

Competency to Study and Learn in Stressful Contexts: Fundamentals of the *e-Coping with Academic Stress*TM Utility

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Abstract

There has been growing research interest in achievement emotions in university teaching-learning processes in recent years. While their importance has been firmly established, there continues to be a need for assessment and intervention models. The objective of this report is to present the *Competency Model for Studying, Learning and Performing Under Stress*, as well as the specific variables that underlie the assessment and intervention utility, *e-Coping with Academic Stress*. The basic characteristics of this innovative, self-help tool will be presented, as well as its utility for self-assessment and improvement in emotional processes that are associated with stressful experiences, in learning situations in higher education.

Key words: academic stress, model, self-help, coping, innovation, e-utility

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Competencia para Estudiar y Aprender en Contextos Estresantes: Fundamentos de la Utilidad *e-Afrontamiento del Estrés Académico*[®]

Resumen

La investigación sobre las emociones académicas en los procesos de enseñanza-aprendizaje universitarios ha cobrado fuerza en los últimos años. Tras la constatación de la importancia de las mismas, siguen siendo necesario modelos de evaluación e intervención. El objetivo de este informe es presentar el *Modelo de Competencia para Estudiar, Aprender y Rendir bajo estrés*, así como las variables específicas en las que se centra la evaluación e intervención, como fundamentos de la utilidad de *e-Afrontamiento del Estrés Académico*. También, se presentan las características esenciales de esta herramienta innovadora de auto-ayuda, útil para la auto-evaluación y la auto-mejora de los procesos emocionales, asociados a las vivencias de estrés, en situaciones de aprendizaje universitario.

Palabras clave: estrés académico, modelo, auto-ayuda, afrontamiento, innovación, e-utilidad.

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Introduction

Recent research on positive and negative emotions during university processes of learning and performance reveal that such emotions play an important role, and not to be overlooked (Andersson et al, 2010; Bardi et al, 2011; Hamaideh, 2011). Classic, first-generation cognitive models, spring from information processing and constructivism metaphors, and have not given enough attention to emotions and their effect on cognitive processes during learning. Second-generation, motivational-affective models (Pintrich, 2004; Zimmerman & Schunk, 2008, 2011) insisted on the need to consider and intervene in affective processes that take place during learning, because they affect the cognitive processes that support information processing, sometimes in a positive way, other times in a negative, interfering way. Therefore, it is essential to understand the *negative emotional experiences that are characteristic of stress* during university learning, and especially when preparing for professional exams (Regehr, Glancy & Pitts, 2013).

The stress response during learning and academic performance

The stress response in humans has been amply studied in different contexts, especially in the clinical and health spheres (Costarelli & Patsai, 2012; Hamdan-Mansour, Puskar, & Bandak, 2009; Gulewitsch et al., 2013; O'Donovan & Hughes, 2007; Pettit & De Barr, 2011). In the *psychoeducational sphere*, although there has been significant progress in understanding cognitive and metacognitive processes, more attention must be given to clearly understanding the mechanisms involved in the stress response, because of their harmful effect on these cognitive and motivational-affective processes (de la Fuente, Zapata, Martínez-Vicente, Sander & Putwain, in press).

Academic stress

Basically, stress is an adaptive response that produces a change in the body during the process of adjusting to the environment. Originally, the stress response was produced in situations of danger, when there was a need to flee, protect or defend oneself. In the present day, this response is more likely to occur in situations perceived as presenting *psychological danger or threat*. For example, when a student believes that there is not enough time to study for the whole exam, when assignments seems too difficult to accomplish, or when multiple required tasks create an excessive workload, we find potentially stressful situations. The re-

sponse produced is a general in nature, although it is primarily physiological, accompanied by other, psychological processes: thoughts, feelings and actions that are typical of stress.

There is evidence that the stress response in its different modalities interferes in cognitive and motivational processes during learning and study (Serlachius, Hamer & Wardle, 2007). It is therefore of interest for understanding learning processes in general, and study processes in particular. The stress response has been proven to interfere with memory and attention processes, as well as with information recovery. Stress-associated anxiety may increase worry and negative emotionality. It changes the course of positive thoughts into other negative thoughts and irrational beliefs, weakening one's motivational-affective state while learning, ultimately leading to demotivation (Largo-Wight, Peterson & Chen, 2005).

All of this points to the need to work on prevention of stress responses, helping students establish the competencies they need to manage stress and anticipate its appearance. However, the usual programs for preparing university students and exam candidates overlook this aspect, focusing almost exclusively on the demands of the examination itself.

Indicators of academic stress

The experience of academic stress is multidimensional, as we have noted. This psychological state has different components that function as indicators or correlates: thoughts, physiological responses and one's emotional state are such indicators.

