# Career ToolVip24 effectiveness in enhancing self-efficacy, self-esteem, attitude toward enterprise and entrecomp dimensions in students from different european countries

Marino Bonaiuto[*], Valerio Placidi[*], Silvia Cataldi[*], Silvia Faggioli[°], Mathias Geb[^], Anna Kulinska[**], Giuseppina Pinello[°°], Grete V. S. Sande[^^], Lene O. Thorstensen[§]

* Sapienza Università di Roma, 00185, Roma, Italy;
e-mail: marino.bonaiuto@uniroma1.it;
e-mail: placidi.1745257@studenti.uniroma1.it;
e-mail: silvia.cataldi@uniroma1.it.
° IIS Aldini Valeriani, 40129, Bologna, Italy;
e-mail: faggiolis@yahoo.com.
^ Berufliche Schulen Schwalmstadt, 34613, Schwalmstadt, Germany;
e-mail: mathias.geb@gmx.de.
** ZSAE, 81-540, Gdynia, Poland;
e-mail: annakulinska@op.pl.
°° ITCS Rosa Luxemburg, 40131, Bologna, Italy;
e-mail: progettiinternazionali@luxemburg.bo.it.
^^ Sandefjord Videregående Skole, 3214, Sandefjord, Norway;
e-mail: lene.odberg.thorstensen@fonix.as
§ Fønix, 3221, Sandefjord, Norway
e-mail: grete.sande@vtfk.no.

**Ricevuto:** 14.03.2022 - **Accettato:** 27.07.2022

**Pubblicato online:** 31.01.2023

## Abstract

School guidance in general terms and, more specifically, school career guidance are effective means for the positive development of students in the academic and personal-social domains, as well as in their approach toward the labor market. Indeed, guidance programs can boost dimensions that play a relevant role in keeping students' high motivation within the academic context, thus preventing drop-out, ameliorating their academic achievement and orienting them toward their future career.

Marino Bonaiuto et al. */ Ricerche di Psicologia, 2022, Vol. 45*
ISSN 0391-6081, ISSNe 1972-5620, Doi:10.3280/rip2022oa15199

In light of this, the present study aims to evaluate the effectiveness of different guidance tools in producing more specific increases in participants' self-efficacy, self-esteem, attitude toward enterprise and in several EntreComp dimensions. The main focus is on the Career ToolVip24, a career guidance tool developed in Norway. The study, which is part of the European Project Erasmus+ KA2 "Tool VIP24", was conducted across four European countries (i.e., Germany, Italy, Norway and Poland), involving middle and high school students ranging from the 8th to the 13th grade.

Results indicate how the students participating in the Career ToolVip24, but not the students in the control group nor students participating in other guidance tools, significantly ameliorated in many of the investigated dimensions (including self-efficacy, self-esteem and attitude toward enterprise) at a post-intervention evaluation compared to a pre-intervention evaluation.

The implications of the results for students' attitude toward both the school and the labor market are discussed, together with the limitations of the study and directions for future research.

**Keywords:** attitude toward enterprise, career guidance, entrecomp, school guidance, self-efficacy, self-esteem

## Introduction

### *Background*

School guidance can be defined as a mean through which the positive development of students is promoted at a personal-social, academic and career level (Özmen & Hursen, 2020; Xiong et al., 2021). From a theoretical point of view, guidance differs from counselling which has been related to the help offered to students in order to cope with adversities (Xiong et al., 2021). At the personal-social and academic levels there is evidence concerning the fundamental role of guidance programs in improving students' motivation, school adjustment, academic achievement and self-concept (Hussain, 2006; Pranoto et al., 2016; Yusop, Zainudin & Ismail, 2018). For instance, a study conducted by Brigman & Campbell (2003) investigated how the implementation of a school guidance model named Student Success Skills (SSS) affected academic achievement and behaviour of elementary, middle and high-school students. The intervention was composed by group and classroom guidance, which targeted three types of skills: cognitive skills, social skills and self-management skills. The results indicated how students' who underwent the guidance program, compared to students in the

control condition, showed significantly higher levels of cognitive, social and self-monitoring skills, as well as a better performance in math and reading tests.

Discussing the importance of school guidance in facilitating students' approach to the job market and in orienting them toward their future career, it is necessary to introduce the domain of career guidance. Career guidance programs have been described as interventions allowing "individuals and groups to discover more about work, leisure and learning and to consider their place in the world and plan for their futures" (Hooley et al., 2017). Although some authors underline the variability that is present across different countries in the type of career guidance services offered in schools (Hearne & Neary, 2021), some others argue that those different approaches within the educational system are better understood if considered as interlinked (Hooley & Godden, 2021). Whatever is the case, career guidance interventions have been shown to be useful not only to help students' in becoming aware of their abilities, interests and ideal careers, but also to promote positive outcomes in the other two domains targeted by school guidance: the personal-social one and the academic one (Adeusi, Adekeye & Babalola, 2017; Evans & Burck, 1992; Turner & Lapan, 2005). Therefore, the adoption of career guidance programs in schools offers greater opportunities for students' positive development compared to other kinds of school guidance programs, as the ones reported in Brigman & Campbell (2003) and Pranoto and colleagues (2016), which focus exclusively on academic achievement and personality aspects of students.

In agreement with this perspective, the present study aims to evaluate the effectiveness of different guidance tools in enhancing students' self-efficacy, self-esteem and entrepreneurial competences, focusing in particular on the Career ToolVip24 which is a career guidance tool initially developed in Norway. This study was carried out as part of the European Project Erasmus + KA2 "Tool VIP24", whose final goal is to adapt such a specific tool across different European Union (EU) countries in order to test if, ultimately, it could be used to decrease school drop-out, motivate students, and make them aware of their strengths and weaknesses, also helping them to focus on achieving the chosen goals.

Indeed, school drop-out represents an internationally widespread phenomenon that causes concern among people who are involved in the field of education, such as teachers and counsellors, as well as among policymakers. Early school leavers face greater risk of economic instability, negative health outcomes and social exclusion, affecting also

the educational, economic and health outcomes of next generations (Ogresta et al., 2021). In 2020, in the EU the percentage of early leavers (that is individuals who decided to drop out from education or training) between 18 and 24 years of age stood at 9.9% (Eurostat, 2020a).The goal set by EU for the year 2030 is to reduce the percentage of early leavers to below 9%: even if some of the countries that are members of the Union or are within the European area have already reached the target (e.g., Montenegro, Slovenia, Switzerland), there are several others that have not (Eurostat, 2020b).

Evidence coming from several studies indicate how the levels of students' motivation, self-efficacy and self-esteem play a primary role in their decision about dropping out of school (Ogresta et al., 2021; Taniguchi & Hirakawa, 2016; Bridgeland, Diulio Jr. & Morrison, 2006; Samuel & Burger, 2020; Zein, Vignoli, Cohen-Scali & Lallemand, 2018). For this reason, in the present work, attention was given to the effects that guidance tools specifically have on students' self-efficacy and self-esteem. Students' entrepreneurship competence was also included as an additional dependent variable, because entrepreneurship, as defined in the EntreComp framework (Bacigalupo et al., 2016, which will be discussed more in detail later on), includes both the self-awareness and motivation aspects. Measuring students' growth along those three dimensions, after the guidance intervention, allowed to evaluate the efficacy of the guidance tools in producing positive development in the students, and consequently to determine the possible benefits of their implementation in educational contexts.

In the following paragraphs the three target constructs (self-efficacy, self-esteem, and entrepreneurship) – which can supposedly be affected by the guidance tools – will be introduced.

### *Self-Efficacy*

When we talk about self-efficacy, we refer to the conviction that the behaviour required to produce desired outcomes can be successfully executed (Bandura, 1977). In simpler words, a person, who shows high self-efficacy beliefs, judges herself as capable to produce a performance which will allow her to achieve specific attainments (Bandura, 1997). Beliefs in self-effectiveness are likely to affect coping in a given situation. Indeed, higher perceived self-efficacy is associated to more active coping efforts (Bandura, 1977).

Another relevant aspect is the link that self-efficacy has with academic performance, pro-sociality and life choices. Caprara and colleagues (2008) demonstrated that a specific type of self-efficacy, self-regulatory efficacy (or academic self-efficacy), is a predictor of both

school drop-out and academic achievement. Academic self-efficacy has been also found to mediate the effects of conscientiousness and self-esteem on school grades in another study (Di Giunta et al., 2013). Furthermore, evidence indicates how empathic self-efficacy mediates the relationship between regulative emotional self-efficacy and pro-sociality (Alessandri, Caprara, Eisenberg & Steca, 2009). Finally, Bandura (2001) argues how self-efficacy (or sense of agency more in general) determines our life course, influencing our choice about performing or not specific actions, and consequently our management of fortuity.

According to Bandura's theorization, efficacy beliefs are domain-specific and cannot constitute a global trait. Therefore, from his point of view, individuals' self-efficacy levels can show considerable variation between different contexts (Bandura, 2006). However, other authors have conceptualised the construct of generalized self-efficacy, which has been defined as "a global confidence in one's coping ability across a wide range of situations" (Schwarzer, 1994). Generalized self-efficacy is in clear opposition to the idea of domain-specificity, reflecting a general tendency to judge ourselves as capable to produce successful outcomes. To obtain a more complete picture of students' self-efficacy beliefs, in the present research it was chosen to measure student's self-efficacy at a global level, through the use of the Generalized Self-Efficacy Scale (GSE; Schwarzer & Jerusalem, 1995). The scale will be described in the Methodology section of the article.

### *Self-Esteem*

Self-esteem can be framed as the extent to which a person recognizes herself or himself as worthy (Baumeister, 1993; Rosenberg, 1979). Having a high self-esteem does not only entail a more positive evaluation of the self, but it is also linked to high aspirations (Baumeister & Tice,1985). On the contrary, a low self-esteem is related to a vision of oneself as inadequate and unworthy (Rosenberg, 1979). Moreover, subjects who are low on this dimension seem to be more motivated by failures than by successes (Baumeister & Tice, 1985).

