Country:	Brazil
Member/Company	CNI
Initiative	*Multiple Initiatives*

Overview

"Mundo SENAI" Vocational Education Marketplace

PURPOSE

Implement a platform that optimizes the provision of vocational and technological education courses and programs, in partnership with several institutions, in order to expand the scope of supply, ensuring the quality and adherence of the offers to the industry needs.

BACKGROUND

In a globalized world marked by continuous transformations that affect the productive systems, demanding continuous processes of professional updating and improvement, it has become important to increase and give visibility to the set of offers of vocational and technological education courses and programs in order to meet the most diverse demands of the industry, bringing together several partners and providers in a single digital space.

Thus, SENAI has implemented a national platform, called "Mundo SENAI" (marketplace), which brings together different vocational and technological education institutions, with offers of courses and programs that meet the professional training needs of industries.

The "Mundo SENAI" (marketplace) is a platform intended for the sale of educational services, bringing together 29 stores with their respective showcases, advertising their classroom, mixed, and distance vocational education courses all over Brazil, serving both individuals and companies.

The "Mundo SENAI" (marketplace) platform for vocational and technological education in Brazil is a pioneer initiative and seeks to foster a better business perception by SENAI and its partners, by favoring and optimizing the relationship with customers, producing new businesses, and increasing the supply of vocational education courses and programs.

The "Mundo SENAI" (marketplace) is presented as a new business model to provide solutions for the Brazilian industry, in accordance with different contexts and scenarios.

Marketplace integrates the vocational and technological education ecosystem implemented by SENAI, enabling access to job vacancies offered in the industry and to the course catalog, both for interested young people and adults and for companies, providing a set of information ranging from vocational orientation, salary survey, professions guide, to the indication of the registration period for the courses.

It is, therefore, a digital tool that has proven its relevance in intermediating the sale of vocational and technological education courses and programs and increasing the expansion of vocational and technological education in the country.

SENAI in the New Secondary Education

PURPOSE

Expand the supply of vocational and technological education according to the demands of the industrial sector in the new secondary education.

BACKGROUND

One of the main challenges of the Brazilian public education is how to prepare the Brazilian youth for the changes of a constantly evolving world. To ensure a solid knowledge base then becomes the starting point for the development of a set of skills required for young people to be successful in their professional career and in their lives.

The secondary education reform, through Law No. 13,415/2017, established a new structure for this level of education, including the integration of a Common Core Curriculum (BNCC) to the offer of different education routes, focusing on the areas of knowledge and on technical and vocational training, in response to the expectations of adolescents and young people who will have to face the labor market after concluding the basic education.

The reform is a major advance in the regulatory framework of national education, aligning itself with good educational practices implemented in industrialized countries, which are concerned with the training of skilled labor for the productive sector. In the European Union, 48% of young people enrolled in the secondary education are also enrolled in some vocational education. In Brazil, this percentage is only 11%.

By adding relevant meaning to the last stage of basic education through professionalization pathways, the secondary education seeks to meet the expectations of the vast majority of young Brazilians who are in school today, but will not go to college. According to the Summary of Social Indicators (2018) published by the Brazilian Institute of Geography and Statistics (IBGE), only 36% of students who finished the secondary school in a public institution entered college.

Of the 15,018,498 students who entered primary school in 2019, only 65% finished secondary school. In this context, 35% neither finished the basic education nor entered higher education.

About one in four students is failed or drops out of school at the beginning of secondary school. In 2018, 880,000 students dropped out of school while 2.7 million students had to repeat a grade.

There are several factors that interfere with students staying in school. Among them, the lack of better future prospects and the low attractiveness of the secondary education cannot be overlooked.

The challenges that public schools face are not few, but the biggest one is to make them an effective agent of transformation in the lives of adolescents and young people who do not enter college. For them, the secondary education needs to be a terminal degree and provide a certification that will serve as a passport to the future, enabling the qualified insertion in the labor market after completing basic education.

