

Exploring the evolution and impact of the restructured School-to-Work Alternance in Italy: the point of view of external tutors

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This article analyses the educational value and effectiveness of *Percorsi per le Competenze Trasversali e l'Orientamento* (PCTOs – *Paths for Transversal Skills and Orientation*) in Italy from the perspective of external tutors in host organisations. Based on a mixed-methods design, it explores how tutors interpret the aims, practices, and outcomes of PCTOs within the evolving framework of school-to-work policies. Although European and national guidelines present PCTOs as instruments for developing transversal competences and facilitating school-to-work transitions, empirical results reveal persistent differences related to school type, organisational structure, and territorial context. By linking these findings to the broader Italian debate on educational inequalities, the article interprets PCTOs not merely as policy mechanisms but as social devices through which educational differentiation and local disparities are reproduced or, in some cases, challenged.

Keywords: school-to-work alternance, PCTOs effectiveness, educational inequalities, host organisations, general technical and VET schools

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Introduction¹

In recent years, debate on school-to-work transitions (SWT) has stressed the educational value of work-based learning (WBL) and the role of transversal and orientation competences in upper secondary education. Following this direction, recent policy reforms in Italy – from the *Alternanza Scuola-Lavoro* (ASL) to the *Percorsi per le Competenze Trasversali e l'Orientamento* (PCTO, *Paths for Transversal Skills and Orientation*) – have progressively moved from sector-specific skills towards transversal and self-orienting competences, explicitly linked to the European Council Recommendation on Key Competences for Lifelong Learning (2018) and to the 2019 ministerial guidelines.

Yet, the translation of these formal goals into effective pedagogical practices depends strongly on context. Italy exemplifies the tension between European

1. Although the article is the result of a joint effort, the authors assign responsibility for the individual sections as follows: Brunella Fiore led the literature review and thus paragraph 1 is attributed to her. Paragraphs 2 and 4.2 of the empirical section are attributed to Sara Recchi. Federico Paleardi led the analysis of the quantitative data and the methodological section and thus paragraphs 3 and 4.1 are attributed to him. The Introduction and Discussion and conclusions are the responsibility of all three authors.

rhetoric on transferable competences and a stratified school system (Barone and Schizzerotto, 2006). Policy evolution has also created ambiguity around «skill», «ability» and «competence», whose meanings differ (Ajello and Sannino, 2013). In 2025, the Ministry renamed PCTO as «school to work education» without introducing substantive modifications to the structure of the pathways. Clarifying these terms is essential to situate PCTOs not merely as operational tools linking schools and companies/civic society, but as educational devices that participate in the social processes of reproduction and differentiation within the Italian education system (Pinna and Pitzalis, 2020; Palumbo and Pandolfini, 2019). Moreover, research suggests that ASL/PCTO have not reduced territorial gaps nor the divide between general, technical and vocational tracks typical of Italian context (Pinna and Pitzalis, 2020, 2021, 2024; Giancola and Salmieri, 2021; Salatin, 2016, 2018; Giannoni *et al.*, 2024).

Considering these controversies, this article examines the educational value and effectiveness of PCTOs, contributing to the existing debate on whether it helps to reduce or exacerbate educational inequalities within the Italian system. The research focuses on host-organisation tutors, a largely overlooked perspective that offers a valuable lens to reconsider how this educational policy is interpreted, implemented, and experienced in practice. Using sociological and educational approaches, PCTOs are interpreted as boundary-crossing contexts (Tuomi-Gröm and Engeström, 2003), where institutional and economic actors negotiate the relation between theory and practice. The field is shaped by tensions between labour-market adaptation and educational activities, as well as structural inequalities, affecting schools' and territories' ability to offer meaningful learning experiences (Salatin, 2016; Consolini, 2016; Giannoni *et al.*, 2024).

Drawing on empirical material coming from broader national research on PCTOs, the article addresses the following research questions:

1. To what extent do the normative and formal purposes of PCTOs align with the expectations of host organisation tutors and how effective are PCTOs in supporting education and school-to-work transitions?
2. From the perspective of hosting tutors, which factors most strongly influence the educational value and effectiveness of the policy?

A convergent mixed-methods design was adopted (Creswell, 2015; Timans *et al.*, 2019): the qualitative phase sample represents a subset of the population included in the quantitative one, and the two phases inform and condition each other. The article is structured as follows: after reviewing the main theoretical and empirical contributions on work-based learning and its implementation in Italy,

the research design and mixed-method approach adopted in this study will be presented. The subsequent sections discuss the empirical findings in relation to the two research questions, while the final section offers a critical discussion and conclusions, highlighting the study's original contributions and policy implications.