1) Cognitive level: stress-associated thoughts

At this level of response, the student or exam candidate may experience an increase in the frequency, intensity, duration, level of interference and number of situations subject to *interfering thoughts*, often automatic and recurring in nature. They are usually negative thoughts, worry, anticipation of failure, and even triggering an incapacity to carry out the task at hand (Romero et al, 2014).

2) Physiological level: physiological and motor activation

This level of response refers to an increase in different physiological responses in frequency, intensity and duration, whether one is studying, or in the exam situation itself (written or oral). Several physiological systems can be involved: perspiration, palpitations, insomnia, mouth dryness, trembling, etc. The types of tension and anxiety responses depend on each

person and their learning history. If a university student or exam candidate has a history of stress responses, he or she should consider setting a goal to learn how to manage these responses, and begin to work on this early enough to learn how control them. In other words, it is not a good idea to try to learn to relax or stop smoking two days before the exam, when one is already experiencing a good deal of the symptoms mentioned. As with relearning any behavior, time and training are needed in order to successfully modify the desired behaviors.

3) *Motivational-affective level: positive vs. negative emotions*

This level of response is very important, since it summarizes the motivational-affective state of the student or exam candidate. On the positive side, the student or exam candidate can experience a state of *engagement* with the task of preparing and studying, that is, he or she is motivated, involved in the study task and not affected by negative stress. In other words, this student would be on the positive side of stress, taking the demanding situations as a challenge, with high expectations for success and energy for working (Putwain, Sander & Larkin, 2013; Villavicencio & Bernardo, 2013). On the negative side, the student or exam candidate can experience a state of *burnout* or emotional fatigue that hinders him or her from optimal task execution, resulting in demotivation and disaffection with the task of study or exam preparation. Persons who experience this psychological state refer to it as exhaustion, lack of strength to face the situational demands, or a sense of being "burnt out" (Arsenio & Loria, 2014).

Note that *prior experiences* of success or failure, whether academically or in professional exams, can cause a tendency toward one state or the other. For example, it is to be expected that a person who has had several failures in coursework or professional exams, who has formed an idea that their personal ability and chances for success are not good, would then experience a negative emotional state. This evidence and experience should bring an awareness that studying and performing under pressure requires specific training in stress management knowledge, skills, attitudes and habits, that is, in *being competent to manage academic or competitive stress* when learning and studying, in order to attain the desired performance.

Teaching-learning situations that potentially induce stress

Every person, and especially every student, has faced some situation with potential for causing stress. However, today we understand that situations have *potential* for producing stress, depending to a greater extent on how one copes with the situation more than the intensity of the stressful stimuli themselves. In other words, the way that a person faces the stressful situation determines its impact more than the stressful stimuli.

Characteristics of the teaching-learning process

Recent research has established different characteristics of learning contexts that may potentially induce stress:

1) *Uncertainty about or a lack of correspondence between effort and results.* This is the case of students who must study and exert themselves over a long period of time without any *a priori* guarantee of success in meeting their objectives. In other words, there is no linear dependency between effort and results.

2) The perception that the *system is unfair or unreliable.* One's level of preparation for the testing situation does not ensure a positive outcome. This occurs when the situation has uncontrollable factors, for example, when certain unobtainable aspects are rewarded in the ranking (experience, years of service, etc.) or the teacher uses different, non-explicit criteria in correcting the exams.

Characteristics of the task or of what must be learned

Specific characteristics of the task itself may involve a certain level of stress:

1) *The demands of the situation.* When the learning context requires competencies that the person perceives they do not have and cannot be easily acquired (speaking in public, speaking in another language, completing an exam in a given amount of time, problem-solving, etc.). These capacities are complex and are not gained through trial and error; they require building a combination of knowledge and complex skills.

2) *The difficulty of the task.* When the context requires excellent execution of assigned tasks (achieving a certain grade, meeting minimum levels of performance on several trials, etc.). At the university level, study in itself is a stressful activity, by definition, given the level and quantity of material to be covered, not to mention the predominant assessment systems. This is even truer of competitive contexts, where, in addition, one is competing and being examined in order to gain a professional position.

3) *The lack of regulatory teaching.* This factor refers to the person's need to have work guidelines that can be followed while learning. Without such an outline or work plan, the student has no external help toward making steady and significant progress over time. Typically, when professional exams or academic subjects are presented, they indicate the final product that must be demonstrated, but they do not indicate how to reach the required level of competency (de la Fuente, García-Berbén & Zapata, 2013).

Characteristics of the person facing the situation

This component refers to personal characteristics that are helpful in managing the context and the task, that is, the degree of *competency for studying and learning in stressful contexts*. In the scope of our analysis, this variable is decisive for being able to effectively compete in professional exams. It is a complex competency that requires time and specific training in order to learn.

