Emotions as a Lasting Leadership Learning in High-Potential Female Students

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Abstract: Women's underrepresentation in leadership positions is a well-known problem. The lack of self-confidence and training in leadership is highlighted in the literature as the two main barriers to women seeking managerial positions. Educational organizations have to provide leadership skills development and gain-oriented personal resources through women's leadership programs. Research demonstrates that emotions improve the learning process in educational activities. Nevertheless, to our knowledge, there has been little feminist research focused on how emotions modulate the learning process in educational leadership programs and how they promote students' personal change, which needs to last in time. To fill this gap, the objective of this study is to present an evaluation of the impact of emotions on a leadership program for female undergraduates, using a multi-source program assessment based on triangulation. The study analyzes the students' emotions during and after the university Women's Leadership Program (WLP), exploring their learning processes in the acquisition of formal leadership skills, personal resources, and personal inner transformation as a fusion of their emotions. The Achievement Emotions Questionnaire (AEQ) scale was applied including 9 items (α= 0.72). Bivariate analyses were conducted using an analysis of variance (ANOVA) and exploratory factor analysis. Additionally, focus groups were carried out at the end of the course, two weeks after, to allow time for reflection by the participants. The analysis was carried out as a conventional content analysis (inductive). The results of an online survey and focus groups with the students and the perceptions of the lecturers suggest that emotions contributed to fostering the learning of leadership skills and triggering deep inner personal development. The findings indicate that i) positive and negative valence contributes to the appraisal process, helping them to be self-reflective about their personal leadership qualities, ii) reinforcing their own shortcomings and improving self-skills such as confidence, building leadership fluidly. In addition, the emotional state of the trainers who accompanied the students during the sessions of the program was highly significant, becoming emotional triggers. Furthermore, trainers also become role models. Practical implications for the future are provided for the educational institutions and business managers to improve women leadership programs.

Keywords: emotions, leadership skills, self-confidence, women leader, female barriers

1. Introduction

According to the (World Economic Forum, 2018) women occupy just 34% of managerial positions, 24% of parliamentarians and 18% of ministers are women; this is the so-called "Glass Ceiling". A Catalyst 2020 census of Fortune 500 firms in the USA noticed that women are merely 5.8% of CEO positions in these companies (International Labour Organization, 2020).

The literature has tried to pinpoint the barriers to women's access to leadership positions and highlights issues such as discriminatory stereotypes, insufficient female critical mass in managerial positions, institutional and structural difficulties, work-life balance and the idea that authentic leadership is associated with masculine attributes (Hopkins and O'Neil, 2015; Machín-Rincón *et al.*, 2020). Human capital theories have explained these limits as a lack of self-confidence, stereotypes and lack of specific training (Baxter and Wright, 2000; Hopkins and O'Neil, 2015; Matheson and Lyle, 2017).

Student leadership is becoming an increasingly stated priority for higher education institutions (Skalicky *et al.*, 2020). Nevertheless, little attention has been paid to female leadership development. Early intervention supporting female leadership is extremely important to foster women leaders considering the enormous gap in Women representation in management positions. Women empowerment, through knowing one's self, building a mental picture, being well communicated among others, and taking effective action to improve one's personal leadership potential, must be underpinned on leadership educational programs (Hendricks *et al.*, 2010). However, enhancing and enriching deep learning among students is particularly difficult in terms of personal

change (Hendricks *et al.*, 2010). Research on the influence of emotions in the learning process has shown that they are relevant to promoting a student's personal change leading to an approach that lasts in time (Jacob *et al.*, 2019).

The relationship between emotions and education is a broad topic of research studied at the scientific level. Some of the most developed theories between emotions and education are those originating in appraisal theories, specifically those of appraisal of emotions. According to these theories, "emotions or emotional components are caused and differentiated by an appraisal of the stimulus such as mis/matching goals and expectations, as easy/difficult to control, and as caused by others, themselves or impersonal circumstances" (Moors, 2020).

Within this broad line of research arises the theory of Control Value Theory of Achievement Emotions (CVT) (Pekrun *et al.*, 2007). This complex theory responds to the emotions that the student experiences in learning and which, in turn, are subject to the academic institution and the classroom environment. It postulates two types of emotions in students: 1) while performing an academic activity, i.e., "achievement activity", e.g., boredom or enjoyment during practice; 2) the emotions experienced after reaching an academic result (goal), i.e., "achievement outcomes", e.g., relief or frustration due to the result of an exam. This set of emotions experienced by the student is called "achievement emotions".

