

SOFT SKILLS WITH LEARNING TECHNOLOGIES: THE PROJECT AT THE UNIVERSITY FOR FOREIGNERS OF PERUGIA

Valentino Santucci, Talia Sbardella, Chiara Biscarini, Stefania Spina, Giuliana Grego Bolli

University for Foreigners of Perugia (ITALY)

Abstract

The aim of the paper is to present the main activities of the training pathways developed at the University for Foreigners of Perugia to help students to face the challenges that a changing working life poses to young graduates. The project stems from the awareness of importance of training students' skills both for their future employability and for the harmonious development of their competences. Recent approaches for embedding the training of soft skills into hard skills courses are adopted, such as blended learning, experiential learning, flipped classroom, and learning by doing. The learning process is carried out by the community of learners in different environments in which students contextually gain knowledges and skills in an innovative and collaborative way through targeted activities. The focus of the project is on the whole soft skills training process which has been divided in five phases: design, develop, assess, recognise, and analyse. After analysing the literature on the subject, we have identified six soft skills to be considered in our project: problem solving, adaptability, team working, networking, multitasking, and communication skills. The soft skills development process has been implemented in few experimental courses, selected from different Master's degrees. Teachers have been trained in order to foster students' soft skills by means of innovative learning technologies such as LMS (Learning Management Systems) and other digital tools. A soft skills testing and assessment process has been devised in order to have a suitable and affordable procedure both for students and assessors. Once the student has been assessed, she is awarded with a digital certificate that follows the open badge standard. Therefore, such a certificate can be used in a variety of software platforms worldwide like, for example, social media, blogs or e-portfolio systems. Finally, the whole soft skills' learning process is scientifically analysed by means of learning analytics tools, i.e., by continuously monitoring learners' data collected during their online activities in LMS systems.

Keywords: Soft skills' development, Soft skills' assessment, Learning technologies [Arial 10-point, justified alignment].

1 INTRODUCTION

The University for Foreigners of Perugia is the oldest and most prestigious institution engaged in the teaching, research and promotion of the Italian language and culture in Italy and, as a meeting point for people of different cultures, has a value system based on intercultural education. Besides Italian language and culture courses, the University for Foreigners of Perugia offers undergraduate and postgraduate degree courses both for Italian and foreign students. The Bachelor's and Master's degree courses offered by the Department of Humanities and Social Sciences cover two main reference areas: (i) teaching and promotion of the Italian language and culture, (ii) advertising communications and international relations.

In order to encourage and support students in preparation of their entrance in the labour market, as employee or entrepreneur, and in order to train their acquisition and development of soft skills and to raise their awareness of what those skills are, we develop new learning strategies to help them to identify how and what they can do to improve their know-how in the context of their learning programmes.

Our project aims to apply the most advanced information technologies, enriching and innovating teaching methods and tools in order to innovate the teaching activity. Teachers are required to rethink the way they teach by taking full advantage of the use of new technologies in order to improve the learning process of their students.

Moreover, the University for Foreigners of Perugia is by its very nature an international atheneum and the proposed courses are an opportunity to foster a better general understanding for foreign students, who have the possibility to personalize their own learning and to be more motivated.

Before defining what soft skills refer to in the context of our project, it is important to acknowledge the extensive literature around this field.

In the second half of the last century, research in the psychological and economic field has highlighted the importance of general skills in determining the success of individuals in the training path and in the labour market.

Since the studies conducted by the American psychologist David McClelland on the theoretical models related to motivation and success [1], we begin to consider work success as dependent on a variety of components: the Intelligence Quotient (IQ), systematically measured on American educational system, knowledges acquired during the study pathways, the practical knowledges, technical skills, aspects of character and physical characteristics.

In 1980s, the concept of intelligence, understood as one-dimensional, begin to be questioned [2], [3], [4], and it is precisely Goleman [4] who proposes a distinction between cognitive and non-cognitive abilities.

