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The Social Intrapreneurship, Innovating in the Competences Delivered to Students: Case Engineering Students of the University of La Serena, Chile

Segundo Ricardo Cabana Villca

Abstract

It is important to connect the concepts of innovation and development with the incoming entrance of sociological phenomena, in such a way that an integrating education is allowed, where the role of university education becomes a key element, where innovation in the competences delivered to the undergraduate students it becomes a challenge, which is approached from the perspective provided by the strategies that allow students to wake up the social intrapreneurship.

Keywords: student, teaching and learning, satisfaction, loyalty, support network

1. Introduction

At present, no one argues in the academic environment that we are in a moment of change and profound transformation in the role and function that education has to play in today's society, more specifically, higher education. In the last decade from different academic and also institutional areas, through the adaptation to the European Education Space, it has been declared that the role of the University and of the teachers, must make a radical change to adapt to the knowledge society [1]. Today is a challenge to overcome a teaching based on content and mastery, respond to needs, take advantage of the potential of new generations of students, and make possible a University that is connected to the social and professional environment. Every time it is imposed more in our societies not to separate the academic, labor aspects of the vital ones. In short, we need another university with a different training project for a complex society. It seems that the Bologna process forces in that direction [2], to create a university project focused on student learning in which emotion, connection, interrelation, and collaboration move, if we want it to be deep learning [3]. Undoubtedly, there are few steps that are being taken with the purpose of moving toward that horizon of learning. In the University of the Basque Country, where the experience we are going to present has been developed, we have opted for an educational model that we call IKD (Ikaskuntza kooperatibo and Dinamikoa), terms that in Basque mean Cooperative and Dynamic Learning. It is a collective attempt to develop an innovative model focused on students and their learning [4].

And in relation to it, all efforts are made to rethink university teaching betting on the use of methodologies that encourage autonomy, critical thinking, and teamwork [5].

Today the university is seen as an organization that has among its activities the generation, dissemination, and transfer of knowledge, becoming a fundamental actor of the new economy, society, and culture, which understand knowledge as a strategic factor that generates competitive advantages for allow the differentiation of organizations and their sustainability. Aware of this, universities have begun to give greater importance to one of its substantive functions: university extension or social projection, through which they hope to bring knowledge to the environment to contribute to local, regional, national, and international development. In this scenario, university students have a fundamental role in acquiring such knowledge and begin to develop their social intrapreneurial behavior, that is, thanks to their activities generate benefits at the university level and positive impact on society.

In Chile, universities are currently competing for students, resources (human and financial), and reputation, the most important being students. This increase in competition between universities is shared in other contexts. Thus, in Europe, and within the framework of the European Higher Education Area, there is also an increase in the level of competition of universities in various aspects [6]. These important changes, together with an increase in society's expectations regarding the work of state universities and the demands of users of these services, have caused great problems and a concern to improve the quality of teaching, research, and all the services that a university provides. This interest has led to a greater emphasis on the analysis of two aspects that are closely linked: quality and satisfaction [6]. Therefore, the educational process is a crucial activity in every university and can be characterized in a simple way as an interactive and intentional process; interactive, not only by the existence of human relationships among its members, but also by the interaction that occurs with a multiplicity of factors associated with this process [7].

On the other hand, when there is a correct relationship between the University and its students, and they have the conviction to formulate and implement initiatives that arise from a need of the same university, a project developed by students with intrapreneurial behaviors will be carried out. Generating activities from within the university, which are beneficial not only for your home study, but also can generate favorable impacts for society, and train an intrapreneurial future corporate character and/or entrepreneur who has his own ambitions, which generate impact in companies, the community and the world [8].

In this chapter, the impact of the variables satisfaction, identification, and fidelity is analyzed in the social intrapreneurial behavior of the students of the Faculty of Engineering of the University of La Serena. From this systemic analysis, the relevance of forming a skills profile consistent with the previous variables in a public university in Chile can be evidenced.

With regard to social innovation and social intrapreneurship, research shows the relationship between both variables. This is consistent with the statement by Esen and Sekerdil [9].

2. Analysis of the university environment

By uniting two concepts as universal as innovation and social, it is not surprising that the definitions of Social Innovation have taken such different shades over the last 10 years. While there is a general consensus in using the term to describe a novel project that has a social purpose; its focus, scale, and orientation can vary considerably, depending on the context in which it develops. In 2013, the European Commission published a Guide to Social Innovation in which it defined the concept

as “innovations that are social, both in their end and in their process,” which “are not only good for society, but also boost the capacity of individuals to act.” Interestingly, although said Guide clarifies that there is still no real consensus as to the meaning of this term, it considers it as an essential strategy for competitiveness [10].

