Make soft skills stronger? An online enhancement platform for higher education

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ABSTRACT

The growing attention of the labour market to soft skills has led universities, in different countries to develop tools for the promotion and the assessment of generic skills. The studies carried out at the University of Turin on the design, implementation and testing of the Passport platform fall into this area. Passport is an articulated online course focusing on 12 soft skills. The course includes: a self-assessment Scale, 87 online activities (video clips, reflections, case studies...) and a final certification of the acquired skills. The effectiveness of the Passport course in favouring the academic success of fist-year students in terms of credits acquired, is attested by a previous follow-up research. The present study, on the other hand, aims to evaluate the contribution of the Passport training in improving students' soft skill profile.

1. Introduction

In the last two decades an increasing number of studies have focused on the promotion and evaluation of soft skills in academia. In fact, their valorisation has emerged simultaneously from several directions. On the one hand, it is a direct demand of the increasingly competitive and ever-changing labour market (Taylor, 2016). Indeed, the importance attached to soft skills has become increasingly important, in connection with the transformation of workplaces. In fact, priority is given to the ability to solve new problems, to find creative solutions and asses them critically, to seek and manage information; moreover, interconnectivity and communication are the foundations of work (Bargach, Ghailani, & Bouhdidi, 2021; Mitchell, Skinner, & White, 2010). Several researches examined in depth the needs of the labour market in order to identify the soft skills that should be promoted in view of a better job placement for students (Vogler et al., 2018), also considering that the gap between graduates' and employers' perceptions of the importance of soft skills still exists (Dolce, Emanuel, Cisi, & Ghislieri, 2020).

However, focus on soft skills is also closely linked to the development of studies on teaching and learning in universities. Thorough investigations about teaching and evaluation techniques that promote and develop quality learning has indeed led to the overcoming of traditional teaching approaches, centred on memorization and syllabus coverage in favour of a student-centred approach (Uiboleht, Karm, & Postareff,

2018). On the other hand, it has led to the integration of summative evaluation practices with formative methods (e.g., sharing of evaluation criteria, self-assessment, peer-assessment) (López-Pastor & Sicilia-Camacho, 2017). These are teaching and evaluation practices that can stimulate different cognitive processes, including higher-level processes (critical and creative thinking) and promote key soft skills (communication, teamwork, decision making, problem solving, etc.).

From an assessment perspective, monitoring soft skills both at university entry and at exit has also become fundamental for accountability, as it allows the results of different courses to be compared (OECD, 2013), although not without critical issues, such as methodological and ethical difficulties, which have been widely discussed especially when these comparisons form the basis of international rankings.

Reliable measurement of soft skills, both at entry into post-secondary education and at graduation, also enables the planning of appropriate improvement and development interventions aimed at increasing academic success and facilitating entry into the labour market (Marcone-Dapelo, Vizcaíno, López, Godoy-Briceño, & Campos, 2020; Tan, Abdullah, & Ali, 2021). Several theoretical and scholarly contributions emphasise the relevance of soft skills for academic success, promoting meaningful learning, and guiding highly skilled graduates in the current competitive job market (Chamorro-Premuzic, Arteche, Bremner, Greven, & Furnham, 2010; Klaus, 2010; Patil, 2021; Schulz, 2008; Vogler et al., 2018).

The importance of promoting soft skills in academia and the need for targeted faculty training for this purpose was also reiterated in Italy in the University-Business Observatory Report of the CRUI Foundation (2016).

In this scenario, the University of Turin, also considering the increasing number of students, has recognised the need to offer its incoming and outgoing students specific training opportunities to develop soft skills. To this end, the "Passport" platform was designed and implemented: a complete online course that allows students to assess and develop twelve soft skills essential for academic success and entry into the labour market.

1.1. Theory and research on soft skills

Hard skills are technical/specialised knowledge, such as typing, writing, arithmetic, reading, language skills, and the ability to use software; they are relatively easy to observe, measure, and learn (Balcar, 2016). Unlike hard skills, which are about the ability to perform a specific type of task or activity, soft skills are intra- and interpersonal socio-emotive skills, that are critical for personal development, social participation, and work and academic success (Kechagias, 2011). They are referred to as skills because they can be taught and developed through targeted training. Soft skills, or transversal competences, are person-related and not task-specific, because they are relevant in any context. Soft skills enable specific professional behaviours and are critical to the transferability of skills to different activities.

Numerous authors have proposed classifications and models to describe soft skills; one of the most important contributions is by (Bennett, Dunne and Carrè, 1999), based on research on university students.

The authors distinguish between two types of skills: "core skills", which denote disciplinary skills, and "generic skills", which represent skills that can be applied in any discipline and are, potentially, transferable to a variety of contexts, both in academia and in workplace. In terms of "generic skills", the authors propose a model that identifies four skill areas: management of self, management of others, management of information, and management of task. These skills are called "generic" because they can potentially be applied in any discipline, academic course, profession or job, or any other context.

For their part, Dacre Pool & Sewell, 2007, conducted an analysis of the essential skills that graduates entering the world of work and seeking employment should possess. These authors state that knowledge of the subject areas covered at university, both in terms of understanding and practise, is not sufficient to ensure a satisfactory working career. Instead, it is essential for this purpose to possess several "generic skills", such as: imagination/creativity, adaptability/flexibility, willingness to learn, independent work/autonomy, teamwork, ability to manage others, ability to work under pressure, good oral and written communication, attention to detail, time management, assumption of responsibility and decision-making skills, planning, coordination, and organisational skills. In addition, there is "entrepreneurial competence", i.e., the ability to create one's own project and potentially profitable business.

