

THE EDUCATIONAL VALUE OF PCTO: THE TUTOR'S ROLE IN PROMOTING CRITICAL REFLECTION AND THE DEVELOPMENT OF TRANSVERSAL AND STRATEGIC SKILLS

IL VALORE FORMATIVO DEI PCTO: IL RUOLO DEL TUTOR TRA PROMOZIONE DELLA RIFLESSIONE CRITICA E SVILUPPO DELLE COMPETENZE TRASVERSALI E STRATEGICHE



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ABSTRACT

Current legislation assign an educational and guidance function to PCTOs, with the aim of developing transversal skills that are also useful for building a professional identity (Margottini, 2019). Properly trained, the tutor (Ministerial Decree No. 328/2022) can design individualized educational activities aimed at groups of students who, although having completed different PCTOs, have a similar mastery of strategic skills (Pellerey, 2021), which could be identified through the QSA and subsequently classified through cluster analysis.

La normativa vigente attribuisce ai PCTO una funzione educativa e orientativa, con l'obiettivo di sviluppare le competenze trasversali utili anche alla costruzione dell'identità professionale (Margottini, 2019). Opportunamente formato, il tutor potrebbe progettare attività educative rivolte a gruppi di studenti che, pur avendo svolto PCTO diversi, hanno una padronanza simile delle competenze strategiche (Pellerey, 2021, che si potrebbe stimare per mezzo del QSA e, in seguito, classificare gli studenti per mezzo della cluster analysis.

KEYWORDS

Paths for transversal skills and orientation, tutor teacher, transversal skills

PCTO, docente tutor, competenze trasversali

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Introduction

The evolution of individual needs and the growing demands for innovation and competitiveness by economic systems are pushing the education system to rethink its strategies. It becomes essential to adopt more effective and targeted approaches that improve internal organization and facilitate transformation processes.

In this context, it becomes a priority to put the student back at the center of the training path, strengthen ties with the territory (Mantovani & Santangelo, 2020) and structure educational itineraries that combine the fundamental contents of the disciplines with the development of personal and transversal skills, often referred to as *soft skills* in the school and professional world. The school, as a key player within the educational community, is called upon to promote integrated teaching, capable of creating bridges between formal, informal and non-formal learning experiences. In this scenario, aspects such as emotionality, interpersonal relationships and the experiential dimension acquire a central role (Cinque, 2014). Learning thus becomes a dynamic process made up of participation, communication, sharing, experimentation and discovery. The development of transversal skills contributes substantially to the student's personal growth, providing him with an articulated set of knowledge, skills and attitudes useful for dealing, with awareness and flexibility, with awareness and flexibility, with the many situations that he may encounter in daily and professional life, whether simple or complex. This development requires a training model capable of overcoming the limits of the traditional school setting (Tino, 2018), both in the initial training of teachers and in the perspective of lifelong continuous training.

No longer a simple transmitter of static knowledge, the educational system is now called upon to train individuals capable of orienting themselves in complex and changing professional contexts, characterized by a strong demand for adaptability, autonomy and the ability to learn continuously. The role of the Pathways for Transversal Skills and Orientation (PCTO), established under Law 107/2015 and regulated by Legislative Decree 77/2005, with the aim of bringing school education closer to the needs of the world of work, overcoming the traditional separation between theoretical knowledge and practical experience, fits into this perspective. The PCTOs, while maintaining a strong educational dimension, are no longer configured as simple school-work alternation