Competency for studying, learning and performing in stressful contexts

The concept of *competence* is not one-dimensional, but multi-dimensional (de la Fuente et al, 2004). In other words, it does not refer to a single skill or type of knowledge. Instead, it refers to a set of skills, knowledge, attitudes and habits that a person has built up, and that allow him or her to face a certain assessment situation and be successful. According to the *Competency Model for studying, learning and performing under stress* (de la Fuente, 2014a), this involves:

- 1) *Knowing (factual knowledge).* This factor means that the person must have enough factual knowledge relative to the study or competitive task. Therefore, the student must possess knowledge of:

- *facts* related to what is involved in the class subject, degree program or professional exam (requirements, typical exams, percentage of students who pass).
- *concepts*, referring to knowledge of any applicable legislation, types of exercises, grading systems, characteristics of the class subject or professional exam, and merits required.
- *principles*, relating to behavioral norms and assumptions for studying or participating in professional exams.

2) *Ability or know how (knowledge of skills and meta-stills)*. This means possessing: *specific study skills* (study techniques and learning strategies), as well as *specific skills for professional exams* (writing out the exam, speaking in public, problem solving, etc.) and *skills for managing stress* (relaxation skills, physical exercise and skills for reducing test anxiety).

It also means *meta-skills for studying* (self-regulated learning and study) and *meta-skills for managing stress* (personal self-regulation, control of stress, appropriate coping strategies).

Mindset and knowing how to be (knowledge of attitudes, values and appropriate habits). This means being sufficiently motivated and engaged in the class subject, degree program or competitive exam in order to achieve and meet the demands required. This factor is decisive in that it has a considerable effect on the two prior factors. As the popular saying goes, “where there’s a will there’s a way”, meaning that motivation is the “engine” that drives the learning process. Thus, one needs to adopt:

Attitudes and values, in other words, have a motivational style of competitive achievement – in a selection process, where one is competing with others, or in a class subject, where one competes with oneself and the objective is growth or personal achievement. Along with these attitudes and values, one must have appropriate beliefs, not irrational beliefs that negatively affect motivation and performance.

Habits are essential. Good work and study habits are key to meeting one’s objectives and not losing motivation. Good habits guarantee disciplined, effective behavior in making good use of time, that is, in a structured learning and study environment. However, habits

without strategic and meta-strategic study procedures are not enough. All these aspects are reflected in *Table 1*.

Table 1. Multi-dimensional nature of the Competency for studying, learning and performing under stress (de la Fuente, 2014a; reproduced with permission)

	Facts (knowledge about the characteristics of the class subject or professional exam: job openings, percentage of candidates who pass, requirements)
<u>Knowing</u>	Concepts (system of work, competitive exam system, requirements; type of exam, scoring, prior merits)
	Principles (beliefs about one's possibilities or about the professional exam and the selection process)
+	
	Learning and study skills (study skills and techniques)
<u>Know how</u>	Instrumental skills (written and oral skills; reducing anxiety)
	Meta-skills for study (learning strategies) and stress management (coping strategies and personal self-regulation)
+	
	Attitudes and values (academic behavioral confidence, achievement motivation)
<u>Mindset</u>	Study habits (time management, persistence, discipline)

Assessment and intervention for improved management of academic stress

Psycho-educational intervention for helping university students or professional exam candidates to better manage their study, learning and related stress, is based on the *Competency Model for studying, learning and performing under stress* (de la Fuente, 2014a).

Presage variables: prior experience with stress

One's prior experience with a given stressful event makes certain types of personal responses more probable.

In the case that the student *has not had prior experience* at university or with competitive exams, preventive action should be taken. In this case, there is usually less perceived stress, since there is no negative experience with competitive exams. Thus, training in the different competency sub-levels is desirable in order to prepare the student for the upcoming experience. When there have been *several attempts* accompanied by failure, whether in class subjects or professional exams, the perception of unpleasantness and disaffection is usually significantly greater than in the previous group.

In the case of *numerous unsuccessful experiences* with taking academic or professional exams, the perception of unpleasantness and disaffection is at its greatest, due to the learning history that the student has been exposed to. In a few particular cases, some students seem to become inoculated against stress, so that they are relatively unaffected by the experience. This group of "recurring" students, therefore, should be treated with special attention.

Process variables: improving the competency for studying and learning under stress

Conceptual subcompetencies

Facts about the academic or professional exam. Becoming better informed in the categories mentioned above is specific to each class subject or selection process. Official announcements regarding professional exams, and materials offered by the different publishing houses help establish an *adequate representation* of all the requirements involved. One basic, *key aspect*, is that in most cases there is a two-fold selection process:

The exams and competitive selection process. By this we refer to the testing involved in the selection process. There may be several eliminatory tests, or not; in some cases written, in other cases oral; still others require demonstrations of professional ability or other testing, carried out as described in the Announcement. It is essential to understand exactly what type of test one is going to be facing, as well as how each exercise is to be scored.