Interestingly, as a contribution to the definition of a more complete theoretical framework on soft skills, there are the studies of the American psychologist Robert Sternberg, that considers intelligence as a mental activity, on one hand analytically directed to adaptation and, on the other hand, to the selection or creation of relevant and useful environmental conditions for one's own life, thus assigning decisive importance to non-cognitive skills [5].

As such, soft skills are defined as the skills necessary to every individual in order to manage her/his own life effectively, obtaining results in line with her/his objectives [6].

Also James Heckman, Nobel Prize winner in 2000 and one of the greatest exponents of our century in the economy area, has underlined the importance of non-cognitive abilities as soft skills leading as an example: social skills, communication skills, ability to work with others and self-control skills [7].

Today, there is a widespread awareness of the importance of these skills. In order to emphasize the importance of a training model aimed at promoting inclusion, cultural diversity, the principle of global citizenship to strengthen entrepreneurial, social and civic skills, the European Council adopted a new recommendation [8] in which the concept of soft skills is declined as a combination of knowledge, abilities, and attitudes.

Taking into account our specific context, and as a means to help people to develop and foster their skills, we promote training pathways providing four online courses related to the four Master's degrees of the University for foreigners of Perugia: ITAS (Italian teaching to foreigners), COMPSI (communication, storytelling and image culture), RICS (International relations and cooperation), TRIN (translation and interpreting for the entrepreneurship). The courses are designed to support both students that are unable to attend the lessons and students who attend regularly, adopting methods and strategies of flipped classroom, blended learning and cooperative learning online and in presence, combining online resources and in presence lessons.

The use of specific learning management systems (LMS) enhances both the organization and distribution of teaching material and the interaction between teachers and students in a more structured and effective way.

The focus of the project is on the whole soft skills training process which has been divided in five phases: design, develop, assess, recognise, and analyse. The choices made in each one of these phases are described in Section 2. By remarking that the project is not yet finished, Section 3 provides a description of the partial results and the findings obtained at the time of writing. Finally, Section 4 concludes the paper by also drawing future lines of research.

2 METHODOLOGY

Considering the soft skills as personal characteristics, that the training courses can however contribute to strengthening, it is important to try to identify and select some skills which are considered important and determinant within the degree programs identified and their respective courses, especially taking into account the profile of professional skills that the Master's Degree Programs of the University for Foreigners of Perugia intend to form.

Additionally, it has been taken into account, in particular with regard to Master's degrees, the European Qualifications Framework for Lifelong Learning [9] which provides a useful reference to identify knowledges, skills and abilities.

Another distinction has been taken into account: identifying the soft skills as internal and external. Internal skills are more focused on the individual, while the external ones are more focused on managing relationships with external reality. Both have been taken into consideration, keeping in mind their complementarity.

Moving on from these considerations, we have decided to divide the soft skills enhancement project into five phases: design, develop, assess, recognise, and analyse. These are motivated and described in the following.

2.1 Design choices

The first steps of our project included the definition of the reference population and of the skills to be enhanced, verified and evaluated, meaning verification and evaluation as two different, complementary moments of the assessment process as a whole.

The reference population are the students of the four Master's degrees currently underway at the University for Foreigners of Perugia and concerning the following areas: Sociolinguistics and languages of new media, International politics, Narrative techniques and models of storytelling, Italian Linguistics.

In view of the future employability of our students, in the light of the guidelines of the European Parliament and considering our specific context, we selected some of them that are regarded as most relevant for young graduated:

- *problem solving*, or rather the capacity to apply strategies in situations requiring critical thinking, assessing situations and identifying the root cause of a problem in order to achieve a goal;
- *adaptability*, meaning the ability to adapt to changing requirements and information by identifying and suggesting alternative solutions and using a creative approach to achieve an outcome;
- *team working*, i.e. the ability to work effectively as a member of a team in order to achieve shared goals. That includes flexibility and to be supportive of the opinions and contributions of others in a group, recognising and respecting people's diversity, individual differences and perspectives;
- *networking*, or rather contribute to a team by sharing information and expertise;
- *multitasking*, namely the ability to plan and organize one's own work activities, including making effective use of time and resources, sorting out priorities and monitoring performance;
- *communication skills*, i.e. the ability to deal with people, problems and situations with honesty, integrity and personal ethics and learn from mistakes, accepting feedback in a positive and constructive way.