experiences, but as integrated learning paths, aimed at developing in young people those transversal skills – cognitive, relational, organizational – which are fundamental to successfully face not only the professional career, but also the social and existential challenges posed by the contemporary world. Learning environments that, if well structured, facilitate the emergence of soft skills and promote the active involvement of all educational actors – students, teachers, companies and the territory – in a shared process that integrates formal and informal dimensions of learning (Da Re, 2018). The legislation emphasizes, in fact, how PCTOs have an eminently educational and orientation function, aimed at supporting students in the construction of a solid and conscious personal and professional identity (Margottini, 2019). This approach implies a profound rethinking of traditional teaching practices: to be effective, the paths must favor constructive, self-regulated and collaborative learning methods, as argued by De Corte (2012) and taken up by Pellerey (2017) in the definition of adaptive competence. In this sense, the PCTO experience must not be limited to mere exposure to external work contexts, but must become an opportunity for critical reflection, conscious self-assessment and active planning of one's own growth path. The Pathways for Transversal Skills and Orientation are now one of the most effective tools for promoting the development of integrated skills in young people, capable of combining disciplinary knowledge and practical skills in a unitary and coherent training framework. Far from being marginal or ancillary experiences with respect to the school curriculum, PCTOs constitute a backbone of contemporary training, aimed at strengthening young people's ability to live their personal, educational and professional path in a conscious and planning way. Through PCTOs, students are faced with the challenge of translating the knowledge learned at school into practice, confronting real tasks, organizational rules, complex interpersonal dynamics. As pointed out by Wallnöfer and Zadra (2021), learning located in authentic work contexts allows students to build not only cognitive, but also emotional and relational skills, which are essential to face the challenges of the twenty-first century. Skills, in order to prove truly effective, must be able to go beyond the boundaries of the environmental, social, cultural and professional context in which they have developed and found application. It is essential that these are transferred beyond the original scope, since it is precisely this passage that gives them a real transversal dimension (Bertagna G., & Sandrone G. (2009). According to the model proposed by Pellerey, these skills constitute an integrated system that allows the individual to govern his or her

decision-making processes, to self-regulate his or her behaviors and to adapt flexibly to the changing demands of the social and work context. It is not just a matter of acquiring technical skills, but of developing a global vision of one's training, in which the life project becomes the fulcrum around which all training experiences revolve (Marcarini, 2022). The PCTOs, at least in the intentions of the legislators, therefore aim to build an integrated curriculum where the student is an active protagonist of his or her own training, capable of relating traditional knowledge with practical experience, of co-constructing knowledge with others, of enriching school knowledge with the personal contribution of lived experience. They represent a form of integrated learning that systematically combines the acquisition of theoretical knowledge with the development of practical skills, giving rise to an authentic and certified educational process, as also reiterated by Da Re (2018). Thanks to PCTOs, students have the opportunity to develop greater autonomy and self-management skills, consciously inserting their training path within a community practice (Wallnöfer & Zadra, 2021). This approach not only stimulates the protagonism of students, but also promotes a social transformation oriented towards change: school, society and young people thus build an evolving relational system, configuring itself as a community in learning and transformation.

The activities proposed in the PCTOs must therefore pursue a twofold objective: on the one hand, to consolidate the specific skills related to the chosen field of study; on the other, to encourage the acquisition and transfer of transversal skills in different contexts, through authentic tasks that make it possible to measure the degree of awareness and personal mastery achieved by each student. These paths represent not only a training opportunity, but also a laboratory of pedagogical innovation in which students can experience, in real contexts, the value of meaningful learning, oriented towards autonomy, responsibility and self-awareness. The stated objective of the legislation is to strengthen the connections between school and the world of work, promoting personalized guidance and teaching capable of activating complex and situated skills (MIUR, 2019; Ministerial Decree no. 328/2022).

The PCTO experience is therefore configured as a training ground for active and responsible citizenship, in which young people are called to reflect on their aspirations, to evaluate their strengths and weaknesses, to outline a first draft of a professional life project. According to Margottini (2019), the construction of professional identity necessarily passes through a progressive awareness of one's

skills and their meaning with respect to one's values and objectives. PCTOs represent the privileged context in which this reflection can be started in a concrete way, through experiences that solicit personal responsibility, the ability to choose, flexibility and adaptation to change. However, in order for this potential to be fully expressed, it is essential that PCTOs are designed according to a rigorous training logic, capable of integrating cognitive, metacognitive, affective and social dimensions of learning. As stated by Carletti (2023), it is not enough to expose students to different contexts: it is necessary for experiences to be structured, accompanied by moments of critical reflection, oriented towards the construction of personal meanings. Only in this way can PCTOs carry out their function as a training bridge between school and life, between knowledge and know-how, between formal learning and personal growth.