The employment conditions of the young population also deserve attention. The unemployment rate of young Brazilians between the ages of 18 and 24 reached 27.1% in the first quarter of 2020, far above the overall average of 12.2% unemployment in the country in the same period.

The offer of robust professionalization pathways, integrated to the new secondary school, thus seek to respond to the challenges of a labor market increasingly affected by new technologies that are transforming the production processes of goods and services and that demand more and more qualified workers.

Within this context, SENAI pioneered the implementation, in partnership with the Social Service of Industry (SESI), of the new secondary education, by providing technical and vocational training courses integrated to the secondary school curriculum in line with the demands of the Brazilian industrial sector.

The experience, subject to the Vocational Training Evaluation System developed by SENAI, increased the proficiency levels in the students' performance, both in the curricular components related to general education and to the development of the professional skills required from the professional profiles for the conclusion of the technical and vocational courses.

Considering that, in Brazil, only 15.95% of the students in the secondary technical education graduate in engineering, manufacturing, and construction areas, it becomes essential to stimulate the supply of vocational training that meets the demands of the industrial sector and that is able to contribute to a favorable environment for the resumption of the Brazilian economy growth.

Taking into consideration that vocational training for the industrial sector, especially with the emergence of new technologies and Industry 4.0, requires significant investments in the periodic training of teachers and the permanent upgrading of laboratories, machinery, and educational environments, SENAI, based on a successful experience, positions itself as an important partner of the public educational systems to implement the secondary education reform, thus ensuring a quality technical and vocational education for the industrial sector, which contributes to the increase in the employability rates of young people after they finish basic education.

Therefore, the aim is to strengthen vocational and technological education for the industrial sector in the Brazilian educational matrix, through the offer of vocational training courses and programs committed to the development of professional skills in line with new work contexts in the industry, whether by preparing the young people for the professions of the future or by implementing educational processes capable of supporting the requalification of workers to preserve jobs.

SENAI Program: "CONTRATE-ME" (Hire Me)

PURPOSE: Support the labor intermediation process for the Brazilian industrial sector.

BACKGROUND

The need to support industrial companies' processes for recruiting and selecting professionals led SENAI to develop a digital platform, called "CONTRATE-ME" (Hire me, in English), which intermediates the labor force for the productive sector using technological resources that identify the job applicant' characteristics that are more suitable to the professional profiles sought for the job vacancies offered by companies.

The platform seeks to optimize the resources invested by companies in the process of hiring new employees, which, most of the time, requires a huge effort to conduct interviews to fill just one vacancy

in the company. Through "CONTRATE-ME" (Hire Me)the recruitment process becomes more agile and assertive.

Through artificial intelligence, the program reviews the profiles of applicants for vacancies, analyzing their technical and social-emotional skills (soft skills), and then ranking the applicants based on the degree of adherence of their resumes to the expectations and culture of the companies.

The goal is to optimize the access of young people to the labor market, while meeting the real needs presented by industrial companies in the replenishment of their labor force.

The implementation of the tool was so successful that the companies also glimpsed the possibility of using it to manage the skills of their current employees, in order to identify skill gaps and guide processes for improving and retraining their employees.

One of the benefits brought by the platform is related to the increased employability of SENAI students and former students, who, most of the time, are the ones who meet the most the requirements established for job vacancies registered in the platform by the industrial companies.

The success of the tool "CONTRATE-ME" (Hire Me) led SENAI to maximize its reach by associating it with a virtual talent fair called Feira de Talentos – "CONTRATE-ME" (Hire Me).

The first edition of the event, held 100% online for 3 days in 2021, had an innovative virtual environment with stands, auditorium, and workshop rooms, and aimed to link professionals to vacancies available in the industry, as well as to promote employability for SENAI students and former students registered in the "CONTRATE-ME" (Hire Me) platform and other participants of the event.