The satisfaction of the teaching-learning process is the favorable appreciation that students make of the results and experiences associated with their education, based on the attention to their own needs and the achievement of their expectations [11]. There are several researches that studied the positive effects of the confidence and support of teachers. Cokley et al. [12] found that the vast majority of students considered important the relationship with their teachers for their development. Willie [13] points out that through interpersonal relationships of respect and trust, learning environments can be transformed into true learning communities. McNeely and Falci [14] found that adolescents who perceive support from their teachers are more committed to their educational institution and are less vulnerable to engaging in risky behavior. Klem and Connell [15] are recognizing that the link with educational institutions is important for learning and that students through the years of study live a progressive disengagement with these, in their research found that the support of teachers facilitated maintain ties with their schools. In the same line, Yáñez et al. [16] found that trust in teachers was a significant determinant in the attitude of students to believe in the value of the evaluation of teacher performance and in the positive disposition to answer it.

The student sets his objectives according to the institutional image projected by his house of study, which is the importance of the university in the leverage of tools that encourage innovation in the learning stage and link with the environment. This is how various investigations confirm that the way in which the organization is perceived (the evaluation made of it, its image) will influence the identification. Likewise, several researches have explored the influence on the identification of different characteristics of the identity of the organization that favor the satisfaction of said needs for self-definition. In this line, it has been demonstrated that the prestige or reputation of the organization improves the attractiveness of identity and identification. In this way, the brand image of the university will be based on solid and relevant bases for its graduates, directly influencing their levels of identification with the institution, being able to defend and feel part of it, as well as at the levels of loyalty, which will increase the intention to choose it again for postgraduate studies, keep in touch with it, recommend it or speak well of it in their environment [17].

They also contribute to the formation of the image, and in a decisive way, the information coming from the environment of the organization. This last statement must be highlighted, since not only the messages sent by the organization influence or affect the image formation, but also all those that may come from other sources and that contain information about the organization or its activities, as well as those that refer to their scope of work or action (sector to which they belong), which may indirectly affect their image [18].

The mechanisms linked to communication allow to maintain a motivating relationship between the students and the house of higher education. Corporate communication serves to remind members of their current membership and generate a positive consideration of their organizational identity. A useful communication tool is the corporate media, where the values, norms, and institutional seal are positioned in the educational community to strengthen their cohesion with the University. The frequency and quality of the university's communication with the student, also increases their loyalty with the House of Higher Studies, enhancing their identification and thus generating a positive relationship that will be the basis for social innovations that benefit the University and the society. In addition, the relational and emotional link between the University and the students is enriched,

thus increasing the benefits for all involved, reinforcing student loyalty, and activating extraordinary behaviors to support the organization [19].

From the approach of social identity applied to work, it has been insisted that social identity is the basis for receiving social support within a group and an organization. In fact, there are three different ways in the identification can affect social support: by the availability of one member of the group to provide social support to another, due to the probability that the person in need, what is accepted and finally, depends on the interpretation of the support offer from the recipient. As these studies have shown, social support is contingent on perceptions of a shared social identity, where a person is more likely to provide social support to a member of their own group, social support is more likely to be accepted when who provides it is perceived as a member of a shared social category and it is more likely that the intentions with which support is offered are better interpreted when both people belong to the same social group [20]. In this way, student satisfaction in their insertion in the university, helps to reaffirm their institutional commitment [21].

A study conducted by Schlesinger et al. [22] confirms the influence of identification on fidelity and commitment. Given the current characteristics of the university environment, such as the reduction in the number of students entering and the increase in those who drop out of studies, among others, they justify the importance of analyzing fidelity in this area, which is necessary for the survival of higher education institutions [23]. After graduation, a student identified with the institution can attract new students through positive word-of-mouth communication, improve the image and reputation of the university in their environment or attract entities or organizations that donate or fund research projects. In this way, we can see how the consequences of this identification generate fidelity, which is not limited to the time the student remains in the institution, but continue throughout his life [24]. Strategies focused on improving student satisfaction and fidelity should be converted into strategic decisions at CES, installing a paradigm of priority educational management in Chile, where the quality of education is simultaneously a short-term goal as well as a strategic objective, which should impact the decisions of educational managers [25].

