

Faculty of Economics and Business Science ICADE

Soft skills Evaluation in the Educational System, Industry overview and Business Plan of the start-up Softeo

Author: Gonzalo Arribas Turrado

Director: Sergio Javier García Saiz

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ABSTRACT

The evolution of society towards a highly dynamic and technological environment has

modified the competencies required to develop personally and professionally. Nowadays,

it is not only sufficient to control hard skills but also a set of social and emotional traits

such as emotional intelligence, problem-solving, critical thinking, the capacity of

negotiation, between others.

Historically, schools have focused on the teaching and evaluation of cognitive skills even

if educational laws incorporate the importance of soft skills nurturing in students. This is

explained by the difficulty that entailed the measuring of social and emotional traits. The

result is a gap of competencies and capacities between what companies demand and the

professional profile of the applicants.

In this context arises Sofeo, a tri-directional platform for teachers, students and

parents that identifies, evaluates, analyses, and quantifies the soft skills of the students in

the schools. This PaaS depicts an accurate individual and group view of soft skills by

collecting information from school experiences and personality tests. This way schools

have access to a reliable framework that allows for the evaluation of a set of social and

emotional traits, so they can provide an integral education.

The first section of this end-of-degree project seeks to illustrate the theoretical

context of soft skills, the significance of their development, and their impact on the

educational system. It acts as a basis onto which can be articulated the business

description of the start-up Softeo during the second section of the paper.

Key words: soft skills, life skills, technology, business model, start-up, PaaS.

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1. Introduction

1.1 Project background and topic justification.

Education is considered to be the main driver of economic growth, productivity, and business development. Furthermore, it acts as the foundation for societal prosperity, regarding values such as fairness, freedom, and social justice. The primary role of educative institutions during the academic life of the student is to provide the latter with a set of competencies that are going to be required in their future professional lives to meet the demands of the global economy. The two main categories in which these competencies are divided are:

- Hard skills: array of abilities that are most often technical skills, which are heightened by practice, repetition, and natural ability. There are common skills that apply to the whole employment options, but every job will require a particular set specific to the industry and position. The content of the Curriculum Vitae generally includes Hard Skills such as proficiency in a second language, programming languages, statistical analysis, marketing management, etc.
- Soft skills: the set of emotional, social, and personal traits that determine the way of working both individually and collectively. Even though they are more intrinsic to the personality, they can also be learnt and developed. The work environment requires skills like problem-solving, effective communication, emotional intelligence, adaptability, between others.

The technological transformation society has experienced in the past decades has affected the economy at many levels. Companies have shifted the group of abilities that demand from postgraduates (Mitchell, Skinner, & White, 2010). The evolution from an industrial economy to an information based, dynamic system has resulted in technical skills not being the only focus for career development. In work environments in which offices are the dominant format, soft skills are enhanced in the workforce at every level of the organization. The importance of soft skills in the professional career is not limited to hiring. Multiple studies support that the long-term job success relies on these personal and interpersonal set of abilities.

On the personal level, the majority of the private sector job interviews I have had during my last year of university, have been oriented towards testing my social and emotional skills. This situation was common to two of my degree partners, who we questioned together, why are we being evaluated on skills that we have never directly encountered throughout the whole basic education? Thanks to the university international experiences of my colleagues Elena Gómez-Villalba and Miriam Cohen in the United States, they got in touch with Education start-ups related to soft skills. These organizations used data analytics to promote student success and personal development. In what way could we provide a value proposition that met the customer needs, adjusted to the Spanish educational system?

This is the point where the three last-year ICADE students decided to form a team and get inscribed in the Comillas Emprende Contest (2020-2021 Edition). This tournament organized by Universidad Pontificia de Comillas, administered mentoring and a digital platform designed by Adventurees, that identified the critical aspects of the technology, market and business that needed to be developed. After months of studying the market opportunities and validating the hypothesis by surveys and interviews, we finally designed the value proposition of Softeo:

"Tri-directional Platform for teachers, students and parents that identifies, evaluates, analyses and quantifies the soft skills of the students in the schools".

1.2 Structure

After this introductory phase, the structure of this paper is divided into two blocks that can be easily separated. The first one provides a theoretical framework onto which can be articulated the subsequent business model of the start-up Softeo:

 Chapter 1 explains the importance of soft skills for both personal and professional development. It provides a more profound explanation of soft skills and their categorization. It also describes the industry requirements, the impact on postgraduates and the relation of these competencies with long-term corporate success.

- Chapter 2 analyses the history of soft skills in the E.E.U.U. and Spanish educational systems. It studies the evolution of these competencies from the legal angle, and the lack of practicality in the European Union, and in particular, Spain.
- Chapter 3 provides a general overview of the state of technology and its importance in daily life social interactions. Furthermore, it explains some potential uses in the classroom with two brief real-life examples.

The second block describes in-depth the initiative of Softeo: Measuring soft skills for secondary education students.

- Chapter 4: Describes the Business Model of Softeo using the Business Model
 Canvas. This tool is composed of nine sections that help understand the idea of the
 project holistically: Customer Segments, Customer Relationships, Channels, Value
 Proposition, Key Resources, Key Activities, Key Partners, Cost Structure and
 Revenue Streams.
- Chapter 5 presents valuable information of the Business that is not included in the before-mentioned sections: Key Performance Indicators (KPIs), Organizational Structure and Proposition to Investors.

1.3 Objectives

The objectives of the paper can be separated accordingly to the two blocks described. Firstly, three objectives are identified from the theoretical chapters:

- 1. Analyse the factors influencing the increasing demand for soft skills.
- 2. Study the impact of soft skills in educational laws and their implementation.
- 3. Diagnose the effect of technology in the development of soft skills and potential uses.

Secondly, another two objectives come up from the analysis of the Business Model of Softeo:

- 4. Describe the Business Model of a start-up, Softeo, by the development of the Business Model Canvas. This is achieved by a detailed explanation of the nine sections that conform to the framework.
- 5. Provide a holistic view of the problem and the company as the solution.

2. Why education on soft skills

2.1 Importance of soft skills

2.1.a Soft skills for personal development

Soft skills, as described in the introduction, refers to the combination of interand intra-personal capabilities that play a vital role in personal development and social stability. The continuous improvement of technology has altered the interaction between humans and their relationships. The result is a more complex environment that requires individuals to acquire a more integral education that advocates for a set of competencies applicable to multiple scenarios. In this direction, the World Health Organization defines soft skills as life skills that are: "abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life" (World Health Organization, 1997). Even though they are not accepted as synonyms by every pertinent authority, they will be used in this paper indistinctively.

Soft skills complement hard skills, which are the technical competencies and functional tasks that people must dominate to exercise a job. This industry-oriented knowledge requires abilities to express and transfer it productively to another group of individuals. There is an underlying thought that life skills cannot be taught or learnt, when in fact, soft skills can be matured at both the early periods of education and at later stages in life (Ra, Shrestha, Khatiwada, Yoon, & Kwon, 2019).

The classification of soft skills depends on the author and the theoretical framework that works under. Nevertheless, every classification is separated into two parts. One is focused on the consolidation of attributes and traits to create a productive mindset. The other is composed of communication skills and the social dimension. Hereafter, find two examples of grouping these personal traits:

Collaborative for Academic, Social, and Emotional Learning (CASEL), an
international research organization of Social Emotional Learning (SEL) during the
education, addresses five core areas: self-awareness, self-management, responsible
decision making, social awareness and relationship skills.



Source: (CASEL)

Figure 1 CASEL Wheel

Researcher Carolyn Saarni identifies six skills: awareness of one's own emotions, the ability to discern and understand others' emotions, the ability to use the vocabulary of emotion and expression, capacity for empathetic involvement, ability to differentiate the internal subjective emotional experience from external emotional expression, capacity for adaptive coping with aversive emotions and distressing circumstances. And from her experience as a clinical developmental psychologist, she adds two more: awareness of emotional communication within relationships, and capacity for emotional self-efficacy (Saarni, 1999).

The learning process must consider the integral development of the individual. Therefore, an appropriate curriculum must entail knowledge (know-how) and the feelings and emotions (to transfer it), in order to build personal relationships that generate healthy coexistence and effective participation in the course of society (Sánchez, Amar, & Triadú, 2018). To support this point of view, a study was carried out to test the effect of soft skills nurturing through a training program on management students. The research measured more than twenty-five life skills components and found significant dissimilarity between the control and the experimental group. The scholars that had received repeatedly soft skills instruction outclassed the control students in overall personality development and employability skills (John, 2009). Once it is clear the significance of holistic education for individuals, it will be studied its effect in the workplace.

2.1.b Soft skills for professional development

The needs that companies demand from the labour force have been pivoting to adjust to the before-mentioned changing environment. In a report executed by IESE, in which 53 representative companies of the Spanish economy are involved, finds that 72% of them have difficulty hiring (IESE, 2019). Regarding the international landscape, a survey carried out by McKinsey & Company in 2020 concluded that 87% of companies are currently experiencing a lack of skills or are expecting it in the next five years (Beyond hiring: How companies are reskilling to address talent gaps). This fact is due to the gap of competencies, capacities and traits between what companies demand and the professional profile of the applicants.