Andrews & Higson, 2008 conducted research in four European countries (United Kingdom, Austria, Slovenia and Romania) with the aim of identifying and compiling a list of soft skills considered essential for graduate employability. Employability is "the possession by an individual of the qualities and competencies required to meet the changing needs of employers and customers and thereby help to realise his or her aspirations and potential in work" (CBI, 1999, p. 1). According to Andrews and Higson, in order to be employable, individuals must first develop several soft skills, such as the ability to cope with uncertainty, the ability to communicate and interact with others, written and oral communication skills, creativity and self-confidence.

In this context, the World Economic Forum (2020) has identified the following ten soft skills as the most sought after by companies by 2025: analytical thinking and innovation; active learning and learning strategies; complex problem-solving; critical thinking and analysis; re-silience, stress tolerance, and flexibility; creativity, originality, and initiative; leadership and social influence; reasoning, problem-solving, and ideation; emotional intelligence; technology design and programming.

The further promotion of soft skills in the workplace stems from the initial studies aimed at identifying the changes introduced in education, training and the labour market to respond to the pandemic (e.g. massive introduction of technology, increase in distance communication and global connections, …) which to some extent will remain inevitable in the post-Covid phase (Brown & Finn, 2021).

1.2. Promoting soft skills in higher education

Given the relevance of soft skills, an increasing number of research contributions have addressed this issue, focusing on models for directly promoting soft skills in academia (Moore, 2004). The strategies that can be used by Higher Education institutions to promote soft skills are diverse and can include different levels of engagement and scope of interventions (Jääskelä, Nykänen, & Tynjälä, 2018). Indeed, academic institutions can promote capillary projects, focused primarily on raising awareness, with extensive face-to-face, fully online or blended events that are sustainable for both medium and large universities (Valverde Berrocoso & Ciudad Gómez, 2014). The effectiveness of online training for these skills is controversial, given their specificity and the central role of interpersonal relationship in fostering these skills. However, there is research evidence of the effectiveness of online courses in achieving some basic goals of soft skills acquisition, such as their understanding and awareness of their importance (García García, Biencinto López, Carpintero Molina, & Expósito Casas, 2016).

Is it also possible to work deeper by encouraging the introduction of innovative teaching and evaluation strategies in academic courses (Zhang, 2012) to promote the development of soft skills in students (Virtanen, Tynjälä, & Eteläpelto, 2014). The latter first requires appropriate training programmes for faculty members. This approach, defined as "global", seems to be particularly effective according to research, because transfer problems are avoided (Laker & Powell, 2011; Misseyanni, Papadopoulou, Marouli, & Lytras, 2018) and it also has considerable effects on study motivation according to large meta-analysis studies (Kember, Leung, & Ma, 2007). Universities may also choose to carry out projects targeting specific groups of students (whether struggling or high potential) or for targeted training, explicitly designed to promote one or more soft skills.

Universities are increasingly offering formal opportunities to help students develop the soft skills they need to meet academic challenges on entry and workplace challenges on exit. In this context, it is worth mentioning entry, *in itinere* and outgoing guidance and tutoring programmes, when they are inspired by a "formative" model and are not limited to providing information or consist solely of welfare or replacement services. For example, courses to improve study strategies, time management skills, and learning and self-motivation techniques, all of which promote the development of soft skills that can be transferred from a particular field of study to life, have long been popular (Fry, Ketteridge, & Marshall, 2003).

In addition, several universities offer opportunities to develop soft skills for entry into the labour market, either through one-on-one sessions or small group workshops. Such initiatives often involve coaching experts, professional groups, recruiters or human resource managers in addition to university faculty (Loup, Kornegay, & Morgan, 2017).

1.3. The Passport model

The University of Turin implemented the Passport Project, a complex and elaborate soft skills development plan designed to promote academic success and work readiness. The project included (Ricchiardi & Emanuel, 2018; Ricchiardi, Ghisleri, & Emanuel, 2018): an online platform for the evaluation and enhancement of soft skills (through readings, exercises, reflections, videos…); workshops for first-year students
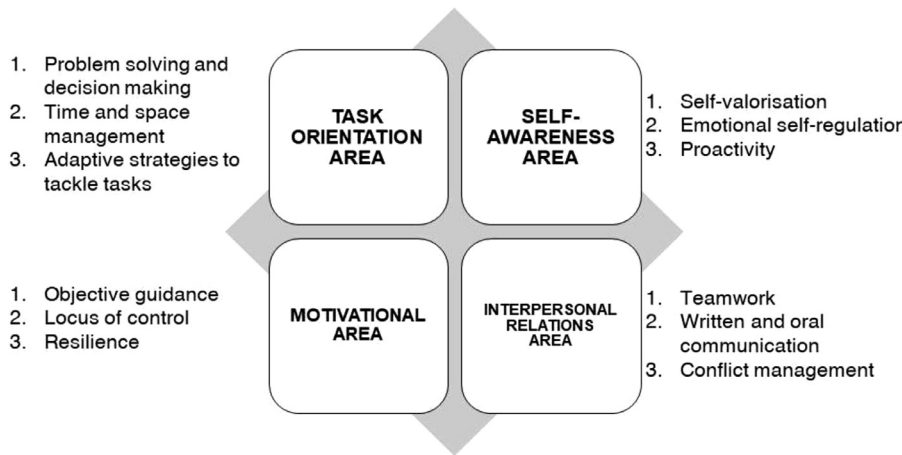
Fig. 1. The Passport.Unito model.