Construction of professional identity through skills

In recent decades, the concept of competence has acquired a central role in educational, training and professional processes, evolving far beyond the simple technical-specialized dimension. In particular, the focus has shifted towards a set of transversal skills – commonly known as *soft skills* – that prove to be fundamental not only for job placement, but also for educational success, personal growth and the exercise of active citizenship (Margottini, 2019; Pellerey, 2017). *Soft skills* are interpreted as clothes, understood as habitual behaviors required in the exercise of every profession and work activity. Their transversality does not concern so much the technical-specialist skills applicable to different sectors, but rather the way of being of the subject in dealing with the work. These skills refer to the person and are recognized in the positive and constructive ways in which he manages relationships and problems (Pellerey, 2017). These are skills gained through real, often unforeseen situations, which require direct involvement and adaptability. These include, for example, teamwork, flexibility, creativity and the management of the unexpected. They are not skills linked to a specific work environment, but represent personal qualities that allow the individual to fit effectively into different professional contexts, thanks to a transversal preparation that is fundamental to face the challenges of employability (Pellerey, 2017). Among the *soft skills*, also known as general personal skills, some skills of particular importance are highlighted, attributable to the ability to self-determination, understood as the ability to make conscious

choices in problematic contexts and with high emotional involvement, oriented towards the construction of one's own existential and professional project. This is accompanied by the ability to self-regulate in the different domains of experience that allows the individual to manage himself independently, pursuing the goals he has set himself with constancy and method.

The development of *soft skills* requires that they are stimulated, valued and cultivated over time. This process is possible mainly through direct experience, that is, through learning that takes place in authentic contexts, enriched by moments of conscious reflection on the action. Precisely thanks to its flexibility, action allows the individual to confront, in a significant way, a multiplicity of situations – even very heterogeneous ones – that affect both the professional and personal spheres (Massagli, 2017). These skills, also referred to as strategic, include communication, relational, decision-making, emotional and metacognitive skills, such as critical thinking, the ability to work in a team, stress management, cognitive flexibility, problem-solving skills, intrinsic motivation and self-efficacy. The growing interest in soft skills is linked to the awareness that these skills are a reliable predictor of professional fulfilment and quality of adult life. In the educational field, this implies a rethinking of teaching and evaluation practices, which can no longer be based exclusively on the acquisition of disciplinary content, but must include the promotion of transversal skills and the ability to transfer them to different contexts. The development of professional identity is closely linked, and cannot be separated from, a parallel process of construction of personal and social identity. Through the development of the ability to critical reflection, manage one's emotions and self-regulate one's learning and work paths, the individual builds an image of himself as a competent professional, capable of facing challenges and pursuing meaningful goals. Moreover, the construction of professional identity is closely linked to the sense of self-efficacy, as underlined by Bandura (2000). He has deepened the concept of self-efficacy through socio-cognitive theory, also applying it to the educational context. In his opinion, the school should promote not only the development of cognitive and social skills, but also the construction of the convictions of personal effectiveness and the intrinsic motivations necessary for the formation of the self, both on a personal and professional level (Bandura, 2000). Students' beliefs about their effectiveness in coping with schoolwork also influence their professional aspirations, among other things. In this perspective, self-efficacy represents a powerful tool for self-regulation, as it guides the student's motivation in choosing

his or her professional future and accompanies the learning path (Pellerey, 2006). The perception of oneself as capable of acting effectively in the world of work feeds self-esteem (Pellerey, 2017), promotes intrinsic motivation and strengthens commitment to one's life project. The acquisition of soft skills becomes, therefore, an essential step to ensure not only work success, but also personal fulfillment and psychological well-being. In this sense, it is highlighted that the formation of the individual must be considered in an integrated and global way. Precisely for this reason, even within school curricular indications, reference is often made to the need to develop authentic life projects, which include the different dimensions of human experience (Pellerey, 2021).

The main challenge today lies in promoting an authentic and functional integration of the multiple dimensions that make up personal identity, with the aim of supporting professional paths that reflect the singularity and coherence of the individual.

The central theme is re-proposed that interprets career guidance as a training course aimed at the development of both technical, general and specialized skills, and – even more importantly – transversal skills, with the aim of effectively preparing people for inclusion and permanence in the world of work (Pellerey, 2017).