The reasons that led to choosing Information and Communication Technology (ICT) in our project have been multiple. Combinations of traditional and modern ICT and e-learning education methodologies are generally considered to greatly improve the learning process [10], [11], [12], [13], [18].

Moreover, the "Web 2.0 and later era" have a *raison d'être* right in the possibility of collaborative and shared use. Therefore, digital technologies are nowadays essential tools to develop digital skills, teamwork skills and to improve socialization.

The choice of tools to be used has therefore fallen on collaborative instruments as the Moodle LMS [14] to publish videos, notices, questions, links to work resources, using it as a repository for work files and using related tools to produce texts, collect data, etc.

2.2 Soft skills' development

In our courses, students are involved using a multidisciplinary approach: didactic process is based on active learning and on the combination of different ways of interaction between students and teachers, whether in presence or at distance, synchronous or asynchronous.

The training courses actively support the above-mentioned strategies by integrating individual and social learning through experiential activities focusing on knowledge as semantic interpretation, on communication and interaction in the environments in which learning is developed, and including, besides the cognitive goals, the development of ethical behavior and organizational skills, encouraging

the evolution of values and attitudes in skills to effectively address the challenges that the labour market poses to young graduates.

In order to enhance methodological and cultural innovation in teaching and learning on digital network environments, we developed a training pathway for our teachers proposing an itinerary in the virtual environment in which it is possible to experiment directly the learning context, exploring features and functionality of the Moodle platform and other digital tools, with a focus on enhancing digital, organizational and teamwork skills.

The course was divided into 8 units for a total of 32 hours and introduced the teaching staff to the functionalities of some technological tools for the design, development, use and management of processes and resources for online teaching, promoting, through meetings online and in presence, the active learning of the participants.

It focuses on the most useful topics to guide the teachers, presenting the fundamental concepts that help them to understand how and what operations allows the platform to be made; video tutorials were also included with the aim of showing what operations a teacher can do to obtain a certain goal.

Moreover, according to our students' characteristics, we choose a platform based on the Small Private Online Courses (SPOCs) paradigm [15]. The objective of these courses is two-fold: on one hand, teaching the classical course specific content and, on the other hand, lead the students towards a development and enhancement of their soft skills. Hence, the courses have been built by using micro videos oriented both to knowledge and the importance of soft skills, providing contents and involving learners with targeted resources.

The structure of each Master's course develops in the Moodle Learning platform over a period of 10 weeks; each of them includes a 2-hour weekly lesson, for a total of 20 lessons and each program includes the description, goals, contents and skills acquired at the end of the course, the prerequisites for accessing the course, the indications to exercises and in-depth analysis of video-lessons, methodological indications and suggestions for the study of contents.

Each lesson includes videos lasting 5 - 15 minutes, various kinds of text files, links to resources, bibliographies, quizzes for self-evaluation and digital tools that encourage meta-reflection and co-construction of knowledges.

The resources proposed by the platform are presented as parallel and complementary to the offer of the traditional training system and teachers had the opportunity to innovate their role by becoming facilitators of a process of discovery that sees students as protagonists.

The real-time supervision and the resources' management foster the didactic process giving both full play to teachers' guidance role and to students' creativity and learning motivation.

2.3 Soft skills' assessment

What we propose is an experimental soft skills assessment model related to our specific context, to be implemented, improved and expanded in successive phases, based on the evidence gathered.

We developed an experimental prototype to assess the students' soft skills through multiple answers tests implemented by means of the quiz activity provided by the LMS.

The tests are administered through the same Moodle software platform used for the Masters' courses. An area of the platform, by which the students, at the end of the training, can carry out the verification test of soft skills acquired, has been activated.