Emotions related to activities or outcomes are mediated by students' internal processes (appraisal). One of them leads to the control of emotions, specifically "subjective control", which is the process of the control of emotions originated by students' expectations and "subjective value" integrated by; 1) the individual appreciation of their activities, i.e. "intrinsic values" and by the perception of usefulness or benefit of an activity to produce an outcome, i.e. "extrinsic values". At the same time, the student's emotions are related to the educational environment, e.g., classroom instruction, value induction (of the subject or task), goal induction, feedback, and autonomy support, among other factors. Consequently, the effects of the achievements (achievement emotions) reached by the students influence learning, specifically in the use of cognitive resources, student motivation, the use of learning strategies (trainers' methodologies, classroom interaction) and self-regulation of the students' emotions (control). Later works expand the CVT theory in higher education (Pekrun *et al.*, 2009) and create an instrument for the measurement of "achievement emotions" experienced by students in academic settings, which has been chosen in this research for the measurement of emotions (Pekrun *et al.*, 2011).

Although research describes emotions through different variables, dimensions and processes, all of them share the concept that emotions can be classified according to their "valence", that is, positive or negative (Ellsworth and Scherer, 2000; Jacobs and Gross, 2014; Pekrun *et al.*, 2009). The positive emotions (pleasant) usually include enjoyment, joy, hope, pride, relaxation, relief, among others, while the negative (unpleasant) include anger, anxiety, shame, hopelessness, boredom, frustration, disappointment, and anger. Research in education shows that the value of positive and negative emotions leading to academic achievement (or not) in students (Harley *et al.*, 2019; Pekrun *et al.*, 2009) are also part of the process of the regulation of emotions (Finch *et al.*, 2015).

Negative emotions, such as annoyance and frustration are related to poor student performance in higher education (Wass *et al.*, 2020). They are also detrimental to the realization of classes and activities in the classroom (Finch *et al.*, 2015). However, other works show that anxiety and tension associated with learning can stimulate states of reflection, but also of "learning inaction" (Gilmore and Anderson, 2016). In leadership training programs, stress is associated with increased critical thinking, which leads to a realization of their current skills and how to develop future ones (Waller *et al.*, 2017); in addition, emotions influence the perception and insight of their own training as a leader (Janson, 2008). Positive emotions are often related to good student performance. In some cases, joy, satisfaction and pleasure predict academic performance, academic engagement and self-efficacy (Oriol-Granado *et al.*, 2017). Motivation as an inner state (Titrek *et al.*, 2018) also positively influences student engagement with their studies and interest in learning (Jacobs and Gross, 2014). Even when there are positive reciprocal links between trainers' and students' enjoyment, i.e. a good classroom climate, which benefits the development of training activities (Frenzel *et al.*, 2018). In leadership training, positive emotions foster more autonomy and participation in the academic environment, as well as being positively associated with learning goals and to a lesser extent with work avoidance (Jacob *et al.*, 2019). Positive emotion is associated with higher levels of learning in leadership training (Villegas and Raffaelli, 2018).

Using a feminist Open Innovation (OI) approach, King Juan Carlos University has developed in collaboration with the Women's CEO Association, a Women's Leadership Program (WLP), three one-year courses carried out between 2017 and 2020 with the participation of 75 young female university students with high potential (Laguna-Sánchez *et al.*, 2021). A specific training to improve skills and tools in leadership for female university students and to enhance self-esteem and self-perceptions to empower females about their own assessment. The Program arises from the concern shared between both institutions, about the growing setback that was noticed among young women in matters of gender equality.

In 2019, the results of the program were analyzed based on the achievement of the objectives set in its design in order to propose the appropriate improvements. The findings ratified the effectiveness of the specific education in breaking down two barriers for women to attain a managerial position: lack of training and self-confidence (Segovia-Pérez *et al.*, 2019), but also we detected some paralyzing stress in the participants. This suggested we should pay attention to other indicators in the analysis and review the results. In this sense, it was considered necessary to evaluate the structure, methodology, the mentoring model and even their emotions. Then in 2020, following 50 student assessments some changes were made to the structure of the program to improve students' performance. We proposed an advancement in our research analyzing to what extent emotions contribute to improving the achievements of this program.

