieiro, N.; Álvarez, D.; García, T.; Dobarro, A. Escala de Evaluación de la Autorregulación del Aprendizaje a partir de Textos (ARATEX-R) (Scale of Evaluation of Self-Regulation of Textual Learning (ARATEX-R)). *Eur. J. Educ. Psychol.* **2015**, *8*, 9–22. Available online: <http://www.elsevier.es/es-revista-european-journal-education-psychology-235-pdf-S1888899215000094> (accessed on 15 January 2018). [CrossRef]
12. Corporación CIMTED. *Gestión del Talento Humano: Enfoques y Modelos (Human Talent Management: Approaches and Models)*; Editorial CIMTED: Medellín, Colombia, 2016; ISBN 978-958-59518-3-9.
13. Durán-Aponte, E.; Arias-Gómez, D. Validez del Cuestionario de Metas Académicas (CMA) en una muestra de estudiantes universitarios (Validity of the Academic Goals Questionnaire (AGQ) in a sample of university students). *Cuad. Hispanoam. De Psicol.* **2015**, *15*, 23–36. Available online: <https://dialnet.unirioja.es/descarga/articulo/5559767.pdf> (accessed on 12 January 2018). [CrossRef]
14. Calderón, C.; Casu, G. Escala de factores estructurales de la clase: Una medida para evaluar características de la clase relacionadas con las metas académicas de los estudiantes (Scale of structural factors of the class: A measure to evaluate characteristics of the class related to the academic goals of the students). *Rev. Latinoam. Psicol. Salud. Soc.* **2011**, *2*, 285–296. Available online: <http://revistas.ucn.cl/index.php/saludysociedad/article/view/829/669> (accessed on 13 January 2018).
15. Gámez, E.; Marrero, H.; Díaz, J.M.; Urrutia, M. What do students expect to find when they enter Psychology studies?: Goals and personal motives during the first year at university. *An. Psicol.* **2015**, *31*, 589–599. Available online: <http://revistas.um.es/analesps/article/view/analesps.31.2.171851/175671> (accessed on 12 January 2018). [CrossRef]
16. Suna, Z.; Xieb, K.; Anderman, H.L. The role of self-regulated learning in students' success in flipped undergraduate math courses. *Internet High. Educ.* **2018**, *36*, 41–53. Available online: <https://www.sciencedirect.com/science/article/abs/pii/S1096751617304542> (accessed on 29 September 2018). [CrossRef]

17. Tan, D.A.; Limjap, A.A. Filipino students' use of metacognitive skills in mathematical problem solving: An emergent model. *Int. J. Dev. Res.* **2018**, *8*, 20430–20439. Available online: https://www.researchgate.net/profile/Denis_Tan2/publication/326423174_Filipino_Students_Use_of_Metacognitive_Skills_in_Mathematical_Problem_Solving_An_Emergent_Model/links/5b4ca9e80f7e9b4637de6718/Filipino-Students-Use-of-Metacognitive-Skills-in-Mathematical-Problem-Solving-An-Emergent-Model.pdf (accessed on 10 July 2018).
18. Garrote Rojas, D.; Garrote Rojas, C.; Jiménez Fernández, S. Factores influyentes en motivación y estrategias de aprendizaje en los alumnos de grado (Influential factors in motivation and learning strategies in undergraduate students). *REICE. Rev. Iberoam. Sobre Calid. Efic. y Cambio en Educ.* **2016**, *14*, 31–44. Available online: <https://revistas.uam.es/index.php/reice/article/view/3081/4035> (accessed on 9 January 2018).
19. Gaeta, M.L.; Cavazos, J.; Sánchez, A.P.; Rosário, P.; Högemann, J. Propiedades psicométricas de la versión mexicana del Cuestionario para la Evaluación de Metas Académicas (QEAG) (Psychometric properties of the Mexican version of the Questionnaire for the Evaluation of Academic Goals (CEMA)). *Rev. Latinoam. Psicol.* **2015**, *47*, 16–24. Available online: <http://www.elsevier.es/es-revista-revista-latinoamericana-psicologia-205-articulo-propiedades-psicometricas-version-mexicana-del-S0120053415300029> (accessed on 9 January 2018).
20. López Aguado, M. Diseño y análisis del Cuestionario de Estrategias de Trabajo Autónomo (CETA) para estudiantes universitarios (Design and analysis of the Autonomous Work Strategies Questionnaire (AWSQ) for university students). *Rev. Psicodidáctica* **2010**, *15*, 150–164. Available online: <http://www.redalyc.org/articulo.oa?id=17512968005> (accessed on 7 January 2018).
21. Introducción a la Psicología. Tema 4. El Método Observacional (Topic 4. The Observational Method). Available online: <http://www4.ujaen.es/~{j}eramirez/Descargas/tema4> (accessed on 17 January 2018).
22. Martínez Ortega, R.M.; Tuya Pendás, L.C.; Martínez Ortega, M.; Pérez Abreu, A.; Cánovas, A.M. El coeficiente de correlación de los rangos de Spearman caracterización (The correlation coefficient of the Spearman ranges characterization). *Rev. Habanera Cienc. Médicas* **2009**, *8*. Available online: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1729-519X2009000200017&lng=es&nrm=iso&tlng=es (accessed on 8 January 2018).
23. Pulido Rull, M.A.; Serrano Sánchez, M.L.; Valdés Cano, E.; Chávez Méndez, M.T.; Hidalgo Montiel, P.; Vera García, F. Estrés académico en estudiantes universitarios (Academic stress in university students). *Psicol. y Salud* **2011**, *21*, 31–37. Available online: <https://www.uv.mx/psicysalud/psicysalud-21-1/21-1/Marco-Antonio-Pulido-Rull.pdf> (accessed on 4 January 2018).
24. Bitran, M.; Zúñiga, D.; Leiva, I.; Calderón, M.; Tomicic, A.; Padilla, O.; Riquelme, A. ¿Cómo aprenden los estudiantes de medicina en la transición hacia el ciclo clínico?: Estudio cualitativo de las percepciones de estudiantes y docentes acerca del aprendizaje inicial de la clínica (¿How do medical students learn in the transition to the clinical cycle?: Qualitative study of the perceptions of students and teachers about the initial learning of the clinic). *Rev. Médica Chile* **2014**, *142*, 723–731. Available online: https://scielo.conicyt.cl/scielo.php?script=sci_arttext&pid=S0034-98872014000600006&lng=en&nrm=iso&tlng=en (accessed on 15 January 2018). [CrossRef]
25. Hernández, A.S.; Torres, F.; Fang, L.C.; Díaz Caballero, A.J. Estrategias de aprendizaje en estudiantes de odontología de una universidad pública en Cartagena, Colombia (Learning strategies in dentistry students of a public university in Cartagena, Colombia). *Univ. Odontol.* **2017**, *36*, 1–20. Available online: <http://revistas.javeriana.edu.co/index.php/revUnivOdontologica/article/view/19937/15418> (accessed on 13 January 2018). [CrossRef]
26. Hernández Barrios, A.; Camargo Uribe, A. Adaptación y validación del Inventario de Estrategias de Autorregulación en estudiantes universitarios (Adaptation and validation of the Inventory of Self-Regulation Strategies in university students). *Suma Psicol.* **2017**, *24*, 9–16. Available online: <http://www.elsevier.es/es-revista-suma-psicologica-207-pdf-S0121438117300048> (accessed on 8 January 2018). [CrossRef]
27. Valencia Serrano, M.; Duarte Soto, J.; Caicedo Tamayo, A.M. Aprendizaje autorregulador, metas académicas y rendimiento en evaluaciones de estudiantes universitarios (Self-regulatory learning, academic goals and performance in evaluations of university students). *Pensam. Psicol.* **2013**, *11*, 53–70. Available online: http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S1657-89612013000200004&lng=en&tlng=es (accessed on 6 January 2018).
28. Daura, F.T. Aprendizaje autorregulado y rendimiento académico en estudiantes del ciclo clínico de la carrera de Medicina (Self-regulated learning and academic performance in students of the clinical career cycle of Medicine). *Rev. Electron. Investing. Educ.* **2015**, *17*, 28–45. Available online: http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1607-40412015000300003 (accessed on 11 January 2018).