The object of measurement is not strictly related to the specificity of the discipline of reference but is mainly linked to the skills that all the training processes develop: situations presented require students to mobilize skills and knowledge in different contexts, combining logical-cognitive, socio-affective and communicative dimensions, stimulating reasoning, transfer and critical thinking.

In particular, for each of the six soft skills identified, four scenarios are presented, each of which describes a situation set in a work or academic context, accompanied by different response options intended as action strategies.

Each of these strategies includes four possible answer alternatives categorized as follows: more effective, reasonable, less effective, inappropriate.

Students are called upon to identify the most effective answer strategy with the aim of verifying their attitudes related to the skills identified.

Each answer alternative is accompanied by its own feedback, proposed to students once the test is finished, that is intended as a guided analysis tool that will help students to develop an awareness of their own way of acting and their skills.

The scoring method involves the assignment of 10 points for the most effective response, 5 points for the reasonable answer, 2 points for the less effective response and for the inappropriate response.

Learners will have 30 minutes to answer to each of the six tests and, in case of failure, reference can be made to the training courses to fill in any gaps or enhance student's abilities through exercises and feedback.

2.4 Soft skills' recognisement

For every single soft skill, and basing on the score obtained in the related test, the student receives a grade basing on the following correspondence table:

- from 0 to 23 points: insufficient,
- from 24 to 26 points: sufficient,
- from 27 to 34 points: good,
- from 35 to 40 points: excellent.

If the student receives a (at least) sufficient grade, she is awarded a digital certificate. These certificates have been implemented as *Open Badges* [16], i.e., digital images containing a graphical representation of the certificate and embedding information such as: the description of the skill acquired, the criteria by which the skill has been verified, the date of the verification, the identity of the releaser entity (the university), and the identity of the receiver (the student). Using open badges, the students are able to share them in social network, e-portfolio systems and, more in general, in all the systems of the open badges infrastructure [17].

Furthermore, aside the open badges, the student also receives a more classical certificate that summarize the results obtained in all the six tests. This certificate also provides grade descriptions that allow to create a readable profile of the student. Let imagine, for example, the case of a *head hunter* that comes through this certificate. A concise description of the student profile (related to the soft skills verified) will be undoubtedly helpful to whoever will read the certificate.

2.5 Learning analytics

The use of the Moodle LMS allows to have a series of digital tools for the analysis of the both the processes of soft skills development and assessment.

The system provides data and statistics about every single step of the project, thus allowing to measure: the satisfaction of the teachers in the teachers' training course, the active engagement of the students in the courses, the difficultness of the verification quizzes, etc.

All this information will be useful, at the end of the project, for measuring the impact of the project itself on the teaching activities at our university, thus allowing us to reflect on the results obtained, highlight and correct the critical points in order to reiterate the project with a larger number of courses involved.

3 RESULTS

The main result of the project is the development of a series of digital learning resources and tools designed to facilitate the development of students' soft skills, and to assess their acquisition by the students.

The first technical step has been the deployment of the Moodle learning management system platform, that is, the digital environment where most of the project activities have been carried out. The platform has been called "LOL - Learning OnLine" and it has been integrated with university identity system in order to easily allow both students and teachers to access with their existing university accounts.

The results of the project can be mainly divided in: teachers training, students skills formation and skills assessment. We briefly describe them in the following subsections.

3.1 Teachers training

We started by training the teachers to be aware of the importance of soft skills and the use of modern software technologies to enhance their teaching activities. This is the first result of the project and it has been reached by means of a series of training meetings, some of them deployed online through the same learning management system used for the rest of the project.

The statistics and data collected, also by means of questionnaires, during and after the teachers training, show that teachers effectively grabbed the contents and concepts provided them, thus showing an excellent grade of satisfaction about the training path.

3.2 Students skills formation

As reported in sections 2.1 and 2.2, for each one of the four Master's degree courses selected, we have devised a Moodle course formed by 20 teaching units. Every teaching unit provides to the students: short video-lessons, digital resources, and self-evaluation tests.

