Quality in higher education: How we teach is important too

Professional values: A study case in a Chilean Engineering

Maite Jiménez-Peralta; Jacqueline Reveco-Gautier; Carolina Astudillo-Castro
Pontificia Universidad Católica de Valparaíso
PUCV
Valparaíso, Chile
Maite.jimenez@pucv.cl

***Abstract*— The perception that students have between 1st and 2nd education and the one given in the university influences their vision of the role of the university and its teachers. Thus this paper through research in classroom practices explore how the students perceptions influences the interspace between teach and learning process. Two research questions guide the work: how is it impacting a curricular modification when it is performed in one engineering introduction course (pertaining to an engineering major plan)?; and Can it create profession reflection spaces' early on?. For doing this an intervention in a first year course was implemented. Results shows that the reflections about professional values is not spontaneous and it need to be guided. This it permits to interpelate the quality standards where elements like professional values during the studies are not present. Together with the relevance for researching how the way that in taught is important for knowing how it is influencing the student perceptions**

Keywords—high education; curricular strategy; social responsibility; career program; professional values

I. INTRODUCTION

The professional values into the professional training as quality criterion in teaching programs is not a question, at least in Chilean high education system, although the Sustainably development goals demands socially responsible professionals

In fact, a vast discussion related to the social role of universities, has been taking place during recent years, especially regarding the impact generated on their main domains: research, management, community engagement and teaching programs [1]–[4].

The higher education institutions are far from being "professionals factories"; universities are committed to a social function, and must be held accountable for their actions impacts, [5] including, the fundamental values development, on their graduates, i.e., graduating socially responsible professionals. This latter, is the imprinting of a "fundamental values' driving force" as part of the definition of the different majors.

It is one university's responsibility to deliver proper tools to enable students to cope with current societies' ethical challenges. Hence, ethical thinking, cultural issues dealing, volunteer work promoting, and an inclusive education, focused on socially disadvantaged groups, are among the tools that should be provided [6].

Besides, strongly committed employees are more satisfied with their jobs, positively affecting altruism and team performance [7]

The teaching design program must considerer as quality criterion, how their students are educated in personal involvement in actions, fundamental values' learning, acquisition of an own social consciousness, reality knowledge, awareness of others' suffering, and understanding the profession from a social commitment point of view [8]

However, although mostly professional programs are explicit about what is teaching, there is a lag when are questioned about how the human values (e.g. ethic, solidarity, social responsibility) are integrated to the curricular design, despite there are formal statements in the same programs.

Therefore, it is important to ask about "how" inside the classroom this kind of learning is happening between the students, not only because occurs but it had been intentioned like a curricular design.

This paper shows how through one curricular strategy in a course of technical skills, like an engineering one, the students perceive and learn the meaning of their career. With this purpose, in the first part a discussion about the meaning of quality, the role of the universities and what it means to become a professional are displayed. Secondly, one classroom intervention is presented in order to finish with the findings during the exploring into the student's perceptions

A. How is it understanding the meaning of quality in undergraduate majors

In Chile, from a legal point of view, only higher education institutions grant all professional habilitations. E.g. universities and professional

institutes; the so called “system of higher education” (SHE). Each year, more than 200,000 youngsters graduate from junior high, and apply to these institutions (SHE) taking a national selection test. Depending on their performance on this test, they can consider applying to specific majors. Acceptance will ultimately depend on the major´s demand, students’ undergraduate records, as well the results of the above-mentioned test. This means, that potential students “are accepted in certain majors”, rather than these choosing a specific major.

As per year 2020, Chilean higher education system included 59 universities, and graduated more than 197.888 students, conferring professional habilitating degrees. Sixty percent of these new professionals, graduated from technology, , education, and health areas [9]

Despite the fact that the degrees conferred by all 59 universities are equivalent between one university and another, when choosing career options, students make choices based on: “institution prestige”, which is a concept made up of several dimensions, that will ultimately influence their: opportunities, employability, and professional development. This latter occurs when an employer seeks for, and prefers, professionals graduated from university X, over those graduated in university Y.