Fig. 2. Theoretical models on soft skills and Passport model.

Bennett et al., 1999	Joseph et al., 2010 (referred to Wagner et al., 1985)	Heckman & Kautz, 2016	Passport model (2018)
Management of task Management of information	Management of task		Task orientation area
Management of self	Management of self	Character skills (the contribution enriched personal soft skills	Self-awareness area
Management of others	Management of others		Interpersonal relations area
/	Management of career		Motivation area (some elements proposed by Joseph et al. (2010), connected with the future profession, converged in the motivational area)

conducted with active methods; a "Fall School" for outstanding graduates focused on soft skills for employability; the introduction of training sessions on soft skills for faculty members.

The soft skills model underlying Passport is based primarily on the model of Bennett, Dunne and Carré (1999), revised according to Joseph, Ang, Chang, and Slaughter (2010) and Heckman and Kautz (2016) works. The researchers (3 seniors and 5 juniors) participated in focus group discussions that analysed the selected theoretical models and identified the most appropriate skills for the context and the population considered (Italian university students). The research team identified 12 soft skills, which it grouped into areas based on the theoretical classifications considered (Figure 1).

Figure 2 briefly illustrates the different theoretical models considered (Bennet, Dunne, & Carré, 1999; Heckman & Kautz, 2016; Joseph et al., 2010 referred to Wagner and Sternberg, 1985) and the skill classification areas of the Passport model.

The first area is called Task Orientation and refers to skills related to the way how subjects manage problems and make decisions and to planning and organising time and work in general.

- Problem solving and decision making: the ability to approach problems and decisions using rational, logical reasoning strategies, tak-

ing into account limitations and possibilities, even in complex and unfamiliar situations.
- Time and space management: knowing how to plan, organise and control time for specific activities and use appropriate spaces for concentration (De Beni, Zamperlin, Fabris, & Meneghetti, 2015; Robles, 2012).
- Adaptive strategies to tackle tasks: the ability to identify the most appropriate strategies for coping with different tasks, considering their nature and one's learning style, and to use effective strategies for in-depth study (Nijhuis, Segers, & Gijselaers, 2008).

The second area is the Self-Awareness, which includes skills related to the subject's ability to value and act upon himself/herself even when not prompted to do so, and the ability to manage and regulate emotions. Specifically, it includes the following 3 skills.

- Self-valorisation: knowing how to reflect on, accept and value oneself and one's own attributes, knowledge, and skills (Bar-On, 2006).
- Emotional self-regulation: being able to recognise and understand one's own emotions and those of others'; recognising the connections between thoughts, emotions, and behaviours; communicating feelings and emotions (Bar-on, 2006; Di Pietro, 2016).

- Proactivity: knowing how to act even when not prompted, being present and consciously influencing reality (Trifiletti, Capozza, Pasin, & Falvo, 2009).

The third domain is called Motivational Area and includes soft skills related to goal achievement (in this case academic success), the way individuals make sense of their experiences and interpret events, and aspects related to the ability to respond and withstand stressful situations.

- Objective guidance: the knowledge of how to focus attention, cognitive and emotional resources to achieve one's goals (Borgogni, Petitta, & Barbaranelli, 2004).
- Locus of control: the retrospective explanation of the cause of one's own behaviour and the behaviour of others, as well as the results of the behaviour, in both successful and unsuccessful situations, looking between internal factors (e.g., effort or ability) and external factors (e.g., task difficulty and luck) (Pombeni, 1996).
- Resilience: coping with stressful or difficult events and positively reorganising one's life when faced with difficulties (Di Fabio & Palazzeschi, 2012; Masten, 2014).

The fourth and final domain is the Interpersonal Relations Area. It includes skills related to the relationship with peers and figure of responsibility, as well as how individuals manage and organise their communication and how they deal with conflict.

- Teamwork: the ability to collaborate positively with others to achieve a common goal, identify the roles and tasks of each individual and adjust time and resources appropriately (James & James, 2004; Robles, 2012).
- Written and oral communication: the ability to use effective communication strategies at all levels, both oral and written, paying attention to clarity, synthesis, quantity and quality of information, appropriateness of messages, and active listening during interactions (Robles, 2012).
- Conflict management: knowing how to recognise, understand and manage conflict dynamics in relationships with others by developing appropriate negotiation strategies that create solutions for both parties to emerge from conflict successful and satisfied (Thomas & Kilmann, 1974).

1.4. Passport online

The Passport project envisaged the development of an online platform for soft skills assessment and enhancement: Passport online. This platform was created in collaboration with the Department of Informatics of the University of Turin (www.passport.unito.it). All students and faculty of the University of Turin can access the online course; it is offered free of charge to the entire student body and can be approached independently (Fig. 3). When accessing the course for the first time and at the end of all activities, students are asked to fill in a questionnaire assessing their level of soft skills (PassporTest). The course includes 12 in-depth units, one for each soft skill of the Passport model, for a total of 87 different activities (Ricchiardi, Ghislieri, & Emanuel, 2018). All suggested activities provide a possible "solution" to be seen once the student has completed the activity (e.g. by filling in or answering some questions). In some cases answers provided by workshop and Fall School participants were used as solutions, where applicable.