Self-esteem has been found to be significantly related with academic achievement, at least at specific times during students' academic career (Alves-Martins et al., 2002; Booth & Gerard, 2011; Wang, Huebner & Tian, 2021; Zheng, Atherton, Trzesniewsky & Robins, 2020). In addition, Moksnes and Espnes (2013) showed how, in adolescents, self-esteem is an important predictor of life satisfaction, even after controlling for individuals' age and gender. Similarly, evidence has been provided in support of a significant relationship between self-esteem and conditions such as depression and anxiety (Manna et al., 2016; Peñate,

González-Loyola & Oyanadel, 2020; Sowislo & Orth, 2013). The existence of this relationship has been reported by some authors specifically in the population of students (Moksnes & Reidunsdatter, 2019; Nguyen et al., 2019).

In the current study, the Rosenberg Self-Esteem Scale (RSES, Rosenberg, 1965) was adopted to measure a global dimension of self-esteem. The scale was chosen because it offers a reliable assessment of self-esteem (Rosenberg, 1979), which is also proven by its widespread use (Donnellan, Trzesniewski & Robins, 2011).

***Entrepreneurship***

In recent years, a highly multifaceted conceptualization of entrepreneurship has emerged. It has been described as the ability to create new opportunities, to act in uncertain and unknown environments, to seize opportunities, to innovate and to take risks (European Commission, 2006; Neck & Greene, 2011). In the last few years, supranational institutions, such as the EU and the United Nations (UN), have recognized the inherent value of entrepreneurial skills which allow to adequately face the challenges that characterize the globalised world. This is proven by the entrepreneurship mentioning in the UN target 4.4 for Quality Education and among the EU eight key competences for lifelong learning (European Commission, 2018; UN, 2015).

In the present research, the EntreComp model of entrepreneurship was taken as a reference point. EntreComp has been developed with the goal of defining the entrepreneurship ability as a competence and representing a reference framework for the initiatives devoted to the promotion of such a competence (Bacigalupo et al., 2016). In this study the EntreComp model was adopted because of its refined structure, which links the theoretical level with the practical one providing hints, descriptors and learning outcomes useful for the implementation of educational programmes (Bacigalupo et al., 2016).

The model is composed in first place by three competence areas: “Ideas and Opportunities”, “Resources”, and “Into Action”. Each area is in turn subdivided into five competences. In the current study four EntreComp competences were investigated by the authors: Self-awareness and self-efficacy, Motivation and perseverance, Taking the initiative, Planning and management. The choice of those specific competences was guided by the relevance that they own for the positive development of the students within the school context. Indeed, differently from other competences which better apply to the demonstration of entrepreneurship in financial and economic environments (e.g., financial and economic literacy, spotting

opportunities), the above mentioned four selected competences target determination, resilience, organization, initiative and adaptation (as reported in the competences' descriptors section by Bacigalupo et al., 2016), all essential characteristics in order for the students to achieve their goals. In addition, the Self-awareness and self-efficacy competence includes all the dimensions of interest, representing a link between self-esteem, self-efficacy and entrepreneurship. On the basis of those reasons, measuring the effects of the guidance interventions on the four listed competences was judged sufficient to evaluate the potential improvement in students' entrepreneurship.

In order to measure such four EntreComp competences, given the lack of already validated and standardised tools, fifteen couples of items were created to be administered via a questionnaire to the students. The items come from a selection of the competences foreseen by the framework and were created by adapting the sentences from Bacigalupo (Bacigalupo et al., 2016). Moreover, as a further standardised pre-validated measure of entrepreneurship, the Attitude Toward Enterprise (ATE) Test (Steenekamp et al., 2011) was used too.

## Hypotheses

### *Preliminary aim*

As a preliminary aim, each scale structure was checked to confirm the expected structure or explored it if it was not preliminary given by the literature.

### *Hypotheses on students' questionnaires*

The first hypotheses group of the research predicted that the experimental subjects, being exposed to the career guidance tools, would have ameliorated their score in self-esteem and generalized self-efficacy dimensions and in the dimensions related to the "Self-awareness and self-efficacy" EntreComp competence (which are "Following aspirations", "Identifying strengths and weaknesses", "Believing in abilities" and "Shaping future"), with no improvement over time expected for the control group in relation to those dimensions.

A second group of hypotheses posited an improvement for the experimental groups in the scores regarding dimensions linked to the "Motivation and perseverance" competence (that include "Staying driven", "Being determined", "Focussing on what is motivating", "Being resilient", "Do not giving up"). Even in this case, no amelioration was expected in the control group.

For the third group of hypotheses, after the exposure to the guidance tool, an improvement for the experimental groups in the scores of attitude toward enterprise and in the scores of the dimensions related to the "Taking the initiative" competence (that are "Taking responsibility", "Working independently" and "Taking action") was expected. Again, no difference in those scores across the two administrations was predicted for the control group.

Finally, the fourth hypotheses group predicted that the experimental groups would have improved in the scores of dimensions referring to the "Planning and management" competence (which are "Defining goals", "Defining priorities", "Flexibility"), with no improvement in scores expected for the control group.

All the hypotheses are reported in detail, as follows.

First hypotheses group – "Self-awareness and self-efficacy".

- Hypothesis 1a. Increased scores in the self-esteem dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 1b. Increased scores in the generalized self-efficacy dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 1c. Increased scores in the "Following aspirations" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 1d. Increased scores in the "Identifying strengths and weaknesses" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 1e. Increased scores in the "Believing in abilities" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 1f. Increased scores in the "Shaping future" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

Second Hypotheses group – "Motivation and perseverance".

- Hypothesis 2a. Increased scores in the "Staying driven" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 2b. Increased scores in the "Being determined" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 2c. Increased scores in the "Focussing on what is motivating" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 2d. Increased scores in the "Being resilient" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 2e. Increased scores in the "Do not giving up" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

Third hypotheses group – "Taking the initiative".

- Hypothesis 3a. Increased scores in the "Taking responsibility" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 3b. Increased scores in the "Working independently" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 3c. Increased scores in the "Taking action" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 3d. Increased scores in the attitude toward enterprise dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

Fourth hypotheses group – "Planning and management".

- Hypothesis 4a. Increased scores in the "Defining goals" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 4b. Increased scores in the "Defining priorities" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

- Hypothesis 4c. Increased scores in the "Flexibility" dimension at the post administration in comparison with the pre administration were expected for the Career ToolVip24 group and the other guidance tools group. No increase in scores for the same dimension was predicted for the control group.

## Methodology

### *Participants*

The sample was composed by 492 subjects (227 females and 265 males) with a mean age of 16.54 (SD = 1.49). 30 participants were German (22 females and 8 males), 293 Italian (113 females and 180 males) 129 Polish (79 females and 50 males) and 40 Norwegian (13 females, 27 males). The school grade ranged from the 8th to the 13th grade. 19 students attended middle school and 473 attended high school.

The educational institution that took part in the research are: Berufliche Schulen Schwalmstadt (Germany), IIS Aldini Valeriani (Bologna, Italy), Scuola Media Statale "G. Ellero" (Udine, Italy), ITCS Rosa Luxemburg (Bologna, Italy), Sandefjord Videregående Skole (Norway), ZSAE Gdynia (Poland).

### *Materials*

A questionnaire, which was composed by three different scales, fifteen couples of items related to the EntreComp framework, in addition to questions related to demographic variables, ideas about a future job and the experienced guidance tool, was created in occasion of this study.

The scales and items present in the questionnaire were:

- Attitude Toward Enterprise (ATE) Test (Steenekamp et al., 2011) composed by N. 23 items;
- Generalized Self-Efficacy Scale (GSE) (Schwarzer & Jerusalem, 1995) composed by N. 10 items;
- Rosenberg Self-Esteem Scale (Rosenberg, 1965) composed by N. 10 items;
- N. 30 items concerning fifteen dimensions (Following aspirations N. 2 items, Identifying strengths and weaknesses N. 2 items, Believing in abilities N. 2 items, Shaping future N. 2 items, Staying driven N. 2

items, Being determined N. 2 items, Focussing on what is motivating N. 2 items, Being resilient N. 2 items, Do not giving up N. 2 items, Taking responsibility N. 2 items, Working independently N. 2 items, Taking action n. 2 items, Defining goals N. 2 items, Defining priorities N. 2 items, Flexibility N. 2 items) related to the EntreComp theoretical framework (items created by adapting sentences from Bacigalupo et al., 2016);

- N. 1 forced-choice question about parents' education;
- N. 6 items about school achievement;
- N.1 open question about the students' ideas regarding their future; N. 8 items and N.1 open question about the guidance tool.

The guidance tool on adopted in this study is Career ToolVip24.

Career ToolVip24 is a tool used by the Norwegian company Fønix with the aim of orienting or reorienting to career young people, people who lost their job and people with disabilities. It is composed by four parts (Interests, Abilities and Values, Preferences and Ciclo Vip 24) which are supported by psychological theories such as the RIASEC model by Holland (Holland, 1997) and Jung's psychological types (Jung, 1971; Myers & McCaulley, 1985). In the first part, the subjects complete a questionnaire regarding their interests, which is based on the RIASEC model. The result of the questionnaire indicates the three most dominant traits of the individual, providing them with knowledge about what gives them motivation and about the types of activities in which they are interested. The second section, Abilities and Values provides information concerning how to take advantage of one's own resources and potential in the most effective way. This is done using a chart in which coloured rays reflect how much a person is capable to use specific values and skills, whereas white dots represent individual's abilities and values in the present moment. In the third part of the guidance program, participants are administered with the Myers-Briggs Type Indicator (Murray, 1990), which is inspired by Jung's theory about psychological types. As a result, participants obtain a profile which is a combination of four dimensions (energy, perception, decision and lifestyle) and informs them about their personality. Finally, in the last section defined Ciclo Vip 24, many different domains are examined (e.g., communication, social relationships, personal values) to have a clear perspective on individuals' life and on how the gap between the current situation and the desired one can be closed. Importantly, participants discuss with experts during all the listed steps, in a way that aims to acquire enhanced knowledge regarding themselves and the opportunities they have, in order to target how to ameliorate their lives (see Appendix)

The other tools applied include an orientation tool named Planet Beruf, which is inspired by the WIE – Werte in Europa project and an Italian guidance tool.