In consideration of the asymmetry posed by the concept of “institution prestige”, and looking to target a more balanced “quality of education”, a system of quality assurance was implemented in Chile, creating the National Accreditation Commission (year 2006), and the Accreditation Agencies; a system in which, both institutions and programs of study, should comply with performance standards. A modification was introduced in 2018

One of the standards is the coherence between the declared professional profile and the curricular design. Thus, it is required to clearly state the “professional profile” (the specification of the abilities, field of knowledge and competencies of the graduates in a particular area) highlighting the differences between these specs and those of other institutions, i.e., what makes these professionals “different” from others [10]. Thus, under this quality assurance scheme, the professional habilitation is understood as a proof of compliance with the systems’ pre-established criteria and this “uniqueness” conferred by the institution. Global judgments of the quality of one’s degree program are influenced by work experience after graduation; judgments of curriculum and teaching practices pertain to what was experienced as a student or before [11][12]

However, even though the beginning and ending of the whole process of becoming an habilitated professional, are clearly recognized, these milestones do not account for, and do not offer any explanation, as to how a student becomes aware and conscious of the abilities and knowledge acquired through the whole cycle.

B. What is the meaning of becoming a professional?

Professional training does not occur isolated from cultural context, on the contrary, it develops over the foundations provided by this latter, both socially and individually, encompassing scientific, ideological and spiritual background [13], [14]. Similarly, affirming that the role of a university teacher is restricted to merely “transferring knowledge”, is inaccurate when analyzing the student formation process in globalized and multicultural contexts [15]. Hence, it is necessary to enable adequate spaces for reflecting about the true meaning of professional career and how the “immediate environment” promotes this meaning.

Related to affective commitment there are four dimensions of career development that are positively: i) career goals progress; ii) professional ability development; iii) promotion speed and iv) remuneration growth [16], [17], but they are poorly mentioned when it is discuss about the professional curricula. López (2010) highlights that every profession is an “ethical activity” aiming to positively contribute to society [18]. Therefore, it requires the participation of a professional community that can relate to this concept. However this concept of “ethical activity” is unknown to freshmen students.

Moreover, as Lopez, Vivanco and Mandiola (2006) point out, the majority of students in their first year, experience a number of strains related to the end of their high school days and the new opportunities that university life brings along[19].

The perception is that research performed at this level, is mainly concerned with youngsters motivations to apply to university, and all different factors involved in their performance, and learning process [19], [20].

This technical vision of education, focused only on performance indicators does not recognize the profession as “a social and cooperative activity”, whose internal goal is to provide society with a specific and essential benefit to survive as human civilization. For this reason, the concurrence of the community of professionals who identify themselves as such a society is required [21].

Under these terms, university training is understood as a lifelong education that should not only approach scientific, technical, and professional dimensions, but also deal with moral qualities [22], since each profession, -despite being exercised individually-, provides, as a whole, a community service, arising from the mastering of knowledge and techniques used for tasks execution [21].

In other words, this professional autonomy is oriented by adherence to a code of ethics and norms of conduct, traditionally agreed upon by an experienced and organized trade union [23], that works responsibly and ethically to improve social wellbeing, establishing accepted behaviors that legitimize the profession’s contribution to society [24].

Therefore, it is necessary to create spaces to reflect on professionalism and how learning spaces promote its meaning [25]. Leading to the questions: (1) Which are those spaces in engineering curricula where technical have the primary role, and (2) During the curricula itinerary when is it the best opportunity to have a really impact over the student?

C. The Impact of University Teaching

In Chile, outsourced teachers mainly perform university teaching. Only 54% of university teachers feature full time jobs, and one third of all teaching staff, spends less than half of their working hours in the institution [26]. This fact has derived in an academic management more focused on ensuring students' progress (proper progress on their majors), using methodological and evaluative strategies centered around technical elements [27], measurable performances, and indicators that are in conflict with spending time guiding students' through a thorough reflection process on their future social role.