Strategic skills in an adaptive key: an evolutionary approach

According to Pellerey (2017), the development of strategic skills is closely linked to the acquisition of adaptive competence, i.e. the ability to learn continuously, to adapt to change, to reinvent oneself professionally throughout life. Adaptive competence is therefore a crucial – if not essential – element to allow the individual to orient knowledge and skills towards new educational challenges (De Corte, 2012). It is therefore evident that it plays a central role in lifelong learning. In a society characterized by very rapid changes, adaptability is no longer an option, but a fundamental necessity for survival and personal fulfillment. Strategic skills are therefore an indispensable capital, which each individual must build and enhance in order to successfully face the challenges of globalization, digital transformation and contemporary socio-economic complexity (Tino, 2018). The promotion of these skills requires a radical change in educational practices. It is not enough to teach notions or transmit content: it is necessary to create learning environments that are constructive, situated, self-regulated and collaborative, as

proposed in the learning model called CSSC, an acronym for Constructive, Self-regulated, Situated and Collaborative Learning developed by De Corte (2012). This paradigm is based on the idea that authentic learning can only be an active, self-reflective, contextualized and socially shared process. First of all, learning must be constructive: knowledge is not received passively, but is built through autonomous and meaningful mental activity, which integrates new information with knowledge already acquired, generating increasingly complex and articulated cognitive schemes. The student, therefore, becomes an active subject of his or her own training path, engaged in a continuous re-elaboration of the contents, according to his or her experiences, needs and future prospects. A second central element of the CSSC model is the autonomous regulation of learning processes. Self-regulation implies that the individual is able to plan his or her goals, select appropriate strategies, constantly monitor his or her progress and critically review his or her actions according to the results obtained. This aspect strongly recalls metacognitive skills, which are fundamental for promoting the ability to learn continuously and adaptively throughout life. De Corte emphasizes that self-regulation is not an innate gift, but a skill that must be educated and trained through intentional teaching practices, which encourage reflection on "how" one learns, as well as on "what" one learns. The third pillar of the model is situated learning. According to this perspective, knowledge and skills do not develop in an abstract vacuum, but emerge and consolidate in interaction with real or simulated contexts, rich in meaning for the student. Situated learning enhances the pragmatic dimension of knowledge, stimulating the acquisition of contextualized knowledge, closely linked to social and work practices. Through exposure to genuine problems, the learner is encouraged to apply and adapt their skills creatively, thus developing problem-solving skills, critical thinking and cognitive flexibility. In this perspective, experiences such as those proposed in the PCTOs – which provide for the inclusion of students in real work contexts – take on an essential educational value. Finally, according to De Corte, learning must be collaborative. Knowledge is no longer seen as an individual good, but as a process of social construction, which is achieved through interaction, dialogue, and the comparison of different points of view. Working in groups, negotiating meanings, building shared solutions to the problems proposed, stimulates not only the acquisition of more sophisticated cognitive skills, but also promotes the development of relational skills, which are essential for professional and social life. Collaborative learning enhances conflict management skills, shared

leadership, empathy, and collective responsibility. In addition, comparison with others activates powerful metacognitive processes, which push each individual to critically reflect on their strategies and improve their way of learning. In summary, De Corte's CSSC Learning model outlines a radically new conception of learning, which focuses on the autonomous and contextualized construction of knowledge, the conscious regulation of cognitive processes and social interaction as a driver of personal and professional development. Adopting this model in training courses oriented towards the development of strategic and adaptive skills, such as PCTOs, means not only responding to the needs of a constantly evolving labour market, but also contributing to the training of citizens capable of learning throughout their lives, of reinventing themselves in the face of change and of building, with responsibility and creativity, one's own project of existence. Students, therefore, must be put in a position to actively build their knowledge, to reflect on their cognitive processes, to exercise the ability to autonomously regulate their emotions and behaviors, to collaborate with others for the resolution of authentic problems. In this perspective, the PCTO is not simply a place for the application of skills, but becomes a space for the critical construction of knowledge and personal identity. Through encounters with new situations, through the processing of difficulties and unforeseen events, through reflection on lived experience, students can develop that cognitive flexibility and emotional resilience that form the basis of adaptive competence. The PCTO, if properly designed, can be transformed into a powerful laboratory of personal and professional growth, in which each student is called upon to become a conscious protagonist of his or her own life project (Guerini, 2022).