Planet Beruf is a collection of different orientation tools, which are used by students during regular school hours and workshop activities. Those tools help students in finding the job that fits them the most. For example, Berufe Entdechen, one of the tools composing Planet Beruf, presents the students with images referring to particular jobs. The students can select the images they prefer and the tool gives them the possibility to explore more in depth the jobs associated with those images. This is done through brief videos and written descriptions. It must be highlighted how Planet Beruf is a tool used within the WIE project. WIE aims to strengthen the awareness of European Union as a community of values that have a common origin, but that must be considered in their plurality. The project focuses at the same time on the exploration of themes such as work sharing and mutual understanding.

The Italian tool consists of a path of individual guidance that suggests students the closest training or professional path to their ambitions; it also shows the concrete experience of those students who have made the same choices and are currently employed. Crucially, it allows students to identify their strengths and to get to know better the university system and the labour market. After completing the online course, students get a personalized profile – based on their ambitions and skills.

***Experimental Design***

The students were split into three groups:

- the first experimental group was exposed to Career ToolVip24 and it was composed by 350 students that completed the questionnaire before the guidance intervention (pre-administration) and 246 subjects that completed the questionnaire after the intervention (post-administration);
- the second experimental group was exposed to one of the other guidance tools (composed by 35 pre and 35 post subjects);
- the control group comprised participants who were not exposed to any of the tools (composed by 142 pre and 126 post subjects).

The number of students involved in the three groups for each school is reported in Table 1.

It must be specified that – due to both participants mortality and incongruencies in the students' reported identities – it was not possible to constantly match the questionnaires of the subjects across the two administrations. Therefore, a between-subjects experimental design was adopted.

For the first experimental group and for the control group separately it was decided to compare scores at post with the totality of the observations at pre. Consequently, in the case of the first experimental group 246 post observations were compared with 350 pre observations, while for the control group 126 post observations were compare with 142 pre observations. This was done because for those two groups it was not possible to match subjects that were identical in relation to their age, gender and attended school. On the contrary, for the second experimental group, it was decided to just compare scores at post with a sub-sample of 35 subjects extracted from the first experimental group at pre (the extracted subjects were identical in terms of age, gender and attended school to the 35 post subjects).

Tab.1 - *Number of students involved in the three conditions for each school*

| General Sample<br>N Pre = 492 N Post = 407 | | |
|---|---|---|
| First Experimental Group<br>N Pre = 350 N Post = 246 | Second Experimental Group<br>N Pre = 35* N Post = 35 | Control Group<br>N Pre = 142 N Post = 126 |
| Berufliche Schulen Schwalmstadt<br>N Pre = 30 N Post = 21 | Berufliche Schulen Schwalmstadt<br>N Pre = 3 N Post = 3 | IIS Aldini Valeriani<br>N Pre = 44 N Post = 45** |
| IIS Aldini Valeriani<br>N Pre = 99 N Post = 71 | IIS Aldini Valeriani<br>N Pre = 16 N Post = 16 | Italian ITCS<br>N Pre = 39 N Post = 30 |
| Scuola Media Statale «G.Ellero»<br>N Pre = 19 N Post = 6 | Scuola Media Statale «G.Ellero»<br>N Pre = 8 N Post = 8 | Sandefjord Videregående Skole<br>N Pre = 15 N Post = 12 |
| Italian ITCS<br>N Pre = 91 N Post = 90 | Italian ITCS<br>N Pre = 1 N Post = 1 | ZSAE Gdynia<br>N Pre = 44 N Post = 39 |
| Sandefjord Videregående Skole<br>N Pre = 25 N Post = 24 | Sandefjord Videregående Skole<br>N Pre = 1 N Post = 1 | |
| ZSAE Gdynia<br>N Pre = 86 N Post = 34 | ZSAE Gdynia<br>N Pre = 6 N Post = 6 | |

* Due to incongruencies in the students' reported identities it was not possible to match the 35 pre-administration and 35 post-administration observations in the second experimental group. Therefore 35 subjects were extracted from the first experimental group at pre to compose the pre-administration sample for the second experimental group. Those 35 subjects were identical in terms of age, gender and attended school to the 35 post subjects. It must be clarified that, following this procedure, those 35 subjects were included both in the pre-administration sample of the first and in the pre-administration sample of the second experimental group.

** For the IIS Aldini Valeriani's control group, the number of post-administration observations is higher compared to the number of pre-administration observations. This is due to missing data for some participants at the time in which pre-administration questionnaires were completed.

***Procedures***

The study started in April 2019 and ended in March 2020. The administration modalities for the questionnaires and the guidance tools are reported for each school here below.

In Berufliche Schulen Schwalmstadt the administration took place in classroom. The students participated to 3 group sessions of 4 hours. The results discussion happened in groups.

In Italian ITCS, the administration took place in three separate IT laboratories, involved three different classes, and it was guided by teachers that are in the team dealing with international projects for students and teachers, and that have joined the staff training events in Norway, Germany and Poland. Students participated to 1 group session of 5 hours. The results discussions happened in group before the administration of the post-questionnaires.

In the Aldini Valeriani school the administration took place in classroom. Students participated to 8 individual sessions of 1,5 hours in which they were guided by the teacher. The results discussions happened in groups and each discussion was guided by the teacher with the help of Fønix.

In G. Ellero school students participated to 5 sessions of 2 hours each, in groups, in couples or individually, depending on the skills. No final discussion took place because of the lockdown that made impossible the continuation of the activities.

In Sandefjord Videregående Skole the administration took place in the classroom. Students participated to 2 sessions: one for the pre-questionnaire filling and the guidance tool administration, one for the post-questionnaire completion. The discussion of results happened in groups.

In ZSAE Gdynia the administration took place in the school library. Sessions were held in four classes (groups). Each group took part in two two-hour sessions. Each was supervised by a teacher involved in the project who explained the linguistic doubts. Additionally, each group was presented with one-hour summaries of the results of the VIP24 surveys. The results discussion happened one week after the final administrations.

Subjects in the experimental groups went through three steps: at first, they completed the questionnaire (pre administration), then they were exposed to one of the career guidance tools, and eventually they completed again the questionnaire (post administration), also answering items about the guidance tool.

On the contrary, the control group was not exposed to any career guidance tool and only filled out the same questionnaire two times (after a similar time interval in between).

## Analyses

### *Preliminary analyses*

At the beginning, principal components and confirmatory factor analyses were run on the ATE, GSE and Rosenberg Self-Esteem scales. That was done to extract high-order dimensions on which further analyses were conducted. Moreover, correlation analyses were run on each of the fifteen couples of items to examine the possible existence of common underlying dimensions.

*Analyses on students' questionnaires*

To verify the four hypotheses' groups, that is the efficacy of the career guidance tools in developing self-efficacy, self-esteem and entrepreneurship, independent-samples one-tailed t-tests were run. The decision to use t-tests was due both to the loss of some subjects at the time of the second administration and to inconsistencies in the identities of the participants (names and surnames), which made not possible the use of repeated-measures analyses.

## Results

### *Structural and correlational analyses on dimensions*

For what concerns the ATE scale, two factors were suggested by the principal component analysis. However, given that the two factors were moderately correlated ($r = .33$ at first administration, $r = .36$ at second administration) and that their content overlapped, we opted for a single factor solution ($\alpha = .90$).

A single factor emerged from the structural analysis related to the Generalized Self-Efficacy Scale ($\alpha = .86$), accordingly we ran the subsequent analyses on this single dimension.

Focussing on the Rosenberg Self-Esteem Scale, similarly to what happened for the other two scales a single factor solution was chosen consistently with the literature (Gray-Little, Williams & Hancock, 1997), anyway it must be mentioned that the reliability of the scale was found to be low ($\alpha = .41$ at first administration, $\alpha = .52$ at second administration).

Eventually, the correlation analyses showed how items in each couple were significantly correlated (the lowest correlation was $r = .39$ for taking action in the post questionnaire, while the highest one was $r = .63$ for following aspirations in the post questionnaire), and consequently fifteen dimensions (one for each couple of items) were taken into consideration for the following analyses (see Hypotheses and Methodology for the name of the dimensions).

***Hypotheses testing on career guidance experience***

As already reported, independent samples one-tailed t-tests were conducted to verify the four groups of hypotheses of the study (hypotheses from 1a to 1f).

For what concerns the first hypotheses group, for the Career ToolVip24 group significantly higher scores in Generalized Self-Efficacy Scale ($t = - 3.15$, $p = .00$), Rosenberg Self-Esteem Scale ($t = - 2.09$, $p = .02$) and "Following aspirations" dimension ($t = - 3.00$, $p = .00$) were found at the time of the post administration compared to the pre administration (Figures 1, 2 and 3),while no significant difference resulted in the scores of "Identifying strengths and weaknesses", "Believing in abilities" and "Shaping future". On the contrary, no significant increase was found between the pre and post administration in the scores of the other guidance tools and control groups.

Discussing the second hypotheses group (hypotheses from 2a to 2e), a significant increase in the scores of "Focussing on what is motivating" ($t = - 2.73$, $p = .00$) and "Do not giving up" ($t = - 1.93$, $p = .03$) dimensions between pre and post was present in the Career ToolVip24 group (Figure 4 and 5). It must be also mentioned that an almost significant increase was found, in this group, for the "Being determined" dimension ($t = - 1.56$, $p = .06$) (while no significant difference resulted in the scores of "Staying driven" and "Being resilient"). Talking about the other guidance tools and control groups, no significant change was found in the scores of any dimension.