29. Rodríguez, S.; Piñeiro, I.; Regueiro, B.; Gayo, B.; Valle, A. Metas académicas, estrategias de aprendizaje y rendimiento académico en educación secundaria (Academic goals, learning strategies and academic performance in secondary education). *Magister* **2014**, *26*, 1–9. Available online: <http://www.elsevier.es/es-revista-magister-375-pdf-S021267961470012X> (accessed on 19 January 2018). [CrossRef]
30. Panadero, E.; Alonso Tapia, J. Teorías de autorregulación educativa: Una comparación y reflexión teórica (Theories of educational self-regulation: A comparison and theoretical reflection). *Psicol. Educ.* **2014**, *20*, 11–22. Available online: <http://journals.copmadrid.org/psed/articulo.php?id=84c6494d30851c63a55cdb8cb047fadd> (accessed on 19 January 2018). [CrossRef]
31. Uribe Meneses, A. Características del aprendizaje autónomo de los estudiantes del programa de enfermería de la Universidad de Pamplona (Characteristics of the autonomous learning of the students of the nursing program of the University of Pamplona). *Rev. Cienc. y Cuid.* **2012**, *9*, 24–33. Available online: <http://revistas.ufps.edu.co/ojs/index.php/cienciaycuidado/article/view/451> (accessed on 8 January 2018). [CrossRef]
32. Granados López, H.; Gallego López, F.A.; Arredondo Clavijo, D.M. Asociación y uso de estrategias de aprendizaje en estudiantes de Básica y Media Vocacional (Association and use of learning strategies in students of Basic and Vocational Media). *Textos y Sentidos* **2017**, *15*, 29–46. Available online: <http://biblioteca.ucp.edu.co/OJS/index.php/textosysentidos/article/view/3253/3493> (accessed on 15 January 2018).
33. Navea-Martín, A. El aprendizaje autorregulado en estudiantes de ciencias de la salud: Recomendaciones de mejora de la práctica educativa (Self-regulated learning in students of health sciences: Recommendations for improvement of educational practice). *Educ. Médica* **2018**, *19*, 193–200. Available online: <http://www.elsevier.es/es-revista-educacion-medica-71-pdf-S157518131730013X> (accessed on 14 January 2018). [CrossRef]
34. Schunk, D.; Zimmerman, B. *Motivation and Self-Regulated Learning: Theory, Research and Applications*; Lawrence Erlbaum: New York, NY, USA, 2008; ISBN 978-0805858983.
35. Torrano, F.; Fuentes, J.L.; Soria, M. Aprendizaje autorregulado: Estado de la cuestión y retos psicopedagógicos (Self-regulated learning: State of the art and psycho-pedagogical challenges). *Perf. Educ.* **2017**, *39*, 160–173. Available online: http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0185-26982017000200160&lng=es&tlng=es (accessed on 3 January 2018).



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