The tutor as a guide to reflection and strategic skills

Before starting activities within work contexts, it is essential that the school prepares students adequately. This preparation must include the involvement of expert staff, with the task of illustrating the activities that will be carried out, clarifying the link between the school training project and the external experience, as well as presenting the organization and specificities of the host structure. It is precisely in this delicate moment that the function of the school tutor emerges in all its importance, a key figure in the construction of an effective bridge between school knowledge and professional skills. Their institution responds to the need to accompany the educational and professional growth path

of students in a more careful, personalized and conscious way, in a social and working context made extremely complex by technological and global transformations. The tutor, in particular, is no longer seen as a simple coordinator of alternation activities or as a marginal figure in didactic planning, but as a central educational agent, called upon to encourage the construction of reflective learning paths oriented towards the overall growth of the person. In the reforming framework outlined by the most recent legislation – in particular by Ministerial Decree no. 328/2022 – the figure of the tutor teacher emerges as a fundamental pillar in the design and implementation of the Pathways for Transversal Skills and Orientation (PCTO). The introduction of this figure responds to the need to overcome a traditional and bureaucratic vision of school-work alternation, in favor of a more reflective, orientative and personalized educational approach. The tutor, in fact, does not limit himself to coordinating the activities or supervising the fulfilment of the internship hours, but is configured as a real facilitator of transformative learning, capable of guiding students in the conscious construction of their educational and professional path. The design of educational activities centered on reflection, guided by appropriately trained tutors, represents one of the most effective strategies to translate the PCTO from a simple work experience to a powerful device for personal growth. It makes it possible to transform the fragmentary nature of experiences into a coherent development itinerary, to encourage the construction of a conscious professional identity and to make each student an active and responsible protagonist of his or her own future.

The tutor assumes the role of *boundary spanner*, a figure capable of creating bridges between different worlds – school, businesses, local authorities – by promoting dialogue, integration and the co-construction of complex educational paths. capable of crossing and integrating different educational and work contexts, assuming the role of facilitator and mediator between school and the outside world (Tino, 2018). It is not only a matter of encouraging dialogue between different realities, but of building a coherent learning path, which knows how to enhance the richness of the experiences lived by students during the PCTOs.

Alongside this mediation function, the internal tutor also has the task of monitoring and evaluating the effectiveness and consistency of the experiences carried out by the students, constantly updating the collegial bodies and the Class Council on the progress of the courses. In particular, it is his duty to collaborate

with the School Principal in the drafting of the evaluation forms of the affiliated structures, highlighting not only the educational opportunities offered, but also any critical issues that have emerged during the collaborations. This function is even more crucial if we consider that PCTOs involve a plurality of subjects, with different needs, languages and expectations: students, families, disciplinary teachers, companies, public institutions. In this interweaving of relationships, the tutor carries out a delicate work of mediation, aimed at maintaining the formative sense of the experience and ensuring that each student can derive the maximum benefit from it in terms of personal and professional growth.

The main task of the tutor teacher is therefore to personalize the educational path of the students, taking into account not only the skills already acquired, but also the inclinations, aspirations and unexpressed potential of each individual. Personalization does not result in a superficial adaptation of the paths, but requires observation, active listening, data collection and reflective analysis. To this end, tools such as Pellerey's *Learning Strategy Questionnaire* (QSA) are particularly useful: they allow you to detect the perceived mastery of students' strategic skills, highlighting their strengths and areas for improvement, and provide the tutor with valuable information to design targeted educational interventions. With this in mind, the adequately trained tutor teacher can design individualized educational activities that have as their fulcrum the critical reflection on the experience. It is not simply a matter of having students tell about the activities carried out during the PCTOs, but of guiding them in a deeper process of analysis, self-assessment and awareness of the skills acquired, the strategies adopted, the strengths and weaknesses that emerged. The reflective activity thus becomes a powerful pedagogical tool, capable of transforming practical experience into an opportunity for meaningful learning and identity development. Following the perspective of Pellerey (2021), who emphasizes how the construction of professional identity must be based on a progressive awareness of one's potential, aspirations and skills, the tutor assumes the task of facilitator of strategic awareness. The educational action therefore focuses not on the mere transmission of information or on an external evaluation of performance, but on a maieutic accompaniment that enhances the student's ability to question himself, to attribute meaning to lived experiences, to place them in a personal and professional development project.