2. Methodology

A multi-source program estimation design was used to analyze the effect of emotions on the development of student skills during the WLP. Therefore, the leadership program evaluation included qualitative and quantitative techniques, facilitating the comparability of data by distinct methods allowing cross-validation if the results were similar in both. In addition, two informants were included: the students and the lecturers.

Quantitative Survey

At the end of each module, a quantitative online survey was used for the assessment of the WLP itself, the training received, and the emotions felt. The survey sample was 25 students.

Instrument: The performance assessment of the WLP itself and the training received were assessed using a scale developed in a previous study (Segovia-Pérez *et al.*, 2019) ($\alpha = 0.87$) and to evaluate the students' emotions an reviewed and adapted version of the Achievement Emotions Questionnaire (AEQ) (Pekrun *et al.*, 2011) were used ($\alpha = 0.72$).

Analysis

The quantitative data were analyzed using SPSS21 by univariate analyses, bivariate analyses with analysis of variance (ANOVA) and an exploratory factor analysis to shed light on students' emotional conceptualization.

Qualitative Study

For the assessment of how emotions influence the development of abilities and self-confidence, a qualitative methodology was conducted at the end of the program. Two focus groups (16 students participated) were held with the students to obtain a deep comprehension of their emotions, how they perceived themselves, individual changes in their behavior and their self-consciousness of personal change. Furthermore, as part of the cross-validation by the multi-source program assessment, we conducted a series of semi-structured interviews with seven lectures of the program.

Analysis

The analysis was carried out as a conventional content analysis (inductive analysis), to capture relevant information (Hsieh and Shannon, 2005).

3. Results

3.1 Assessment of the WLP program and the training received

Table 1 shows that the general evaluation of the course was excellent (M=8.81; ST=1.62). Analyzing the results of the evaluation of the students per module, in general, all of them present very high evaluations and none of them below 7 (the measurement scale is from 1 to 10). However, the module that stands out from the rest is the Public Speaking module, followed by Social Media and Networking and Negotiating Efficiently. It is noteworthy that in all three cases, the ratings present minimum values of 6, 7 and 6 respectively, which indicates their position towards extremely high and positive values.

Table 1: Descriptive results of the subject evaluation (Scale from 1=Very Bad; 10=Very Good) N=180

	N	*Media*	*Dev. Deviation*	*Minimum*	*Maximum*
Introduction/Business Context	27	7.93	2.772	1	10
Personal Branding	25	8.88	1.301	5	10
Social Media and Networking	**24**	**9.08**	**1.018**	**7**	**10**
Communicating efficiently	23	8.96	1.186	6	10
Public Speaking	**22**	**9.32**	**1.129**	**6**	**10**
Negotiating Efficiently	**20**	**9.05**	**1.276**	**6**	**10**
Covid-19					
Leadership styles and techniques (online)	22	8.55	1.654	5	10
Design for Change (online)	17	8.88	1.409	6	10
Total	180	8.81	1.628	1	10

3.2 Assessment of student's emotions

Positive emotions predominated during and at the end of the program, as Table 2 reports. High scores have been given to motivation (Motivation: 91% of the students), greater hope in their own abilities (Hope b): 89% of the students) and the increase in self-confidence (Hope a): 85%). Students highlighted on the focus groups that they were motivated throughout the program. They expressed that "This Program goes beyond academia" (Focus Group 2), as they felt that it had changed their lives and own perception, facilitating a way of learning to evaluate their professional and personal strengths and weaknesses. As they got to know themselves, they were increasing their self-confidence significatively and self-hope about their leadership strengths. This idea was reinforced by three trainers when they explained that the students "gain confidence, security in decision making, strengthening their personality" referring to the program as a whole.

Table 2: Descriptive results of the positive emotions felt by the students. Scale de 1 a 10 (1=No emotions; 10=A lot of emotions) N=180

Positive Emotions	*Media*	*ST*	*Yes*	*No*
Motivation	**8.59**	2.217	91%	3% (n=6)
Hope b)	**8.37**	1.899	89%	3% (n=5)
Hope a)	**8.28**	1.928	85%	8% (n=3)
Enjoyment a)	8.19	2.012	86%	7% (n=11)
Pride	8.18	2.111	87%	6% (n=11)
Enjoyment b)	8	2.207	83%	8% (n=15)
Relief a),	7.94	2.164	83%	7% (n=14)
No, they have not felt it (Values below than 4); YES, they have felt it (values above 6).				
Motivation, I am more motivated than when I started the module; Pride, I am proud of how well I mastered the module; Hope a), I feel more self-confident on finishing the module; Hope b), I have great hope that my abilities will be sufficient for the course; Enjoyment a), I felt excited during the module; Relief a), I feel very relieved during the module; Enjoyment b), for me the module is a challenge that I enjoyed.				