Vallaeys (2014) states, that each year, the educational system is challenged by the lack of creativity of all the new professionals entering the work market. Indeed they have been awarded professional titles that increase their chances of getting an employment by means of reproducing social patterns on the student´s minds and bodies[1].

Despite this fact, several studies have proven that some elements linked to: peer relations [28], their own transcendent dimension perception [29], and the institutional context, determine the students academic performance[30]. The same as the bond established with different places, plays a role in their sense of welfare. [31]

The way each academic understands university teaching, makes an impact on the students' learning results. It so, that "teaching innovations" have evolved from having a focus on a lecturer that delivers contents, to a student who develops learning. And more recently, to a halfway focal point centered in the "student-professor relationship" [32], [33].

Fayard and DeSanctis (2010) suggest that through language students build a sense belonging to the community, arising the question on how the present university teaching strategies, give proper answer to a formation process that is more based on "the professional doing" than on "being a professional". [34]

This study puts forward the idea, as a university teaching strategy, that it is possible to introduce early on the studying cycle, spaces to reflect on the true meaning of the profession and understanding of the social welfare that this one must preserve.

II. METHODOLOGY

A. Focus and research question

For university teacher to research the own practice is not something easy to do, mainly because most of them are not educators but professional that teach. So, understanding the learning process in a qualitative sense, far away that approved or not percentage, meaning to look inside the student's perceptions for understanding what happen with them.

For this reason to "open the black box" in learning process possibilities understand how the space between teacher and student are impacting the process in a way that is not shows for traditional numbers that talking about teach and learning performance.

Keeping in mind the fact that in Chile, the educational approach emphasizes the technical aspects of training, the research question is how is it impacting a curricular modification when it is performed in one engineering introduction course (pertaining to an engineering major plan)?, Can it create profession reflection spaces' early on?

B. The context (engineering career) and their participants

The context, as scenario of the intervention, is a career that accreditation standard defines like a technical engineering with biology based, so their profile has many study hour with math, chemistry and biology contents and their emphasis is over technical skills. All the career program has five years.

In the program's first year, together with basics science courses, one introductory has the target to shows the career's fundamental characteristics. It was in this that the intervention was implement.

The participant are all the student enrolled in this introductory course, in consequences, all have around the same age and share the same universities spaces. Something important, and explains why this group is interesting and representative, it is that they unapproved in the first time this course, so they are not specially sure about their future in the program. A total number of eight students, participated in both focus groups

C. The intervention

What was chosen for this study is the "image film", which is a hybrid between research and teaching, and a recognized method for formative purposes. This technique was chosen, mainly, because the video is a teaching tool students are familiar with [35], [36], and allows the integration of visual anthropology elements to the collaborative work. Literature on this topic, emphasizes that the expression of research skills at the undergraduate level, allows the development of reflective processes [37] that may contribute to an

interpretation model building, by integrating knowledge, abilities and skills, with attitudes, values, principles, and required work habits to execute any research activity [38], [39].

The new activity included in the course syllabus, was the development of a video addressing the following question: What is the social good that this engineering profession cares for? In order to answer this inquiry, the course students, organized into groups, conducted videoed interviews to faculty teachers, advanced students, and former students now active in the professional world. This way, while the video preparation integrated principles of visual anthropology; its execution, organized in groups, incorporated the principles of collaborative work.

To ensure the technical work rigor, students were previously trained in the method principles, and the teacher of this course was trained in collaborative work.

D. Analysis and data production

Data production, that allowed understanding on how a student comprehends this process, was carried out making two focus groups. The first one took place at the beginning of the activity, discussing the question (1) what are the perceived differences between high school and higher education. The second one was carried out at the end of the activity, when the students finished the video, therefore, analyzing their (2) beliefs and expectations, regarding their future profession.