The online course includes 12 in-depth units, one for each soft skill in the Passport model: the units are presented in a predetermined sequence that forst covers the skills needed to complete tasks, then moves to personal skills related to individual development, and finally considers the skills needed to interact effectively with others.

There are 87 activities, divided as follows: 35 exercises for the "task area"; 17 for the "self-awareness area"; 17 for the "motivational area"; 18 for the "interpersonal relations area" (for details see Ricchiardi, Ghislieri, & Emanuel, 2018). The activities are varied: case studies, exercises,

videos, readings, suggestions for activities, book and movie suggestions, and so on. In order to facilitate the successful entry of new students into university, the different activities ask subjects to think about their own soft skills that they need to be used, especially when dealing with common academic tasks. However, each unit also includes what is called a "glimpse of the future", i.e. examples or simulations that allow students to imagine how these skills will be used in the labour market and in their personal lives. Some units also have a more exercise-based approach, to acquiring appropriate strategies (e.g. a suitable learning method to effectively address university challenges), while others are mainly aimed at raising awareness of a perhaps lesser-known topic, such as "resilience", and encouraging reflection on one's attitudes and beliefs that can negatively impact personal well-being and success (e.g., "self-valorisation", "locus of control").

The course takes approximately 20–30 hours to complete, which averages two to three weeks to a maximum of one month. Upon completion of the course, the student must complete the PassporTest again and take a test that measures the level of knowledge or skills (depending on the area) achieved on the topic of soft skills. This test provides some external assessment, albeit in a simplified form. At the end of the online course, students receive a certificate attesting to their participation in the activities and the test.

The effectiveness of Passport Online in promoting the academic success of first-year students in terms of credits earned, is attested by a previous follow-up study (Contini, Leombruni, & Ricciardi, 2020).

1.5. Research questions

The aim of this study is to evaluate the effect of the online course on the increase of perceived soft skills in a group of students of the University of Turin. The level of soft skills is measured before (T1) and after (T2) participation and completion of all proposed activities through the online Passport platform. A control group of students attending other universities will also be included.

2. Methods

2.1. Study design and data collection

A quasi-experimental design with an intervention group (experimental) and a control group was used for this study.

The intervention group consisted of male and female students from the University of Turin who completed the Passport.online course. At the first access and at the end of all the activities, students are asked to fill in a questionnaire in which they evaluate the level of their soft skills.

The control group consists of subjects who are not enroled at the University of Turin and have not recently participated in soft skills courses. Subjects were contacted via email, messages on WhatsApp and Messenger, and Facebook groups from the different universities to participate in the study. The questionnaire was uploaded on the Uniquest LimeSurvey platform of the University of Turin. To complete the questionnaire, participants had to be enroled in the first or second year of university and be between 19 and 25 years old. For the control group, the biographical questionnaire included a filter question about having attended soft skills courses in the recent past; only those who reported not having attended soft skills courses were included in the control group. Participants were then contacted again after 2 months to complete the soft skills level questionnaire a second time. Data matching was done using a personal code that each participant had created during the first compilation. All participants in the control groups received a soft skills summary profile, as an appreciation of their participation in the study.

2.2. Ethics

The study was conducted according to the Declarations of Helsinki (World Medical Association, 2013) as well as the European Union (EU)
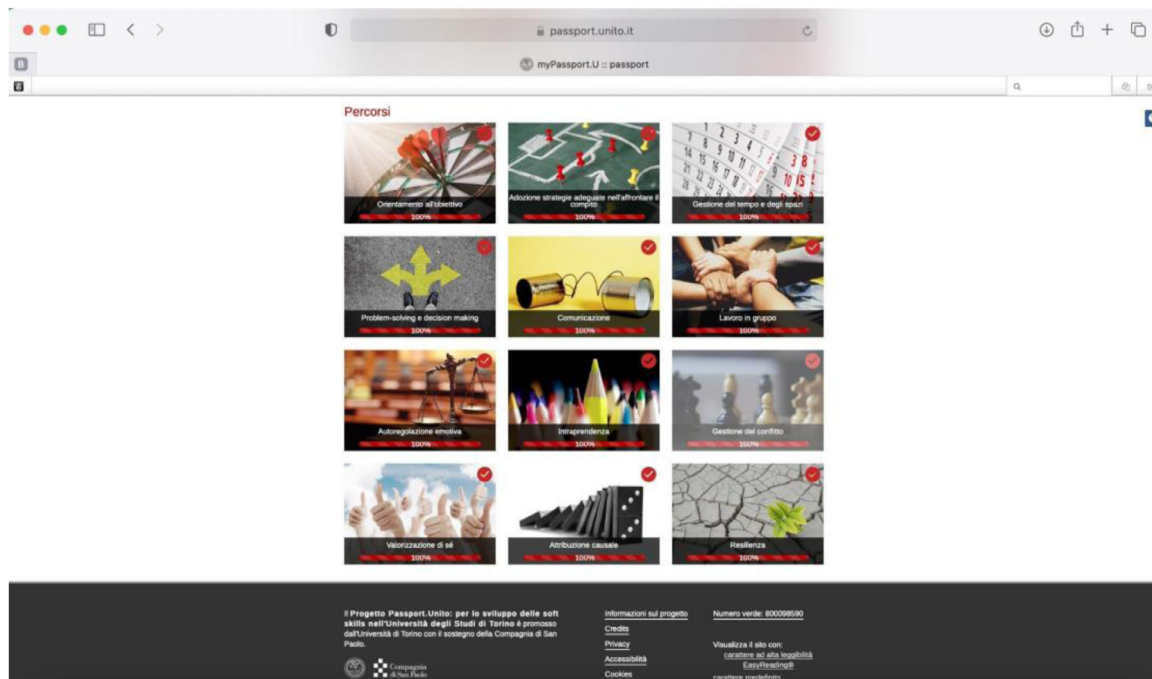
Fig. 3. Passport online.