Nowadays, it is not enough to have an outstanding Intellectual Coefficient, but a competitive edge backed by the abilities of problem-solving, effective communication, and critical thinking, between others (Wagner, 2008). Individuals need to master life skills in order to advance in a highly competitive professional world and fit into the social structure of an organization. In a report published by LinkedIn Learning, the soft skills more in demand by companies are creativity, Persuasion, Collaboration, Adaptability and Emotional Intelligence (Linkedin Learning, 2020).

Life skills are going to play a vital role during the whole professional life. From the first interview in the application process until the retirement date. Previous to 1990 approximately, soft skills were not a relevant factor when hiring new employees, whereas the predominant facet to be assessed was hard skills (Kyllonen, 2013). Currently, many companies in their selection process give greater importance to the potential behaviour in their work group and meeting the necessities of the organization, than previous work experience (Comercial & Casas, 2018). Deficiency in life skills represents an important aspect associated with unemployment (Araluce, 2019). A report published by the CBI in 2018, states that the majority of the employers (60%) appreciate non-technical skills and in fact, represent one of the three considerations when employing (Educating for the modern world, 2018). Another study suggests that 85% of employers label soft skills as essential, indeed, with 60% valuing them more than degree qualifications (Archer & Davison, 2008).

Graduates are especially affected by the previously mentioned gap of competencies because they get excluded from the market even before joining it. Employer's value soft skills development because they feel like demanding life skills as a base and teach the hard skills to the ones that they select. A study executed to analyse the factor related to unemployment of university graduates from the Employer's perspective, both from national and multinational companies, listed a series of factors represented in the graph:



Source: (Hairi, Toee, & Razzaly, 2011)

Figure 2 Ranking of Graduates' Unemployment Factors by

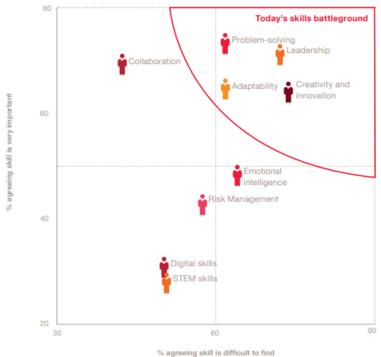
The first factor by weighted rank is the lack of life skills required in the workplace such as teamwork, decision making and/ or critical thinking (1). It is a shock that this aspect is valued higher than insufficient knowledge due to wrong major (3), lack of experience on the subject (6), or even low academic achievement (7).

In the case of existing employees, the situation is slightly different, as they are already in an organization, and many of them offer training. It is no surprise that already back in 2011, the American Society for Training and Development (ASTD) stated that 27.6% of the overall dollars invested in worker training and development of U.S employers went to soft skills (M & E, 2011). Life skills will define the scope of the professional career, here are some studies that prove this statement.

Stanford Research Institute and the Carnegie Mellon Foundation among Fortune 500
CEOs declared that 75% of long-term job success in the workplace was associated
with soft skills mastery and only 25% with technical skills (International Journal of
Research In Social Sciences, 2013).

- Researchers at Boston College, University of Michigan's Ross and Harvard University found that workers that have received soft skills training increased their productivity by 12% compared to the ones that did not (Achyuta Adhvaryu, 2017).
- Harvard University and the Carnegie Foundation concluded that 85% of success professionally is attributed to Soft traits and only 15% to technical competencies (Mann, 1918).
- A public interest study carried out by McDonald's in the UK estimated over half a million individuals will be restrained from job industries by 2020 due to lack of life skills (The University Of Law).

PwC's annual CEO Survey analyses the talent management issues that companies face nowadays. Almost 80% of CEOs point out the before-mentioned key skill gap as the main risk for their firms. The following graph extracted from the report puts in connection the skills that are required for the professional profile of the employee and the difficulty finding them:



Source: (PwC, 2017)

Figure 3 Soft skills are in demand – but hard to find.

The explanation for the dominance of soft skills in the critical area is explained by the urge for innovation that relies on human capabilities, and the need for cross-activity competencies. The latter reason is explained by José Galán, Chairman of Iberdrola: "Sixty-five per cent of jobs in the future are still unknown. That means we need to prepare people for a different world, a world which is going to change, a world that is going to create new opportunities. Talent is going to be vital" (*PwC*, 2017).

From the information presented above, it can be concluded that soft skills have a resounding influence on the professional development of an individual. The modern workplace demands a set of personal traits and behaviours that were not as valued in the past but are required nowadays. This change in demand has been caused by evolution in technology and the transition towards a knowledge-based economy. In the situation of developed countries, where there is direct access to resources digitally and graduation rates are very high (45% in OECD Countries), the market requires professionals to dominate a set of life skills that apply to a dynamic environment. The latter necessitates not only discerning the best content and expertise but the treatment of that information, meaning the social and emotional skills. However, it is clear that the educational systems have not been able to adjust to the demand of the market, as organizations point out the lack of development in graduates and existing workers. The problem is visible in the workplace, but it derives from the formation stage. For this purpose, we will analyse subsequently the history of soft skills up to date, and their evolution inside the educative system in Spain and the United States of America.

2.2 Soft skills during the time in the education system

Traditional education from the late 1800s until the early 1900s relied on the basic core subjects that allowed students to sufficiently take part in the labour force. Towards a more physical, static environment this idea fitted into the social trend of the era. Educational leaders started in the United States to question the orthodox approach and started introducing liberal and innovative ideas that shaped the period known as the "Progressive Era". John Dewey's ideas of a new educational teaching approach and soft skills development influenced the way of schooling in the first half of the past century. This Era advocated for a more integral education that focused on both the nurture of core

subjects and social skills that would allow personal realization and a more competitive workforce (Schooley, 2017).

The importance of personal life skills started to get considered in education and workplaces. The balance between academic expertise and personal traits started being studied for college admissions, bringing this topic onto the table (Willingham & Breland, 1982). New frameworks were being deliberated to examine the personal and interpersonal dimension of the individuals, and the outcomes they had on teamwork, satisfaction, academic success, etc. Goldberg in 1990 set the primary factors of personality (Openness, Conscientiousness, Extroversion, Agreeableness and Neuroticism) in his Known Big Five Framework, to finally put the focus of study on human behaviour and personality.

Traditional	Progressive
Program is determined by external	Program is determined by mission,
criteria primarily test scores.	philosophy, and goals for graduates
Learning is linear, with facts and skill	Learning is spiral with depth and breadth
mastery	
Knowledge is absorbed through lecture,	Knowledge is constructed play, direct
worksheets, and text	experience, and social interaction
IQ is shown through language and	IQ is measured in the ability to problem-
mathematical abilities	solve real-life situations
Success is competitively based, taken	Success is shown through applying skills
from regurgitation of facts	and collaboration

Table 1 Traditional versus Progressive Education

Progressive education focused on teaching methods that were more studentoriented in which they played an active role in a more practical approach. To prove the positive impact of this education, two sets of 1.500 students of each educational approach were compared when they reached college. Alfie Khon describes that progressive students surpassed traditional ones in academic marks, extracurricular involvement, dropout rate, intellectual inquisitiveness and problem solving (Kohn, 1999).

The educational scope during the 1950s and forward switched from a holistic approach to a measurable and equal education. Schooley identified two major events that resulted at the end of the Progressive education Era (2017). The first was the

Source: (*Love*, 2005)

desegregation of schools due to the gap in educational opportunities between the growing diversity classes in the United States. Secondly, during the cold war, the URSS had a thriving technological and scientific potential that culminated with the launch of the satellite Sputnik in 1957. Therefore, the scope of attention in the US educative system was put into the empowerment of cognitive skills and in particular maths and science, leaving life skills shadowed by a result-oriented education. The change in mentality resulted in the approval of the Elementary Secondary Education Act (1965) which later evolved to the No Child Left Behind Act (2002). No Child Left Behind demanded higher standards that were measurable, to ensure individual economic success with the purpose of financing education. For this reason, the idea of developing soft skills was discarded once more.

In Spain after the death of the dictator Francisco Franco, the education system has been regulated by the Spanish Constitution approved in 1978 and organic laws that ensure the constitutional principles and rights. Hereafter, there is a list of the organic laws affecting basic education (non-tertiary):

- The Organic Law 5/1980, 19 of June, regulates the statutes of the educational centres.
- The Organic Law 8/1985, 3 of July, regulates the Right to Education (LODE).
- The Organic Law 1/1990, 3 of October, General Ordination of the Educative System (LOGSE).
- The Organic Law 9/1995, 20 of November, Participation, Evaluation and Government in the education centres (LOPEG).
- The Organic Law 10/2002, 23 of December, The Quality of Education (LOCE).
- The Organic Law of Education 2/2006, 3 of May (LOE).
- The Organic Law 8/2013, 9 of December, the improvement of education quality (LOMCE).

Spain is currently regulated by the LOE, with the modifications introduced by the LOMCE in 2013. Even if there has been a total of eight organic laws that theoretically improved the existing educative system, the truth reveals the inefficacy and inefficiency in the reforms. The educational laws are subject to the overwhelming hierarchization of the system, bureaucracy, and a communication deficiency of the pedagogy community. This is caused mainly by the intrusion of politics in the regulation of the educational

system. Therefore, the upheavals in politics are transferred to organic laws that replace the changes imposed by the previous political party.