1) *Concepts of the exam or competition-selection*

The concepts of the exam or professional selection refer to a complex network of knowledge that is needed in order to successfully pass the examination. These concepts have to do with the *academic-professional knowledge involved in practicing the profession which the selection process gives access to.*

2) *Principles of the exam or competition: irrational beliefs*

As people, we tend to develop explanatory criteria and propositions that enable us to elaborate our own ideas about the events of our life. In many cases, since these are generated individually, they act as *explanatory principles* of reality, and involve personal positioning and hidden value judgments. If these principles are *well adjusted*, they benefit us by contributing to psychological balance, that is, to positive emotionality and motivation. If the principles are *maladjusted*, because they are unreal or irrational, they produce negative emotionality and demotivation. In stress situations, precisely because of the negative emotionality of the situation, this type of unintentional, negative ideation is more likely to develop and to turn into personal *beliefs* or *automatic self-instructions*; we do not heed them, but they have a great impact on our emotional state, and even worse, on our motivation. There are many types of *irrational beliefs* that must be evaluated and readjusted, if they are found to be producing a negative effect on the student who is preparing a competitive exam. For this reason, it is beneficial to assess such beliefs and then work on them. If the student has trouble modifying or managing irrational beliefs, he or she should seek help from a professional educational psychologist. Improvement interventions can include: (1) blocking this type of irrational interference, using the *stop thought* technique; (2) readjustment and dismantling of these thoughts, through *cognitive restructuring*. We suggest a careful analysis of thoughts that are becoming ingrained, one at a time, to see which ones are having a harmful effect on keeping up the motivation and effort needed to prepare for the competitive exam.

Procedural subcompetencies

Instrumental skills for the exam or selective process

Instrumental skills are the essential skills that are required to carry out the exercises involved in the selection process. These are not a minor concern, since the exercises are based on these skills. Having these skills usually depends on one's personal learning history, but in any case, they should be fine tuned for use in the professional exercises.

1) *Expository writing skills*

It is essential to have good writing skills in order to discuss a topic or carry out a practical exercise. Keep in mind that the people who evaluate the exams have no knowledge of what the students knows, only of what he or she has written. Therefore, once you have assessed your skills, you should set specific objectives for improvement, and work to meet them. *We must not forget that skills develop only if they are practiced.*

2) *Oral presentation skills*

This is a *complex skill* and requires *specific training* for each type of professional exam. Different types of oral presentation are required in a professional examination for Judge, in presenting a Psychology topic, or when defending a Teaching Syllabus. The period of preparation for professional exams is a good time to improve your skills. After periodic assessment, you will be able to identify aspects of form and substance that you can gradually improve in. As in the previous case, realize that one can only learn to speak by speaking.

Cognitive skills

1) *Study and note-taking strategies*

These refer to *strategic behaviors* for making study and note-taking more efficient. In this section it is very important that you evaluate what the best *tactics* are *for study and note-taking* (use of summaries, repeating aloud, marking up texts, looking for main ideas, etc.), and what aspects you find difficult or you might be able to improve on (organization of your study time, information selection, anxiety, ideas of failing, etc.). Therefore, the assessment can help you set *objectives for improvement* in studying and note-taking.

2) *Cognitive learning strategies*

This aspects refers to the *specific information processing behaviors* that the student uses in order to construct knowledge as he or she is studying, in tasks like organizing and selecting information, information structuring, memorization or summarizing. After the assessment, the student will become aware of aspects that should be improved. For example, if memorization is difficult, new mnemotechnics can be learned, or if the problem is organizing information, the student can try another method of organization using conceptual maps.

3) *Learning approaches*

This variable is a synthesis of the previous ones; it offers the student information about his or her usual manner of going about studying, whether a *deep approach* is taken, or they settle for a *surface approach*. For an exam or selection process, one can decide which aspects to address using a deep approach or a more superficial approach, but it should be planned and carried out consciously. By and large, a surface approach does not encourage inquiry and full development of the student's knowledge, so it is helpful to use a *deeper approach* that will ensure more fully developed knowledge, and above all, greater motivation to study, which is such a benefit in these high-effort situations.

Emotional skills

Emotional skills refer to *procedures* or *tactics* for managing emotions, converting negative emotions into positive ones. When these skills are not present, or one's learning history has led to a perceived lack of competency on a certain task, any evaluation situation can become negative, creating an experience of anxiety and fear (Perera, Torabi & Kay, 2011).