In higher education, the fidelity of the user would be expressed both in their willingness to return to it to continue training as in the possibility of recommending the university to other potential users belonging to their environment (work, family, neighborhood), thus generating attitudes positive toward the institution [26]. For the university, in its educational role, not only must the student be trained to face the dynamic labor market that requires quick, innovative, and specialized answers, but it must also contribute to their citizenship formation, during this process of student training, the university should instill a sense of gratitude for the institution and of retribution for its contribution in its formative development, generating an emotional bond of fidelity [27].

The social intrapreneurship is about the possibility that employees take their value in the workplace and dare to do something with it, its materiality will result in behavior based on intrinsic motivation and resulting in high levels of commitment. The theory suggests that when people are engaged, it leads to greater creativity and greater commitment to make their initiatives a success. That is what is needed to make companies more sustainable and create a more positive impact step by step in the world [28].

The social intrapreneurship not only locates the best minds to find ideas and solutions, but also involves these people in the innovation process, letting them turn their ideas into projects and see how these projects lead to new businesses. Therefore, social innovation is based on an effective conceptual framework of university doing from the social (moral) responsibility that falls within an integrated organization, in a world of vertiginous change and increasing complexity. It is a way

of understanding the social meaning of university activity for the personal, civic-social, political and cultural development of people, communities and peoples. It is linked to the university function itself, rooted in its mission and vision [29].

In this research, the social intra-entrepreneurship in universities is deepened, together with the risk that it carries. The willingness to risk can be defined as the preference for situations that can yield beneficial rewards in case of success, but also severe consequences if the individual fails. In this way, the intrapreneur ventures into areas unknown to the organization, without knowing what the results will be. It refers to the willingness of the subject to commit to sources of opportunity that are likely to fail [19]. Personal factors are an important part when making an entrepreneurial profile, since they are talking directly to the individual. Researchers have tried to highlight the psychological aspects and personal characteristics of the entrepreneur. The University of La Salle seeks students to materialize their ideas through the design and implementation of diverse strategies that make it easier for them to present to the world life projects that not only can represent profits in monetary terms, but also provide a life experience and growth at the personal and professional levels, since these influence, in turn, the development and growth of our country. For this reason, it has contributed to the formation of its students, fostering entrepreneurial spirit and the ability to be creative, innovative, leading, and perseverant [30].

3. Proposal for a model capable of explaining the generation of social intrapreneurship in universities

3.1 Methodology

Based on the analysis of the university environment, a model is proposed, whose objective is to describe the relationship between variables that produce social intrapreneurship in universities.

To validate the proposed model, an empirical study is presented, where the method used to collect the information is of a quantitative nature based on a structured survey of 57 Likert-type questions, scale of 1 (minimum value associated with response) to 5 (maximum value associated with response), the type of sampling is probabilistic with a confidence level of 95%. The survey covered the following items, satisfaction, among which is differentiated according to its origin (Process social support, teaching-learning process, internal support process, and institutional image), identification of students with their careers, student loyalty to their university, innovation, willingness to take risks, and social intrapreneurial behavior in IES, which was evaluated based on the following two questions: Do I execute social actions or social intra-undertakings that manage to generate social value in the University/career or internal activities? Do I execute social actions or social intra-undertakings that manage to generate social value in society? The fieldwork was done personally and online, between December 2015 and May 2016, data that presented measurement errors and inconsistencies, represented with a standard deviation of 0. The valid cases amounted to 401, being all students of the Faculty of Engineering of the University of La Serena-Chile. **Figure 1** shows the outline of the proposed model.

3.2 Individual reliability of the indicators

In order to evaluate the viability of the factorial analysis, the Kaiser-Meyer-Olkin index (KMO) was quantified, which for each of the factors was greater than

0.5 and the Bartlett's sphericity test (PEB) which must be significant ($p < 0.05$) [31]. For this, the SmartPLS software version 3.2.6 was used, using the Bootstrap extraction method. In this regard, to accept an indicator as a component of a construct, we considered factor loads with values higher than 0.4 suggested by Hair [32], however, to obtain more rigor in the data, factor loads with values lower than 0.5. **Table 1** shows that the indicators FEU021, SPEA043, SPEA044, SPEA048, SPEA049, SIGI051, SPASP071, SPASP072, IS081, IS082, and DAR094 were eliminated because they did not comply with the minimum established.