Many principles written down in the education organic laws refer to the full development of the student's personality (LOE, 2006), the development of creative capacities and critical spirit, the educational and professional orientation, as a necessary mean to achieve a personalized formation, that enables an integral education in knowledge, skills and values (LOGSE, 1990), between many others. However, the educational model does not integrate tools to ensure didactic methods that orientate the development of the soft competencies and their application in a sociocultural context.

Historical evaluation like *The Programme for International Student Assessment* (PISA) carried out by OECD for comparison of the quality of educational systems, the National Assessment of Educational Progress (NAEP) in the United States and the Evaluación para el Acceso a la Universidad (EVAU) in Spain, all focus on technical and theoretical skills (cognitive). Students during their whole academic life are evaluated on hard skills, which are the ones demanded by law to be assessed. The consequence of this is schools trying to maximize their value towards education on cognitive expertise. This means that the limited resources of educative centres are being destinated to provide students with tools that improve hard skills. This type of evaluation that is test-based leaves the teaching and evaluation of soft skills unattended. This lack of life skills has led to the rising problem that employers face today when they try to hire students who were taught under this legislation.

What we consider nowadays the European Union is the product that started to consolidate after World War II (1939-1945). Since then, there has been a continuous process of expansion to other nations and consolidation between the members at the economic, legal, political, and social level. Nevertheless, the consolidation process in the education sector has historically been left behind, even labelled as inexistent during many periods (Gálvez, 2015). Diversity in the educative systems continues to be the predominant situation between the states. There is an absence of a community policy in education in contrast to other sectors.

Eurodyce, the Education Information Network in Europe, acknowledges in 2002 that education should focus on developing competencies rather than teaching knowledge

of facts. The new-born Council of competencies states a list of key competencies that are necessary for lifelong learning. In Spain, the third underlying principle of the LOE Organic Law (2006) consists of the firm commitment to the educational targets set by the European Union. Therefore, following the recommendation of the European Parliament, Spain adapted this list to its context. Find hereafter the table with both lists compared:

European Union	Spain (LOE)
1. Communication in the mother	
tongue	1. Linguistic communication
2. Communication in foreign	g
languages	
3. Mathematical competence and	2. Mathematical competence
basic competencies in science and	3. Interaction and knowledge with the
technology	physique world competence
4. Digital competence	4. Information treatment and digital
	competence
5. Learning to learn	7. Learning to learn competence
6. Social and civic competences	5. Social and civic competence
7. Sense of initiative and	6. Autonomy and personal initiative
entrepreneurship	,
8. Cultural awareness and expression	8. Cultural and artistic competence

Table 2 EU and Spanish Education competencies

The objective is to develop this set of competencies on a progressive and transdisciplinary methodology that considers the knowledge and the theoretical skills with personality traits and practical cases. They will set the basis for lifelong learning, and enable Individuals to personal development and realization, social inclusivity, and employment careers (Morán, Collera, & Álvarez, 2008).

2.3 Soft skills and technology

Even though it may be considered that technology and soft skills have a unidirectional relationship, the fact is that it is more ambiguous than the initial expectations. There are multiple arguments in favour and against its use. Nowadays

students have most of their social interactions through any sort of electronic device. Technology has evolved to offer a wide range of products that connect users in different formats: social networking, text messages, video calls, video games, etc. Each of the before mentioned covers a specific necessity, shadowing the traditional face-to-face interactions of their daily life (Schooley, 2017). Certain types of technology have abruptly evolved from a complementary to a substitutive interaction tool. Communication and socialization competencies are the first at risk of diminishing from abusive use of inappropriate digital content. Hereafter find a summary of the average technology consumption in the United Kingdom at different formation ages (OECD, 2019):

Technology use at 3-4 years old	Technology use at 12-15 years old
97% watch TV for 13,5 hours a week	90% watch TV for 13,5 hours a week
63% play online games for 7,5 hours a week	76% play online games for 13,5 hours a week
67% go online for 9,5 hours a week	99% go online for nearly 20,5 hours a week
5% have their smartphone	83% have their smartphone
42% have their tablet	50% have their tablet

Table 3 Technology use in UK students

The integration of digital automation into children's life is going to continue strengthening over the future. At this age, due to the brain's flexibility, students are able to interiorize learning concepts that are going to become critical in their development. Therefore, it is vital to develop teaching systems supported on technology that cover the needs of social and emotional development during the education (Mustafaoğlu, Zirek, Yasacı, & & Razak Özdinçler, 2018).

Regarding the application of technology to enhance soft skills nurturing, it is necessary to describe the use of Artificial Intelligence. The latter is commonly described as an extremely wide computer science that enables computers to carry out tasks that traditionally required human intelligence and maximize the performance success of it. Artificial Intelligence allows to collect vast amounts of data from students and measure them according to a set of variables to identify patterns that are both visible and hidden to the lecturer. The advancement in these innovative technologies provides new opportunities to be incorporated into educational practices. For example, grading can be automated, students can receive additional tutoring from AI, providing constructive

feedback, improvement of existing processes, etc. The objective is to use technology and its variants (AI) to measure and provide feedback on the development of the student's skills (Fahimirad, 2018).

To put the use of Artificial Intelligence into practice, two short industry examples will be used:

Snappet: founded in 2011 in Holland, it is an online platform that targets the domains of language, mathematics, and English in primary education students. It compiles and analyses the activities that each student does in each of the beforementioned areas. Then, using Artificial Intelligence Software, the teaching process in the competencies is adapted and personalized depending on the individual's needs and learning pace.

Smartick: developed in 2009 in Spain and placed on the market in 2011, it is an online learning methodology that is supported by Artificial Intelligence. It is a program designed for children between the age of 4 and 14 to excel in mathematics. The technology enables to identify the overall level, strengths, and weaknesses of the student grading in real-time and provide exercises depending on the particular maximum level of competency.

2.4 What now?

The United States of America, under the presidency of Barack Obama, enacted in 2015 Every Student Success Act (ESSA). This new law called for an integral, well-rounded education that shifted its focus from the purely academic approach that had been dominant for the past decades. Moving away from the centralized, test-based cognitive accountability, provides states with the flexibility to evaluate student achievement under non-academic measures. Many schools are incorporating Social and Emotional Learning (SEL) competencies into their teaching programs. In fact, there have been developed multiple SEL frameworks that incorporate the education on learning mindset and life skills depending on the age range and setting (where are they learned, i.e., school, workplace, home). Each framework allocates different weight to the principal domains that are: Cognitive, Emotion, Social, Values, Perspectives, and Identity. Harvard

University identifies a total of forty widely spread academic frameworks (Explore SEL Frameworks). Furthermore, a report published by the Harvard Graduate School of Education analyses twenty-five leading programs and groups them in the following categories (Jones, et al., 2017):

- In-school, Lesson-based curricula i.e., the 4Rs Program, Open Circle, RULER, etc.
- In-school, non-curricular approaches to SEL i.e., Conscious Discipline, Playworks.
- Out-of-School time SEL programs i.e., Girls on the run, WINGS for Kids.

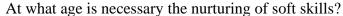
In Spain, the existing educational law (LOMCE), as well as the European guidelines, recognize the necessity of developing social and emotional competencies during education. However, under the current approach, all the pedagogic and financial resources are being destinated to the evaluation and training of the cognitive, hard skills. The two main reasons that explain this situation are:

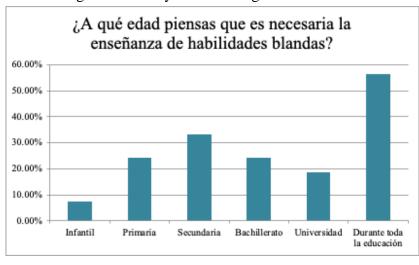
- The Law only requires measuring hard skills during the whole educative system as they can be easily measured, comparable and homogeneous to all students.
- Schools are not equipped to measure these skills in a reliable and precise method that provides extra value to the student's education.

To summarize, it is clear the necessity of nurturing life skills for personal development. In the workplace, the employability requirements include soft skills mastery. Education systems are reforming their teaching proposition, from a practical perspective like in the United States or a theoretical perspective in the European Union. However, the latter approach is inefficient in the sense that it is not meeting the needs of both the industry neither the individuals. The objective is to use the development of technology and in particular Artificial Intelligence to create a reliable and measurable way of accounting soft skills in the education system and comply with the required competencies in the Organic Laws and the European directives to ensure an integral education.

3. <u>Softeo: measuring soft skills for secondary education students</u>

The soft skills gap exposed in the earlier parts of the paper is a visible problem globally and cannot be targeted using a uniform solution. Once the problem had been determined under the theoretical approach (Educative systems and legal framework), we decided to carry out market research based on online surveys and interviews. It was extracted that it was necessary to design a company that was oriented towards the basic formation stage, and in particular, secondary education schools. The start-up is focused on providing a clear solution adjusted to the Spanish educational system, where most of the research has occurred, and the three current members have had the predominant part of the education. However, the upside potential is not limited to this formation phase and neither to the country. The product could be moulded to target skills at different ages and other similar education systems.





- 58% during the whole education
- 33% during secondary education

Source: Own making

Figure 4 What stages are more important for soft skills nurturing?