1 The debate on work-based learning and the Italian specificities

Across Europe, work-based learning has become a cornerstone of strategies to promote employability, social inclusion, and lifelong learning (European Commission, 2012, 2013, 2018; CEDEFOP, 2021). The diffusion of apprenticeships, internships, and school-to-work alternance programmes are increasingly promoted by EU-level initiatives like the *European Alliance for Apprenticeships* and the *New Skills Agenda for Europe*. These initiatives aim to create more integrated pathways between school and work, emphasising quality assurance, cooperation between educational institutions and industry, and the recognition of competencies acquired in non-formal educational contexts (Tuomi-Gröm and Engeström, 2003; ETF, 2013; Hooge, 2015; OECD, 2019). Research has shown that WBL experiences can enhance students' employability and foster smoother school-to-work transitions (Gruber *et al.*, 2008; Billett, 2014; Vickers and Vrohings, 2021). Nevertheless, the success of such programmes varied significantly across countries due to differences in national educational and institutional systems as well as labour market dynamics (Pastore, 2016).

Countries with consolidated dual systems – such as Germany and Austria – have developed strong coordination mechanisms among educational institutions, local enterprises and regional governments (Konkola *et al.*, 2007; Mulder *et al.*, 2015). Conversely, in more generalist educational systems like Italy, the integration between schools and the labour market or civil society has historically been weak and fragmented (Allulli and Farinelli, 2014; Gentili, 2002). Indeed, Italy's education system prioritises general training over specific technical and practical skills and postpones work experience until after graduation. Therefore, a significant mismatch emerges between the skills of students and the needs of employers, weakening the connection between schools, tertiary education and the labour market (Pastore, 2016; Pompei and Selezneva, 2017). The structure of the Italian labour market also influences the effectiveness of WBL programmes. Due to its predominance of small and medium-sized companies, the labour market often struggles to align with the educational objectives of such programmes and to effectively integrate young people during the transition from school to work (Pastore *et al.*, 2022). Finally, looking at the institutional dimension, Italy has often been described as a hybrid model (Allulli and Farinelli, 2014; Pinna and Pitzalis, 2021),

as European normative frameworks have been transposed faster than contextualised within the national socio-institutional setting. This is evident when we consider the normative evolution of school-to-work educational programmes. The *Alternanza Scuola-Lavoro* (ASL), introduced by Legislative Decree 77/2005 following Law 53/2003, was the first SWT policy to be implemented in the Italian education system. It aimed to integrate classroom learning with practical experience, emphasising WBL and employability (Gentili, 2002; Allulli and Farinelli, 2014). However, this policy evolved within an education system that was still characterised by rigid curricular boundaries and deep social stratification between different types of school. Therefore, to solve the historical differences between school types, the *Buona Scuola* reform, introduced by the Law 107/2015, made ASL mandatory for all upper secondary students, including lyceums, thus extending the model beyond its original focus on vocational schools. The *2019 Budget Law* (Law 145/2018), then, replaced ASL with PCTOs. The reform has redefined the educational objectives of these experiences by placing greater emphasis on guidance and transversal competencies; furthermore, it has significantly reduced the total number of hours, whilst retaining their compulsory status: for vocational tracks, the number of hours has been reduced from 400 to 210; for technical pathways, from 400 to 150; and for lyceums, from 200 to 90 (MIUR, 2019). The shift from «work» to «orientation» in the policy label symbolised a transition from a labour-market logic to an educational and self-reflective one.

2 The effectiveness of work-based learning in Italy: evidence from ASL and PCTO programmes

Empirical research conducted across Italy on the effectiveness of ASL and PCTO, including studies published in the monographic issue of *Scuola Democratica* entitled *Get to Work* (2021), has revealed a persistent gap between policy rhetoric and actual outcomes. These studies highlight how factors such as school infrastructure and type (e.g. Salatin, 2016), labour market dynamics (e.g. Arlotti, 2016), governance models and territorial disparities (e.g. Salatin, 2018; Giannoni *et al.*, 2024) shape both policy opportunities and results.

Focusing on school type, Pinna and Pitzalis (2020, 2024) highlight an educational paradox: although PCTOs are framed around transversal and soft skills, in practice they tend to be translated in ways that fit the lyceum track with soft skills and citizenship-oriented experiences, whereas in vocational (and more broadly non-lyceum) tracks professional and practical skills remain central, with soft skills often marginal or instrumental to workplace discipline. Similarly, Salatin (2016, 2018) argues that reducing the hours dedicated to such pathways, alongside the fragmen-