As for the negative emotions (see Table 3), except in the case of "Relieved b): relieved to finish the module", which they felt 37% of the time, the rest of the negative emotions were practically absent throughout their learning and at the end of it. All the averages are close to the extreme value 1, which corresponds to NOT having felt that emotion. In fact, students reported that they felt tension but "I became calmer when I saw that I was capable".

Table 3: Descriptive results of the negative emotions felt by the students. Scale de 1 a 10 (1=No emotions; 10=A lot of emotions) N=180

Negative Emotions	Mean	ST	No	Yes
Relief b)	4.34	3.338	60%	37% (n=67)
Anxiety	2.05	1.829	91%	7% (n=13)
Shame	1.86	1.779	93%	6% (n=11)
Disappointment	1.46	1.207	96%	2% (n=4)
Hopelessness	1.39	1.305	98%	2% (n=4)
Anger	1.32	0.837	99%	1% (n=2)
No, they have not felt it (Values below than 4); YES, they have felt it (values above 6).				
Disappointment, I felt disappointed during the module; Hopelessness, I have lost all hope that I have the skills to finish the course well; Anger, I am fairly annoyed during the module; Anxiety, I get tense and nervous during the module; Shame, I felt ashamed during the module; Relief b), I felt very relieved when I finished the module.				

In order to determine the students' conceptualization of their emotions, an exploratory factorial analysis of 13 questions about their emotions during the course was carried out. Contrary to what one might think, emotions were not grouped into two large blocks, bringing together positivity or negativity. The results (see Table 4) revealed a three-factor solution, which explained 74% of the variance after 4 iterations (KMO=.839, Bartlett's sphericity test =2033,006 (gl= 78; σ= 0.0000)). Questions loading less than 0.50 on the factors were discarded. Sum-scores based on factors 1, and 2, obtained Cronbach's alpha coefficients ranging from 0.97 to 0.68, respectively. However, sum-scores based on factor 3 obtained low Cronbach's alpha coefficients, ranging from 0.44.

Table 4: Results of the exploratory factor analysis of emotions (n=180)

	Factor Loadings	Eigenvalue	Variance explained %	Cumulative %
Factor 1. Positive Emotions (Cronbach's α = 0.97)		5.89	45.31	45.31
Motivation	.96			
Pride	.94			
Hope a)	.93			
Hope b)	.93			
Enjoyment a)	.90			
Relief a)	.88			
Enjoyment b)	.86			
Factor 2. Disappointment-hopelessness (Cronbach's α = .68)		2.43	14.56	59.87
Disappointment	.88			
Hopelessness	.75			
Anger	.68			
Factor 3. Negative Emotions (Cronbach's α = .44)		1.30	14.25	74.13
Anxiety	.76			
Shame	.73			
Relief b)	.54			
Method of extraction: Principal component analysis. Method of rotation: Varimax with Kaiser. a. Converging at 4 rotations				

The first factor, accounting for 45% of the total variance, was named Positive Emotions. Themes loading on this factor were related to all the positive, inspiring, driving, self-confidence emotions that the program generated. It is also the most relevant factor since it groups the highest percentage of the accumulated variance. The second factor, named Disappointment-hopelessness, accounted for 14.6 % of the total variance and consisted of questions related to a negative balance in terms of disappointment, displeasure or lack of hope in their own abilities. Therefore, these emotions imply self-reflection on their current situation and how the course made the students reflect on what changes they needed to make personally, what their strengths and weaknesses were, both at a formative level of acquisition of skills and knowledge, as well as personal. This factor, despite bringing together negative emotions, invited action and change, through self-reflection. The third factor, named Negative Emotions, accounted for 14.25% of the total variance and included the most blocking negative emotions that

did not invite action, but rather seemed to agglutinate a more paralyzing emotional state, such as tension, anxiety, shame and relief in finishing the module-course.