1) *Test anxiety*

This is a type of *negative emotionality* that affects engagement and performance on the task, by wasting a person's cognitive and emotional resources (Shamsuddin, et al., 2013; Zunhammer et al., 2013). If an assessment of test anxiety has revealed medium or high levels, the student must learn to control it and to substitute it with positive emotionality. A certain level of anxiety helps one perform and maintain a state of alertness; excessive anxiety is harmful and may be accompanied by other emotional or health issues (depression or burnout), especially if it continues over time, as is likely in the case of preparing for professional exams.

Meta-skills: meta-cognitive, meta-affective and meta-behavioral skills

Meta-skills are skills for *managing or monitoring skills*, whether these are cognitive, emotional, or behavioral.

1) *Cognitive regulation strategies: monitoring one's own study*

These are skills for managing one's *cognitive behavior during study*, with appropriate behaviors *before (planning and goal-setting)*, *during (monitoring and decision-making)* and *after*

(*reappraisal of*) studying. This behavior, referring to self-regulated learning, has been extensively modeled (Benbenutty, Cleary & Kitsantas, 2014; Zimmerman & Labuhn, 2012).

2) *Emotional regulation strategies: coping strategies*

These are skills for *managing emotional behavior, in order to cope with stress* that may be produced by studying and learning in university situations or selection processes. These strategies, according to the Lazarus and Folkman model (1968), may either seek to minimize the emotion (*emotion-focused*) or seek to address the causes of the problem (*problem-focused*). These strategies are especially important because they make it possible to maintain emotional equilibrium throughout the period of study or preparation for a selection process (Chou et al. , 2011); if lacking, this may result in health issues (Sulkowski, Dempsey & Dempsey, 2011). The assessment provides an overview of the student's strategies, and the extent that these are being used, so that strategic adjustments can be made. One essential aspect found in recent research is that university students make greater use of problem-focused strategies, and often overlook management of emotions. In the long term this can take its toll, especially over periods of sustained stress.

3) *Behavioral regulation strategies: personal self-regulation*

This is the skill of *managing one's general behavior* (Pichardo et al, 2014); it allows a person to plan and set goals at the beginning of a task, to self-monitor and make decisions throughout the task, and finally, to learn from any mistakes. This personal macro-competency is predictive of self-regulated behaviors in daily life, which in turn predict well-adjusted personal behavior. This skill is especially important for maintaining personal effort and discipline in work and study over prolonged periods.

Attitudinal subcompetencies: attitudes, values and habits

Academic behavioral confidence

Assessing this psychological construct reveals one's level of *self-confidence* with respect to academic achievement, carrying out study behaviors, verbal competence and class attendance. One's level of academic behavioral confidence is a consequence of one's learning history, so that students who possess a *low or medium level* should work on improving this aspect (Sander et al., 2011; Sawatzky, et al., 2012).

Achievement motivation

The assessment provides information about one's degree of *achievement motivation*, in other words, of the desire and need to perform well and to achieve, academically and professionally. Results regarding one's *action-emotion style* (de la Fuente, 2004, 2008; de la Fuente & Cardelle-Elawar, 2009, 2011; Lala, Bobirnac & Tipa, 2010; Salmerón, 2014) provide information about one's motivational-affective approach to academic achievement situations.

Perceived locus of control

This variable reveals to what extent you perceive that what happens in your life, and the results you obtain, depend on your own actions and not on external factors. Greater perceived control is associated with more engagement and a greater commitment to the study task and to sustained effort.

Resilience

Resilience is the personal skill that enables a person to overcome and bounce back from difficulties. There are many difficult situations that a university student or competitive exam candidate may face throughout their study process: discouragement, lack of motivation, results that do not measure up to one's effort, or unexpected personal events (Artuch, 2014; Hartley, 2011).

Study habits

Habits are acquired behaviors, practiced repeatedly, that predict to a large extent people's future behavior, for better or for worse. Good study habits refer to behaviors involving organization and discipline, essential for spending hours in study and for proper learning. They differ from study strategies, which refer to cognitive behaviors that are applied during study, while study habits pertain to observable study behavior: the study schedule that one sets, follow-through on that schedule, and choice of an appropriate study location.

Product variables: how stress is experienced

As we have discussed, stress responses in humans may affect different levels of behavior, and researchers have found different behavioral indicators and correlates of the stress experience (Burris, et. al., 2009; Verger, Combes, Kovess-Masfety, et al., 2009; Tivolacci et al., 2013).

Cognitive stress

Cognitive stress refers to the *frequency, intensity and duration of interfering or maladjusted thoughts* that appear along with signs of emotional tension. These thoughts may be a cause or a consequence of the other levels of stress. The assessment reveals the presence and extent of such thoughts and whether some adjustment is needed. The usual psychological approaches for exercising control over these thoughts and diminishing them are cognitive stress-reducing techniques (McKay, Davis & Fanning, 1985), with wide ranging interventions according to the characteristics of these thoughts.