Softeo is an online platform (PaaS- Platform as a service) directed to schools that enable to evaluate a set of key soft skills in secondary education students and present the insights in a comprehensible mode. The objective is to provide a reliable and measurable scheme that allows schools to account for social and emotional skills development in students between the age of twelve and sixteen years old. This system is blended with the current pedagogical approach, meaning that the service is complementary to the traditional cognitive skills teaching. This way schools can evaluate hard and soft skills and provide an integral education that is highly demanded in the professional world.







Source: Own making

The individual data is presented in a graphical, easy-to-understand manner that is accessible to both the student and the parents through the Softeo webpage. The information displayed in the platform consists of a holistic view of the student's current social and emotional skills and its trajectory during the four-year period. Furthermore, the educational staff will have access to the individual and group data to ensure the progress in life skills nurturing at both levels.

The evaluation of soft skills in students can be achieved using a Minimum Viable Product. It requires a database such as Excel, in which each soft skill is measured on a series of variables predefined by the educational psychologist. Then, using a data analysis tool such as Project Jupyter, all the data extracted can be presented in dashboards with the results obtained and main statistical metrics. However, the objective is to develop a

software that integrates the data collection and data analysis tool in an online platform that provides value to the schools in the long term.

The soft skills offered by Softeo in the introduction phase (2021-2023) are Critical Thinking, Negotiating Capacity, Problem Solving Abilities. In the expansion phase (2023-2026), the curricula of life skills augment to six: Critical Thinking, Negotiating Capacity, Problem-solving abilities, Emotional Intelligence, Leadership and Communication skills.

But what kind of information could be used to produce these insights? The soft skills data is extracted from two sources:

- Periodic online research-based personality tests that are individual and homogenous
 to the pool of students. These evaluations will validate students' emotions and their
 personalities to analyse the social and emotional development. The type of test will
 vary depending on the data that wants to be extracted in each phase:
 - 1. Questionnaires: formed by varied or ambiguous personal questions, designed from a positive attitude towards it.
 - 2. Projective sheets: whose objective is knowing the structure and functioning of the individual through their interpretation competence.
 - 3. Personal skills: to evaluate the activities in which the students have natural ease or difficulty.

The type of test is repeated with different content, in order to measure the student's progress in the specific soft skill during their secondary education.

Online form assessing academic personal and group experiences. It includes any short of happening in the teaching program of the different existing modules such as projects, group activities, public presentations, workshops, among others. These evaluations aim to track the performance of the students through self-assessment and 360 feedback. The latter is executed by the different parties involved in the experience.

The information extracted is measured according to a scoring model composed of a set of weighted variables that can be traced to the desired specific life skills. It endows students and teachers with the strengths and weaknesses in each field and a high degree

of self-awareness that is the base for lifelong learning. Both sources of information constitute an iterative process with feedback loops in which students view their progress and their close future improvement opportunities. This outcome can be enriched by comparing individual performance to school, district, or national metrics.

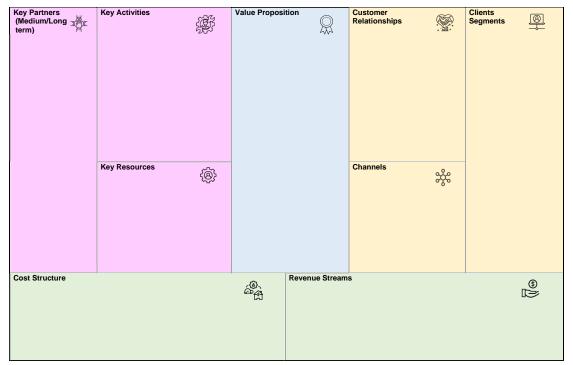
The software behind the platform applies Artificial Intelligence Algorithms that ensure personalization and transparency of the data at different levels:

- The data collection form of school experiences is divided between multiple choice, scales, and an open text box for feedback. It is in the latter where Natural Language Processing (NLP) is used to measure the qualitative intel. This subfield of Artificial Intelligence is focused on how computers interact and interpret human language. After a syntactic and semantic analysis, the algorithm can execute a text extraction and classify it into different topics. Therefore, the Softeo Software is able to transform the 360° qualitative feedback into quantitative to be compared jointly with other information.
- Data obtained from the two before-mentioned sources is processed to generate insights from individual and group patterns. These insights constitute the majority of the output displayed in the platform that is visible to parents and schools' staff. As more data is compiled from each student, the more precise the personal insights of soft skills progress.
- Based on the historical performance and current insights, the Artificial Intelligence
 Algorithm contributes to the learning optimization by recommending learning
 material from strategic Partners.

To thoroughly comprehend the project, each section of the Business Model Canvas will be analysed hereafter.

4. Business Model Canvas

The Business Model Canvas is a strategic management tool that is used for developing enterprise models. It was designed by Alexander Osterwalder and proposed in the book *Business Model Generation: A Handbook for Visionaries, Game Changers and Challengers* published along with the author Yves Pigneurin in 2010. It consists of nine key business areas in which the main aspects are presented concisely and visually. It enables to resume the most critical facets from the individual analysis of each area and group them. For this reason, the Business Model Canvas framework is widely used by entrepreneurs that want to create start-ups. Each section will be rigorously analysed to design the Canvas under the format exposed hereafter.



Source: own making

4.1 Customer Segments

This first section studies the client segments that the platform is targeting to cover the soft skills need. Clients are the most important element of a business, as they represent the potential buyers and the subsequent streams of revenue that are going to determine the scope and life of the company. Softeo is oriented towards the education technology market niche, which affects mainly the basic education industry and the agents

involved in it. Following the EdTech Pitchbook Report 2020, the market size was \$163Bn in 2019 and was expected to grow at a 16,3% CAGR, reaching \$404Bn in 2024. The main factor explaining the upgrowth is the emergence of innovative educative technology that complement traditional teaching practices and student success.

For the purpose of exposing the different clients, they are divided into segments depending on the following criteria:

1. Segmentation regarding Direct/Indirect Client

Direct Client	Indirect Client
Private Schools: independent, CICAE,	Students and Parents
Fomento, ACADE, and other religious	
orders or educational groups	

Table 4 Direct and indirect clients

The direct clients are private schools that could be independent or part of a larger educational chain. In the short/medium term the Served Available Market (SAM) and the Served Obtainable Market (SOM) exclude the educational centres that receive public financing. This is because in the private sector it is getting more common to subcontract external companies to implement or ameliorate existing processes. Furthermore, it is the private sector, which is paying education of their children externally, that is demanding a well-rounded education that advocates for hard and soft skills development. Once the industry gap described in an earlier part of the paper is visible, the sector demands an innovative integral education that is translated onto a competitive positioning of the students. The growth opportunity in publicly funded institutions is lower, as the evaluation of soft skills is not required by law, and the funds are being allocated to excel on purely cognitive skills of the students.

The objective is to implement a pilot of Softeo on educative centres that have strong connections with other schools, so when the business starts operating, it can quickly spread. These are the most important neuralgic centres to support this action plan:

 CICAE (Círculo de Calidad Educativa) is an association of private and independent schools nationally and with international projection, founded in 2010. It aims to be the educational leader of the school members and implement reference teaching practices moulded to the new methodologies, pedagogic systems, and requirements of the 21st century. It groups a total of 39 institutions that represent 58 schools with a pool of more than 60.000 students. Schools in Madrid such as: *Virgen de Europa, Alameda de Osuna, Ramón y Cajal, SEK Ciudad Campo, Mirabal, San Patricio*, etc.

- ACADE (Asociación de Centros Autónomos de Enseñanza Privada) is an organization founded in 1978 that defends and enhances private education not publicly subsidized. It represents more than 3.000 education centres in the national territory. Amongst its services, it has El Club de la Excelencia, in which its members participate to discuss improved teaching practices and innovation inside the system. They provide pedagogic teaching practices, recommendations, and business collective agreements for the members.
- Other religious oders with schools in Madrid such as Fomento: Aldeafuente, Aldovea,
 El Prado, Las Tablas-Valverde, Los Olmons, Montealto, etc.

Softeo represents a Business to Business to Consumer (B2B2C), because the indirect and final clients are students and parents. Even though the operations run through the educational centres, it is the students who take active participation in the evaluation and improvement of the soft skills. Parents will also be benefited from improved education and access to the platform to contrast the insights generated.

2. Segmentation by the direct current client (short/medium term) and potential (long term)

Direct Client	Direct Potential Client
Private Schools: CICAE, Fomento,	Public schools, companies, and
ACADE, and other religious orders or	universities
educational groups	

Table 5 Current and potential clients

The direct client is common to the previous segmentation, but the potential client is not. The Total Addressable Market (TAM) includes both fully and partially publicly financed schools. The estimations are that once soft skills evaluation is a usual practice in private schools, the law will include it in the educational budget. Other direct potential clients are companies and universities that have a greater amount of information about the applicant for the selection process and its capabilities for the vacancy. For this reason,

the latter clients will play an essential role in the building of a community that will be described later on in the paper.

- 3. Segmentation by geographic area
- Madrid: Initial location of the operations and the schools selected for the pilot.
- Expansion to the rest of Spain when the expansion is carried out from Year 2 of operations.