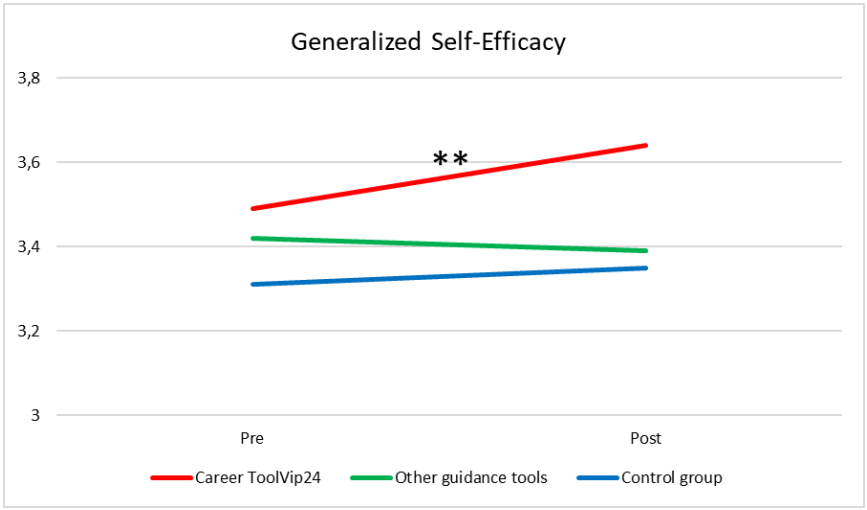


Fig. 1 - *Significant effect of Career ToolVip24 experience on Generalized Self-Efficacy scores (t = - 3.15)*

Legend: * indicates p < .05, ** indicates p < .01; asterisks above one line indicate a significant difference between the pre-administration and post-administration for a specific group

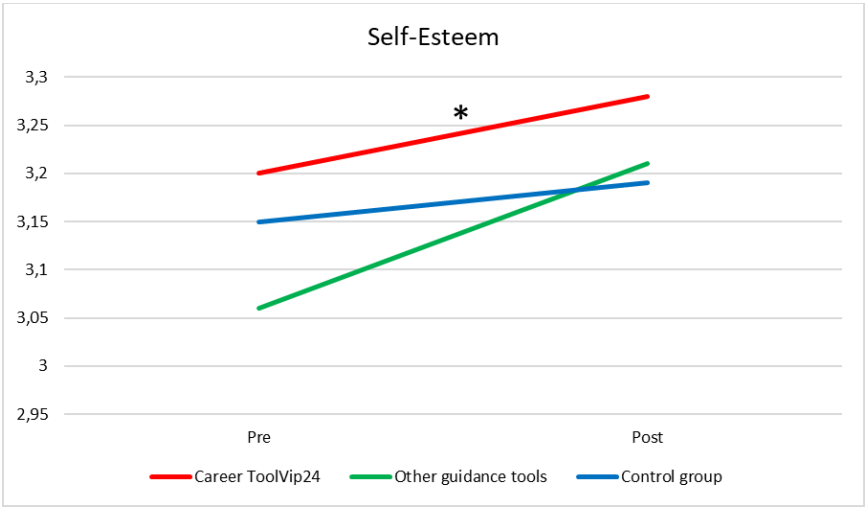


Fig. 2 - *Significant effect of Career ToolVip24 experience on self-esteem scores (t = -2.09)*

Legend: * indicates p < .05, ** indicates p < .01; asterisks above one line indicate a significant difference between the pre-administration and post-administration for a specific group

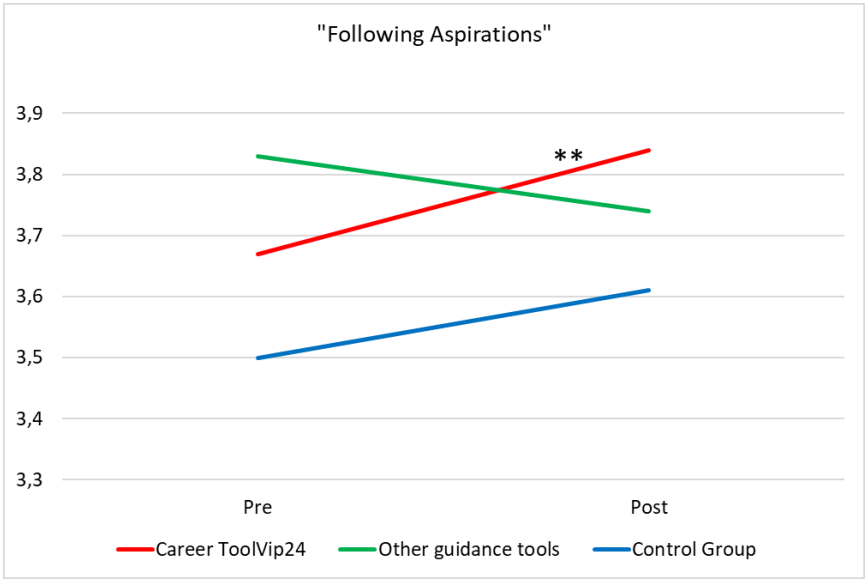


Fig. 3 - *Significant effect of Career ToolVip24 experience on Following aspirations scores (t = - 3.00)*

Legend: * indicates p < .05, ** indicates p < .01; asterisks above one line indicate a significant difference between the pre-administration and post-administration for a specific group

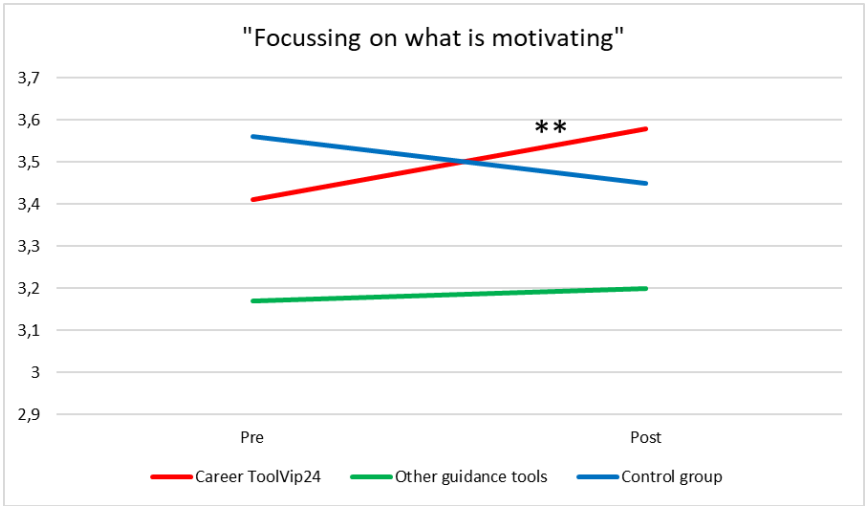


Fig. 4 - *Significant effect of Career ToolVip24 experience on Focussing on what is motivating scores (t = - 2.73)*

Legend: * indicates p < .05, ** indicates p < .01; asterisks above one line indicate a significant difference between the pre-administration and post-administration for a specific group

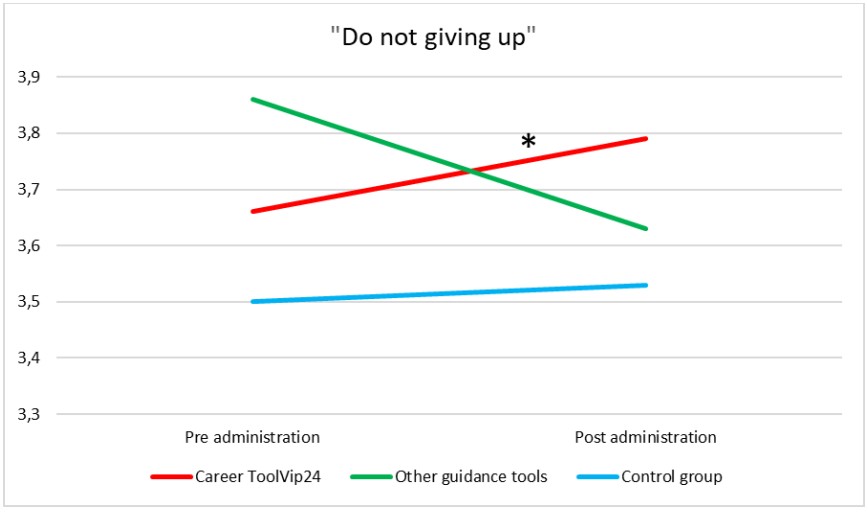


Fig. 5 - *Significant effect of Career ToolVip24 experience on Do not giving up score (t = - 1.93)*

Legend: * indicates p < .05, ** indicates p < .01; asterisks above one line indicate a significant difference between the pre-administration and post-administration for a specific group

Moving to the third hypotheses group (hypotheses from 3a to 3d), the Career Toolvip24 group showed a significant increase in the second administration in relation to the first one concerning the scores of three dimensions: attitude toward enterprise (t = - 2.13, p = .02), "Taking action" (t = - 2.57, p = .01) and "Taking responsibility" (t = - 2.02, p = . 02) (Figures 6, 7 and 8), while no significant difference resulted in the scores of "Working independently". In the other guidance tools and control groups no significant difference was present.