tation of partnerships, has weakened the curricular and territorial value of the policy, transforming it from a structural to a peripheral component of schooling. The literature also emphasises that the coexistence of pedagogical and labour market logics is key to determining the quality of PCTOs. While the former prioritises self-awareness and orientation, the latter demands immediate job readiness. Furthermore, micro and small companies, which represent the majority of host organisations involved in PCTOs, often lack the resources to provide structured training environments (Salatin, 2018). In contrast, medium and large organisations generally offer more formalised learning experiences, which however mainly involve students from lyceum. This uneven distribution contributes to reproducing historical educational inequalities the policy aimed to mitigate. Italian scholarship has increasingly pointed to the misalignment between the rhetoric of transversal competences and the expectations of employers, particularly in small companies that continue to value practical and technical abilities (Allulli and Farinelli, 2014; Pinna and Pitzalis, 2021). While policies emphasise creativity, problem-solving, and adaptability, the local labour markets often reward specific operational skills. This can lead to a «field effect», whereby institutional positions and social resources affect access to and outcomes of PCTO experiences (Pinna and Pitzalis, 2020, 2021). In this regard, recent contributions (Giancola and Salmieri, 2021; Giannoni *et al.*, 2024) highlight the importance of multi-level governance in ensuring PCTO quality. The effectiveness of such educational experiences depends on coordination among schools, host organisations, and territorial institutions, as well as on shared monitoring and evaluation tools. However, such coordination is still uneven. In southern Italy, enrolment is more concentrated in lycées, while in the North, with denser economic networks, technical and professional tracks account for a larger share of students (MIUR, 2023). This territorial asymmetry mirrors broader socio-economic inequalities in Italy and aligns with recent findings on the differentiated governance of transition policies. Indeed, an effective PCTO relies on multi-level governance and coordination among schools, host organisations, and local institutions. However, uneven local networks across regions result in unequal opportunities within Italy's education system (Giannoni *et al.*, 2024). Therefore, the Italian case underscores how European frameworks of WBL acquire distinctive local meanings depending on the institutional configurations and territorial resources available.

The article aims to contribute to this controversial debate on PCTOs quality and effectiveness, exploring the point of view of tutors from the host organisations. Indeed, with a few exceptions (Tino and Fedeli, 2016; Zadra, 2020), the perspective of host organisations has been omitted from academic debate on PCTOs. Nevertheless, host organisations as well as tutors who directly supervise students

play an important educational role and are central to the success of these programmes (Decataldo *et al.*, 2025; Recchi *et al.*, 2025). The article frames PCTOs within a theoretical framework that views SWT programs as boundary-crossing contexts (Tuomi-Gröm and Engeström, 2003), where students, teachers and external tutors negotiate meanings, roles, and knowledge across the traditionally distinct realms of education and work. These contexts have the potential to foster learning through the confrontation and integration of different practices, values, and expertise, thus encouraging reflexivity and the development of transversal competences.

3 Research Design and Methods

The study is part of larger research on PCTOs in Italy, conducted between 2019 and 2023². A mixed-methods approach was used, beginning with an exploratory phase in 2020 that included 12 semi-structured interviews with key informants to define the research questions. Participants were selected through convenience sampling and included PCTO representatives from different institutions (Ist) and external tutors from various host organisations (Org). Most of the interviews (10 out of 12) were conducted online due to the Covid-19 outbreak.

Furthermore, between 2021 and 2022 a two-stage e-mail survey was conducted targeting tutors from host organisations. The first survey occurred from May to July 2022, focusing on projects from the 2021/2022 school year (N projects = 267), involving third-year students. The second wave was conducted a year later, focusing on projects from the 2022/2023 school year (N projects = 776), and involving fourth-year students.

The host tutors' contact list was generated through a centralised INVALSI procedure: 78 upper secondary schools, selected via stratified probability sampling, uploaded detailed information on PCTO projects to a dedicated platform, from which project-level metadata and external tutors' contact details were extracted. Since the unit of analysis was the project, tutors overseeing multiple PCTOs received one invitation per project and were asked to complete a separate questionnaire for each.

Data collection was planned as two-wave longitudinal, but respondent overlap was minimal (42 tutors participated in both waves, each time on different projects/years), preventing longitudinal tracking. The waves were therefore treated as independent cross-sectional samples and merged to maximise statistical power.

2. Financial support for this study was provided by the PRIN 2017 «Evaluating the School-Work Alternance: a longitudinal study in Italian upper secondary schools», Protocollo 201735NL9B, Settore ERC SH3, Linea A. Codice CUP F87C19000050005).

In total, 356 questionnaires were collected across both waves. Tutors supervising lyceum students had a higher response rate than those working with technical and vocational tracks, resulting in a slight overrepresentation of lyceums in the final sample ($N_{\text{tot}} = 356$. $N=141$, 40.8% for lyceums; $N=114$, 32.9% for vocational schools; $N=91$, 26.3% for technical schools). The geographical distribution of surveyed projects broadly reflects the national distribution of secondary schools, with a slight overrepresentation of the North (MIUR, 2023). Project composition varies by macro-area: vocational projects are about half of those in the North but a small minority in the Centre and South/Islands; lyceums exceed half in the Centre and South/Islands; technical institutes account for about one-fifth in the North and roughly one-third to two-fifths elsewhere.

Host organisations were classified by size (micro: ≤ 9 employees; small: 10–49 employees; medium: 50–249 employees; large: >249 employees) and sector (business companies; universities/tertiary education and research; associations/public bodies/other). Most projects were hosted by companies (64.9%), followed by associations/public bodies/other (25.3%) and universities/research (9.8%). Host type and size are strongly associated with school track: micro hosts collaborate more often with vocational students (42%), whereas large organisations host mainly lyceum projects (75%). University and research hosts are predominantly linked to lyceums (85.7%) and are almost exclusively medium-to-large organisations (94.3%). In contrast, companies are mostly micro or small organisations (55.6% and 33.2%, respectively). Respondents were predominantly men; most were aged 46–60 (46%) or 36–45 (25%). Around 80% held senior roles and supervised other staff, but only 19% had attended PCTO-related training (higher among technical-school tutors and women: 22% each; medium–large organisations: 24%; South/Islands: 34%; higher-educated tutors: 25%).