4.2 Customer Relationships

Hereunder, it is explained the relationship Softeo will keep with its direct and indirect client segments throughout its operations. For deeper analysis, it has been decided to study separately the relationship for engaging with new customers and the relationship for creating customer's loyalty:

1. Engagement of new customers:

Customer relationships	Direct Clients	Indirect clients	
	Free Trial	Brand Ambassadors	
Customer	Personalized Emails, social m		
engagement	Recommendations	talks	
	Personalized Service	Community	
Customer		Emails, social media,	
loyalty	Feedback loop	talks	

Table 6 Customer relationships

In the introduction phase, direct clients (schools) are provided with a four-month free trial model when contracting Softeo for the first occasion. School contracts are signed in September for the incoming academic year, yet the last quarter of the year (September-October) is free of charge until the new year. It will allow schools to get used to the online gathering information format and the user-side of the platform. During this period, the team will be close to the school to set practice guidelines for any complication on the day-to-day service use. In the expansion phase, the trial is reduced to one-month length, as the product is already consolidated in the market and the tangibility of the results is visible.

Even if soft skills development has been a resounding topic regarding basic education pedagogy, the business product might encounter initial resistance from more traditional, rooted teaching practices. Due to the innovative nature of the product, the team of Softeo recognizes the entry as the critical point and decided to choose this model to surpass the entry barrier and create long-lasting relationships with customers. The estimated risk of schools not renewing the academic year contract is low because Softeo starts providing value from the first day of school activities. Furthermore, soft skills nurturing is a field that many private schools are encountering or will be in the coming years.

Brand Ambassadors will be selected from Indirect Clients such as parents or students. They receive discounts and special prizes if an agreement is reached with the pertinent private school. This represents a type of "organic" growth in which the business proposition is presented from the inside of an organization.

2. Creating customer loyalty:

- Personalized Service that ensures a safe treatment of personal data. Semestral report
 that represents performance, tendencies, positioning and updating of the objectives
 based on progress. The data is aggregated to provide more analytical analysis to the
 educational workforce (teachers and management) about the collective situation.
 This service complements routinary insights displayed in the platform to generate an
 integrative awareness of soft skills development.
- Feedback loop with the client by online contact to improve the existing processes of data collection and insights display on the web. This represents one of the identifying traits of Softeo, which always seeks to provide extra value by creating direct communication with the client and its needs. Despite the fact that the majority of the platform development cost is assumed in year 0, the company invests in platform advancement and research and development throughout the business life. It is crucial to install the feedback loop, so the customer's preferences are constantly shaping the changes in the Platform.
- The Community of Softeo targets educators, students or parents with the creation of special events. It will be organized contests, workshops and award prizes for community members. Following the corporate core value of academic prestige,

standing educative schools will participate depending on the amount of interaction with the platform and the highest scores obtained. From these types of activities, teachers will improve their use of the platform and their teaching practices from contacts outside of the classroom. Furthermore, other education technology start-ups regarding empowerment programs and student success will be introduced to schools.

4.3 Channels

This building block describes the channels through which the company contacts and interacts with the different customer segments identified previously. The purpose is to get access to the clients and convey the value proposition in the optimal form, as it represents an important factor in the customer experience. The steps to introduce Softeo into the market are the following:

- Step 1: Contact through networking private schools in the Community of Madrid to start a pilot test. These are schools that have been in touch during the interview process or accessible via key contacts.
- Step 2: Make use of the internal connections of the association/order to which the school belongs and repeat step one.
- Step 3: Maintenance of the schools contracted and exposure to new clients is effectuated depending on the type of customer:

Direct Clients	Indirect Clients
Platform chatbot, email, social media	Web Page, email, Brand Ambassadors
(Facebook, Instagram, Twitter,	announcements, informative events/talks,
WhatsApp)	and social media
Events and Fairs:	Events and Fairs:
-Schools Day	-Aula
-Expolearning	-Experiential talks
-The Summit by Simmo education	

Table 7 Channels

4.4 Value Proposition

The value proposition section describes the exchange of value between the business and the client segments. The objective is to meet the needs of the customers by offering a service with a series of unique attributes that ameliorate the existing market landscape. In order to represent the foundational concept of Softeo, the Value Proposition Canvas analysis will be used. It is a tool that studies the gains, pains and needs of the customers and connects them with the offering of the Business to illustrate the value creation process.

1. Customer Profile

Customer Jobs describes the actions that our customer segments are trying to perform to meet the needs they want to satisfy.

- Direct Client (Schools) are trying to provide added-value services that justify the extra cost of private education. Schools want to prepare their students with an outstanding education that is applicable in the labour market. They also want to address the life skills gap with programs or activities that are challenging to evaluate.
- Indirect Client (Parents and students) are implementing employee soft skills training in companies to meet the industry requirements. Preparing individually for interviews that take into account social and emotional competencies. Extracurricular activities that indirectly develop these skills. Individuals also rely on subjective feedback to build an image of their strengths and weaknesses.

Pains respond to the problems and limitations that clients face when they are trying to perform the actions mentioned.

- Direct Client spend resources on sending teaching staff to learn soft skills teaching practices. Schools are unable to evaluate social and emotional activities because they are difficult to quantify and measure. Furthermore, educational centres do not collect information about the school experiences outside the classroom and the roles of the students in each.
- Indirect Clients have difficulty when real-life problems appear that require a
 productive mindset and social and emotional competencies (Communication skills,

lack of motivation, problem-solving tools, emotional intelligence, negotiation capacity, etc). Furthermore, lack of soft skills is a critical factor related to postgraduate unemployment (Araluce, 2019).

Gains stand for the benefits that customers are expecting from a value proposition that meets their needs.

- Direct Client: prepare well-rounded individuals that have acquired a set of competencies that are multifunctional. A product that can be adjusted to the current pedagogic offer because the teaching hours can not be increased. It must entail a clear picture of the soft skills of each student to understand individual and group patterns.
- Indirect Client looks for a reliable framework that creates awareness of the current level of the competencies. From secondary education, this set of skills can be industry oriented. Parents seek education adjusted to the 21st-century demands.

2. Value Proposition

- Gain creators describe what Softeo offers positively and additionally to the clients. Softeo provides a reliable evaluation system that depicts an accurate image of the soft skills of the student. Furthermore, it creates value from the gathering of data from experiences in the cognitive subjects of schools. It invites schools to complement its current pedagogic proposition and outstand in the quality of the education offered.
- Pain relievers display the way in which Softeo solves the pains described by the customer profile. Softeo promotes Life Skills development in basic education, so students are equipped with these transversal competencies required in future employment. It gathers information from the feedback of experiences about the behaviour of students in and outside of the classroom. It empowers teachers with an individual and group picture in order to optimize the teaching practices and areas they need to work on.
- Product and services provide a description of the product features. To do so, the main benefits Softeo offers to each customer segments have been identified and presented in the following graph. Additionally, they are compared to the main competitors:

Skilio, Edunexis and BeChallenge. Out of the total number of ticks (20), Skilio and Edunexis coincide in most of them (14). It can be concluded that the real product is similar, but the differentiation comes from the commercial and marketing strategy, as well as the action plan.

~ · · · · · · · · · · · · · · · · · · ·	DIRECT COMPETITORS			
<u>COMPETITIVE</u>	SPAIN SINGAPUR		SINGAPUR	
<u>ANALYSIS</u>	Softeo	<u>BeChallenge</u>	Skilio	Edunexis Spanish origin*
KEY BENEFITS OF SOFTEO	Three-way platform for teachers, students and parents that identifies, evaluates, analyzes and quantifies the soft skills of school students	Experiential learning platform that helps you discover, design, and connect real- world challenges in your classroom.	Soft skills measurement and analysis platform that enables organizations to track soft skills development	Intuitive web engine that enables schools, educators, and students to develop 21st century approaches through experience, reflection, and artificial intelligence.
SCHOOL				
Reports and annual or quarterly reports of the news of the educational and business ecosystem, more personalized	Ø			
Free trial period with the entire platform available	\square			
Feedback, improvement and intelligent communication system	\square	\square		
They focus solely on measuring Soft Skills	\square		Ø	
Easy coupling to the teaching plan and the methodologies implemented by the centers and other startups (without the need to transform)	Ø		\square	\square
Reliable and proven 360° evaluation process	\square		\square	\square
Availability in Spain, Europe and LATAM	\square	Ø		\square
Allows the center to differentiate	\square	\square	☑	☑
Simple and standardized simple platform adapted to any educational system and region	Ø	\square	\square	\square
Simple and user friendly visualization of the results. (Graphics, comparisons, degrees of development)	\square	\square	Ø	\square
Unlimited availability, online and on any device	\square		Image: section of the content of the	\square
Clients are schools	\square	\square	\square	Ø
PARENT Full accessibility to all members involved in the teaching of the user / student (Parents, teachers, school administration and students)				
STUDENT Comparative possibility with students from the same center or others who are part of the community, without violating data privacy	I			
Evaluation, measurement, quantification and objective analysis of Soft Skills	\square		\square	Ø
Self-awareness of the students' personal skills, their strengths and improvement points		\square	Ø	\square
Creates a competitive advantage in students for their incorporation into the world of work		Ø	Ø	Ø
TEACHER Reduces teachers' time completing	\square		\square	\square
administrative activities Teachers personalize classes based on				
data to optimize their teaching practices Analyze individual and group progress, trends and patterns of students by teachers				

Figure 5 Benefits of Softeo compared to competitors

Source: Own making

4.5 Key Resources

This section describes the essential resources that allow a company to design and deliver the value proposition to the identified client segments, build business relationships with them, and generate earnings from the operations. Softeo's Key Resources are grouped in the following categories depending on their nature: Financial, Intellectual, Human and Physical.