3.3 Coefficient of determination and predictive validity of the model

The coefficient of determination of the endogenous or dependent variables (R^2) must be equal to or greater than 0.1 as the minimum value [33]. On the other hand, what determines the prediction quality of the structural model is the Stone-Geisser Test (Q^2). This test is used as a criterion to measure the predictive relevance of the dependent constructs and is calculated using the Blindfolding technique. In the case that $Q^2 > 0$, it indicates that the model has predictive relevance. In **Table 2**, it can be seen how the R^2 value for Social Intrapreneur Conduct is 0.465 which means that 46.5% of the variance of this construct is explained satisfactorily. From this empirical criterion all constructs have an acceptable quality of prediction power and in all of them the values of Q^2 are positive, which certifies the predictive relevance of the model.

3.4 Goodness of adjustment and hypothesis contrast

Esposito [34] suggest a global criterion of goodness of fit for PLS structural models, propose that the global goodness index of adjustment be given by means of the square root of the multiplication of the arithmetic mean of the analysis of the variance extracted (AVE) and the arithmetic mean of the coefficient of

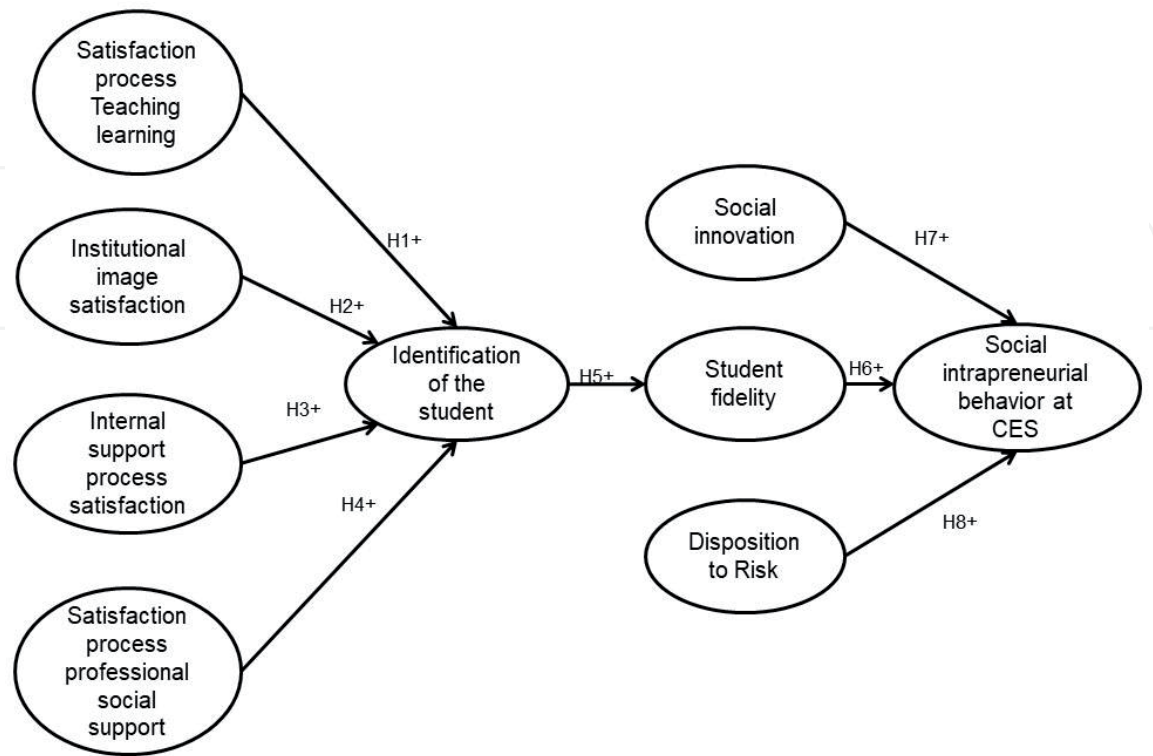


Figure 1. Causal model on social Intrapreneur conduct in higher education institutions. H: Hypothesis.