Finally, to deepen the findings from the surveys, in 2022 15 in-depth qualitative interviews were conducted with tutors from host organisations involved in the first survey. The aim was to better understand external tutors' perspectives on PCTOs, especially regarding their value and effectiveness.

A reasoned multilevel sampling strategy was adopted to address the heterogeneity of structures and external tutors. The following dimensions and sub-dimensions were used to select the tutors involved: a) Type of school: lyceum, technical high school, vocational high school; b) Type of host organisation: company, university and other educational institutions, public entities and associations; c) Geographical location: North, Centre, South, and Islands.

The goal of achieving maximum sample heterogeneity was only partially successful. Ten company tutors (Ent), two university tutors (Uni), and three tutors from public entities and associations (PA/A) were interviewed. The final sample

was influenced by the tutors' willingness to participate. Additionally, since companies engage more in PCTOs than other host organisation categories, the sample is overrepresented by business organisations. In terms of geographic distribution, northern regions tend to activate more projects with technical and vocational schools, while southern regions with lyceums; finally, there are fewer sampled organisations in Central Italy.

The interviews were conducted online via video call. A thematic analysis was performed using the Nvivo software. To identify emerging themes, we employed a constant comparative method, revisiting codes and categories whenever contradictory data appeared (Boyatzis, 1998).

4 Research findings

The following section presents the research findings, organised by research questions. Section 4.1 explores alignments and gaps between policy goals and host tutors' perceptions, assessing educational value and role of SWT. Section 4.2 examines factors affecting policy effectiveness and perceived quality. A data integration approach was adopted when presenting and discussing the results, combining quantitative and qualitative findings (Bryman, 2006).

4.1 Formal objectives and perceived effectiveness of PCTOs

In two different survey questions, external tutors were asked to evaluate the general importance of specific competencies from their point of view (Q18) and how much the PCTOs contributed to their actual acquisition (Q19). The list of competencies was constructed based on those listed in the most recent ministerial guidelines (decree n. 774, 4 September 2019) (see Tab. 1).

The average values reported for Q18 in Table 1 show that tutors assign the highest importance to self-awareness («awareness of one's own abilities, skills and personal inclinations», mean = 4.34) and to personal and social competences («[...] ability to learn to learn», mean = 4.31). These findings are consistent with the formal educational objectives of the policy, confirming that PCTOs are primarily conceived as instruments for the development of transversal competencies. A second group of learning outcomes occupies an intermediate position, with mean values around 3.8 - 4.0. These include the ability to independently construct one's own training pathway (mean = 4.03), technical-professional skills (mean = 3.89), and the ability to navigate the labour market (mean = 3.85). While these competencies are considered important, they are given less emphasis, reflecting a more selective focus on employability-oriented learning outcomes.

Finally, cultural awareness, citizenship competencies, and especially entrepreneur-

Table 1 **The importance and effective development of competencies and skills through PCTOs (scale from 0 to 5)**

	Q18. [...] As a tutor, how are the following competencies relevant in students?		Q19. [...] How much do PCTOs contribute to effectively developing each of the following competencies in students?	
	<i>Mean (0-5)</i>	<i>St. dev.</i>	<i>Mean (0-5)</i>	<i>St. dev.</i>
Awareness of one's own abilities, skills and personal inclinations	4,34	0,87	3,96	0,96
Personal and social competences, and the ability to learn to learn	4,31	0,92	3,93	1,06
Ability to independently and effectively build one's own training and educational path	4,03	1	3,62	1,13
Technical-professional competencies and increased job opportunities	3,89	1,11	3,61	1,21
Ability to navigate the labour market	3,85	1,14	3,4	1,23
Cultural awareness and expression competences	3,72	1,12	3,42	1,19
Citizenship competencies	3,54	1,3	3,22	1,37
Entrepreneurial competencies	3,03	1,43	2,82	1,52

ial competences are rated as less important overall (means between 3.72 and 3.03). These dimensions are less central to the core aims of PCTOs or more difficult to foster effectively.

Despite this overall pattern, some inter-group differences emerge. We report ANOVA results and corroborate them with Kruskal–Wallis tests (with Bonferroni-adjusted pairwise comparisons) as a robustness check; the two approaches yielded largely convergent findings.

By educational path, tutors working with lyceums attribute higher importance to self-awareness ($M = 4.47$) than those collaborating with vocational institutes ($M = 4.14$; $p < .01$), while technical schools occupy an intermediate position ($M = 4.35$). Conversely, tutors working with vocational and technical pathways place greater importance on technical and professional competences (technical $M = 4.02$; vocational $M = 4.00$; lyceums $M = 3.68$), reflecting their stronger job-oriented mandate. By geographical area, tutors in the southern Italy and Islands attribute greater importance to both citizenship and entrepreneurial competencies than their colleagues in north-eastern Italy (respectively $M = 3.87$ vs. North-East $M = 3.26$; $p < .01$).