Physiological and motor stress

This refers to the *frequency, intensity and duration of physiological activation responses*. This type of behavior is a direct sign of the degree of stress that one feels. The assessment makes it possible to detect and intervene in these stress responses when facing competitive exams or other study situations. There are numerous behavioral treatments for disactivating physiological stress responses that interfere with study or are dangerous to one's health, amply demonstrated by the evidence (Bodenlos, Noonan & Wells, 2013; Davis, McKey & Eshelman, 1985).

Emotional stress

Emotional stress refers to the *frequency, intensity and duration of emotional burnout responses* (negative emotionality) vs. *engagement with the task* (positive emotionality). The assessment reveals the level of one's negative vs. positive emotionality with regard to university studies or a selection process, as well as which aspects can be adjusted. Recent research has revealed the importance of positive emotionality (engagement) during learning and study (Christenson, Reschly & Wylie, 2014; Conley, Travers & Bryant, 2013; Malinauskas, Malinauskiene & Dumciene, 2010), after providing consistent evidence of the harmful effect of burnout (Law, 2007). There has also been evidence of the value of using mindfulness techniques (Caldwell, et al., 2010; de la Fuente, Franco & Mañas, 2010).

The e-Coping with Academic Stress utility

The *e-Coping with Academic Stress* utility (de la Fuente, 2014b), <http://www.estres.investigacion-psicopedagogica.com/english/seccion.php?idseccion=7>, is in keeping with other recent intervention programs, whether in traditional formats (Regehr & Pitts, 2013) or online (Day, McGrath & Wojtowicz, 2013). The tool may be used independently, but it is recommended for use under appropriate guidance from an educational psychologist. The specific characteristics of this online tool have been presented in a previous study (de la Fuente *et al.*, in review).

Self-assessment and improvement of the competency for studying, learning and performing under stress

Although there are a large number of assessment inventories available, the *e-Coping with Academic Stress* tool (de la Fuente, 20014b) has selected inventories whose design and characteristics facilitate self-assessment and improvement of desired behaviors. For this purpose, it is based on the *Competency Model for studying, learning and performing under stress* (de la Fuente, 2014a).

The online tool coherently establishes a low-medium-high level for the student being assessed, on each variable in this model. These levels have been calculated in prior samples of university students or professional exam candidates, and the inventories were also validated. Nonetheless, these levels should be considered *indicative, not absolute*, for the sake of helping the student or candidate to make decisions for improvement. For example, a *low level* on one variable would indicate that the student should work considerably to improve their competence in this variable; a *medium level*, which would be the average for students, should be improved to some extent; a *high level* represents a good level of competence, although certain behavioral aspects might be further improved. An example of this online assessment and intervention system, as it pertains to the resilience variable, can be seen below. See Figures 1, 2 and 3.