The biggest challenge is to manage the heterogeneity of students' experiences. PCTO courses, in fact, can vary significantly from one student to another: there are those who have had experience in structured business contexts, those in third sector organizations, those in research or creative craft projects. However, as Pellerey points out, it is not so much the type of experience that makes the difference in the student's growth, but the ability to reflect on it and to elaborate strategic learning. For this reason, the tutor must design activities that are not based on the specific nature of the PCTO carried out, but on the transversal and strategic skills developed. An effective operational approach involves the formation of groups of students who, despite having achieved different PCTOs, show a similar mastery of strategic skills. These groups are therefore not formed on the basis of the type of experience, but on the quality of the skills demonstrated, creating cooperative and reflective learning environments that are homogeneous from the point of view of the cognitive and metacognitive resources of the students. Too often, PCTO activities risk being perceived by students as a formal obligation, devoid of real educational value. To avoid this risk, it is necessary for the tutor to accompany students in a systematic path of analysis, interpretation and enhancement of the experiences lived. Reflection must be understood as a structured process, which helps the student to connect practical experience with school knowledge, to recognize the skills acquired, to identify the effective strategies implemented and to project these learnings into his or her life project.

According to the constructivist perspective of De Corte (2012), authentic learning arises from the interaction between concrete experience and critical reflection. It is through this dialectic that deep and lasting skills are developed, capable of transferring from one context to another and nurturing the ability to adapt. In this perspective, the tutor does not limit himself to observing, but actively interacts with the student, stimulating critical thinking, encouraging self-evaluation, providing constructive feedback and directing attention towards the construction of personal and professional meanings. Particularly effective is the organization of reflective workshops, in which small groups of students, united by similar levels of strategic skills, can discuss their experiences, develop shared narratives and build together new interpretations of their educational path. These activities, based on discussion, narration and reflective writing, promote self-awareness and a sense of self-efficacy, two fundamental elements for the construction of a solid and resilient professional identity (Bandura, 2000).

The tutor, therefore, must possess specific skills not only in the field of educational and professional guidance, but also in group management, in conducting individual interviews, in the use of self-assessment tools and in the design of personalized learning paths. Its action must be guided by a clear framework of values, which places at the center the integral growth of the person, the promotion of autonomy and the enhancement of diversity as a resource. Ultimately, the tutor teacher represents a key element for the success of PCTOs. It is through his intervention that the work experience is transformed from a simple external activity to a high-value educational opportunity, capable of profoundly affecting the construction of the personal and professional identity of students. A function that is all the more strategic in a rapidly changing society, where the ability to reflect on oneself, to adapt, to plan one's future is no longer a luxury, but an essential necessity for every young person who wants to successfully face the challenges of adult life.

Strategic skills assessment and cluster analysis: customizing PCTO paths

One of the most innovative and qualifying aspects in the management of the Pathways for Transversal Skills and Orientation (PCTO) concerns the possibility of personalizing the training experience of students through the use of diagnostic tools and advanced analytical methodologies. In this perspective, the evaluation of strategic skills assumes a central role, not as a mere measurement of acquired knowledge, but as a dynamic process of recognition, development and enhancement of the personal resources of each student. Among the most effective tools for this purpose is the QSA, conducted by Pellerey in 2006, which detects the self-perception of competence in some strategies of a cognitive and affective-motivational nature. Those who possess the ability to independently guide their learning know how to consciously activate an integrated series of sub-skills, of a strategic type (such as diagnostic, decision-making, planning and organizational skills) and tactical (related to management, regulation and evaluation). In this way, he is able to autonomously analyze, predict, choose, plan, organize, conduct, monitor and evaluate his or her own study and learning paths. The questionnaire is designed not only as a tool for detecting the skills already possessed, but also as a stimulus for critical reflection on the attitudes, learning methods and action strategies put in place by students. It allows you to explore fundamental areas such as planning skills and time management, perceived self-