M = 3.54 vs. North-East M = 2.60; $p < .001$). Moreover, central regions report the highest importance for labour market navigation (M = 4.15). Similarly, tutors belonging to associations and public bodies tend to assign greater value on citizenship and cultural competences than companies do ($p < .001$). Overall, these variations suggest that the perceived educational purpose of PCTOs partially differs depending on the institutional and territorial context of implementation.

When it comes to the actual outcomes of PCTOs, the overall hierarchy of competencies outlined by respondents (Q19) mirrors that of perceived importance (Q18), with only slightly lower mean scores. This suggests that tutors perceive a comprehensive alignment between relevance and actual competencies acquisition.

Given this scenario, an exploratory factor analysis (EFA) was carried out to identify latent dimensions underlying the competence items. We conducted the analysis using Unweighted Least Squares (ULS) extraction on N = 356 cases focusing on the Q19 items (perceived competencies development through PCTOs), as the actual development appeared more relevant than the general importance attributed to the competencies. Moreover, the same analysis produced substantially equal results for the two sets of questions.

In the presented solution, sampling adequacy was high (KMO = 0.858; Bartlett's test $\chi^2(21) = 1324.66$, $p < .001$). Guided by the theoretical structure of the competence framework underlying the questionnaire and supported by the eigenvalue pattern and scree plot suggesting a two-to-three factor solution, we retained three factors³ (Tab. 2). This structure was rotated using orthogonal Varimax (Kaiser normalization) and factor scores were estimated using the regression method for subsequent analyses. The three-factor solution accounted for 72.46% of total variance after rotation (Factor 1 = 24.75%, Factor 2 = 24.35%, Factor 3 = 23.36%), with extracted communalities ranging from 0.504 to 0.999 (Tab. 3).

The rotated loading pattern supports three factors:

1. *Self-awareness and Learning*: it describes competencies related to self-management, meta-learning and personal orientation. It includes the items defining pure transversal competences, such as «Awareness of one's own abilities, skills and inclinations», «Personal and social competences, ability to learn to learn» and «Ability to construct one's own learning path independently and effectively».

3. In an initial exploratory solution, we included Q19.6 (entrepreneurial competences), thereby analysing the complete set of eight items. Strictly using the Kaiser criterion (eigenvalues > 1), this first analysis produced a two-factor Varimax solution (KMO = 0.881; Bartlett's $\chi^2(28) = 1637.35$, $p < .001$) explaining 64.52% of the rotated variance. However, Q19.6 showed cross-loadings (.61 on Factor 1 and .47 on Factor 2), reducing the interpretability of the analysis; therefore, the final model presented in the paper was specified without Q19.6 and preferring the three-factor solution.

Table 2 Exploratory factor analysis. Total variance explained and eigenvalues

Factor	Initial eigenvalue	% of variance (initial)	Cumulative % (initial)	Extraction SS loadings	% of variance (extraction)	Cumulative % (extraction)	Rotated SS loadings	% of variance (rotated)	Cumulative % (rotated)
1	4.355	62.22%	62.22%	4.090	58.43%	58.43%	1.733	24.75%	24.75%
2	0.858	12.25%	74.47%	0.598	8.54%	66.97%	1.704	24.35%	49.10%
3	0.577	8.24%	82.71%	0.384	5.49%	72.46%	1.635	23.36%	72.46%
4	0.395	5.64%	88.35%	-	-	-	-	-	-
5	0.316	4.52%	92.87%	-	-	-	-	-	-
6	0.280	4.01%	96.87%	-	-	-	-	-	-
7	0.219	3.13%	100.00%	-	-	-	-	-	-

Table 3 Rotated factor loadings for Q19 (acquired competencies) and communalities

Acquired competencies(Q19)	Factor 1 Self-awareness and learning	Factor 2 Citizenship and culture	Factor 3 Employability	Communality (extraction)
Awareness of one's own abilities, skills and personal inclinations	.826	.245	.291	0.826
Personal and social competencies and the ability to learn to learn	.607	.404	.322	0.636
Ability to independently and effectively build one's own training and educational path	.551	.379	.448	0.647
Technical-professional competencies and increased job opportunities	.397	.222	.545	0.504
Ability to navigate the labour market	.289	.265	.992	0.999
Cultural awareness and expression competencies	.298	.793	.224	0.767
Citizenship skills	.222	.767	.221	0.687

2. *Cultural and Citizenship Competence*: it encompasses «Cultural competences» and «Citizenship competences», which are actual transversal competences but primarily refer to a civic and citizenship dimension.
3. *Job Market Orientation and Professional Skills*: it comprises competences that most directly refer to hard skills and, by extension, to employability, including «Technical and professional competences and increased job opportunities» and «Ability to orient oneself in the labour market».