regulation 2016/679 on data protection (General Data Protection Regulation, GDPR) (European Union, 2016). Participation in the research was voluntary, without receiving any reward; data collection and analysis were anonymous. Informed consent was obtained from all the study participants for all questionnaires administered (T1 and T2).

2.3. Participants

An overview of the study participants is presented below.

2.3.1. Experimental group

Experimental group is composed of 355 participants. 234 were female (65.9%) and 121 were male (34.1%). The level of education was high school for all participants. The average age was 21.99 years ($SD = 4.64$; min = 19; max = 60). Most participants are enroled in the first year of a degree (95.8%); with regards to the area of study, the majority (33%) are enroled in literary and humanistic courses, 26.8% in the legal and economics sciences field, 16.6% in natural sciences, 11.5% in foreign languages courses and the remainder in clinical and medical sciences (11.1%). 14.1% of participants had already passed a university exam in the first months of attendance, with an average score of 24 (range 18–30, $SD = 3.23$).

2.3.2. Control group

Control group is composed of 187 participants. 152 were female (81.3%) and 35 were male (18.7%). The level of education was high school for all participants. The average age was 21.98 years ($SD = 4.64$; min = 19; max = 32). Most participants (79.1%) are enroled in a university course, while 20.9% report to be a student-worker (babysitter, waiter, clerk, etc.) amongst participants who attend university, 71% are enroled in the first two years, while 72% had already passed a university exam, with an average score of 26 (range 18–30, $SD = 2.31$).

2.4. Measures

The soft skills levels are evaluated through the PassporTest (instrument description and validation data in Ricchiardi & Emanuel, 2018; Ricchiardi, Ghislieri, & Emanuel, 2018). The PassporTest assessed 4

main areas of soft skills, articulated in 12 soft skills. The participants responded using a six-point Likert scale (1 = strongly disagree, 6 = strongly agree). The items that compose the different scales were developed from the relevant literature and from specific tests and questionnaire that relate to the skill considered. Below are reported the psychometric properties of the scales in this study, examples of the items, and the references used to develop them.

Problem solving and decision making were assessed with 15 items, developed from decision-making and problem-solving profile assessment tools and tests (Bar-On, 1997; Franco & Tappata, 2009; Soresi, Nota, & Ginevra, 2014). An example item is "I usually take my decisions after comparing the alternatives and considering various aspects and features". Cronbach's alphas were: in experimental group 0.91 (t1) and 0.92 (t2), in control group 0.85 (t1) and 0.88 (t2).

Time management was assessed with 13 items, adapted from reflections and questionnaire for students' self-assessment of their own study method and management of time and work space (Cornoldi, De Beni, & Gruppo MT, 2015). An example item is "I often find myself doing tasks that I had intended to do days before" (reverse item). Cronbach's alphas were: in experimental group 0.89 (t1) and 0.92 (t2), in control group 0.91 (t1) and 0.88 (t2).

Adaptive strategies to tackle tasks was assessed with 7 items, adapted to tools and questionnaires used for students' self-assessment of their study method (Cornoldi et al., 2015). An example item is "When I'm studying, I try to link various concepts together". Cronbach's alphas were: in experimental group 0.79 (t1) and 0.89 (t2), in control group 0.65 (t1) and 0.73 (t2).

Self-valorisation was assessed with 13 items (adapted by Bar-On, 1997; Franco & Tappata, 2009); an example item is "Considering both my personal strengths and weaknesses, I feel good about myself". Cronbach's alphas were: in experimental group 0.86 (t1) and 0.90 (t2), in control group 0.90 (t1) and 0.90 (t2).

Emotional self-regulation was assessed with 12 items, developed from the literature on emotion management and emotional regulation (Bar-On, 1997; Caprara, 2001; Franco & Tappata, 2009). The scale was composed by: *stress tolerance* (7 items), an example item is "I can control anxiety well in face of tests and exams"; and *emotional awareness* (5 items), an example item is "It is fairly easy for me to express happi-

ness when something good happens to me". Cronbach's alphas for the first subscale were: in experimental group 0.85 (t1) and 0.85 (t2), in control group 0.89 (t1) and 0.90 (t2). Cronbach's alphas for the second subscale were: in experimental group 0.76 (t1) and 0.85 (t2), in control group 0.66 (t1) and 0.71 (t2).