As narrative tools, data provided by focus groups, set a way of organizing and communicating experiences, allowing human beings self-knowledge [40]. All significant elements for students were explored (using contents analysis) and categorized within the context provided by the questions presented to them.

III. Discussion and Results

These results are the students main reflections during the two focus groups, as well as some thoughts expressed during the process.

A. Focus group at the beginning: The question presented to the students was: Is high school education different from higher education?

The way of understanding education poses a major challenge for students when entering the university. “There is a big difference,” a student claims, “because at school we felt more protected. You have more time to assimilate the material and the process is slower. However, at the university everything is faster and students have to get used to the rhythm as soon as possible. So, maybe, that is a big step, and when you change from one to the other, that is the hardest part.”

Bearing in mind that one of the main functions of the university is to complement educational formation on a higher level and in a specific knowledge area, considering a career profile, conception, and status, in order to achieve a sustainable articulation with society [41], education has been historically oriented towards an elite specific group within the society. And, even though higher education enrollment has massively increased in 22.8% between 2009-2013, and that 59.8% of access to higher education is to universities [26], the perception that access to university is only for “elites”, still remains.

From the student’s point of view, to be part of the university represents the abandonment of a protected space to begin a new process of adaptation where time and human relations must be re-constructed. It is not only the relationships with their classmates that should be shaped, but also with their professors, who for the most part adopt a “cold” and “distant” position in the sense that the university is autonomous. Students state: “*It is colder regarding personal affection, however, it is probably more mature when discussing topics, things like that, and questions… it’s different…”*

To be a university student poses the necessity to adopt new styles and ways to comprehend the learning process; early on they start to grasp what is the meaning of “being a professional” and use this as a departing point for their formative process.

One student comments: “I mean…, I started to think; because anyway the question is about the difference between primary school and the university, right? So, I believe that the first one is more focused on moral, instead of academic education. On the contrary, there is more professionalism at the university, so one.….it is more personalized. So, obviously there should be a better connection between the teacher and the student, if it is going to be more professional.”

This perception of “coldness” molds disaffection behaviors in students, where affections are transferred to an extracurricular dimension, in order to favor all technical training pertaining to the professional specialty [27], [42]. The integration process of skills, attitudes, and knowledge, inherent to professional competences, is not assisted to by the professor [43].

As a consequence, and intuitively, students start to perceive that their professional skills development has to be linked to proper ways of social relations. For this reason, when asked about the ways of teaching a profession, one student ascertains: “Yes. And I believe that in the university it should be the same. I mean, they should train us as a human being and not as a technical machine in charge of improving all the processes of an industry. No; I believe they should also teach students the concept of social responsibility and what it involves… how society benefits.”

B. During the interviews and video making process

Early on, students recognize that the process of learning a profession exceeds mere technical

knowledge. It is then, that they start to elaborate their own version, of what the profession is about; modeled by all interactions.

In this study case, the use of videotaping to explore and portray this image, intended the process, as the students affirm: “I believe we have a wider vision now, especially after interviewing teachers, employees, and students from different levels, we have realized what`s the perception that each student has along their learning journey, and what teachers want to communicate to their students in general.”

To force students to confront society’s ethical dilemmas, allows them to develop a sense of common good and ethical judgment, essential in a society that wants to be sustainable [21], [24].

Thanks to the interviews and the necessary analysis that arises, when selecting the images and information that will take part on the video, it is possible for students to generate, as a formative space, a reflection and better comprehension of what their profession is, and the social good it guards.