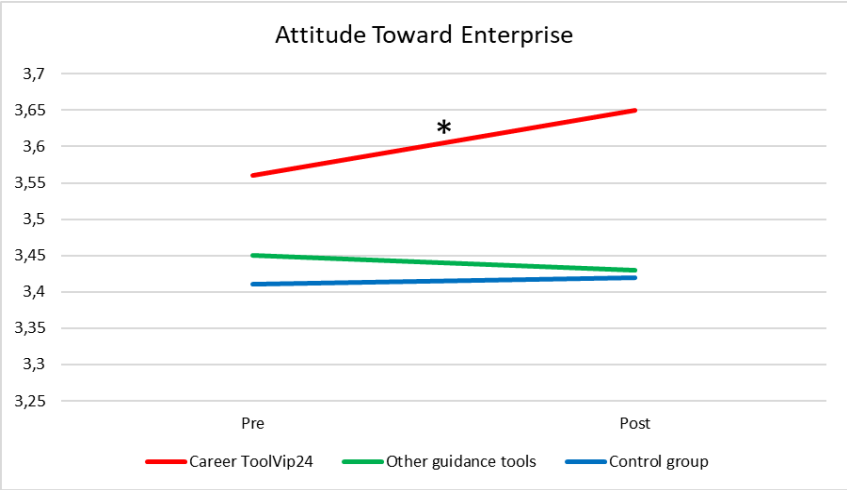


Fig. 6 - *Significant effect of Career ToolVip24 experience on Attitude Toward Enterprise scores (t = - 2.13)*

Legend: * indicates p < .05, ** indicates p < .01; asterisks above one line indicate a significant difference between the pre-administration and post-administration for a specific group

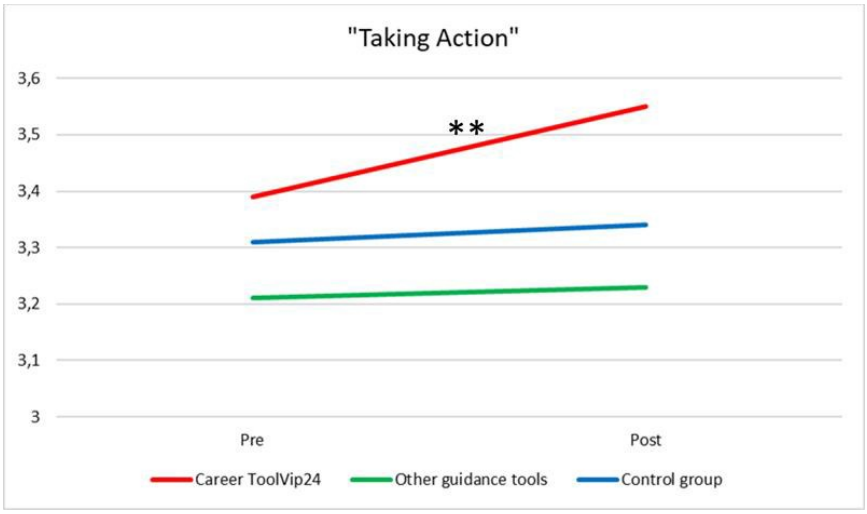


Fig.7 - *Significant effect of Career ToolVip24 experience on Taking action scores (t = - 2.57)*

Legend: * indicates p < .05, ** indicates p < .01; asterisks above one line indicate a significant difference between the pre-administration and post-administration for a specific group

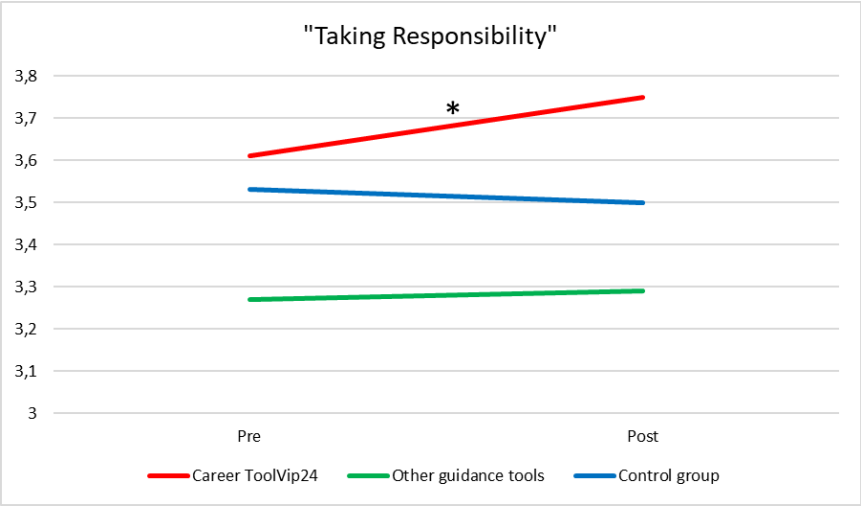


Fig. 8 - *Significant effect of Career ToolVip24 experience on Taking responsibility scores (t = - 2.02)*

Legend: * indicates p < .05, ** indicates p < .01; asterisks above one line indicate a significant difference between the pre-administration and post-administration for a specific group

Finally, in relation to the fourth hypotheses group of the study (hypotheses from 4a to 4c), a significant difference was present in the Career ToolVip24 group, between pre and post, in the scores of "Defining goals" dimension (t = - 1.71, p =.04) (Figure 9). However, participants in this group did not improve their scores in "Defining priorities" and "Flexibility" dimensions from the first to the second administration. On the contrary, both the other guidance tools and the control group did not show any significant difference in the scores.

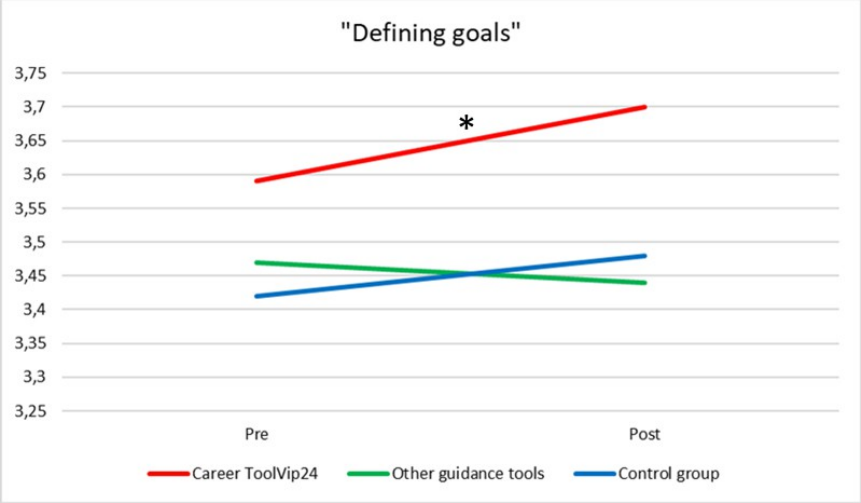


Fig. 9 - *Significant effect of Career ToolVip24 experience on Defining goals scores (t = -1.71)*

Legend: * indicates p < .05, ** indicates p < .01; asterisks above one line indicate a significant difference between the pre-administration and post-administration for a specific group

## Discussion

The goal of the research was to evaluate the efficacy of the Career ToolVip24 and other guidance tools in promoting self-efficacy, self-esteem and entrepreneurial competences. To our knowledge, there are only a few studies that examined the effect of career guidance on the improvement of variables such as entrepreneurship skills, employability, self-efficacy and self-esteem in students (e.g. Grace & Ihuoma, 2013; Legum & Hoare, 2004; Pitan & Atiku, 2017; Shimomura, 2007; Whelan, McGilloway, Murphy & McGuiness, 2018); remarkably, the current study is the first one to analyse how different types of guidance tools can have different effects on the development of EntreComp competences.

Principal components analyses suggested the mono-dimensionality of the validated scales, even if in the case of the ATE scale that was not consistent with the existing literature (Athayde, 2009; Steenekamp et al., 2011). Anyway, it must be reported that from the principal components analysis more than one factor emerged for the ATE scale, but due to the positive correlation between those factors, we opted for a single factor solution to measure a general dimension of entrepreneurship. The Cronbach's alphas indicated an excellent internal consistency for the ATE scale ($\alpha$ = .90), and a good one for the Generalized Self-Efficacy

Scale (α = .86). Surprisingly, the alpha resulted to be poor in the case of Rosenberg Self-Esteem Scale, especially at pre (α = .41). Although these results question the use of Rosenberg's scale to measure a general self-esteem dimension, the existing literature indicates the high reliability of that scale (Blascovich et al., 1991; Sinclair et al., 2010). By consequence, our choice was to use the scale to measure a single factor of self-esteem.

In addition, further analyses revealed how items in each one of the ad hoc created fifteen item couples in the current study were highly correlated, confirming the existence of fifteen different underlying dimensions, which reflect different aspects of the EntreComp competences.

Results mostly confirm the hypotheses of the study, for the Career Toolvip24 and the control group; while hypotheses are not confirmed for the other guidance tools' group. In fact, only the participants exposed to the Career ToolVip24 display a significant increase, between pre and post, in the scores of several dimensions such as self-efficacy, self-esteem, attitude toward enterprise, and a number of EntreComp competences.

Referring to the first hypotheses group (Self-awareness and self-efficacy), the ameliorated dimensions include self-esteem, which was measured using Rosenberg Self-Esteem Scale (Rosenberg, 1965); generalized self-efficacy, measured by means of the Generalized Self-efficacy Scale was used (Schwarzer & Jerusalem, 1995) and "Following aspirations".

In relation to the second hypotheses group (Motivation and perseverance), the dimensions along which the subjects increased are: "Focussing on what is motivating" and "Do not giving up".

For what concerns the third hypotheses group (Taking the initiative), the experimental subjects' increase concerned attitude toward enterprise measured with the Attitude Toward Enterprise (ATE) Test (Steenekamp et al., 2011), "Taking action" and "Taking responsibility".

Finally, for the fourth hypotheses group (Planning and management), the only ameliorated dimension resulted to be "Defining goals".

Unfortunately, not all the investigated dimensions showed a significant increase in their scores after the Career ToolVip24 experience. Anyway, in almost all the cases in which the significance threshold was not reached, an increase in the expected direction was present, with some dimensions showing a statistical tendence (e.g., "Being determined").

For what concerns the control group, the results are, as already reported, in line with the hypotheses. The participants in this group did not ameliorate their performance in any dimension across the two moments.

Regarding the other guidance tools they seem to show a lack of efficacy in improving self-efficacy, self-esteem and EntreComp dimensions. In addition, it should be highlighted that the very limited number of subjects for the other guidance tools group (35 subjects) does not allow to judge those tools and further larger samples studies need to address such an issue.