The distribution of aggregate mean scores (Tab. 1) indicates that tutors tend to recognise as mostly acquired transversal competences closely tied to the on-the-job training («Personal and social skills, ability to learn how to learn») and orientation («Awareness of one's own skills, competences and inclinations») and «Ability

to construct one's own training pathway autonomously and effectively»). In the EFA, their relatively high loadings across multiple factors suggest that these competences, especially «Personal and social skills» and the «Ability to construct one's own training pathway», are perceived as broadly transversal and foundational to multiple dimensions of the PCTOs experience.

Qualitative data reinforce this interpretation. Regarding transversal skills, respondents unanimously agree that PCTOs foster the development of fundamental management, social and interpersonal skills, crucial in both the labour market and other social life environments. According to the host tutors' point of view, these experiences provide students with autonomy, expose them to new challenges and environments, and encourage interaction with individuals outside their peer group.

I think they allow students to get involved more than in school (*refers to PCTOs*) [...]. Here they get to put themselves out there more... They can understand the dynamics of a company [...]. They can also experience an understanding better themselves [...] By staying with us, students discover personality traits that do not emerge in school (PE/A1).

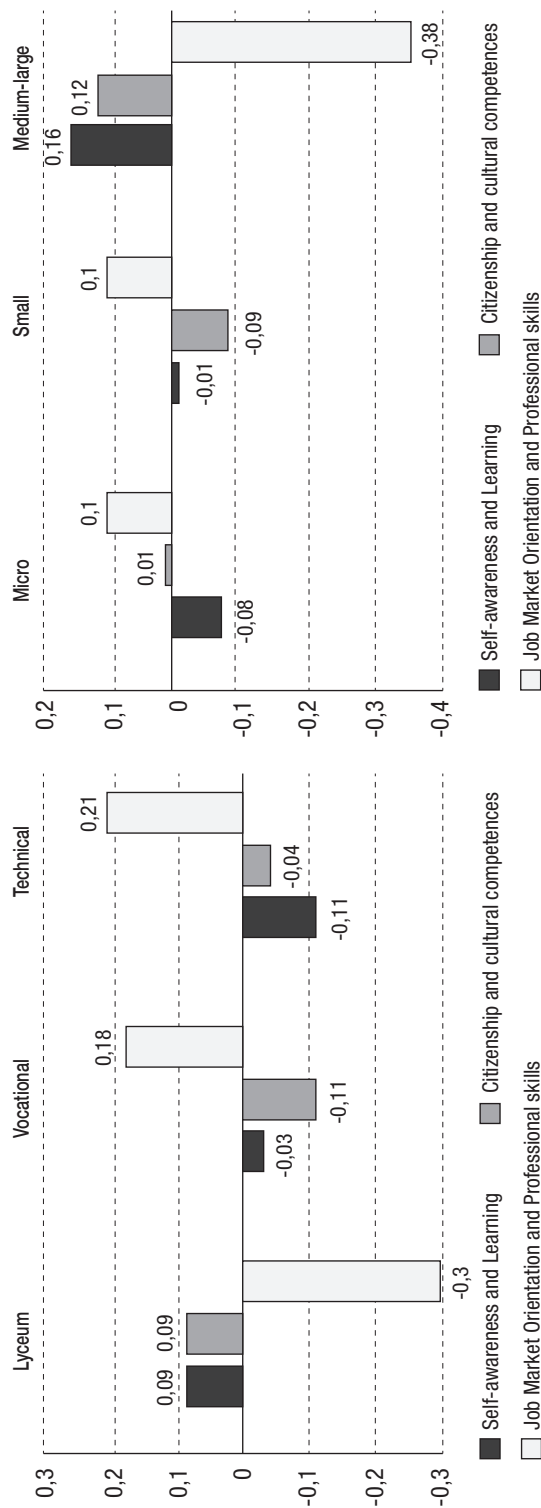
The external tutors seem to appreciate the disruptive nature of PCTOs, as they subvert traditional classroom learning modalities, allowing students to get out of school, test themselves, and learn in a new and situated context.

Conversely, although citizenship and cultural competences received the lowest quantitative scores in terms of both general importance and effective consolidation, this is not the case for tutors in public bodies and associations. The latter primarily highlight the capacity of PCTOs to promote active citizenship experiences through projects that enhance local territories and associative-cultural activities. While orientation and transversal competences are widely acknowledged as functions of PCTOs, some tutors also emphasised the importance of transmitting professional and technical competencies and in facilitating students' labour-market orientation. This results in a certain polarisation of perspectives regarding the ultimate purpose of PCTOs.

When comparing mean factor regression scores across sample subgroups, we can examine how different implementation contexts shape the type of competencies developed through PCTOs. Because these scores are standardised (mean = 0, SD = 1), the values reported do not represent absolute levels of competence acquisition, but relative deviations from the sample average. Positive values indicate that a given subgroup tends to develop that dimension more than the overall mean, while negative values reflect a lower-than-average development.