Proactivity was assessed with 14 items, constructed from the relevant literature on proactivity and entrepreneurship (Savickas & Porfeli, 2012; Soresi, Nota, & Ferrari, 2012; Trifiletti et al., 2009). An example item is "No matter how difficult something is, if I believe in it, I will make it happen". Cronbach's alphas were: in experimental group 0.93 (t1) and 0.95 (t2), in control group 0.89 (t1) and 0.92 (t2).

Objective guidance was assessed with 15 items, adapted from tolls measuring motivational attitudes (Borgogni et al., 2004). An example item is "I always look for ways to use my potential". Cronbach's alphas were: in experimental group 0.92 (t1) and 0.95 (t2), in control group 0.92 (t1) and 0.92 (t2).

Locus of control was assessed with 11 items, developed from Italian relevant instrument that analyse and detect locus of control and internal attribution styles (Pombeni, 1996). The scale was composed by *internal locus of control in case of success* (6 items), an example item is "If I succeed in my studies, it is due to my ability to assess different opportunities" and *internal locus of control in case of failure* (5 items), an example item is "If I do not succeed in my studies, it is due to my lack of ability to assess different opportunities". Cronbach's alphas for the first subscale in this study were: in experimental group 0.84 (t1) and 0.88 (t2), in control group 0.83 (t1) and 0.78 (t2). Cronbach's alphas for the second subscale were: in experimental group 0.74 (t1) and 0.86 (t2), in control group 0.79 (t1) and 0.67 (t2).

Resilience was assessed with 10 items, developed from international and Italian instruments on this skill (Campbell-Sills & Stein, 2007; Di Fabio & Palazzeschi, 2012); an example item is "I think I am a strong person, even when facing hardships". Cronbach's alphas were: in experimental group 0.87 (t1) and 0.92 (t2), in control group 0.85 (t1) and 0.87 (t2).

Teamwork was assessed with 12 items, developed by referring both to the main theories on the skill and to some instruments that analyse teamwork and study in groups (Kline, 1999); an example item is "When working in a group, I deal with problems and conflicts in a constructive way". Cronbach's alphas were: in experimental group 0.91 (t1) and 0.95 (t2), in control group 0.88 (t1) and 0.88 (t2).

Written and oral communication was assessed with 10 items, derived from the reference literature on the topic of communication (Caprara, 2001); an example item is "I can acknowledge the positive aspects of previous contributions when I engage in conversation and discussion". Cronbach's alphas were: in experimental group 0.84 (t1) and 0.93 (t2), in control group 0.74 (t1) and 0.80 (t2).

Conflict management was assessed with 10 items, developed from one of the most widely used models for conflict analysis and management (Thomas & Kilmann, 1974, 2007). An example item is "I do everything I can to avoid unnecessary tension". Cronbach's alphas were: in experimental group 0.88 (t1) and 0.91 (t2), in control group 0.84 (t1) and 0.86 (t2).

2.5. Statistical data analysis

All data were analysed using IBM SPSS Statistics 27.

Descriptive statistics were carried out for the demographic characteristics of students; Cronbach's alpha was used for the scales' internal consistency. Independent samples t-tests were conducted to compare the scores of soft skills between the groups and to examine whether any statistically significant differences existed between the experimental and the control group at T1 and T2. Paired samples t-test were carried out to assess whether statistically significant differences existed between the mean pre-test and post-test scores of soft skills for both groups.

Table 1
Pre-test data in experimental and control groups.

Soft skills	Group	Mean	t	p value
Problem solving and decision making	Experimental	67.13	-	0.045
	Control	68.97	2.01	
Time management	Experimental	52.18	1.60	0.110
	Control	50.37		
Adaptive strategies to tackle tasks	Experimental	31.12	-	0.250
	Control	31.73	1.15	
Self-valorisation	Experimental	54.00	1.30	0.195
	Control	52.61		
Emotional self-regulation – stress tolerance	Experimental	24.11	-	0.596
	Control	24.49	0.53	
Emotional self-regulation – emotional awareness	Experimental	22.97	1.25	0.212
	Control	22.45		
Proactivity	Experimental	63.89	0.45	0.651
	Control	63.39		
Objective guidance	Experimental	64.43	-	0.950
	Control	64.51	0.06	
Locus of control – internal in case of success	Experimental	24.59	0.80	0.426
	Control	24.18		
Locus of control – internal in case of failure	Experimental	15.02	3.06	0.002
	Control	13.63		
Resilience	Experimental	40.90	1.04	0.301
	Control	40.05		
Teamwork	Experimental	55.04	0.49	0.624
	Control	54.59		
Written and oral communication	Experimental	45.76	-	0.825
	Control	45.91	0.22	
Conflict management	Experimental	45.15	0.02	0.981
	Control	45.13		

Table 2
Pre-test and post-test data in the experimental group.

Soft skills	Mean (T1)	Mean (T2)	t	p value
Problem solving and decision making	67.13	72.85	8.66	0.000
Time management	52.18	59.63	10.41	0.000
Adaptive strategies to tackle tasks	31.12	34.44	9.78	0.000
Self-valorisation	54.00	61.38	11.01	0.000
Emotional self-regulation – stress tolerance	24.11	29.38	13.18	0.000
Emotional self-regulation – emotional awareness	22.97	25.26	8.19	0.000
Proactivity	63.89	70.78	10.17	0.000
Objective guidance	64.43	73.94	12.51	0.000
Locus of control – internal in case of success	24.59	28.88	12.72	0.000
Locus of control – internal in case of failure	15.02	14.45	1.81	0.072
Resilience	40.90	47.75	12.60	0.000
Teamwork	55.04	60.24	8.97	0.000
Written and oral communication	45.76	50.58	9.92	0.000
Conflict management	45.15	49.96	9.53	0.000

Note: N = 355; T1 before Passport program; T2 after Passport program.