Financial	Intellectual	Human	Physical
Enisa Loan	Software Patent	Software developer	Computers
Contribution of Partners	Limited Company	Psych pedagogue (Soft Skills expert)	Platform
Family and Friends	Data privacy and security	Web designer	Telephone
Business Angel	Brand / Domain	Legal Advisory	

Table 8 Key Resources

The financial resources required to begin the business operations are divided between debt and equity. The latter is composed of investment from the business partners, family and friends and a Business Angel. The social capital amounts to 170.000€ and it does breakdown in the following manner: Business Partners (50.000€), Family and friends (30.000€) and Business Angel (90.000€).

Debt represents part of a company's liabilities for which it pays an explicit interest from the capital borrowed. Softeo's debt is lent by Enisa, a publicly- owned company that provides different lines of funding for feasible and innovative business projects to Small and Medium Spanish Enterprises (SMEs). There is a financing option called "Young Entrepreneurs" (*Jóvenes Emprendedores*) that is oriented towards SMEs and start-ups of recent constitution by young people. The objective is to provide funding for investments required in the initial phase of the project. The team of Softeo meets the requirements presented by the institution:

Relevant Requirements	Softeo
Company's Constitution maximum 24	Constitution (April) is settled 5 months
months before the application	before the application (September)
The majority of the Equity has to be in	The equity will be divided between the
hands of physical individuals below the	initial partners (Control) and a %
age of 40 years old	ownership of a Business Angel
The partners must contribute at least 50%	Partners contribute more than 50% of the
of the total amount of the loan via social	total capital demanded
capital or own equity	

Table 9 Enisa requirements

Once the requirements are met, the loan is finalised under the following conditions:

Opening Commission	0.5%
Loan Amount	50.000€
Maturity	5 years
Lack of Capital	3 years
Effective Interest years 1-3	2,76%
Effective Interest years 4-5	4%
Link Enisa	https://www.enisa.es/es/financia-tu
	empresa/lineas-de-financiacion

Table 10 Loan conditions

The physical resources include the hardware material that the team relies on to be able to deliver the service as a platform. It comprises computers, telephones, and the platform itself.

The following table comprises some Key resources from the direct competitors of Softeo. This information was extracted from sources such as CrunchBase and Owler. Out of the three, Skilio has got the most resounding market repercussion, employees, and followers.

DIRECT	BeChallenge	Skilio	Edunexis
COMPETITORS	<u>bechallenge</u>	SKIIIU	Eduliexis
Round	Pre Seed	2 Grants	-
Capital Raised	€60k	\$30K	-
Investors	Invergy	NUS Enterprise, Enterprise Singapore	-
Date	-	2019	-
Foundation year	2017	2019	2014
N° of employees	8	12	5
Prizes	-	Nus Enterprise Innovation, 1st in NUS Career fest, Startup World Championship, Enterprise Singapore	SEK Lab Awards
Technology	Amazon AWS, Apache, Ubuntu, Google Tag Manager, Viewport Meta, Google Font API (45)	Gmail, Google apps, Bootstrap Framework, Google Font API, Google Tag Manger	Amazon CloudFront, Cloudflare DNS, Route 53, Amazon AWS, Bootstrap Framework
Partners	-	Great Academy, SGUnited, JA Singapore, Chrisalysts	SEK Lab Awards
Web clicks per month	3405	-	-
Linkeding followers	438	702	235
Countries	15	1	2
HQ	Spain	Singapur	Singapur

Table 11 Competitors key data

Source: Own making

4.6 Key Activities

This block represents the critical ventures the company must do to manage its business model successfully. If these activities are fully accomplished, Softeo should be

able to reach the customer segments and operate accordingly to its value proposition. They are summarized depending on the ultimate goal of the activity:

Product	Clients	
Front-End Development	Back-End Development	
(External design)	(Internal management)	
Platform and web page	Company constitution and	Search and agreement to
design	incorporation	carry out project pilot
Formalize the personality	Legal counselling regarding	Attend related fairs and
tests and feedback	data storage and privacy of	events
questionnaires post-	students	
experience		
Create Softeo's social media	Platform and software	Networking with contacts
account (Facebook,	development	and schools' associations
Instagram, Twitter,		
WhatsApp)		
Create channels of direct	Data and server's storage in the	Monthly, quarterly
communication with clients	cloud	situational report with the
such as Email or Chatbot		clients
	Registration of the software	Feedback loop
	patent	
	Recruitment of software	Sign agreements with
	developer and Psych	strategic partners
	pedagogue	

Table 12 Key activities

In order to effectuate the majority of the key activities regarding the product, it is necessary to consider the human and intellectual resources mentioned in the previous block:

The software developer is in charge of creating and designing the software that
accumulates the students' soft skills data and the algorithm that is used to measure
the soft skills over the different school experiences. This cost is included in the initial
Platform development cost and drains a substantial part of the initial investment.

- However, investments in the platform are conducted yearly for further improvements based on the feedback from the clients and operational needs.
- Psych pedagogue combines two subjects of study: psychology and pedagogy. It plays an essential role in designing the scheme for gathering the student's data. The online forms for both the periodic personality tests and the academic experiences are depicted by the professional to measure the specific soft skills involved.
- Legal Advisory is needed to word a data privacy policy that reflects the actual business practices and complies with the Spanish student privacy laws (Ley de Protección del Menor, Reglamento General para la Protección de Datos y la Ley Orgánica de Protección de Datos). Furthermore, it is needed a data security plan that illustrates the operating and non-operating affairs.
- Data and server storage in the cloud-hosted in a Data Centre Tier 4. Softeo decided to use the Cloud service instead of a traditional physical centre for the succeeding reasons:
 - a) High scalability, meaning that the characteristics of the server can be moulded depending on the necessities of the company. This is especially attractive for a start-up with growth potential.
 - b) Cloud service is available for the company almost immediately after registration.
 - c) High availability to the data stored because the server keeps functioning after punctual issues in detriment of traditional servers that are prone to system failure and data losses.
- Open channels of communication with the client segments to create the feedback loop. On one hand communication with existing customers flows via email or the personalized chatbot. On the other hand, a significant part of the marketing campaign is implemented through social media and events and fairs.

4.7 Key Partners

This section of the Business Model Canvas describes the external companies that are needed to accomplish the Key Activities of the company. The Key Partners can be divided into three categories:

1. Suppliers: represent the only third party involved in the operations of Softeo in the short- term. The evaluation system, which represents the core product, does

not rely on external business agreements because it is a patented software that has incorporated the necessary elements. However, data storage is transferred to companies with cloud computing services such as Amazon Web Services (AWS), Kamatera, OVHcloud, among others. Additionally, cybersecurity companies like Kimatio or Baufest could ensure data protection that is especially important for underage students.

- 2. Partners for strategic alliances embody the set of companies that can help implement the value proposition of Softeo in the medium/ long term. Firstly, company generators of online pedagogic material such as Udemy, Coursera, BIJU'S. The objective is to provide personalized learning recommendations depending on the soft skills student performance. Secondly, companies specialized in the creation of enriching and prestigious communities like Nova Talent.
- 3. Partners for Business Development represent the organizations that provide strategic resources to optimize value creation. Potential contracts with EdTech start up accelerators that provide mentorship, networking and financial support such as AWS Edstart, EduTech Hubbik and Ship2B. International competitors like Skilio, can provide expertise on the expansion to other countries and corporate staff evaluation.

4.8 Cost Structure

The eighth module of the Business Model Canvas picks up the main costs of the company. The financial resources required are divided between Equity and Debt, as mentioned earlier in the Key Activities section. These funds will be allocated to cover the initial investment, mainly the software development and the data collection tools. Furthermore, these resources are needed to finance the beginning operations. This entails maintaining a positive cash balance to defray Softeo's costs and avoid a potential liquidity crisis. The paramount funds are allocated to cover:

1. Investments

- Software development: requires an initial investment of 35.000€ in year 0 and a supplementary investment of 10.000€ in year 3 to launch the expansion stage. Additionally, 1.000€ will be allocated yearly to improve the value proposition based on the client feedback. The commencing software and the subsequent investments have a useful life of fifteen years that are depreciated on a monthly basis.
- Computers: MacBook Pro of 1.130€ for each of the three founding partners that are in charge of the following business functions: Marketing and Sales, Finance and Accounting, and Operations and Human resources. In year 0, one additional computer is reserved to exercise the platform maintenance by the information technology expert in the workforce. Computers have a useful life of ten years that are depreciated monthly with the straight-line method at a charge of 425 annually. In the expansion stage, another set of four computers are acquired for the personnel recruited to meet the demand.

2. Costs

- Direct costs are expenses that can be easily traced to the Platform as a Service and vary as purchasing increases or decreases.
 - a) Payment of salaries to IT support and the psych pedagogue that play an essential role in the operations of Softeo. These positions are required in a stable manner to meet the technical requirements of the software and the data collection tools. The cost of these positions increases jointly during the first years depending on the number of schools contracted. However, two extra IT support salaries are paid from year 5 due to the escalation in the number of users.
 - b) Platform maintenance cost is directly linked to the number of users. In year 1, the charge is 200€ monthly with ten operational clients. In year 5, the monthly cost increases to 3.000€ to cover 230 schools.
 - c) Cloud computing, described in the Key Activities section, accumulates the students' data in a safe, accessible way. Its capacity can be moulded depending on Softeo's requirements. The monthly cost of the cloud doubles from year 0 (350€) to year 5 (700€).
- Indirect costs are composed of the remaining costs that are not readily identified with the performance of the PaaS.