One of the main concerns was to know if the emotions felt contributed to the evaluation of the program, in terms of skills, capacities and the development of personal skills. For this reason, an ANOVA was performed (see Table 5). It was found that there was a statistically significant relationship between the type of positive emotion felt and the best or worst evaluation with respect to each of the modules. Previously, we saw that the Public Speaking module was the best rated of all the modules taught, along with Negotiating Efficiently and Communicating efficiently. Moreover, it was precisely these three modules that produced the greatest concentration of positive emotions, highlighting without a doubt the first one. The Public Speaking module was a turning point that generated an immense motivation, and more belief in their own abilities, which despite being a challenge, they enjoyed, and which gave them much more confidence in themselves. These emotions were similar with Communicating efficiently, as the two modules were intertwined, although this was reflected much more markedly in Public Speaking. The Negotiating Efficiently module, which was taught after the previous one, reinforced belief in their abilities, which they enjoyed, although it was a challenging module.

Table 5: Results of ANOVA analysis of significance. Positive emotions by subject

Emotion	Module	N	Average	ST	Minimum	Maximum	F
Enjoyment a)	**Introduction/Business Context**	27	**8.56**	2.636	1	10	27.375***
	Negotiating Efficiently	20	**8.55**	1.82	4	10	2.559
	Public Speaking	22	**8.5**	2.11	4	10	8.583**
Hope b)	**Public Speaking**	22	**8.73**	1.638	5	10	18.182***
	Negotiating Efficiently	20	**8.6**	1.536	5	10	4.593**
Enjoyment b)	**Public Speaking**	22	**8.73**	1.609	5	10	17.386***
	Negotiating Efficiently	20	**8.65**	1.755	5	10	7.965***
Relief b)	**Communicating efficiently**	23	**8.35**	2.102	3	10	3.868**
	Personal Branding	25	**8.24**	1.832	4	10	9.169***
Pride	**Public Speaking**	22	**8.55**	1.993	3	10	2.900
	Communicating efficiently	23	**8.43**	1.903	4	10	4.858**
Motivation	**Public Speaking**	22	**9.05**	1.463	6	10	28.369***
	Communicating efficiently	23	**8.91**	1.411	5	10	10.545***
Hope a)	Public Speaking	22	**8.64**	2.321	3	10	5.992**
	Communicating efficiently	23	**8.61**	2.083	4	10	6.174**
*** p<0.000 ** p<0.001							

4. Conclusion and practical implications

This research contributes to understanding how emotions modulate the learning process in educational leadership programs, such as the WLP, by building on previous research. The results suggest that activation and deactivation of student emotions (Pekrun *et al.*, 2007) occurs in response to the use of learning strategies in the classroom. Specifically, these strategies are a combination of practical sessions, considered more relevant than theoretical sessions, the design of the program' structure, a motivated teaching staff aligned with the objectives of the program, and the configuration of the group of students, with diverse backgrounds but with high leadership potential. A feminist OI approach was applied in all this WLP.

The results expand on previous research due to many leadership course investigations that evaluated pre/post activity courses primarily through satisfaction (Reyes *et al.*, 2019). In our case, measurement was not limited to satisfaction, but emotions were evaluated during and after the sessions. This design facilitated the identification of the students' internal processes (appraisal). Student learning and appraisal was a non-linear but cumulative process with individual changes that followed a common trend among all students. A turning point occurred during the practical communication and negotiation session, where they felt more excited and motivated, but also more aware of themselves.

This research suggests that positive emotions helped to achieve goals of: 1) improving staff resources as well as confidence, 2) influencing the process of reflection, their skills and their future, and 3) improving networking.

The emotional state of the trainers accompanied the students during the sessions of the program was highly significant. Their positive emotions also engaged the students, becoming emotional triggers, as seen in previous studies (Frenzel *et al.*, 2018; Kordts-Freudinger, 2017). Furthermore, the fact that the trainers not only contributed their knowledge, but also become role models, are issues to be considered in the design of these programs.

As a practical implication, the results show that the demand for soft skills training and preparation appeared repeatedly in the Student Focus Group. Depending on the different student profiles, it can be seen that this demand is particularly urgent. These types of programs especially dedicated to women are essential to generate self-confidence, self-awareness, networking and support networks for the future, overcoming the barrier to reach management positions (Terjesen and Singh, 2008). WLP will be the key to women's success in breaking the glass ceiling. University might incorporate emotions in the design and evaluation of the WLP in order to increase their success and effectiveness.

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