Review of: "Motivational Variables as Predictors of Academic Achievement Among University Students"

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Potential competing interests: No potential competing interests to declare.

Text review: Motivational Variables as Predictors of Academic Achievement Among University Students, by Alejandro Vásquez

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This study deals with the identification of variables related to university students' motivation for learning that can be considered predictors of their academic success. This is highlighted as the goal of the research, so the intention is to identify the predictor variables of academic achievement from the aspect of motivation for learning. As stated clearly, the goal was to look into the connection between academic success and motivational factors in the MSLQ test and to see if it was possible to use motivation to explain and predict the academic success of the students in the sample.

The problem, or research question, is not explicitly stated, but based on the wording of the problem, it could be concluded that the question underlying this research is: what are students' motivations for learning, i.e., what types of motivations for learning do students have, and what is their relationship with academic success? Hypotheses are also not explicitly stated, even if, from the findings of the regression model, which tested the null hypothesis, it was concluded that there is a linear relationship between the dependent variable of academic achievement and the identified predictor variables. So, clear formulations of these two elements of the draft should be stated.

The study, therefore, deals with an important topic because motivation for learning is, for now, despite a large amount of research, still an unfathomable phenomenon. It is clear that the author accepts the interest in self-regulation of learning, initiated three decades ago with changes in the conceptual framework of intellectual processes, in particular with the acceptance of the Theory of Mental Self-Government (Sternberg, Mental Self-Government: A Theory of Intellectual Styles and Their Development, 1988), with which Sternberg changed the traditional view of intelligence, according to which it encompasses a unique general ability (g), below which are hierarchically arranged series of more specific levels of ability, such as fluid ability (the ability to think flexibly and in new ways) and crystallized ability (cumulative knowledge). In accordance with this, he establishes a theoretical framework in which the positions of Decius' theory of self-regulation, Bandura's social cognitive theory, and the role of goals, motivation, and affect in models of self-regulation of learning. And he tries to look at all this from the point of view of importance for didactics, that is, for strategies and models of learning

and teaching, which, from various aspects, search for the importance of factors used to conceptualize the structures of learning strategies.

The author, in accordance with the previous one, referred to the research findings in the introductory part, which focus on the motivational factors of learning that help self-regulation in learning. One of them, which has attracted special attention in recent decades, is self-efficacy, which, within the conceptual model of socio-cognitive theory, Bandura gives the place of a cognitive, self-regulatory, self-reflective process that is essentially a self-regulatory system and considers it the central psychological mechanism of personality action in the structure of the self-regulatory system. This is essentially the theoretical basis of this research study and also the basis of the context for interpreting the findings, which, despite the large number of previous studies in this field, make a significant contribution because the enigma of university students' motivation for didactics is still unfathomable.

It is important to state that the author is aware of the complexity of the self-regulation construct, as well as the methodological scope and limitations regarding the inscrutability of the individual's idiosyncrasy in every aspect, even in matters of self-regulation, which, due to its importance, especially from the point of view of motivation for learning, is attractive for unraveling the complexity of factors that encourage it, that is, they enable it. This is significant because motivation starts the learning system, and as the author notes, it is not uncommon for students who have a highly expressed motivation to decrease or even disappear in certain situations, and with it, also students with high achievements, that is, with great, they disappear from the scene with excellence. Therefore, despite the large number of studies in this area, self-regulation and motivation for learning are still enigmas that need to be researched. The aim of the research in this exploratory study has a special task related to getting to know the motivational aspects of a sample of Chilean university students, which gives the study a practical aspect, i.e., the possibility to correct didactic strategies based on the findings of the study in the sense of comparing them to the students' motivations. After the previous one, it can be concluded that this study contributes to a better understanding of this field, even if, at first glance, it only gives us information that confirms the findings of other studies because it tries to identify predictor variables of academic success. From the aspect of their motivation for learning among students and universities in Chile and by the choice of approach and instrument, in accordance with the selected theoretical framework and the importance of the construct of motivation for learning, it also includes constructs such as self-efficacy, self-confidence, anxiety, self-confidence in meta-cognition, and beliefs about learning control, which were taken as prediction variables. The criterion variable is academic achievement.