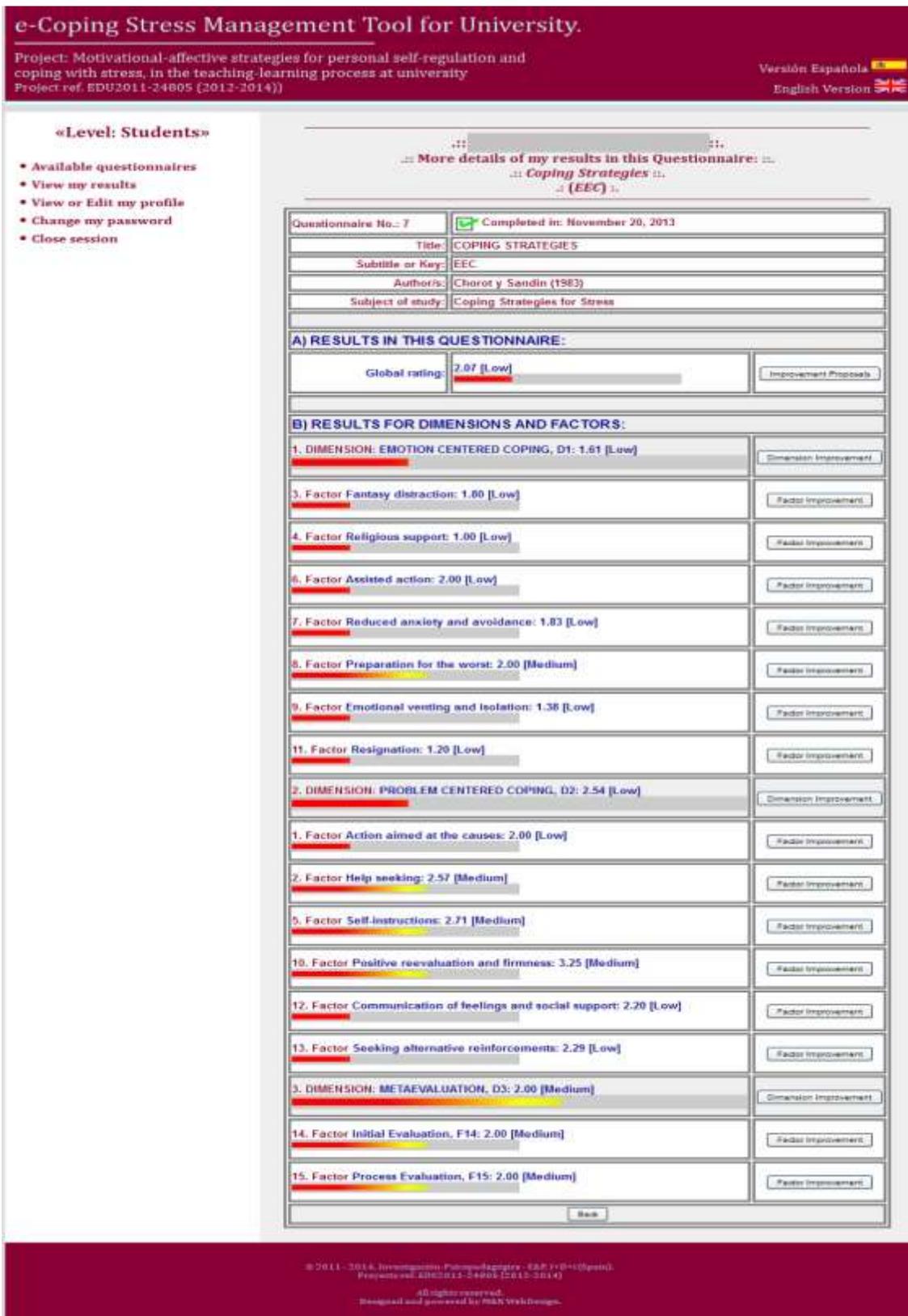


Figure 1. Example of results from a university student on the Resilience questionnaire

e-Coping Stress Management Tool for University.

Project: Motivational-affective strategies for personal self-regulation and coping with stress, in the teaching-learning process at university
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Versión Española

English Version

«Level: Students»

- Available questionnaires
- View my results
- View or Edit my profile
- Change my password
- Close session

... ...

::: Improvement Proposals based on the results: :::

::: Coping Strategies (EEC) :::

Questionnaire No.: 7	<input checked="" type="checkbox"/> Improvement Proposal: 13
Title:	COPING STRATEGIES
Subtitle or Key:	EEC
Author/s:	Chorot y Sandin (1983)
Subject of study:	Coping Strategies for Stress
IMPROVEMENT PROPOSALS FOR:	
Subject: COPING STRATEGIES FOR STRESS: [Low]	
<p>Your score indicates that you should give some thought to this personal characteristic. Be aware that you can make changes, and coping strategies can be worked on. To do so, you should aim to increase certain behaviors. Recent research suggests that this characteristic contributes to academic achievement. Coping strategies refer to behaviors that people use to manage and to cope with stressful situations, in this case, with academic stress.</p> <p>Coping strategies, then, are not a single behavior, but a combination of different groups of behaviors. This psychological construct refers to a person's usual way of dealing with stressful situations. It is made up of two general ways of coping:</p> <p>1) Emotion-focused coping strategies refer to behaviors that are used to manage the negative emotions produced by the stressful situation (anxiety, tension, irritability, etc.). This category includes different types of strategies, such as fantasy distraction, religious support, help for taking action, reducing anxiety and avoidance, being prepared for the worst, emotional venting and isolation, and resigned acceptance. This type of coping strategy is used to manage negative emotions, since it helps a person to minimize them; however, it does not help to solve the actual problem.</p> <p>2) Problem-focused coping strategies are applied to solve the problem that caused the stress, or to minimize it if it cannot be completely resolved. There are different types of behaviors in this category: seeking help and counsel, actions directed at the causes, using self-instructions, making a positive reappraisal and being firm, seeking support from others, or finding alternative support. Problem-focused coping helps to solve the problem, but does not help in managing negative emotions, at least initially.</p> <p>The two types of coping strategies are used according to the situation and the person. In other words, one category may be used more than the other, or they can both be used. We suggest that you analyze each of the behaviors that you use, for your own improvement. In this way you will be able to work on the specific aspects where you are weakest.</p>	
<input type="button" value="Back"/>	

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Figure 2. Example of recommendations for improved Resilience.