- a) Selling, General and Administrative (SG&A) cover the one-time setup costs such as the Mercantile Registry (3.000) or the Patent Registry (400) and other periodic business costs. The latter comprises the salaries of the founding partners, insurance premiums, web domain and hosting, telephone rate, office rent (starting year 4), legal counselling, and banking fees.
- b) Marketing and advertising represent a resounding percentage of Softeo's total cost, especially in the introduction phase. In year 1 the monthly charge is 1.250€, which increases to 4.300€ in year 5.
- c) Research and development (R&D) represent an annual payment that is carried out to test technical innovations that ameliorate the existing platform.

4.9 Revenue Streams

The pricing model designed is based on the study of the Household Spending in Education, published in the survey of the Instituto Nacional de Estadística for the academic year 2019-2020 (INE). The first step is to find out the average household expenditure per student of the obligatory secondary education:

Average annual student	Public	Concerted	Private
cost			
Secondary Obligatory	336€	1.078€	4.931€
Education			

Table 13 Household expenditure per type of education

One of the reasons why Softeo targets private schools in the short/medium term is because the average cost in the private sector six-folds the average cost in public students. This means that households that invest in private education are spending considerably more money annually and are in the position to demand innovative and updated teaching practices from schools that are adjusted to the current personal and market needs. This household average cost can be broken down into the following:

Cost per ESO private student	%	Total Spending
Tuition and elective classes	65	3.205,15 €
Canteen service	10,4	512,82 €
Other complementary services	7,0	345,17 €
After-school activities	7,9	389,55 €
Support and reinforcement education classes	6,4	315,58 €
Other services of formal education	3,4	167,65 €

Table 14 Breakdown of annual private education cost

Softeo's system is blended with the current pedagogic offer, as it receives the majority of the information from the other cognitive modules. However, it is not included in the teaching activity of each of the modules. It is neither included in after-school activities or other services. For this reason, the expenditure attributable to Softeo is included in support and reinforcement education classes, which represents 6,4% of the total cost per private student of secondary education.

Based on the market research carried out by interviews and surveys, prices of education technology competitors and investment costs, some annual assumptions have been fixed. These correspond to the percentage of the annual support and reinforcement education classes cost (315,58€) that will be attributable to soft skills evaluation.

The percentage attributable to Softeo increases from 10% to 16% because of the number of soft skills that compose the product and the consolidation of the value proposition in the market. The latter entails superior bargaining power and visibility that will start transforming the current costs of the category towards soft skills evaluation.

The revenue streams of Softeo are constituted from monthly payments from schools that vary depending on the number of students and soft skills included. However, the contract between the parties is signed for the whole academic year, and it is based on the annual cost per student divided by 10 months (length of the academic year). Finally, the cost of Softeo out of the total household expenditure per student of the obligatory secondary education represents less than one per cent over the next five years. So, it can be concluded that the need for life skills evaluation will not have a resounding impact on private household budgets.

For the purpose of estimating future revenues, it has been used the average number of students per private secondary school in Madrid, which amounts to 117 students (Datos y cifras de la Educación, 2019-2020). This is because there is a wide variety in the student base of each private school.

Academic year	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026
N° Soft Skills	3	3	6	6	6
offered					
% Assumption	10%	10%	16%	16%	16%
Annual Cost per	31.56 €	31.56 €	47.34 €	47.34 €	47.34 €
student					
% Total Annual	0.64%	0.64%	0.96%	0.96%	0.96%
Cost					
Monthly cost	3.16 €	3.16 €	4.73 €	4.73 €	4.73 €
per student					

Table 15 Revenue stream

- In the introduction phase (2021-2023), the operations will be focused on the Community of Madrid so the founding Team can be close to the schools. During this period, the trial lasts the first four months. In year one, Softeo is contracted by five private schools in Madrid, a number that doubles in year 2. Over this period, information is collected about the potential improvements of the system, that act as a base for the consolidation of the PaaS in the forthcoming year. On this date, the second substantial investment in the platform is carried out, enabling to increase the number of soft skills offered to 6 and the start of the expansion phase.
- In the expansion phase (2023-2026) the target is still private schools but this time across the whole national territory. Physical closeness is not required anymore, as the needs during the first two years have been solved by online tools. The trial period is shortened to one month, in which the schools get in touch with the data collection tools and the platform.

Year	1	2	3	4	5
N° of schools	5	10	27	76	230
Growth rate (g)		100%	165%	185%	205%

(Medium/Long Key Partners term)

Key Activities

Material suppliers:

didactic material (Udemy, -Companies with course libraries and soft skills Coursera, Biju's)

Community Creation:

education (Evaluation of -Corporate companies interested in soft skills the applicant through Seedlink, Pymetrics) Universities that continue this teaching (ICADE-CAI, IE, Deusto)

-Participation of existing communities (NOVA)

Key Resources

partners, search and customer acquisition

creating direct communication channels

feedback loop), agreements with

·Networking contacts and schools,

(<u>@</u>) Human: software developer

Education psychologist, web designer, operations, RRHH, marketing y Legal advisory, team (Finance,

ntellectual: Software patent, Trademark, -imited Company, Security and

Data privacy

Physical: computers, Storage Data in Cloud, Servers

Crowdfunding, Family and Friends, Economic: ENISA loan,

Partners contribution

Cost Structure

@(g)

Revenue Streams

Teachers optimize their teaching Pain Relievers: oractices

 Quantify and measure the soft skills of each student

Measure individual and group Students have competencies demanded by the industry progress

Data are obtained from other subjects

Product and Services:

Visual and detailed presentation of the development of each student Accessible for teachers, parents PaaS for high school students Free trial period and students

Customer Relationships

Value Proposition

Segments Clients

®

Short (Madrid) y medium

-Direct clients: ESO private (España) term:

-Direct customer: free trial period

Engagement of new clients:

Indirect customer: ambassadors collection merged with teaching. content recommendation, data

Provides students with transversal

skills

Educational centre differentiation

questionnaires, data collection, creation

Front-end: platform and web page

Product:

design, formalize tests and

hiring, patent registration, creation of a

profile in the cloud

Clients:

Back-end: Incorporation SL, Personal

of social media profiles

Complements the current

Sain Creators:

educational offer

associations (CICAE, Opus schools belonging to larger Dei, NABBS, ICS, Mater Salvatoris, etc)

-Indirect customers: Students, teachers

-Direct client: quarterly and annual

Customer loyalty:

Indirect client: community

participation, events.

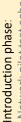
reports, feedback loop

Long term:

private, concerted and public -Potential direct clients: schools

Potential indirect customers: universities, companies students, professors,

Channels



 Contact with associations and orders from private schools ·Network pilot test schools,

Expansion phase:

Simo education, school's day live Aula live connect, The summit by telephone, Events, Fairs, IFEMA Facebook, Instagram, Twitter) connect, expoelearning live -Platform, mail, chatbot, connect. Social media

ॐ



Operational costs: platform costs, data storage and salaries education Initial Investment: 200.000€ social capital and 50.000€ ENISA loan

Schools pay a variable monthly fee depending on the number of Students and soft skills

Monthly fee per student: Year 1-2 (3.16€) Year 3-5 (4,73€) Number of soft skills offered: Year 1-2 (3), Year 3-5 (6)

Number of schools: Year 1 (5), 2 (10), 3 (22), 4 (51) y 5 (129)

Fotal Revenues:

Year 5: 671,148.39€ Year 3: 113,346.90€ /ear 1: 7,753.37€

Source: Own making

Year 5: 168,170.80€

Non-operational costs: Selling, commercial and Marketing, cost of marketing and

Year 0: 41,750.00 € Year 3: 32,400.00€

psychologist and software developer

advertising and expenses in innovation and development

Year 3: 27,238.00€

Year 0: 10,340.00€

Year 5: 54,240.00€

5. Other Key Information

5.1 Financial KPIs

Lastly, it should be pointed out that the Key Performance Indicators illustrate the viability of the product from the financial view over the medium term. It is observable in the Profit and Loss account that the revenues coming from the limited number of schools is not sufficient to meet the elevated cost figures during the first two years.

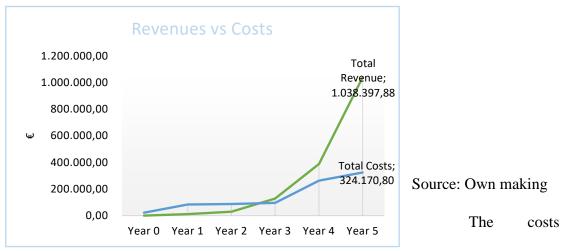


Figure 7 KPIs Revenues and Costs

increase accordingly to the company's growth due to the costly variable charges. On the other hand, revenues also increase but in a more exponential manner. The scalability potential, that is resounding from the beginning of the expansion phase, is explained by the following factors:

- The consolidation of Softeo in the market: the evaluation of soft skills is an innovative concept itself for the current Spanish education system. Furthermore, Softeo counts with a methodology that varies from other competitors in the national and international territory. Once the business model idea is settled, it can easily spread through the different private schools' networks identified in the customer segments section.
- Lack of physical need: The feedback loop during the introduction phase is utilized to ameliorate the operations of the product and the communication channels with the clients. Therefore, the platform can be used online across the national territory

without physical requirements. This fact aggregated with the software updated after the subsequent investments and, the large number of data collection tools developed, explains why the service can be expanded to a vast number of schools without any extra costs.