As shown in Fig. 1, projects involving lyceum students tend to strengthen self-awareness and learning-to-learn competencies and cultural and citizenship dimension, as both factors are slightly above the sample mean (+0.09). Conversely,

Figure 1 Average factor regression scores by students' educational path and host structure dimensions



PCTOs implemented alongside technical and vocational schools show comparatively higher development in job market orientation and professional skills (+0.18 and +0.21 respectively). This pattern reflects the distinct institutional missions of the host organisations and students' school tracks.

Within work-oriented tracks, differences are small: vocational-school hosts score slightly higher on self-awareness and learning, while technical-school hosts score marginally higher on citizenship and cultural competencies, though both remain below the sample average.

By host size (Fig. 1), micro/small organisations score slightly above average on employability but around/below average on transversal and cultural dimensions, whereas medium-large organisations show the opposite pattern.

Finally, the tutors' educational background is associated with different profiles of competence development. Tutors with lower formal education show higher relative scores on Job-orientation and professional skills and lower scores on citizenship and cultural competencies. Conversely, tutors holding undergraduate or post-graduate degrees display a more pronounced cultural-civic orientation, alongside higher levels of self-awareness and learning-to-learn competencies.

The interviews also highlight the polarisation of views regarding the value attributed to different skills. Tutors from universities and associations, which mainly host lyceums students, generally emphasise a holistic view of education. In contrast, tutors from companies primarily stress the importance of professional training (Gambin and Hogarth 2016), considering the first objective of PCTOs the transmission of technical and professional skills. In their view, PCTOs should reduce students' skill mismatches by better aligning school programs with labour market needs (Pompei and Selezneva, 2017).

There is too much difference between what is studied in school and what the real work is [...]. It would take a lot more practice in professional high schools [...]. This school-to-work alternance at least gives a smattering of what they will find one day when they enter the labour market (Ent3).

This alignment can positively affect school-to-work transition processes (Maisto and Pastore, 2017). According to many company tutors, PCTOs have the potential to strengthen the synergy between the education system and the labour market, which is essential to reduce the educational mismatch and improve youth employability.

Meanwhile, in projects involving lyceum students and medium-large host structures, the objectives of PCTOs' almost never foresee immediate work collaboration. This is because the students' transition is generally oriented towards tertiary education, and these structures are often not businesses (Decataldo and Fiore,

2018). On the other hand, vocational students have more opportunities to establish work collaborations after PCTOs⁴, particularly in small organisations (10 to 49 employees) than micro (1-9) structures. This is especially true for host structures with extensive experience in ASL/PCTO.

This trend is also driven by the greater structural capacity for long-term training and assimilation in small companies compared to micro companies. Additionally, companies with more experience in ASL/PCTOs tend to have smoother processes for young worker inclusion, focusing more on direct employability and the development of hard skills in the ASL period.

Moreover, hosting students often also represents an opportunity for small companies to have additional workforce, especially during periods of high work pressure, albeit temporary. PCTOs also allow companies to train and «test» the skills of students who, if motivated, can be recruited directly at the end of PCTOs or at a later time. Furthermore, the ability of PCTOs to transmit basic technical skills to students and orient them to the labour market may reduce the mismatch between schooling and labour market demands, thereby positively affecting the competitiveness of a company or a specific professional sector.

Nowadays, the workforce is a weak point in every company, especially for more practical jobs that are slowly disappearing... Therefore, we do this to help the school and students to acquire training credits. However, there has to be a practical return even for the companies. So, if we train these students, perhaps they will acquire knowledge that will also be useful to us and the professional field in which we operate (Ent4).

4.2 Factors affecting the effectiveness and educational quality of PCTOs

Although external tutors recognise the educational value of PCTOs and many highlights positive outcomes for students involved, negative opinions on educational effectiveness of such pathways also emerge from the research participants. The qualitative interviews reveal that the objectives underlying these paths are not always achieved, depending on several factors.

First, some tutors place responsibility on the school educational system. For instance, regarding the potential of PCTOs to effectively orient students, several tutors point out that due to the rigidity with which the school system conceives orientation, PCTOs are often promoted within narrow disciplinary boundaries, undermining this function.

4. Overall, 39% of the respondents stated that further work collaborations with the students were established after the PTSOs. This figure is higher for projects with vocational institutes (51%), small organizations (56%), and host structures with more experience in SWA/PTSOs (55%).

The impression is that orientation is being done based on outdated paradigms [...]. Orientation can no longer be based on the school outcomes and on a paradigm by which «if you do a technical high school, then you do SWA in a company, or if you have high grades you go to college, and if you are not a good student you go to work» (Ist1).

Furthermore, due to the high mismatch between students' preparation and labour market demands, tutors state that they often fail to effectively transmit sector-specific skills to students.

Generally, those who come here know very little about technical disciplines. Therefore, it is difficult to realise a real project with them [...]. I make them do the simplest things, the most trivial ones [...]. So, they learn little about what it really means to work in the hotel sector (Ent7).