All together the reported findings indicate how the Career ToolVip24 can be effective in the promotion of self-efficacy, self-esteem, attitude toward enterprise and EntreComp competences, both compared to a control group and to a group using other guidance tools, for students in vocational high-school. This outcome suggests a possible fruitful use of this tool to reduce drop-out rates and to facilitate academic achievement and career guidance in adolescent students from Germany, Italy, Norway, and Poland. Indeed, the aforementioned dimensions and competences targeted by the Career Toolvip24 impact on the students' decision to drop-out, on their academic success, and on the way in which they approach to the labour market (Andersson, 2021; Bacigalupo et al., 2016; Batool, 2020; Caprara et al., 2008; Filozof et al., 1998; McCallum et al., 2020; Samuel & Burger, 2020; Taniguchi & Hirakawa, 2016; Zein, Vignoli, Cohen-Scali & Lallemand, 2018). Moreover, high levels of self-efficacy and self-esteem are related to positive outcomes in a variety of domains, even outside the school and the work contexts (e.g. life satisfaction, health outcomes; Cahill, Ferro, Campbell & Ronen, 2021; Caprara, Di Giunta, Bermúdez & Caprara, 2020). Some evidence is also present in relation to the effects of entrepreneurship education on variables like people's beliefs, attitudes, cognitive and non-cognitive skills, however the results are mixed (Brüne & Lutz, 2020; Huber, Sloof & Van Praag, 2014). Overall, the results of the present study fit well in the scenario of the increased interest toward policies related to students' career guidance, that has been developing in the last decades in many countries around the world (Sultana, 2004; Sultana, 2009).

## Limitations of the research

Importantly, the authors are aware of the limitations that characterize the study. A first limit concerns the difference that is present between the number of subjects that took part in the first experimental condition (i.e. students exposed to the Career ToolVip24) and the number of subjects

involved in the second experimental (i.e. students exposed to other tools) and in the control (i.e. absence of exposure to any guidance tool) conditions. Particularly, the second experimental group was composed by a limited number of subjects (just 35) compared to the other two groups and this might have affected part of the results of the study. However, the main aim of the experiment was to evaluate the effect of the Tool Vip24 and therefore results related to this effect were not influenced by the present limitation. The small number of subjects in the second experimental group, due to a reduced statistical power, simply does not allow to conclude that the other used tools had no effect on students' competences. Consequently, it is also possible that with a bigger sample the effects of the other tools would have turned out to be significant, providing full confirmation of our first hypothesis.

Another limitation of the study regards the low internal consistency showed by the RSES scale. The Cronbach's alpha coefficient resulted to be equal to .41 at first administration and equal to .52 at second administration. As previously argued (see Discussion), a similar result indicates how, in our sample, the reliability of Rosenberg's scale in the measurement of a general self-esteem dimension was quite low. Indeed, generally, to be considered acceptable, values of Cronbach alpha must exceed .70 (Cortina, 1993). However, it was decided to use the scale for two reasons. The first one is that the PCA conducted on the items of the scale suggested a mono-factorial solution. The second reason is that the existing literature demonstrates how the RSES is generally highly reliable in measuring a single general dimension of self-esteem (Blascovich et al., 1991; Sinclair et al., 2010).

A final limitation of the study is represented by the high attrition rate and some inconsistencies in the identities reported by participants on the questionnaires. These two issues may have exerted some influence on the final results of the study, producing a loss of statistical power (due to reduction of sample size) and making impossible to run repeated-measures analyses. Therefore, future researchers that will decide to test the effects of guidance programmes on students' competences and personality characteristics, will have to carefully plan each part of the data collection in order to avoid high attrition rates and inconsistencies in participants' identities.

## Conclusion

The current study contributes to determine the efficacy of the Career ToolVip24 tool and procedure, considered as an innovative career guidance intervention, in the promotion of self-efficacy, self-esteem, attitude toward the enterprise, and four EntreComp competences (i.e., Self-awareness and self-efficacy, Motivation and perseverance, Taking the initiative, Planning and management). The results indicate that that this tool exerts a greater and more positive influence on the development of the listed dimensions and competences, as compared to other guidance tools and to a control group which does nothing under that respect. Such findings imply that the adoption of the Career ToolVip24 in schools could be potentially advantageous, producing beneficial outcomes for the students. However, further experimental evidence is needed in order to generalize those findings to populations with different characteristics (e.g., younger students and students who live in countries outside of Europe); as well as to obtain a better estimation of Career ToolVip24 effect sizes on the dimensions and competences of interest.

## Acknowledgements

The authors acknowledge funding and support by the Erasmus+ Project "Tool VIP 24" (2018-1-IT01-KA202-006730, period 01/10/2018 - 30/09/2020). Authors are also grateful to the schools' authorities, the teachers and the pupils who made themselves available to collaborate in the project's activities and in the data gathering within the involved educational institutions that took part in the research during the period April 2019 – March 2020: Berufliche Schulen Schwalmstadt (Germany), IIS Aldini Valeriani (Bologna, Italy), Scuola Media Statale "G.Ellero" (Udine, Italy), ITCS Rosa Luxemburg (Bologna, Italy), Sandefjord Videregående Skole (Norway), ZSAE Gdynia (Poland).

## References

Adeusi, S. O. (2017). Influence of Guidance and Counseling on Students Motivation and School Adjustment among Covenant University Students, Ogun State. *Covenant International Journal of Psychology*, 1(2).

Alessandri, G., Caprara, G. V., Eisenberg, N., & Steca, P. (2009). Reciprocal relations among self- efficacy beliefs and prosociality across time. J*ournal of personality*, 77(4), 1229-1259. DOI: 10.1111/j.1467-6494.2009.00580.x.

Alves-Martins, M., Peixoto, F., Gouveia-Pereira, M., Amaral, V., & Pedro, I. (2002). Self-esteem and academic achievement among adolescents. *Educational psychology,* 22(1), 51-62. DOI: 10.1080/01443410120101242.

Andersson, A. B. (2021). Social capital and self-efficacy in the process of youth entry into the labour market: Evidence from a longitudinal study in Sweden. *Research in Social Stratification and Mobility*, 7. DOI: 10.1016/j.rssm.2020.100580.

Athayde, R. (2009). Measuring enterprise potential in young people. Entrepreneurship *Theory and Practice*, 33, 481-500. DOI: 10.1111/j.1540-6520.2009.00300.x.

Bacigalupo, M., Kampylis, P., Punie, Y., & Van den Brande, G. (2016). EntreComp: The entrepreneurship competence framework. Luxembourg: *Publications Office of the European Union,* 10, 593884. DOI: 10.2791/593884.

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioural change. *Psychological Review*, 84, p.191.

Bandura, A. (1997). Self-efficacy: The exercise of control. New York: Freeman.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26. DOI: 10.1146/annurev.psych.52.1.1.

Bandura, A. (2006). Guide for constructing self-efficacy scales. In *Self-efficacy beliefs of adolescents*, 307-337.

Baumeister, R. F. (1993). Understanding the inner nature of low self-esteem: Uncertain, fragile, protective, and conflicted. In *Self-esteem* (pp. 201-218). Boston, MA: Springer. DOI: 10.1007/978-1-4684-8956-9_11.

Batool, S. S. (2020). Academic achievement: Interplay of positive parenting, self- esteem, and academic procrastination. *Australian Journal of Psychology*, 72(2), 174-187. DOI: 10.1111/ajpy.12280.

Baumeister, R. F., & Tice, D. M. (1985). Self- esteem and responses to success and failure: Subsequent performance and intrinsic motivation. *Journal of Personality*, 53, 450-467. DOI: 10.1111/j.1467-6494.1985.tb00376.x.

Blascovich, J., Tomaka, J., Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Measures of self-esteem. *Measures of Personality and Social Psychological Attitudes*, 1, 115-160.

Booth, M. Z., & Gerard, J. M. (2011). Self-esteem and academic achievement: a comparative study of adolescent students in England and the United States. *Compare: A Journal of Comparative and International Education*, 41(5), 629-648. DOI: 10.1080/03057925.2011.566688.

Bridgeland, J. M., DiIulio Jr, J. J., & Morison, K. B. (2006). *The silent epidemic: Perspectives of high school dropouts.* Washington, D.C.: Civic Enterprises.

Brigman, G., & Campbell, C. (2003). Helping students improve academic achievement and school success behavior. *Professional School Counseling*, 7(2), 91-98.

Brüne, N., & Lutz, E. (2020). The effect of entrepreneurship education in schools on entrepreneurial outcomes: a systematic review. *Management Review Quarterly*, 70(2), 275-305. DOI: 10.1007/s11301-019-00168-3.

Cahill, P. T., Ferro, M. A., Campbell, W. N., & Ronen, G. M. (2021). Self-esteem mediates mental health outcomes in young people with epilepsy. *Epilepsia*, 62(9), 2072-2081. DOI: 10.1111/epi.17006.

Caprara, G. V., Fida, R., Vecchione, M., Del Bove, G., Vecchio, G. M., Barbaranelli, C., & Bandura, A. (2008). Longitudinal analysis of the role of perceived self-efficacy for self-regulated learning in academic continuance and achievement. *Journal of educational psychology*, 100(3), 525. DOI: 10.1037/0022-0663.100.3.525.

Caprara, M., Di Giunta, L., Bermúdez, J., & Caprara, G. V. (2020). How self-efficacy beliefs in dealing with negative emotions are associated to negative affect and to life satisfaction across gender and age. *PloS one*, 15(11), e0242326. DOI: 10.1371/journal.pone.0242326.

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of applied psychology*, 78(1), 98-104. DOI: 10.1037/0021-9010.78.1.98.

Di Giunta, L., Alessandri, G., Gerbino, M., Kanacri, P. L., Zuffiano, A., & Caprara, G. V. (2013). The determinants of scholastic achievement: The contribution of personality traits, self-esteem, and academic self-efficacy. *Learning and individual Differences,* 27, 102-108. DOI: 10.1016/j.lindif.2013.07.006.

Donnellan, M. B., Trzesniewski, K. H., & Robins, R. W. (2011). Self-esteem: Enduring issues and controversies. In *The Wiley-Blackwell Handbook of Individual Differences* (First Edition, pp. 718-746). Hoboken, NJ: Blackwell publishing LTD.