The tangibility of the results since day one: Softeo provides an evaluation criterion for private schools that have got nurturing programs. These schools can check the effectiveness of their programs and measure individual and group progress. Those schools that do not follow yet empowerment programs, will also be able to rely on a framework that provides feedback on the social and emotional abilities. This way it is visible the skills that are needed to improve in future school experiences. The software generates insights as soon as it starts receiving data from activities and personality test.



Source: own making

Figure 8 Financial KPIs Revenues and Net Income

Softeo's objective is to be a profitable business from year three of operations. The financial projections illustrate the negative Net Income during the years 0, 1 and 2. Due to the scalability potential mentioned above, the losses generated during the introduction phase are overcompensated since the beginning of the expansion phase.

5.2 Organizational structure of the company

The founding member's team is made up of three last-year Bilingual Business Administration Students (E-2 Bil) from the finance and accounting itinerary. All three have had international experiences for a year in the United States and the United Kingdom, as well as industry internships during the education. The organizational structure of Softeo during the first years of operations will be as simple as possible. The management team is made up of the founding members of the team:

- Elena Gómez-Villalba will be the COM in charge of Marketing and Sales. In Years
 4 and 5, the marketing team will expand by hiring an intern and another employee.
 It is necessary to develop new marketing opportunities and implement new sales
 plans for potential clients.
- Gonzalo Arribas will be the CFO of the company and, as of Year 4, we will also have another employee join this department. This way, the tasks of tracking Cash Flows, financial planning, financing options, among others can be run with further support.
- Next, Miriam Cohen will be the COO of the company, as in the other departments, from Year 4 we will also have another employee. Finally, it is worth highlighting the importance of the IT Support and Educational Psychology departments, which are key to the development and maintenance of the platform.

5.3 Proposition to investors

The business opportunity for investors is focused on the initial financing round required in year 0. The funds contributed are converted into Softeo's capital stock, which represents a total amount of 170,000€. The reason for this investment is to be able to cover the initial costs and support the viability of the pilot project carried out with five private schools in the Community of Madrid from April to December 2021. The distribution of the contributed capital is divided as follows:

Founding team	Family and Friends and	Business Angel / Pre-seed
	Fools	Investors
50,000€	30,000€	90,000€

Table 16 Capital contributions

Softeo is constituted as a Limited Company, a legal form that is widely used in start-ups companies. The reason behind this is that the required share capital is lower than in other types of legal entities (€ 3,000), and the greater ease concerning the number of restrictions on the transfer of shares. Furthermore, even if it is not allowed to quote in the stock market, it can transform into a public limited company at any point to do so. At the time of incorporation, the three partners acquire 33% of the shareholding distribution that will be altered in the financing round of 170.000€:

- The Family and Friends contribution receives 7% ownership in the company. This
 percentage is diluted in minority investors so that none would have decision-making
 power in the company.
- Business Angel / Pre-seed Investors will receive a total of 21% ownership in Softeo.
- The founding members share the remaining 72% equally. In this way, each one receives 24% of the company's capital.

6. Conclusion

After having finalized this end of degree project, a variety of conclusions can be extracted. Firstly, from the educational systems and industry in which Softeo operates. Secondly, about the operations of the company itself and its expansion opportunities. Lastly, some thoughts about the project development and important remarks.

From the first block that provides the theoretical review onto which can be articulated the Business Plan of Softeo, the first objective identified was to analyse the factors influencing the increasing demand for soft skills. It can be observed that the increase in demand for soft skills is caused mainly by the transformation into a knowledge-based economy, in which there is instant access to digital resources. In this context, technical teaching provides less value to the companies and to the development of the individual. For this reason, both companies and families are interested in an education that covers cognitive and non-cognitive competencies. The second objective of the paper was to study the impact of soft skills in educational laws and their implementation. In the United States it is observable that since the enactment of the Every Student Success Act (ESSA), schools are implementing social and emotional skills into their teaching curricula. Furthermore, schools are commonly relying on analytics and data management companies to improve the gathering and evaluation of these competencies. In Spain, the development of life competencies is illustrated in the Organic Educational laws and the European Union directives. However, schools are only demanded to evaluate technical skills, due to the historic difficulty and subjectivity that entails the evaluation of soft skills. The last objective from the first block was to diagnose the effect of technology in the development of soft skills and potential uses. On the one hand, it is doubtful up to what extent have social interactions being substituted by technology. On the other hand, technology has provided tools such as the use of analytics that help to ensure student success and improve teaching practices.

The second block commences describing Softeo from the technical approach of the product. The fourth objective regarding the business model of Softeo is achieved by describing the nine sections that compose the Business Model Canvas. In each, there is a deep analysis of the client segments (schools, students, parents), channels (in the introduction versus expansion phase), customer relationships (related to engaging new

customers or creating loyalty), strategic partners (Material suppliers- Udemy, and community creators- Nova), key resources and activities (such as the development of the PaaS or financing), value proposition (Tri-directional platform), cost structure (operational and non-operational) and revenue streams (monthly charge to schools depending on the number of students and soft skills). The last objective of providing a holistic view of the problem and the company as the solution is achieved by complementing the Canvas with the proposition to investors (90.000€ of the social capital), Key Performance Indicators (Break-even in year three), and organizational structure of Softeo that describes the assignment of roles to each of the founding members (COM- Elena Gómez-Villalba, CFO Gonzalo Arribas, COO-Miriam Cohen).

Lastly, it is important to outstand the achievement of the ultimate objective of the team: to design a highly scalable company that improves the competencies acquired during the education, to ease the hiring process and day-to-day requirements in the workplace. It has been a long and demanding process in which, driven by our motivation to improve the existing situation, we have achieved Comillas mission and values of "Personal development alongside academic progress".

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8. Appendix

7.1 Softeo Logo



7.2 Softeo's Video pitch



7.3 Template used for interviews with basic education teachers

(Introduction)

Welcome, thank you very much for taking a few minutes of your time with me.

The objective of this interview is to fully understand the problem manifested by many companies, which indicate that recently graduated students sometimes lack the necessary soft skills when they join their first job.

However, we do not want to talk too much about ourselves. We want to make sure the rest of the education sector sees the same problem and see if it is a product worth developing.

The mechanism of the interview is as follows. I will start by describing the main issues we want to address and then ask your opinion on them.

I want to emphasize that we do not have a finished product yet and that our goal is to learn. We don't want to sell anything or convince you of anything. All honest answers are very helpful to us. Do you think if we start?

(Collection of Demographic Information)

Before talking about the problems, I would like to get to know you a little better. I'm going to ask you a few questions just to get general demographic information.

- What position do you hold in the school?
- What level of education do you work with?
- In what type of educational center do you work?

Very well thank you. Now I would like to talk to you about the problems we want to solve:

Companies in the selection processes highly value these skills many times over cognitive skills (more technical)

In my case, (private university) personal skills diploma courses are done. But in many places these skills are not done / seen when they are very old (without the ability to really teach and enhance)

Working on these skills will help individuals in many situations in any professional context. (examples: giving feedback, negotiating salary, assessing the emotions / feelings of your team, etc). I would have loved to work on them since I was a child. This year I have dedicated myself to doing processes and interviews. Where the biggest filters were both psychotechnical tests and personal interviews that evaluated our non-cognitive abilities. I think you can prepare and sell it. But when it comes down to it, I consider that when you get the internship or the job, you realize that you haven't worked on these skills enough.

I think that in general we all think that being a leader or good at working in a team depends on the personality of each one, on whether you are more outgoing. But after I went to the United States, I realized that this is not the case for everyone. These skills can be worked on and developed over time.

(Explore the Client's World View)

I would like to know your opinion on this subject,

Is there such a problem for you? Do you think it is the responsibility of the school to teach these skills? Should they work during basic education? Do you miss these skills in your day to day when dealing with students in class?

More open questions:

What do you think of America's education?

What do you think about the youngsters today? Strengths and negatives compared to past generations.

What challenges do you think young people today face?

What do you think the Spanish educational system does very well compared to other educational systems? Where you think we falter.

How you would like you to educate your children. What things would you value most in your education?

What do you think about non-cognitive skills such as leadership, negotiation ... do you think it is something easy to teach and how do you implement them in your class?

(Questions related to the problem)

- What do you think about this topic?

Has this topic been discussed at school? Informally (between teachers) or formally (meetings, etc). Do you plan to tackle this problem in the future?

- And what idea can you think of to solve this problem?
- Do you have any specific tool to solve this problem? (I would not say platform here because I have seen in the answers that people offer other types of solutions)

(Conclusion)

The purpose of this interview is to understand at what level a platform would be necessary to monitor and enhance the soft skills of students during their academic career.

7.4 Link to data collection survey



https://www.surveymonkey.com/r/69Z6R2N