The research method is not specified, but from the approach, choice of instrument, and statistical analysis when designing the model, it can be seen that it is a quantitative approach in an exploratory study in which the widely used Pintricha MSLQ (Motivated Strategies for Learning Questionnaire, Pintricha et al., 1991) was used to measure variables of motivation for learning in a sample of 117 students. Thus, the research design is based on the general cognitive theory of motivation and learning strategy and builds a multiple regression model with the academic success of university students as a dependent variable and items from the MSLQ motivation scale as independent variables in order to identify predictors of academic achievement. The instrument mentioned confirmed its adequacy with satisfactory metric characteristics (validity and reliability) (Cronbach's alpha = .880), which was noted by the authors in other studies, which recommended it

for this study.

The MSLQ test (Pintricha et al., 1991) consists of two scales, one measuring motivation and the other measuring learning strategies. The motivation scale has 31 items and six subscales of evaluation, expectations, and affect (the evaluation subscale includes intrinsic goal orientation and extrinsic goal orientation; the expectation subscale includes self-efficacy and learning control; and the affect subscale includes anxiety). Therefore, from the above, it could be concluded that with this instrument, motivation for learning is observed, and thus self-regulation is sought to be captured from several aspects, which also include non-cognitive constituents of the phenomenon of motivation, and thus self-regulation, which other researchers find to be important factors of motivation for learning, allows students to have the necessary energy to achieve learning goals, especially in situations of facing difficulties in successfully solving the challenges of higher education. Therefore, the test tries to observe the motivation for learning, but the author focused only on the first part of this test, and the related learning strategy was not taken into account. It would be good if, in the next step, learning strategies were also introduced into the research, i.e., the second part of this test, because in this way, learning would be observed more broadly, and it would be possible to have more information about the individual's approaches to learning as well as about his self-regulation in learning, on which otherwise didactics insists in efforts directed towards a holistic approach in teaching.

The findings state that the regression model, i.e., statistical analysis, identified the following significant predictor variables of student success: self-efficacy, anxiety, and beliefs about learning control. Therefore, it is about the importance of non-cognitive variables, which for the practical aspect of the findings of this research are of great importance because they imply the personalization of didactic instructions, which means more mentoring work by the teacher with the student, and in the next step, a different standard in the sense of a smaller number of lecture hours, as well as other obligations, and that is already the field of education policy in this case of Chile and also of all other environments if the same findings are shown in them. So the conclusion that the scope of this study is of a local character in terms of application does not diminish its value, because in addition to the same, they also initiate other activities in the sense of dealing with the motivation of learning at studies, which is found in the literature to be not at the expected level. Given that in Europe, after the introduction of the Bologna process of quality improvement, the level of motivation for learning is visibly reduced and turned towards the concern about the number of credits, which suppresses what higher education entails (a high level of commitment to the subject of learning, motivation, critical thinking, etc.), this research once again pointed to the need for a holistic approach to encouraging motivation in higher education, as well as the need to pay more attention to non-cognitive aspects of it, which implies enabling personalization in teaching.

The text is written in a clear academic style. The presentation of findings is systematic and documented, with the default necessary statistical analyses, as substitutes for experimental controls. But this does not mean that we can be satisfied with these findings in terms of understanding the factors that determine the motivation to learn. The complexity of the construct of motivation for learning, associated with idiosyncrasy as a phenomenon and awareness of the inclusion of numerous learning factors from the context, therefore, from the outside, is a challenge for further research. So, for the discussion of the findings of this research, and thus the contribution to science, would be interesting questions: Is it

possible to include a smaller number of variables that would determine with certainty the specificity of the individual in terms of determining the condition and didactic approaches (models, instructions, etc.), therefore, to use a holistic approach to record the phenomenon of self-regulation and, based on that, choose with greater certainty teaching strategies that are in accordance with the needs of the individual?

Suggestions to the author are:

• More clearly define the goal, tasks, problem or research question, hypotheses and research methods.

• As the text has wide scope for practice, it would be good to explain the research findings in more detail from that point of view, otherwise they should be tied a little more strongly to the theoretical context, because they contribute the most to the same.

• For new research designs, take into account the possibility the need to include more variables, so that the findings can be observed with more certainty.

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