European Commission (2006). *Entrepreneurship education in Europe: fostering entrepreneurial mindsets through education and learning*. *The Oslo Agenda for Entrepreneurship Education in Europe*.

European Commission (2018). *Proposal for a council recommendation on key competences for lifelong learning. Education and Training: Key Competences.*

Eurostat (2020a). *Early leavers from education and training*. [Data file]. Retrieved from https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=edat_lfse_14&lang=en.

Eurostat (2020b). *Continued decline in early school leavers in EU*. Retrieved from https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20210624-2.

Evans Jr, J. H., & Burck, H. D. (1992). The effects of career education interventions on academic achievement: A meta- analysis. *Journal of Counseling & Development,* 71(1). 63-68. DOI: 10.1002/j.1556-6676.1992.tb02173.x

Fetvadjiev, V. H., & van de Vijver, F. J. (2015). Measures of personality across cultures. In *Measures of personality and social psychological constructs* (pp. 752-776). Academic Press. DOI: 10.1016/B978-0-12-386915-9.00026-7.

Filozof, E. M., Albertin, H. K., Jones, C. R., Steme, S. S., Myers, L., & McDermott, R. J. (1998). Relationship of adolescent self- esteem to selected academic variables. *Journal of School Health*, 68(2), 68-72. DOI: 10.1111/j.1746-1561.1998.tb07194.x.

Gray-Little, B., Williams, V. S., & Hancock, T. D. (1997). An item response theory analysis of the Rosenberg Self-Esteem Scale. *Personality and social psychology bulletin*, 23, 443-451. DOI: 10.1177/0146167297235001.

Grace, E. O. E., & Ihuoma, I. H. (2013). Relationship between counselling and entrepreneurship development skills of Nigerian final year undergraduates. *Procedia-Social and Behavioral Sciences,* 84, 120-127. DOI: 10.1016/j.sbspro.2013.06.521.

Hearne, L., & Neary, S. (2021). Let's talk about career guidance in secondary schools! A consideration of the professional capital of school staff in Ireland and England. *International Journal for Educational and Vocational Guidance*, 21(1), 1-14. DOI: 10.1007/s10775-020-09424-5.

Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (Third Edition). Odessa, FL: Psychological Assessment Resources.

Hooley, T., Sultana, R. G., & Thomsen, R. (2017). The neoliberal challenge to career guidance: Mobilising research, policy and practice around social justice. In *Career guidance for social justice* (pp. 1-27). London, UK: Routledge.

Hooley, T., & Godden, L. (2021). Theorising career guidance policymaking: watching the sausage get made. *British Journal of Guidance & Counselling*, 1-16. DOI: 10.1080/03069885.2021.1948503.

Huber, L. R., Sloof, R., & Van Praag, M. (2014). The effect of early entrepreneurship education: Evidence from a field experiment. *European Economic Review*, 72, 76-97. DOI: 10.1016/j.euroecorev.2014.09.002.

Hussein, A. (2006). Effect of guidance services on study attitudes, study habits and academic achievement of secondary school students. *Bulletin of Education & Research*, 28(1), 35-45.

Jung, C.G. (1971). *Psychological Types* (Baynes, H.G., trans., rev., Hull, R F.C.). Princeton, NJ: Princeton University Press.

Legum, H. L., & Hoare, C. H. (2004). Impact of a career intervention on at-risk middle school students' career maturity levels, academic achievement, and self-esteem. *Professional School Counseling*, 8(2), 148-155.

Manna, G., Falgares, G., Ingoglia, S., Como, M. R., & De Santis, S. (2016). The relationship between self-esteem, depression and anxiety: Comparing vulnerability and scar model in the Italian context. *Mediterranean Journal of Clinical Psychology*, 4(3).

McCallum, E., McMullan, L., Weicht, R., Kluzer, S., & Punie, Y. (2020). *EntreComp at Work. The European Entrepreneurship Competence Framework in action in the labour market: a selection of case studies* (No. JRC120486). Luxembourg: Publications Office of the European Union. DOI: 10.2760/673856.

Moksnes, U. K., & Espnes, G. A. (2013). Self-esteem and life satisfaction in adolescents-gender and age as potential moderators. *Quality of Life Research*, 22(10), 2921-2928. DOI: 10.1007/s11136-013-0427-4.

Moksnes, U. K., & Reidunsdatter, R. J. (2019). Self-esteem and mental health in adolescents-level and stability during a school year. *Norsk Epidemiologi*, 28(1-2). DOI: 10.5324/nje.v28i1-2.3052.

Myers, I. B., & McCaulley, M. H. (1985). *Manual: a guide to the development and use of the Myers-Briggs Type Indicator*. Palo Alto, CA: Consulting Psychologists Press.

Murray, J. B. (1990). Review of research on the Myers-Briggs type indicator. *Perceptual and Motor skills,* 70(3_suppl), 1187-1202. DOI: 10.2466/pms.1990.70.3c.1187.

Neck, H. M., & Greene, P. G. (2011). Entrepreneurship education: known worlds and new frontiers. *Journal of Small Business Management*, 49, 55-70. DOI: 10.1111/j.1540-627X.2010.00314.x.

Nguyen, D. T., Wright, E. P., Dedding, C., Pham, T. T., & Bunders, J. (2019). Low self-esteem and its association with anxiety, depression, and suicidal ideation in Vietnamese secondary school students: a cross-sectional study. *Frontiers in psychiatry*, 10, 698. DOI: 10.3389/fpsyt.2019.00698.

Ogresta, J., Rezo, I., Kožljan, P., Paré, M. H., & Ajduković, M. (2021). Why do we drop out? Typology of dropping out of high school. *Youth & society*, 53(6), 934-954. DOI: 10.1177/0044118X20918435

Özmen, S., & Hursen, C. (2020). School guidance services awareness scale (SGSAS): The study of validity and reliability in a sample of Turkish adolescents. *Current Psychology*, 1-15. DOI: 10.1007/s12144-020-01118-z.

Peñate, W., González-Loyola, M., & Oyanadel, C. (2020). The Predictive Role of Affectivity, Self-Esteem and Social Support in Depression and Anxiety in Children and Adolescents. *International Journal of Environmental Research and Public Health*, 17(19), 6984. DOI: 10.3390/ijerph17196984.

Pitan, O. S., & Atiku, S. O. (2017). Structural determinants of students' employability: Influence of career guidance activities. *South African Journal of Education*, 37(4). DOI: 10.15700/saje.v37n4a1424.

Pranoto, H., Atieka, N., Wihardjo, S. D., Wibowo, A., & Nurlaila, S. (2016). Group guidance services with self-regulation technique to improve student learning motivation in Junior High School (JHS). *Educational Research and Reviews*, 11(24), 2146-2154. DOI: 10.5897/ERR2016.2955.

Rosenberg, M. (1965). *The measurement of self-esteem, society and the adolescent self-image.* Princeton, NJ: Princeton University Press. DOI: 10.1515/9781400876136/html.

Rosenberg, M. (1979). *Society and the adolescent self-image: Conceiving the self.* New York: Basic Book, inc.

Samuel, R., & Burger, K. (2020). Negative life events, self-efficacy, and social support: Risk and protective factors for school dropout intentions and dropout. *Journal of educational psychology,* 112(5), 973. DOI: 10.1037/edu0000406.

Schwarzer, R. (1994). Optimism, vulnerability, and self-beliefs as health-related cognitions: A systematic overview. *Psychology and health*, 9(3), 161-180. DOI: 10.1080/08870449408407475.

Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. Measures in health psychology: A user's portfolio. *Causal and Control beliefs*, 1, 35-37. DOI: 10.1037/t00393-000.

Shimomura, H. (2007). Computer-assisted career guidance and career decision-making self-efficacy. *Japanese Journal of Educational Psychology*, 55(2), 276-286.

Sinclair, S. J., Blais, M. A., Gansler, D. A., Sandberg, E., Bistis, K., & LoCicero, A. (2010). Psychometric properties of the Rosenberg Self-Esteem Scale: Overall and across demographic groups living within the United States. *Evaluation & the Health professions,* 33, 56-80. DOI: 10.1177/0163278709356187.

Sowislo, J. F., & Orth, U. (2013). Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. *Psychological bulletin*, 139(1), 213. DOI: 10.1037/a0028931.

Sultana, R. G. (2004). *Guidance policies in the knowledge society: trends, challenges and responses across Europe*. Luxembourg: Office for Official Publications of the European Communities.

Sultana, R. G. (2009). *Career guidance policies: Global dynamics, local resonances*. Derby: International Centre for Guidance Studies.

Steenekamp, A. G., van der Merwe, S. P., & Athayde, R. (2011). Application of the Attitude Toward Enterprise (ATE) test on secondary school learners in South Africa. *South African Journal of Economic and Management Sciences*, 14, 314-332. DOI: 10.10520/EJC31352.

Taniguchi, K., & Hirakawa, Y. (2016). School dropout at the basic education level in rural Cambodia: Identifying its causes through longitudinal survival analysis. *International Journal of Educational Development,* 49, 215-224. DOI: 10.1016/j.ijedudev.2016.03.001.

Turner, S. L., & Lapan, R. T. (2005). Evaluation of an intervention to increase non-traditional career interests and career-related self-efficacy among middle-school adolescents. *Journal of Vocational Behavior*, 66(3), 516-531. DOI: 10.1016/j.jvb.2004.02.005.

United Nations (2015). Resolution adopted by the General Assembly on 25 September 2015 A/RES/70/1 (United Nations General Assembly, 2015).

Wang, Y., Huebner, E. S., & Tian, L. (2021). Parent-child cohesion, self-esteem, and academic achievement: The longitudinal relations among elementary school students. *Learning and Instruction*, 73, 101467. DOI: 10.1016/j.learninstruc.2021.101467.