This image, adopted by students in their process of becoming a professional, is less about technical elements and more about attitude. Among the references that students make there are: value system, conflict management, ways of establishing relationships with peers, and in hierarchy. These elements are not explicit as contents of a subject, but demonstrate the classroom environment. A student realized that to become a professional it is necessary to be a person with certain characteristics: “First, I believe that it is important to be modest and have a good relationship with people, peer to peer [an equal and very good relationship], because if you… are like a boss that says ‘do this and then do that’”. The student remarks: “…be humble and empathetic, you need to put yourself in the place of a worker as well.” Another student comments: “I don’t know, I think that is necessary to have a strong personality and to stand up for yourself, but you also need to have a good attitude, to be humble too, and obviously it is important to respect every single employee, because as we know there are also people that work but they haven’t finished school, so we cannot discriminate them. Also we have to respect everybody’s position.”

First and foremost a professional is a person, and as such, creates relationships based on companionship and authority; process that requires a value driven context. Thus, the student questions himself/herself, and gives form to different and personal opinions about his/her career….” The way that he/she answer the questions, built his/her own meaning about professional significances.

Students demand an ethical formation: “I believe this is so in general. I mean, it seems strange that even though there are so many engineering majors in [name eliminated] or in other universities, they don’t include anything related to ethics and moral, or social responsibility concerns, as I mentioned…”

C. Focus group at the end: What is it that makes sense of this profession?

For students to answer this question involves the reorganization of reasons to study a particular profession. One student states: “Even though this career is not very well … ..I don´t know if it is well known, maybe its is massified, maybe…, but then you become part of it and, I believe that you arrive with some notion of what food engineering is”. However, through this activity, in which students can be part of a seminar with other students that have already finished their professional training, to visit enterprises, to be in direct contact with a food engineer on site because they know what means to work as an engineer, so with all that information you pretty much start to understand what this is about, and you think if this is really what you want to do, maybe, in the future…”

Thus, for the university student, learning represents more than a simple acquisition of routines and technics, demanding a holistic preparation that helps him/her open to various fields to communicate understanding, and to form a creative sensibility of new social possibilities [44].

Contrary to this integrated view of educational formation in the university, the current approach emphasizes that becoming a professional is a solitary job, where each one makes his/her own reflection and answers the question in different ways.

At the beginning of the intervention students had such dissimilar beliefs, like this example. One student says, “To have the opportunity of… of improving food quality, or of creating new products, also to try to make people eat healthier, perhaps.” Another student comments: “Exactly. Many people can think that that is the role of a nutritionist. But, when you go to the nutritionist it is because you already have an eating problem. So, if we look further back, there is the food engineer that, I don’t know, could take this problem from its origin” A third student comments: “I think it is hard for the food engineer to communicate directly with the client, his job is different. The job of a food engineer is related to food, they study the product, they improve it, so after that they can send it to the food market.”

Therefore, it is the university’s responsibility to create spaces where these beliefs can be socialized. The use of methodologies that promote social interaction among students has been demonstrated to encourage significant learning experiences [45].

New ideas, images, and concepts of the profession are being constructed, in a dialogue, where the student absorbs and freely adapts the elements that will make him/her a new professional. Thus, after the intervention is completed, the speech of the student is different, such as in the following: “Of what is to be a food engineer. Because as much as you look for specific information about food engineering online, it isn’t easy to find from an applied point of view, it is very general. However, through this experience, I

believe that most of us are already clearer regarding what we want to do in the future, if we really like it, and honestly, I think that all of us are interested in continuing in the program, that we are liking it more and more, and in the end we will be passionate about it."

Final thoughts: freshmen students are able of being aware of the processes they are living, as long as they are invited to do it. By being invited, this group was able to set the foundations of the ethical dilemma inherent to professional exercise. This process is not spontaneous, it must be guided by the professors.

Professional training starts by understanding that a shift has taken place, and that the university is not a continuation of high school, thus is not only an enrolled problem. It does not necessarily start naturally from the first day that the students enter the classroom at the university.

It is important a deeper understanding of student agency as a socio-cultural and -political construct for a learner-centred feedback [46]. The Social factors, like interaction with peers and teachers, social presence, and usage of social media positively impact active collaborative learning and student involvement, thus affecting their learning performance [47]

A new leadership for professional learning is needed. The explicit recognition and application of actions underpinning the professional values that being intrinsic to collaborative learning cultures, their creation and maintenance [48].