All the contents, though being related to the specific topics of the course, have been built by also taking into account the enhancement of the students' soft skills. With this regard, the courses also propose interactive activities such as: discussion forums, chats, and assignments to be peer-evaluated by the students themselves.

In Figure 1, we provide the visual structure of a typical teaching unit.

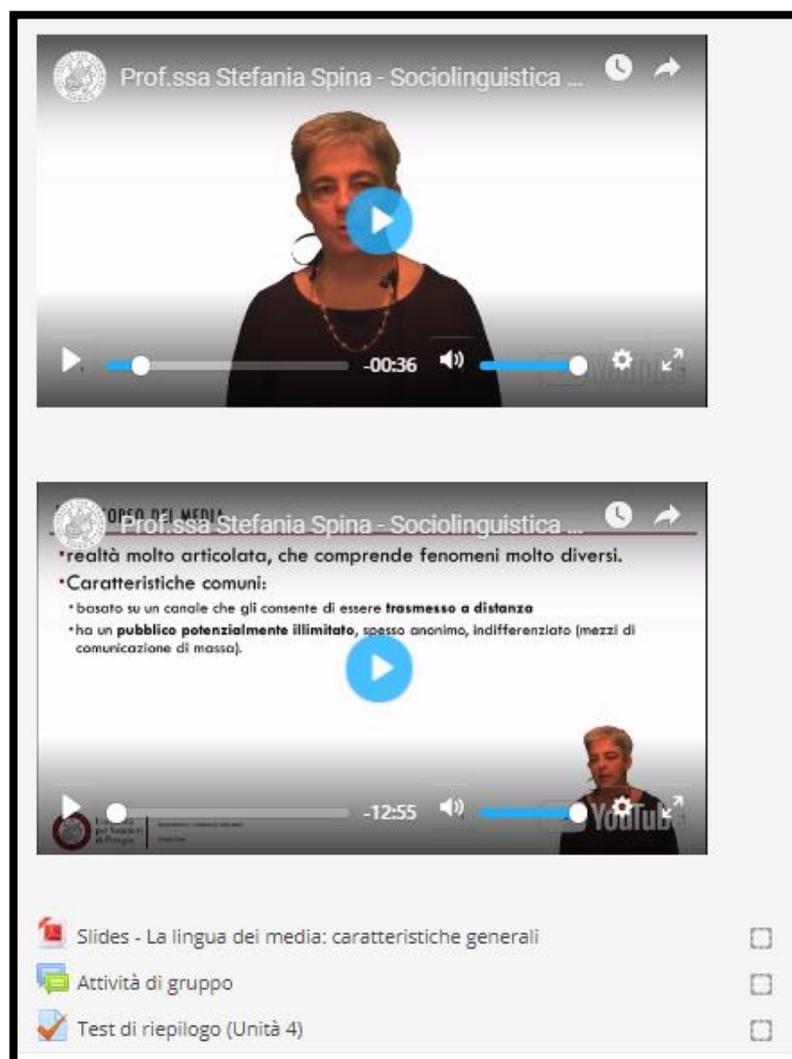


Figure 1. Visual structure of a teaching unit.

It is important to note that the courses follow the *blended learning* paradigm, i.e., they are a mix of online and in presence activities. Their online part is mainly intended for the students that are unable to regularly attend the lessons in presence. However, though the courses are not yet completed, the partial statistics we have collected show that also the students who regularly attend the classical lessons are enjoying the digital resources and they actively participate to the online interaction activities. Also the involved teachers confirm the increased engagement of the students obtained by means of this new teaching modality.

3.3 Skills assessment

As described in sections 2.3 and 2.4, an assessment system has been deployed with the aim of verifying how well a student has acquired the skills previously selected in the design phase.

For each skill, the student is provided with a hypothetical situation (related to the skill under verification) and it is asked to select the most appropriate behaviour (related to the provided scenario) among a list of four possible alternatives. An example is provided in Figure 2.

Sei il responsabile dell'ufficio commerciale di una nota società informatica che sviluppa software aziendali.