Whelan, N., McGilloway, S., Murphy, M. P., & McGuinness, C. (2018). EEPIC-Enhancing Employability through Positive Interventions for improving Career potential: the impact of a high support career guidance intervention on the wellbeing, hopefulness, self-efficacy and employability of the long-term unemployed-a study protocol for a randomised controlled trial. *Trials*, 19(1), 1-18. DOI: 10.1186/s13063-018-2485-y.

Xiong, Q., Fang, X., Wu, Y., Chen, H., Hu, W., & Zhang, Y. (2021). Guidance and counseling relations to high school students' positive development and psychopathology: A non-recursive modeling study. *Current Psychology*, 1-11. DOI : 10.1007/s12144-021-01722-7.

Yusop, Y. H. M., Zainudin, Z. N., & Ismail, A. (2018). Effects of Group Guidance Activities On Students' Self-Concept. *International Journal of Academic Research in Business and Social Sciences*, 8(12). DOI: 10.6007/IJARBSS/v8-i12/5316.

Zein, R., Vignoli, E., Cohen-Scali, V., & Lallemand, N. (2019). Le risque de décrochage scolaire chez des collégiens libanais: le rôle spécifique du sentiment d'efficacité, de l'anxiété et du soutien parental et enseignant?. *Pratiques Psychologiques,* 25(3), 329-347. DOI: 10.1016/j.prps.2018.08.002.

Zheng, L. R., Atherton, O. E., Trzesniewski, K., & Robins, R. W. (2020). Are self- esteem and academic achievement reciprocally related? Findings from a longitudinal study of Mexican- origin youth. *Journal of personality*, 88(6), 1058-1074. DOI: 10.1111/jopy.12550.

## Appendix

### *Career ToolVip24*

#### *Interests Section*

During the Interests section, which is the first section of the Career ToolVip24, participants fill in a questionnaire based on the Holland's RIASEC model (Holland, 1997). According to this model there are 6 macro-categories of personality: realistic, investigative, artistic, social, enterprising and conventional. Importantly, each of the types has different motivating factors (e.g., the artistic type needs freedom in order to develop their original ideas, the social type needs to feel useful for the society).

When the questionnaire was completed, participants received a profile which is a combination of the three predominant traits in the individual (e.g., I S E if the predominant traits are investigative, social and enterprising). However, students were not categorized, and the profile was just a basis for the discussion with the counsellor. The profiles were also accompanied by two graphical representations of individuals' personality types: a solar graph and a human graph (Fig. 10-11).

After the presentation of the results, students were informed about a list of possible jobs associated with their profile. Moreover, they completed the "3+1" exercise, which consisted in choosing instinctively three strengths and one challenge (or weakness) for each of the three traits composing their profile. For example, in relation to the enterprising trait one student could indicate adventure, vision, ability to realize goals as strengths and prevarication as a challenge. Of course, counsellors helped students in providing concrete examples related to the chosen strengths and challenges, in order to reflect over their profile.

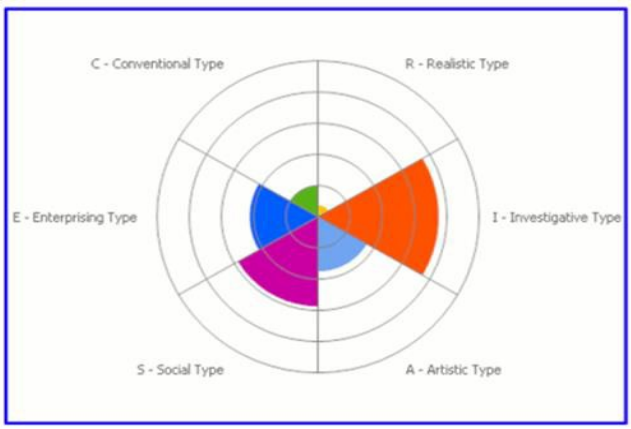


Fig. 10 - *An example of the solar graph provided to students. The prevailing personality types are indicated by more extended coloured areas*

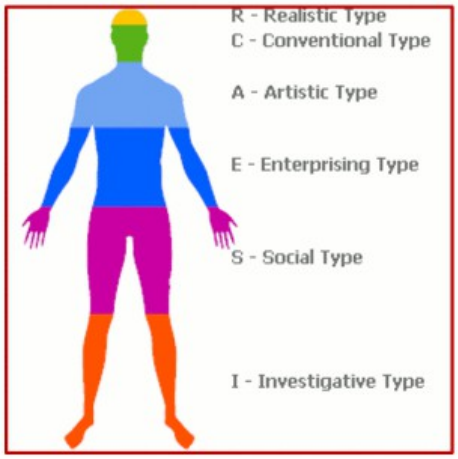


Fig. 11 - *An example of the human graph provided to students. The prevailing personality types are indicated by more extended coloured areas*

### *Abilities and Values Section*

In this section, students completed a questionnaire and were subsequently presented with a graph. The graph highlighted the gap between the level of abilities and values to which they aspired (represented by coloured rays), and their abilities and values in that moment (represented by white dots) (Fig.12)

The counsellors made the students reflect about how to practically reach the desired situation and which challenges had to be faced.

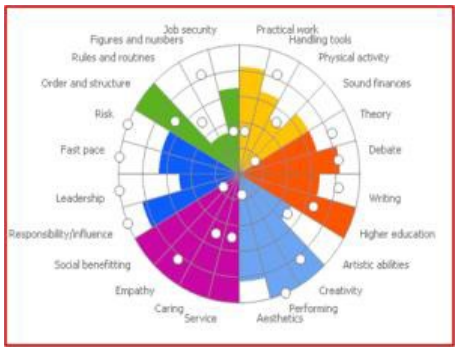


Fig. 12 - *An example of the graph presented to students at the end of the Abilities and Values section. White dots indicate how much an ability or a value is manifested by the student at the moment. Coloured rays indicate the level of abilities and values aspired by the student*

### *Preferences*

In this section, again the students were asked to fill in a questionnaire that is the Myers-Briggs Type Indicator (MBTI; Myers & McCaulley, 1985; Murray, 1990), which is inspired by Jung's theory about psychological types (Jung, 1971; Myers & McCaulley, 1985). This questionnaire is composed by 93 items and allows to define which of the 16 personality types identified by Jung reflects more the personality of the individual (Fetvadjiev & van de Vijver, 2015). The resulting profile (or personality type) is a combination of four functioning styles. Overall, there are eight functioning styles divided in four pairs of opposites: extravert/introvert, sensing/intuitive, thinking/feeling, judging/perceiving.

An example of profile can be ESTJ, which means that the individual is predominantly extravert, sensing, thinking and judging. In addition to the four letters profile, during the study students were also given a graphical representation of the weight of each functioning styles in their personality (Fig.13). Each profile was also accompanied by a motto. In the case of ESTJ the motto is: "let me handle it". After the disclosure of the profiles, participants discussed with the counsellors the strengths of their profile, but also their motivating, demotivating and stress factors. The role of the counsellors was to help the students in the understanding of their personality characteristics and to indicate how they could apply their abilities to reach their goals.

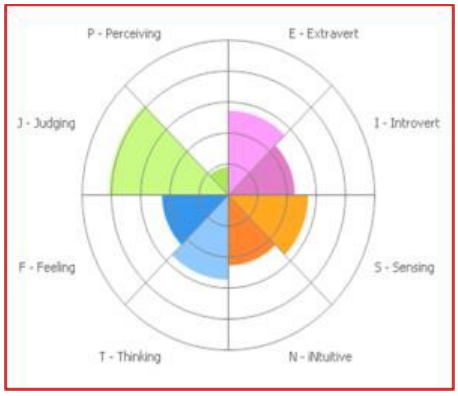


Fig. 13 - A*n example of the graph concerning the functioning styles of students. The prevailing functioning styles are indicated by more extended coloured areas*

### *Ciclo Vip 24*

In the last section, called Ciclo Vip 24, students were presented with a final profile which focused on each aspect of their life and again was graphically reported. The life aspects taken into consideration by the Ciclo Vip 24 are: social relations, lifestyle, economy, physical environment, interests, competency, personal preferences, personal values, challenges and development, feedback, participation, results and goals, public benefit, control, clear leadership and role, cooperation, communication, diversity, affinity, health.

Within the graph, students' preferred and less preferred aspects (or values) were shown, and white dots over coloured areas indicated how much those aspects were satisfied by the individual (Fig.14). In particular, a white dot positioned more toward the centre for a preferred aspect indicated that those aspect was not much satisfied. On the contrary, if the white dot was near the edge of the circumference, the aspect was highly satisfied. Using the graph, the counsellors highlighted to the students the aspects of their life which were not satisfied enough and gave suggestions regarding how to reach the desired situation.

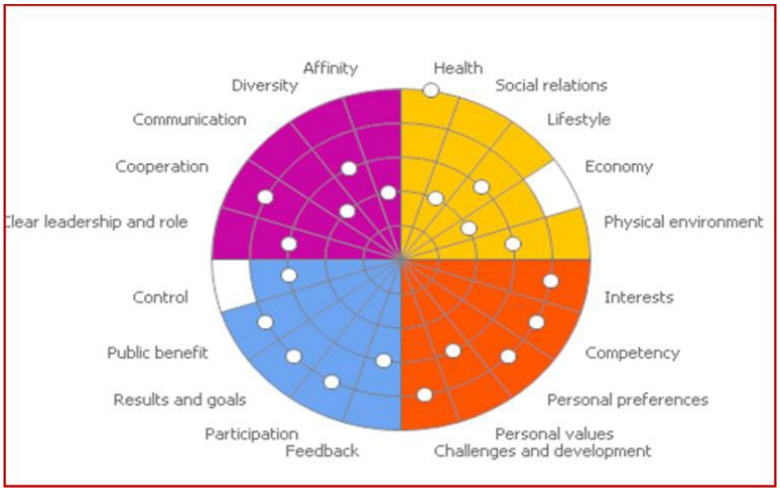


Fig. 14 - *An example of the graph presented to students in the Ciclo Vip 24 section. White dots indicate how much a life aspect is satisfied at the moment. Coloured rays indicate the aspired level of satisfaction for each life aspect*