IV. CONCLUSIONS

A. How is it impacting a curricular modification when it is performed in one engineering introduction course (pertaining to an engineering major plan)?

When the student recognizes himself in a different educational setting, he is projected as a professional future and with this he establishes the bases of what his professional profile will be. Additionally, this initial reflection establishes a framework for the potential of his profession, recognizing the behaviors and characteristics that he must develop during his stay at the university.

Establishing relationships in academic spaces, such as communicating with peers, teachers and professionals in the area, through teamwork, will generate favorable conditions for the appropriation of an image of what their profession means. Attending and caring this process, will ensure to align of students' interests to the purposes of the curriculum. Besides of the appropriation and understanding of what is the social good that legitimizes their profession. This is why teachers are invited to generate spaces for early reflection, with the methodology applied in this work, as one possibility to be implemented in the classroom.

B. *Can it create profession reflection spaces' early on?*

We can conclude from the experience, that professional training begins from the first day the student enters the university, where the breaking point is the take of consciousness about the fact there has been a change and that the university is not the continuity of school education, so the rules were changed for them

For this to happen, it is necessary to guide and to give one intention to the students reflexing. The research showed that through the creation of one space in the classroom this is possible.

Quality standards are blind to this elements, but they are present into the classroom too and they are affecting the student perspective about the meaning of their purpose into the career. Failure to understand this introduces a barrier inside the teach and learning process.

Thus, in higher education is relevant to understand that "the how" it is thought as equally relevant as "the" but for this, it is necessary to train in the research in teaching practices and to innovate in classroom strategies with a critic and reflexive spirit.

REFERENCES

[1] F. Vallaeys, "La responsabilidad social universitaria: Un nuevo modelo universitario contra la mercantilización", *Universia*, vol. 12, n° V, pp. 105–117, 2014.

[2] R. Gaete, "La responsabilidad social de las universitaria como desafío para la gestión estratégica de la Educación Superior. El caso de España.", *Rev. Educ.*, vol. 355, n° 1, pp. 109-133., 2011.

[3] C. De la Cruz, "Los rostros silenciados de la responsabilidad", *Rev. Ocio y Tur.*, vol. 2, pp. 139–155, 2009.

[4] M. Trippl, T. Sinozic, y H. Lawton Smith, "The Role of Universities in Regional Development: Conceptual Models and Policy Institutions in the UK, Sweden and Austria", *Eur. Plan. Stud.*, vol. 23, n° 9, pp. 1722–1740, 2015.

[5] "Responsabilidad social: compromiso u obligación universitaria", *Telos*, 2016.

[6] B. Kliksberg, "Los desafíos éticos pendientes en un mundo paradojal: El rol de la universidad", *Reforma y Democr.*, vol. 43, 2009.

[7] A. Neininger, N. Lehmann-Willenbrock, S. Kauffeld, y A. Henschel, "Effects of team and organizational commitment – A longitudinal study", *J. Vocat. Behav.*, vol. 76, n° 3, pp. 567–579, 2010.

[8] C. De la Calle, J. manuel García, y P. Gimenez, "La Formación de La

Responsabilidad Social En La Universidad", *Rev. Complut. Educ.*, vol. 18, nº 2, pp. 47–66, 2007.

[9] MINEDUC, "Titulación En Educación Superior", 2019.

[10] CNA-Chile, "Normas y Procedimientos para la Acreditación, Comisión Nacional de Acreditación", 2010. .

[11] O. Espinoza, "Neoliberalismo Y Educación Superior En Chile: Una Mirada Crítica Al Rol Desempeñado Por El Banco Mundial Y Los 'Chicago Boys'", *Laplage em Rev.*, vol. 3, nº 3, p. 93, 2017.