More than 20,000 people pre-registered to participate in the event through the fair's landing page and 14,718 registered people participated over the three days. More than 49,000 candidates and 381 companies were registered on the "CONTRATE-ME" (Hire Me) platform. Twenty-seven large companies participated by exhibiting their activities in stands that could be visited by the participants. More than 1,000 job vacancies were opened, and 58 companies offered job vacancies during the event.

Three workshops were held, and 12 lectures were given with themes focused on insertion in the job market: "The professional profile of the future", "Post-pandemic challenges", "The importance of women in the job market", "Soft Skills", "How to face recruitment processes", "How to build a résumé", "How to use Linkedin strategically", and "How to transform the world through innovative entrepreneurship".

SENAI + Digital Program

PURPOSE

The purpose of SENAI + Digital Program is to promote a major pedagogical transformation supported by digital resources. A new way of approaching vocational training, more flexible and customized, with intensive use of digital technologies that take into consideration the new public profiles, contemplating new ways of teaching and learning, and committed to the training of professionals properly qualified to work in Industry 4.0.

Therefore, we seek to promote the digitalization of SENAI Schools, making them more efficient and increasing the number of enrollments by using the digital resources already developed and managing, in

a rational and intelligent manner, to use their installed capacity and increase their productivity and sustainability rates.

BACKGROUND

The premise of the Digitalization of SENAI's Vocational Education is the use of all educational assets built according to the quality standards defined by SENAI's Vocational Training Methodology, based on the development of professional skills.

The effort to develop educational processes and products based on national quality standards started in 2012, and, today, this effort already reaches 32 technological areas served by the industry. These products and processes support the planning, development, and assessment of vocational and technological education throughout the SENAI System, ranging from initial training to higher education technology courses.

Currently, in all SENAI schools there are available 960 courses in the National Itineraries of Vocational and Technological Education, 65,000 hours of online courses, 1,156 Textbooks with Augmented Reality (AR), 30,000 learning objects and situations, 61 pedagogical training and technological updating courses for teachers, teaching kits and simulators, and a Vocational Training Evaluation System comprising theoretical and practical evaluation.

In order to ensure the interrelationship of the developed processes and products, a digital Vocational Education ecosystem that could gather and ensure that all these assets were connected was developed in parallel.

The first national digital platforms were deployed: the National LMS, the School Management System (SGE), the Google Ecosystem, the "MUNDO SENAIS" (marketplace), the Adaptive Learning System, and Mundo SENAI integrated and used as a national platform.

The intended transformation required a school to "think" beyond its walls. The educational offerings now include synchronous and asynchronous classes and the intensive use of already developed technologies, associating online material, practical classes, simulators, e-books and augmented reality, and also ensuring the customization of the vocational training path by the student through adaptive learning.

This allows schools to, in addition to preparing a greater number of trained professionals, reduce the presence of students in their facilities, using more efficiently their installed capacity, and thus being able to increase their productivity and expand the supply of courses.

The digitalization of vocational education should ensure the streamlining of processes and decision-making from data-based evidence, bringing new perspectives to school management, considering three aspects:

- Digital infrastructure: Deployment of 4.0 labs (concept and application) and provision of connectivity for students and teachers anywhere (in schools or at home).
- Digital processes: Incorporation of Artificial Intelligence in the systems to ensure agility in the processes and assertiveness in decision-making from data-based evidence, bringing new perspectives to school management and educational operation.
- Digital mentoring: a vocational education digitalization process should be anchored in the development of a digital culture. A broad investment should be made in training teachers and managers and conducting pedagogical and technological mentoring to actually achieve a digital transformation.

The digitalization process of SENAI's vocational and technological education follows some megatrends for education:

- Technology-mediated grades (synchronous and asynchronous).
- *Microlearning*: short courses for quick and emergency training.
- Adaptive Learning: boom of customization in education.
- Application of XR (extended reality) technologies - virtual, augmented, mixed, and haptic realities.
- Learning Analytics: continuous data analysis for learning evolution through predictive and "advising" functions.
- Recognition of knowledge: certification.
- Need for "Low Cost" Courses: drop in income.