efficacy, emotional management and the ability to work in a team. The importance of QSA lies in the fact that it offers students an opportunity for conscious self-reflection, promoting an increase in metacognition and the ability to self-formulate their growth paths. In this way, evaluation is not limited to being an external operation to the student, but becomes an integral part of the educational process, contributing to the construction of personal and professional identity. The data collected through the QSA, if properly analyzed, can also become a valuable basis for the design of targeted educational interventions. It is not a question of classifying students according to hierarchical or merely comparative logics, but of identifying the areas of strength and areas of development of each one, in order to design personalized paths that enhance individual potential and support the overcoming of critical issues. A particularly effective method for scientifically managing this information is cluster *analysis*, a multivariate statistical analysis technique that allows subjects to be grouped into homogeneous sets based on their common characteristics. Applied to the data collected through the QSA, cluster analysis makes it possible to build groups of students who have similar profiles of mastery of strategic skills (Giacomantonio & Marinelli, 2023). This methodology goes beyond the traditional logic of division by classes or addresses, adopting an approach oriented towards the skills actually perceived. In this way, the tutor teacher can design differentiated training activities that are more in line with the specific needs of each group, promoting cooperative learning among peers and stimulating more effective growth dynamics. Cluster analysis, therefore, is configured as a powerful tool to personalize learning in PCTOs, making it more inclusive and meaningful. Through the identification of recurrent competency profiles, it is possible not only to adapt training courses to different levels of mastery, but also to encourage the development of personalized learning strategies, capable of promoting students' self-efficacy and intrinsic motivation. As pointed out by Pellerey (2021), the aggregation of students with similar characteristics makes it possible to work more effectively on the construction of strategic skills by proposing activities that stimulate collaboration, critical comparison, the assumption of responsibility and the ability to transfer the skills acquired to increasingly complex and diversified contexts. In addition, the clustering process allows for the adoption of more authentic and formative assessment methods, based on personal growth and the ability to reflect, rather than on mere school performance. In this way, the PCTO path is transformed from a simple experience of approaching the world of work to

a profound educational device, capable of fostering the construction of a solid personal and professional identity, based on self-awareness, the ability to plan autonomously and resilience to future challenges. The integration between self-assessment tools such as QSA and statistical techniques such as cluster analysis therefore represents one of the most promising innovations in the field of orientation education. It makes it possible to move from a standardized and massifying vision of training to an individualized, flexible and transformative approach, capable of responding to the needs of a society that asks its citizens not only for technical skills, but above all for adaptability, critical thinking and existential planning. Through a conscious and strategic use of these tools, the tutor teacher can accompany each student in the construction of his or her own life project, transforming the experience of PCTOs into a real experience of integral growth, in which school, work and personal life are intertwined in a coherent and meaningful narrative.

Conclusions

The Pathways for Transversal Skills and Orientation (PCTO) are one of the most significant innovations introduced in the Italian education system, with the aim of reducing the distance between the world of school and that of work. The analysis conducted has shown how these paths not only promote the acquisition of technical and professional skills, but are fundamental for the development of transversal skills, which are essential today to face the challenges of the future of work with awareness.

The school system, influenced by the social and cultural transformations of recent decades, must now respond to new needs, imposed by a constantly evolving labor market. So-called *soft skills* – such as the ability to communicate effectively, work in a team, manage time, solve problems, demonstrate initiative and develop emotional intelligence – cannot be transmitted exclusively through traditional teaching methods. Instead, they are built thanks to concrete and reflective experiences such as those offered by PCTOs, in which the student is placed at the center of his or her own training path, becoming an active subject of his or her own learning.

Reference to the strategic skills that Pellerey sees as habits, which cannot be developed through traditional teaching. The PCTO and the tutor's critical reflection help to foster these habits.

In this context, the school tutor plays a key role. A properly trained tutor is able to design personalized educational activities, focusing on critical reflection on the lived experience. Its task does not end with supervising the performance of the activities, but rather consists of guiding students in an in-depth process of analysis, self-evaluation and awareness. Through tools such as the logbook, individual interviews or group activities, the tutor stimulates the student to question what he has learned, the strategies adopted, his strengths and areas for improvement. In this way, reflective activity is transformed into a powerful pedagogical tool, capable of giving meaning to experience and encouraging the development of a more solid personal and professional identity. PCTOs, thanks to this experiential and reflective dimension, prove to be extremely effective in strengthening students' autonomy, in promoting greater awareness of their inclinations and in directing professional choices in a more targeted way. Direct contact with real situations, in fact, allows you to confront concrete challenges and to test the knowledge acquired in the classroom, facilitating authentic and lasting learning.

This approach also responds to European guidelines, which promote competence-centered, action-oriented education capable of reducing the gap between school education and the demands of the world of work. For these reasons, it is desirable that PCTOs be further consolidated and enhanced within school curricula, so that they can offer an increasing number of students the opportunity to live significant training experiences, capable of preparing them effectively and flexibly for their professional future.

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