Construct	Indicator	Factor load
Fidelity of the student with his career and university (FEU)	FEU021	0.482
	FEU022	0.722
	FEU023	0.874
	FEU024	0.605
	FEU025	0.844
Student identification with career and university (IEC)	IEC031	0.798
	IEC032	0.845
	IEC033	0.858
	IEC034	0.650
	IEC035	0.688
Satisfaction of the teaching-learning process (SPEA)	SPEA041	0.728
	SPEA042	0.695
	SPEA043	0.379
	SPEA044	0.301
	SPEA045	0.714
	SPEA046	0.771
	SPEA047	0.684
	SPEA048	0.055
	SPEA049	0.168
	SPEA050	0.661
Institutional image satisfaction (SIGI)	SIGI051	0.464
	SIGI052	0.629
	SIGI053	0.778
	SIGI054	0.765
	SIGI055	0.727
	SIGI056	0.811
Satisfaction of internal support processes (SPAI)	SPAI061	0.654
	SPAI062	0.771
	SPAI063	0.730
	SPAI064	0.663
	SPAI065	0.719
Satisfaction process professional social support (SPASP)	SPASP071	0.487
	SPASP072	0.314
	SPASP073	0.882
	SPASP074	0.892
Social innovation (ISO)	IS081	0.203
	IS082	0.086
	IS083	0.742
	IS084	0.812
	IS085	0.788

Construct	Indicator	Factor load
Risk disposition (DAR)	DAR091	0.837
	DAR092	0.864
	DAR093	0.815
	DAR094	0.369
Social intrapreneur conduct at CES (CIIES)	CIIES010	0.906
	CIIES011	0.912

Table 1.
Factorial loads of the indicators.

Construct	R ²	Q ²
Social intrapreneur conduct in IES	0.465	0.364
Fidelity of the student with his university	0.280	0.154
Identification of the student with his career	0.216	0.115

Table 2.
Explained variance and predictive validity of the model.

Hypothesis	Relations	PATH coefficient	T statistic	P Value	Contrast
H1	SPEA → IEC	0.333	6750	0.000	Accepted
H2	SIGI → IEC	0.179	3550	0.000	Accepted
H3	SPAI → IEC	0.006	0.104	0.917	Rejected
H4	SPASP → IEC	0.054	1181	0.238	Rejected
H5	IEC → FEU	0.529	13,061	0.000	Accepted
H6	FEU → CIIES	0.101	2248	0.047	Accepted
H7	ISO → CIIES	0.602	16,045	0.000	Accepted
H8	DAR → CIIES	0.117	2427	0.016	Accepted
Adjustment Goodness Index (GoF): 0.454					

Table 3.
Structural equation model: Analysis of causal relationships and hypothesis testing.

determination (R^2) of the endogenous or dependent variables. As can be seen in **Table 3**, the goodness of fit index (GoF) of the analysis model is 0.454, showing that there is a good fit in the measurement model and in the structural model, thus complying with the empirical criterion that the Goodness of fit measure should vary between 0 and 1, the higher the value, the better the index [35].

3.5 Analysis of causal relationships and hypothesis testing

The PLS methodology does not presume that the information is normally distributed, which means that, in order to evaluate the quality of the complete model, it is necessary to apply a nonparametric re-sampling technique called bootstrapping, which involves random re-sampling with replacement of the original sample,

creating new pseudo-samples from the original sample in order to obtain sample errors for hypothesis testing. The new sample obtained by this process allows the estimation of coefficients in the PLS-SEM methodology to test their statistical significance. This technique offers the calculation of the standard error of the parameters, where the condition of the statistic $T \geq 1.96$ must be verified in order to determine its level of significance (see **Table 3**) [36].

4. Comments regarding the proposed model

Esposito et al. [34] suggest a global criterion of goodness of fit for PLS structural models, propose that the index of goodness of global adjustment is given by means of the square root of the multiplication of the arithmetic mean of the analysis of the extracted variance (AVE) and the arithmetic mean of the coefficient of determination (R^2) of the endogenous or dependent variables. As can be seen in **Table 3**, the goodness of fit index (GoF) of the analysis model is 0.454, showing that there is a good fit in the measurement model and in the structural model, thus complying with the empirical criterion that the Goodness of fit measure should vary between 0 and 1, the higher the value, the better the index [35].

The correlation between social innovation and intra-entrepreneurial social behavior represents a paradigm of educational management that is a priority in Chile, given the current challenges of higher education, it is necessary that educational organizations integrate the student in a planned way in the creation of innovations in support processes and educational services.

The management of the satisfaction of the teaching-learning process and the satisfaction with the institutional image, will influence directly and positively with statistical significance, in the identification of the student with his career. The other two variables that are part of the model have no statistical influence: satisfaction of the social-professional support process and satisfaction of the internal support process. That is, students are committed to their career, if the decisions of their managers make “profitable investment” that they perform during undergraduate, by providing quality education and simultaneously enhance the brand and corporate image that projects an education center superior (CES), variables that together influence to achieve a job placement consistent with the career.