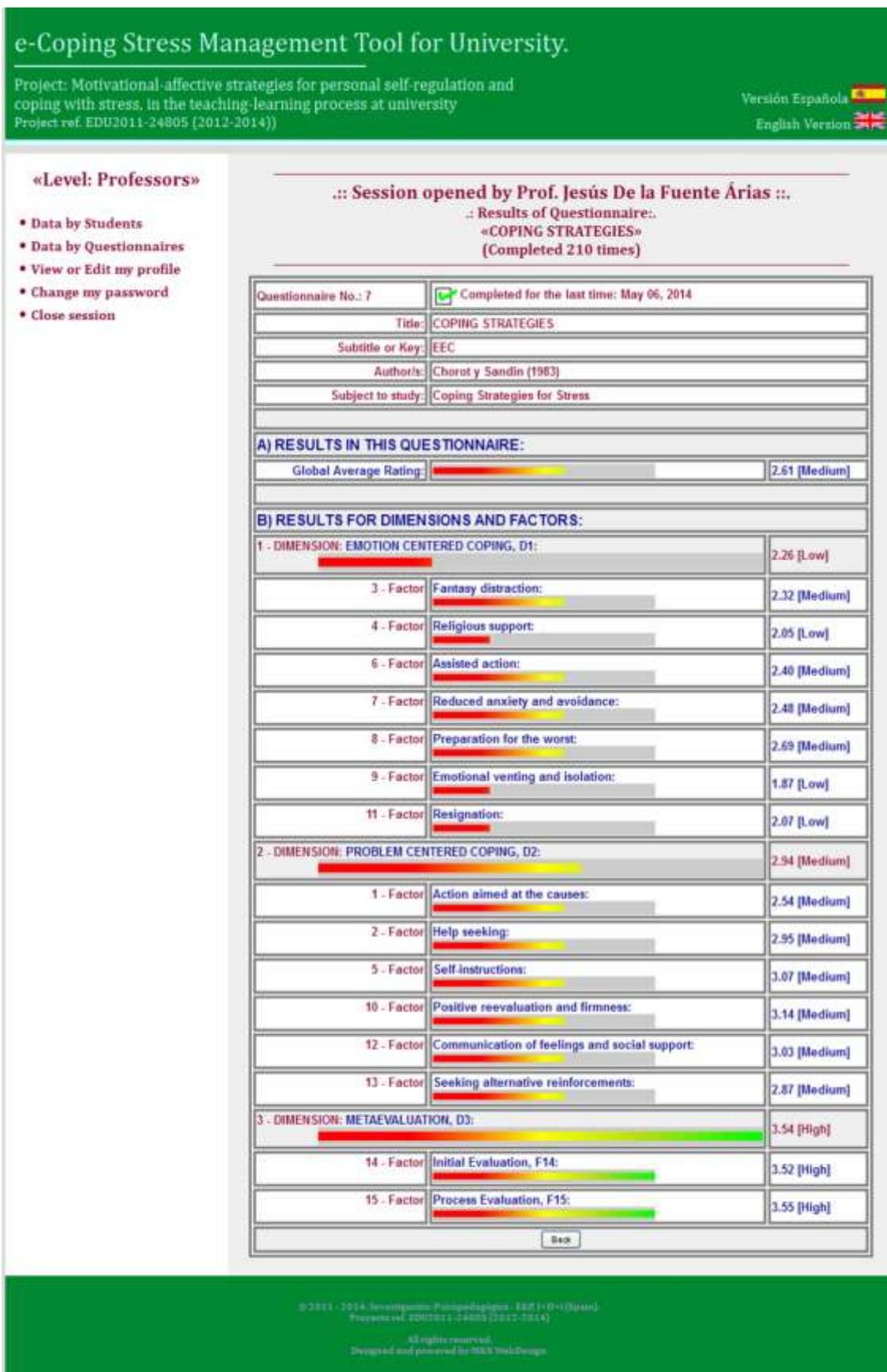


Figure 3. Example of group information for the teacher.

Conclusion

A person's *emotional experiences* during learning and study, especially when under pressure and in potentially stressful situations, are equally important as the cognitive processes that are used. Traditionally, psychological assessment of study and learning has focused on analyzing cognitive skills and metacognitive strategies in order to help students. This idea is coherent in low-stress learning contexts. However, in *university teaching-learning contexts*, where conditions often trigger stress responses (highly demanding tasks, high performance requirements, sustained effort and uncertainty about meeting one's objectives), one must not only examine cognitive behaviors, but also emotional behaviors.

In the specific case of university students and professional exam candidates, it is helpful to work using a *competency model for studying, learning and performing under stress* (de la Fuente, 1994, 2014), which integrates the conceptual, procedural and attitudinal levels of the subcompetencies. The User's Guide (de la Fuente, 2014a) and the technological innovation named *e-Coping with Academic Stress* (de la Fuente, 2014b) contribute toward this end. This line of research and intervention with university students is highly relevant in our day, as is reflected in other utilities developed by other research teams in our field (Buckingham & Dearin, 2012; Small & Deakin, 2008; Williamson et al., 2011).

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