Devi confrontarti con i tuoi collaboratori per elaborare una nuova campagna di vendita in occasione del rilascio dell'ultima versione del vostro prodotto di punta.

Proponi di applicare ai nuovi clienti uno sconto del 30% sul prezzo di listino: un tuo collega sostiene che la percentuale di sconto sia troppo elevata per un prodotto appena immesso sul mercato e critica la tua strategia davanti al direttore, che è presente, definendola poco utile in termini produttivi. Come ti comporti?

Scegli un'alternativa:

- a. Sfidi il tuo collega a elaborare una strategia migliore della tua, sperando di fare buona impressione davanti al direttore
- b. Prendi nota del parere del tuo collega e chiedi al direttore un'opinione per capire cosa sia meglio fare.
- c. Affermi che tale tipo di strategia ha sempre funzionato in passato aumentando il fatturato del 5%, quindi non vedi perché dovrebbe criticarla.
- d. Rifletti sulle parole del collega, ma spieghi che una scontistica di questa portata potrebbe favorire un incremento della clientela.

Figure 2. Example of a question used in the assessment tests.

Once the test is completed, the system automatically evaluates the provided answers and, using the scale provided in section 2.3, it assigns a digital and forgery-proof certificate to the student. These certificates follow the *open badge* format and the assessment system has been configured in such a way that it is not possible to falsify the digital certificates.

Finally, a more classical certificate is automatically released to the students once all the six tests have been completed. Also this certificate is provided with a unique authentication code that avoid digital counterfeits.

In Figure 3, we provide the graphical appearances of some of the open badge released by the system.

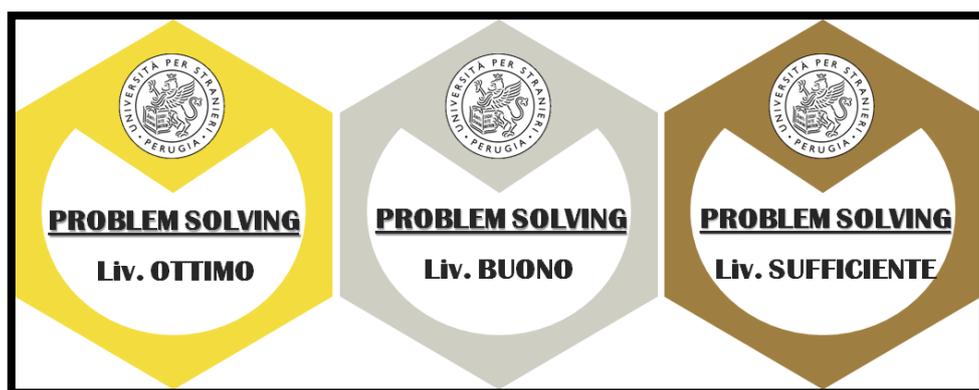


Figure 3. Graphical appearances of the released Open Badges.

4 CONCLUSIONS

In this paper we presented a wide range of initiatives to enhance our students' lifelong learning process integrating the training of soft skills into hard skills courses and thinking at soft skills as part of a lasting learning to be developed at every stage of curricula and beyond.

In terms of development, a partnership with the labour market agencies could be the best way to support soft skills improvement and to sustain it over time.

As regard soft skills' assessment, research is still at the beginning: there is still not a shared framework, on theoretical and empirical bases, of what extent soft skills can be considered transversal to contexts and individuals and therefore generalizable: the assessment of soft skills is still today generally entrusted, in educational contexts, to self-assessments and questionnaires, surely useful as feedback for teachers, but not very reliable in terms of valid results and predictive of real behaviors in life and in the labour market.

What we proposed, in terms of assessment, intends to limit itself to a specific sample and context. The experimentation of the project will allow us to collect and analyze the preliminary results, reviewing, where the necessity is evident, the assessment model itself.

ACKNOWLEDGEMENTS

This project has been undertaken within the framework of University for Foreigners of Perugia's strategic goals programme "Modernization of study and research environments, innovation of didactic methods". We are thankful to all the participants for their precious support in the development of the project.

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