The use of all this technological infrastructure already available will help increase the portfolio of offerings of each school, reduce costs, and cater to the different ways of learning of each student.

Industrial Apprenticeship 4.0 : A new way to provide vocational training

PURPOSE

Develop industrial learning programs in line with the demands of Industry 4.0, providing a more digital and innovative education to young apprentices, thus contributing to their employability.

Legal basis for Professional Apprenticeship in Brazil

Professional Apprenticeship in Brazil is subject to the Apprenticeship Act (Law No. 10,097/2000), which requires all medium- and large-sized companies to hire a number of apprentices equivalent to a minimum of 5% and a maximum of 15% of their staff whose vocational functions require training. By means of the Apprenticeship Contract, the employer undertakes to provide a technical-vocational training program to people over fourteen and under twenty-four years of age who are enrolled in an apprenticeship program.

BACKGROUND:

SENAI is a private, independent non-profit social service, managed by the Brazilian National Confederation of Industry (CNI), specialized in the provision of vocational and technological education courses and programs for industrial companies. It seeks to walk hand in hand with the economy, cooperating to achieve the goals of the society and the country, promoting the education of workers to meet the real demands of the productive sector.

The Brazilian industry has been experiencing some changes in its production and organizational structure with the spread of digital technologies and robotics, both areas associated with Industry 4.0. The acquisition and use of these technologies increase the productivity and competitiveness of industrial companies, and has been accompanied by changes in the manufacturing structure and management tools. With the growth of digital and automation technologies, companies will also seek to establish lean manufacturing and agile production processes.

In addition to the production and management structure changes, digital and automation technologies have brought great challenges involving changes in professional profiles and demand for new professionals. In general, digital and automation technologies will demand professionals with the following skills: material resource management, negotiation, programming, digital fluency, complex problem solving, systems analysis, and service orientation.

Being at the confluence of education and work, apprenticeship training should pay close attention to the changes caused by the impact of new digital technologies on the production processes of goods and services.

Therefore, it has become necessary to outline an apprenticeship program that meets the new demands of Industry 4.0 in order to offer programs in a more digital and innovative format, bringing together technical skills and socio-emotional skills, which are essential for today's labor market. The program combines online and classroom (in-person) education and, in addition to the specific workload of the course, it offers an additional 120 hours for the development of Industry 4.0 skills.

The program initially covered the technological areas of Metalworking and Information Technology, which are considered cross-cutting and important to various sectors. In Metalworking, the program gave to the apprentice access to the main technological innovations of advanced manufacturing processes. In Information Technology, the program comprised programming, coding, and testing of systems using artificial intelligence, developing integration, automation, and connectivity skills. In the context of Learning 4.0, 3 programs were developed (Mechanics 4.0; IT 4.0; and Advanced Manufacturing) with 12 possible offers.

With respect to vocational training, the apprentices in these programs can continue their progression pathway by enrolling in a technical course in Mechanics or a technical course in Internet of Things (IoT), for example.

The candidates to apprenticeship programs use a digital platform (Mundo SENAI) to register and participate in an online interview to talk about themselves: their likes and aptitudes; dreams and expectations; what they think about society and citizenship; what they do for leisure and health; how are their friendship and family relationship. Through the same platform, industrial companies will be able to announce vacancies and hire apprentices, identifying the socio-emotional characteristics of the candidates that best fit the company's profile.

If the company wants SENAI's support when selecting the apprentices, it will have a sophisticated process available that will make a prior selection of the candidates, considering the interests of both parties, through the use of artificial intelligence. This way, the company will receive a list of the most suitable candidates for the apprentice position.

The insertion rate of SENAI apprentices in the labor market was 85.9% in 2020. The income increase rate for apprenticeship graduates was 80.7%.

Key Messages
N/A