[12] R. Badillo Vega, A. Buendía Espinosa, y G. Krücken, "Liderazgo de los rectores frente a la 'tercera misión' de la universidad: visiones globales, miradas locales", *Rev. Mex. Investig. Educ.*, vol. 20, nº 65, pp. 393–417, 2015.

[13] E. Díaz y R. E. Quiroz, "La formación integral: Una aproximación desde la investigación", *Íkala Rev. Leng. y Cult.*, vol. 18, nº 3, pp. 17–29, 2013.

[14] L. Orozco, "La formación integral como base para definir estrategias de un pensamiento lúcido y pertinente", *Rev. Debates*, vol. 32, pp. 37–38, 2002.

[15] A. Bolívar, "El lugar de la ética profesional en la formación universitaria", *Rev. Mex. Investig. Educ.*, vol. 10, nº 24, pp. 93–123, 2005.

[16] A. Cohen, "Commitment before and after: An evaluation and reconceptualization of organizational commitment", *Hum. Resour. Manag. Rev.*, vol. 17, nº 3, pp. 336–354, sep. 2007.

[17] Q. Weng, J. McElroy, P. Morrow, y R. Liu, "The relationship between career growth and organizational commitment.", *J. Vocat. Behav.*, vol. 77, nº 3, pp. 391–400, 2010.

[18] J. martín López Calva, "La ética profesional como religación social; Hacia una a visión compleja para el estudio de la a ética en las profesiones. Professional Ethics as Social Religation . Towards a Complex Vision for research of ethics in a professional level", *Rev. electrónica Investig. Educ.*, vol. 12, pp. 1–14, 2010.

[19] I. M. López, Z. V. Skarneo, y E. Mandiola, "Percepción de los alumnos sobre su primer año de universidad. Facultad de medicina Universidad de Chile", *Educ. Médica*, vol. 9, nº 3, pp. 127–133, 2006.

[20] M. V. Pérez, M. Valenzuela, A. Díaz, J. A. González-Pienda, y J. C. Núñez, "Dificultades de aprendizaje en estudiantes universitarios de primer año", *Atenea (Concepción)*, vol. 508, pp. 135–150, 2013.

[21] A. Cortina, *El sentido de las profesiones*. Navarra: Editorial Verbo Divino, 2000.

[22] M. Rojas, M. González, M. N. González, y M. Núñez, "La educación en valores en el contexto de la formación profesional de Enfermería", *Educ. Médica Super.*, vol. 24, nº 2, pp. 214–222, 2010.

[23] C. Osuna y E. Luna, "Características de ser un Buen Profesional de Ingeniería en la Universidad Autónoma de Baja California, México", *Form. Univ.*, vol. 1, nº 1, pp. 29–36, 2008.

[24] A. Cortina, *Para qué sirve realmente la ética*, First Edit. Barcelona: Paidós, 2013.

[25] L. Yfarraguerri, "Responsabilidad Social Universitaria: Un Reto de las Instituciones de Educación Superior", *Daena Int. J. Good Conscienc.*, vol. 9, nº 1, pp. 158–187, 2014.

[26] SIES, "Servicio de Información de Educación Superior", 2016. .

[27] D. Laurillard, *Rethinking University Teaching: A Conversational Framework for the Effective Use of Learning technology.* New York: Routledge, 2013.

[28] M. Torenbeek, E. P. W. A. Jansen, y W. H. A. Hofman, "Predicting first-year achievement by pedagogy and skill development in the first weeks at university", *Teach. High. Educ.*, 2011.

[29] R. A. Giacalone, "Character Education for the 21 st Century: What should students learn?", *Cent. Curric. Redesign*, 2015.

[30] D. Youdell, "Engineering school markets, constituting schools and subjectivating students: The bureaucratic, institutional and classroom dimensions of educational triage", *J. Educ. Policy*, 2004.

[31] C. Rollero y N. De Piccoli, "Does place attachment affect social well-being?", *Rev. Eur. Psychol. Appl.*, 2010.