3. Results

3.1. Impact of the Passport program

The initial average scores of the soft skills of the Passport model in the two groups are presented in Table 1; the experimental group filled in the questionnaire at first access on the platform, while at the same time the control group received the invitation. The t-test for independent samples reports non-significant results in all cases, except for locus of control in case of failure, for which the participants in the control group show a lower score at T1 compared to the experimental group.

The pre-test and post-test data in the experimental group are presented in Table 2. The paired samples t-test shows that participants who

Table 3
Pre-test and post-test data in the control group.

Soft skills	Mean (T1)	Mean (T2)	t	p value
Problem solving and decision making	68.97	69.27	-0.65	0.517
Time management	50.37	49.98	0.81	0.417
Adaptive strategies to tackle tasks	31.73	31.90	-0.62	0.533
Self-valorisation	52.61	53.49	-1.93	0.055
Emotional self-regulation – stress tolerance	24.49	24.87	-1.22	0.223
Emotional self-regulation – emotional awareness	22.45	22.41	0.19	0.846
Proactivity	63.39	63.93	-1.21	0.227
Objective guidance	64.51	64.85	-0.65	0.515
Locus of control – internal in case of success	24.18	24.87	-2.55	0.012
Locus of control – internal in case of failure	13.63	13.69	-0.24	0.812
Resilience	40.05	40.59	-1.45	0.147
Teamwork	54.59	54.45	0.34	0.737
Written and oral communication	45.91	45.95	-0.10	0.916
Conflict management	45.13	44.36	1.78	0.077

Note: N = 187; T1 initial; T2 after 2 months.

Table 4
Post-test data in experimental and control group.

Soft skills	Group	Mean	t	p value
Problem solving and decision making	Experimental	72.85	3.97	0.000
	Control	69.27		
Time management	Experimental	59.63	8.35	0.000
	Control	49.98		
Adaptive strategies to tackle tasks	Experimental	34.44	5.24	0.000
	Control	31.90		
Self-valorisation	Experimental	61.38	7.63	0.000
	Control	53.49		
Emotional self-regulation – stress tolerance	Experimental	29.38	6.87	0.000
	Control	24.87		
Emotional self-regulation – emotional awareness	Experimental	25.26	7.20	0.000
	Control	22.41		
Proactivity	Experimental	7078	6.57	0.000
	Control	63.93		
Objective guidance	Experimental	73.94	8.02	0.000
	Control	64.85		
Locus of control – internal in case of success	Experimental	28.88	8.12	0.000
	Control	24.87		
Locus of control – internal in case of failure	Experimental	14.45	1.51	0.133
	Control	13.69		
Resilience	Experimental	47.75	9.30	0.000
	Control	40.59		
Teamwork	Experimental	60.24	6.69	0.000
	Control	54.45		
Written and oral communication	Experimental	50.58	6.81	0.000
	Control	45.95		
Conflict management	Experimental	49.96	7.85	0.000
	Control	44.36		

have completed the course present a statistically significant increase in all the soft skills of the model, except for the internal locus of control in case of failure. This skill does not undergo any statistically significant changes but, in line with theory, the decrease in self-attribution score in case of failure decreases with the increase of frequency of the activities of the online platform. For what concerns the other dimension, in some cases the effect and t value are fairly large.

Looking at the control group data, the situation seems quite different (Table 3). The participants in this group did not follow the online course but still completed the questionnaire after a few weeks from the first compilation. No soft skills undergo a statistically significant change, except the internal locus of control in case of success. The paired samples t-test shows that the scores remain almost similar in the two time points.

To conclude, Table 4 shows the scores of the independent samples t-test, comparing the two groups on the final scores (T2). At the end of the online soft skills enhancement course, the competence levels of the participants in the experimental group are significantly different and higher than those of the participants in the control group, except, again, for the internal locus of control in case of failure.

4. Discussion

The purpose of the study was to find out if taking the Passport.U online course can increase the level of soft skills of university students. The experimental group, composed of students from the University of Turin, participated in the entire online training course and completed the PassporTest at the beginning and at the end; participants in the control group completed the questionnaire twice, with the second collection taking place a few weeks after the first.

The results support the hypothesis: the members of the experimental group who completed all the training activities reported significantly higher scores on all soft skills at the end of the programme, with the exception of internal locus of control in case of failure.

Looking at the control group scores, there is no statistically significant difference in soft skills levels. None of the soft skills increase significantly at the second time point, except for the internal locus of control in case of success. However it should be noted that this statistically non-significant increase could be due to the fact that locus of control is a personality trait, that tends to be stable, and could have been influenced by contextual variables related to the university career, such as passing an exam in the last session, or by personal factors, such as a

greater ability to self-reflect amongst students in this group who have more academic experience.

The results reinforce the hypothesis that the level of soft skills in individuals tends to remain stable in the absence of training to develop soft skills.

The skill "Internal locus of control in case of success/failure" deserves further consideration. In the control group this skill decreases, although not significantly, while in the experimental group there are no significant changes. The lack of a statistically significant difference suggests that more in-depth activities are likely required to develop this skill compared to the skill provided by the online course.