The satisfaction for the institutional image and the satisfaction derived from the teaching-learning processes are the only ones that manage to influence the identification of the students with their university, and given their relevance in increasing the value of the HEI, through internalizing the benefits of social intra-entrepreneurial behavior, installs in its managers the challenge of managing the stakeholders that are part of their environment, because they represent providers of resources, skills and knowledge that will allow them to increasingly improve the identification of the student and its causal variables.

5. Final reflections (Conclusions)

The search to better explore the role of the university and its interaction with the actors of its environment, has been the focus of intense study during the last two decades. They have investigated from different perspectives the processes of innovation and generation of value, which would be associated with the interaction between key actors of a territory, such as the university, the State and the Industry; which is known as the Triple Helix [37].

The strategic direction contains as a supra system the Theory of Resources and Capacities, this considers the complex organization as a set of resources and capabilities that form competitive advantages. Therefore, the learning capacity becomes dynamic when the intentions and the results change. This theory focuses on analyzing the resources and capabilities of organizations as a basis for formulating their strategy. It also proposes the promotion of core competencies that allow offering products and/or services that contribute in value to the client [38].

Some authors say that entrepreneurial education must be shared throughout the university, without distinguishing it as their own only from a particular school or faculty. They also point out that at least two changes are needed to meet the objectives of entrepreneurial education: curricula must be changed and different teaching-learning methods must be developed [39].

The university, as an organization that has among its activities the generation, dissemination, and transfer of knowledge, has become a fundamental actor in the new economy, which understands knowledge as a strategic factor that generates competitive advantages to allow the differentiation of organizations and its sustainability in the context. Aware of this, the university has begun to give greater importance to one of its substantive functions: university extension or social projection, through which they hope to bring knowledge to the environment to contribute to local, regional, national, and international development [40].

Social innovation, student loyalty, and willingness to risk manage to explain the social intrapreneurial behavior of the students of the Faculty of Engineering of the University. The greater the identification of the students, the greater the fidelity they feel for their home, positively impacting the social intrapreneurial behavior of the students.

The management of the directors of a higher education center (CES) regarding the satisfaction of the process of social-professional support and the satisfaction of the internal support process, do not influence with statistical significance the identification of the student with his career, without However, this does not imply that their operational and strategic management should be ruled out, given that they provide the “minimum conditions” expected in a CES, according to the institutional accreditation standards [41].

The satisfaction for the institutional image and the satisfaction derived from the teaching-learning processes are the only ones that manage to influence the identification of the students with their university, and given its relevance in increasing the value of the CES, through internalizing the benefits of social intra-entrepreneurial behavior, installs in its managers the challenge of managing the stakeholders that are part of their environment, as they represent providers of resources, skills and knowledge that will allow them to increasingly improve the identification of the student and its causal variables [41].

The systemic management of higher education centers should focus on strengthening social innovation, strengthening students' risk-taking and improving teaching-learning processes and institutional image, thus contributing to the training of students with intra-entrepreneurial behaviors and to initiate the way to build world-class CES.

At present, the educational market is on offer, due to the increase in higher education institutions, since they are not only found in large cities but have also entered intermediate cities and municipalities; Likewise, every day the clients become more demanding and their expectations increase, not only demanding quality in the products or services, but in the added value that is around them. Reason why, the fundamental strategy is to build loyalty with the brand and this is only achieved with an organizational culture focused on customer service [42].

Student loyalty with its Higher Education Center is the key to follow the transformations that result in attitudes that go hand in hand with manifestations of

innovation in the student's thinking. This is why it is a key to satisfy students with the teaching-learning processes by incorporating modifications to the plans that are the pillars of the curriculum.

Therefore, in the CES, innovation in educational management and marketing should be assumed as a daily practice at the undergraduate level. The "profitability" of the associated investments will also be reflected in the contributions and quality of the relationship with the graduates, who are relevant participants of the external support network to improve satisfaction and the teaching-learning process and therefore also it is key in the sustainable development of the University.

Although the results of this research cannot be generalized to other Universities in Chile, it cannot be denied that other national and international research positions the student as a central actor, even without specifying it, assigning him the student-client role. For this reason, it is necessary that these educational organizations integrate it in a planned manner in the co-creation of innovations in support processes and in educational services [43].

Author details

Segundo Ricardo Cabana Villca
University of La Serena, La Serena, Chile

*Address all correspondence to: rcabana@userena.cl

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