[32] M. Micari y P. Pazos, "Connecting to the Professor: Impact of the Student–Faculty Relationship in a Highly Challenging Course", *Coll. Teach.*, 2012.

[33] B. Shen, N. McCaughtry, J. Martin, A. Garn, N. Kulik, y M. Fahlman, "The relationship between teacher burnout and student motivation", *Br. J. Educ. Psychol.*, 2015.

[34] A.-L. Fayard y G. DeSanctis, "Enacting language games: the development of a sense of 'we-ness' in online forums.", *Inf. Syst. J.*, vol. 20, nº 4, pp. 383–416, 2010.

[35] S. Bustamante, I. Pérez, y M. Maldonado, "Educación, ciencia, tecnología e innovación: formación para un nuevo ordenamiento social", *Educere Rev. Venez. Educ.*, vol. 11, nº

38, pp. 511–518, 2007.

[36] P. Monteagudo, A. Sánchez, y M. Hernández, “El video como medio de enseñanza: Universidad Barrio Adentro. República Bolivariana de Venezuela”, *Educ. Médica Super.*, vol. 21, nº 2, pp. 0–0, 2007.

[37] A.-B. Hunter, S. L. Laursen, y E. Seymour, “Becoming a Scientist : The Role of Undergraduate Research in Students’ Cognitive, Personal, and Professional Development”, *Sci. Educ.*, vol. 91, pp. 36–74, 2007.

[38] N. (2011) Nordin, “The Influence of Emotional Intelligence, Leadership Behaviour And Organizational Commitment On Organizational Readiness For Change In Higher Learning Institution”, *Procedia - Soc. Behav. Sci.*, vol. 29, nº 1, pp. 129–138, 2011.

[39] E. Urdaneta, “Factores que constituyen las Competencias del Investigador. Modelo Interpretativo.”, Universidad Rafael Belloso Chacín. Maracaibo. Venezuela, 2001.

[40] H. Mc Ewan y K. Egan, “Introducción”, en *La narrativa en la enseñanza, el aprendizaje y la investigación*, H. Mc Ewan y K. Egan, Eds. Buenos Aires: Amorrortu, 1995, pp. 9–22.

[41] R. Vallejo y M. Goveo de Guerrero, “Retos de la universidad del siglo XXI”, *TELOS Responsab. Soc. e Investig.*, vol. 12, nº 2, pp. 216–236, 2011.

[42] M. Wahlgren y A. Ahlberg, “Monitoring and stimulating development of integrated professional skills in university study programmes”, *Eur. J. High. Educ.*, vol. 3, nº 1, pp. 37–41, 2013.

[43] L. K. J. Baartman y E. de Bruijn, “Integrating knowledge, skills and attitudes: Conceptualising learning processes towards vocational competence”, *Educ. Res. Rev.*, vol. 6, nº 2, pp. 125–134, ene. 2011.

[44] C. De la Calle, J. M. García, y P. Giménez, “La formación de la responsabilidad social en la universidad”, *Rev. Complut. Educ.*, vol. 18, nº 2, pp. 47–66, 2007.

[45] M. Tlhoaele, A. Hofman, y K. Winnips, “Higher Education Research & Development The impact of interactive engagement methods on students ’ academic achievement”, nº April 2015, pp. 37–41, 2014.

[46] J. H. Nieminen, J. Tai, D. Boud, y M. Henderson, “Student agency in feedback: beyond the individual”, *Assess. Eval. High. Educ.*, pp. 1–14, feb. 2021.

[47] M. A. Qureshi, A. Khaskheli, J. A. Qureshi, S. A. Raza, y S. Q. Yousufi, “Factors affecting students’ learning performance through collaborative learning and engagement”, *Interact. Learn. Environ.*, pp. 1–21, feb. 2021.

[48] S. Lovett, “Understanding values embedded in the leadership of reciprocal professional learning by teachers”, *Prof. Dev. Educ.*, vol. 46, nº 4, pp. 593–606, ago. 2020.