Successful completion of the Passport.U online course allowed participants to develop and improve their soft skills, coherently with the Passport model (Bennet et al., 1999; Heckman & Kautz, 2016; Joseph et al., 2010). The soft skills enhancement platform can be an important opportunity for student reflection and empowerment, initially during their university years (Morley, 2001; Ricchiardi, Ghislieri, & Emanuel, 2018) and later for accessing the labour market and improving employability (Andrews & Higson, 2008; Chamorro-Premuzic, Arteche, Bremner, Greven, & Furnham, 2010; Dacre Pool & Sewell, 2007; Klaus, 2010; Patil, 2021; Schulz, 2008; Vogler et al., 2018). Indeed, research has indicated that poor or problematic academic performance may also be due to a lack of soft skills (Ricchiardi, Ghislieri, & Emanuel, 2018). The essential role of soft skills in the labour market is also highlighted in current studies that address the changes introduced in education, training and work fields to cope with the pandemic, some of which will remain in the post-Covid phase (e.g. decision making, long-distance communication, etc.; Brown & Finn, 2021). To address these current challenges, universities need to promote training similar to those presented in this study, analyse and monitor progress during the course, and evaluate the impact on students in terms of soft skills levels and academic performance.

4.1. Limitations

The study has some limitations; the first one lies in some demographic and occupational differences between the experimental and con-

trol groups. With regards to soft skills, the differences found in the internal locus of control skills could probably be attributed to personal differences between the subjects.

Moreover, since the questionnaire was self-report, the soft skills were self-assessed. The subjectivity of the assessment could have affected the validity of the data, as what was measured could be sees as how the participants self-assessed themselves to possess certain skills, rather than the actual level. Nonetheless, given the presence of a control group, the second time point, and the confirmation of the hypothesis, we observed a significant increase in soft skills levels in experimental group.

Another limitation concerns the control group, as it was a convenience sample. The questionnaire was freely available online, so it was not possible to personally meet the participants, who would have been most interested in the topic of soft skills. The questionnaire included a filter question at both time points about participation in soft skills activities and also asked people to describe them. The question did not stop the compilation. Those who responded positively were also given their soft skills profile, but their questionnaires were not included in the study.

4.2. Future studies

Future research could evaluate the effects of participation in the soft skills programme on subjective (e.g., satisfaction, academic fit, Andrews & Higson, 2008) and objective (grade point average, delay in graduation) indicators of academic performance to determine if improving soft skills supports engagement and effectiveness during university.

Finally, it would be useful to assess whether and how the different types of activities proposed support soft skills development by also using qualitative methods (face-to-face or remote) where participant observations and evaluations can be collected.

At a more general level, the usability of the soft skills platform will be evaluated in order to provide students with a more flexible tool, adapted to their needs.

Conclusions

The study highlighted the results, in terms of improved self-evaluation of soft skills, in a large group of university students who participated in the Passport online soft skills enhancement project. Although the results are self-reported and show only one of the possible outcomes of an online course to improve soft skills, they represent an important contribution to the evaluation processes and to the promotion of remote tools for the dimensions considered in this study.

Considering all the known limitations, this type of tools allow to reach a large number of people and to reinforce the valorisation of one's soft skills in a preventive and apparently effective way. Therefore, this kind of investment by universities can support students in the initial stages of their academic studies, without interfering with other learning activities, but rather acting synergistically with them. It is therefore crucial that faculty members are aware of the programme and have also received training on soft skills to nurture this synergy. Promoting soft skills in an integrated manner requires that universities take an active role in developing and monitoring training practices, through structures such as Teaching and Learning Centres. Further reflection and subsequent subgroup discussions on students use of the platform, led by an expert, could prove useful, with the twofold objective of further supporting those with greater difficulties and enabling the development of course content and structure.

It seems important to consider the constant maintenance of online tools, which requires systematic monitoring as well as interactive benchmarking. It is therefore a solution that needs to be regularly checked, but also updated and possibly modified, giving rise to specific spin-offs, potential area for in-depth studies, and hybridisation with other in-presence activities, with specific targets requiring dedicated actions. In concrete terms, this means that platforms, such as the one presented here, need to be incorporated in an integrated support system for soft skills enhancement that, in addition to online solutions, also offers the possibility of providing individualised in-depth sessions for those who encounter particular difficulties at the beginning or later stages of the course. These additional courses can be freely requested by students, or offered in an *ad hoc* basis to specific target groups (e.g., students with a low number of credits earned). In either case, it is important that the decision to take the courses is sustained by genuine commitment, as motivation and engagement are fundamental to learning success.

Linking evaluations, such as the one proposed in this study to a precise analysis of the medium- and long-term effects on performance and the quality of study life, seems to be pivotal. We can expect soft skills to become increasingly important as university teaching changes, becoming more demanding not only in terms of knowledge but also in terms of skills. Supporting this transformation is important to understand and sustain it. This means designing research that provides adequate funding for a medium- to long-term commitment, considering both the monitoring of survey instruments and training units to implement possible adaptations, and the evaluation of how long the enhancement effects could last and course outcomes, in terms of academic success and perceived study quality. These are general indications that each university has to address in its own context, in order to identify the most effective method for designing and implementing a soft skills development system.

Declaration of Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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