Moreover, some aspects related to PCTOs' guidelines also impact the success of these training pathways according to many tutors. For instance, a unanimous criticism relates to the timing and modalities for implementing the pathways. Many tutors state that the hours devoted to PCTOs are often insufficient to ensure effective training and achieve every expected goal.

The period is quite limited because, in a month and a half, they cannot learn that much [...]. If we're in a building where we put electrical wires, if the student comes for a month, he can see only electrical wires. On the other hand, if the hours were spread out over the year, maybe he could see different work realities (Ent3).

The timing of PCTOs has also been criticised, as the courses are often scheduled within a limited timeframe, according to several external tutors. Particularly, host tutors working in seasonal sectors – such as hospitality industries – state that the limited flexibility in defining the periods to host students often «does not allow to guarantee to the students the quality of experiences, because they often come during the school, but in the off season for the hotel» (Ent7).

Finally, although the literature has emphasised the importance of the proactivity and level of involvement of external tutors and host organisations in achieving the objectives set out in the PCTO guidelines, this does not always occur in practice (Pastore *et al.*, 2022; Zadra, 2020). In this regard, the survey generally showed a low frequency of collaboration between schools and host organisations: in 67% of cases, cooperation between tutors occurred only rarely (in the 27% of projects surveyed, they never collaborated or only at the beginning or at the end of projects and in 40% at the beginning and at the end).

Moreover, to ensure the educational effectiveness of PCTOs, external and school tutors should cooperate with schools in designing the pathways objectives and the related activities. Despite this, the involvement of external tutors and the host

organisations in these phases is not consistent but rather depends on their resources and human capital (Decataldo *et al.*, 2025). Time and resource expenditure mainly represent constraints for tutors from small companies, as they do not always have sufficient human and economic resources to accept or successfully undertake training projects with schools such as PCTOs. In contrast, large organisational entities and universities have fewer challenges in meeting the training requirements.

Teachers call us and ask for our availability. However, giving availability is not easy at certain times of the year because we must find someone to follow the students [...]. One thing is to hire an already trained person, and another is to host a 17, 18-year-old boy [...]. In this case you must train and follow him step by step, but I and my employees are not many (Ent4).

In this regard, it is often large organisations and universities that mainly collaborate with schools and internal tutors to «build projects which meet specific needs and objectives» (Ent2). In contrast, small entities and companies often have fewer resources and capacity to collaborate with schools in designing activities. Therefore, with some exceptions, small companies leave the design phase to school, and the principle of co-design is generally not applied.

These results are also confirmed by quantitative analyses: less than 1 in 3 projects were designed equally by the school-organisation dyad, and about 43% were designed entirely by a single actor. More than half of the projects with vocational schools, which usually partner with micro or small organizations, are designed entirely by the school, whereas in lyceums and with large organisations the latter have a predominant or exclusive role in this step. In sum, the design phase is rarely co-managed, and its unequal distribution between schools and host entities, on the host organisations side, depends on the different economic and human capital resources they possess and deploy. Indeed, among the critical issues most frequently reported by external tutors, difficulties in finding staff interested in managing the PCTOs design phase and the complexities of bureaucracy stand out, with the latter issue being felt more by medium and large structures.

In addition, the implementation of activities aimed to engage and stimulate students represents a critical element that positively affects the success of these pathways. However, again, this is not always the case, but it varies according to the specificities of the host organisations. In this respect, being typically training and innovation-oriented, universities and medium-sized companies, more than other structures, recognise the value of careful planning and monitoring, thus ensuring quality training pathways. Conversely, small companies seem to have a more pragmatic view of these paths, in line with the marginal role that design, innovation and training often play in their realities.

We set the activities day by day [...]. In the end, activities are designed when students come based on their preparation, aptitude, and other things that emerge during that time (Ent1).

The «pragmatism» with which some organisations implement these projects also emerges considering that some external tutors do not know the recent regulatory changes from SWA to PCTO and what it entailed, or even that some do not remember the content of formal projects signed with the schools.

I will tell you the truth. I have not seen the project for a while, but there is definitely [...]. About the project, I do not know much. There is a project to fill out. If I remember well, it is three years for each project. But these are things we don't do anymore (Ent10).

5 Discussions and conclusions

Focusing on host-organisation tutors, this research highlighted both strengths and critical issues of PCTOs, with direct effects on their training effectiveness.

RQ1 examined the alignment between PCTOs' formal objectives and tutors' expectations, and their capacity to support education and school-to-work transitions. The results reveal that this alignment is only partial. At the normative level, policy goals – orientation, transversal competences and self-awareness – are widely recognised and appreciated by external tutors, although with variations linked to organisational, social and territorial contexts. Tutors see PCTOs as a valuable opportunity to strengthen students' autonomy, social maturity and interpersonal skills. Yet, this convergence remains largely rhetorical, while implementation differs greatly by school type, organisational structures and available resources.

Tutors hosting lyceum students tend to frame PCTOs as reflective and formative experiences, consistent with general education. Conversely, tutors collaborating with technical and vocational schools prioritise sector-specific skills, which require longer placements and structured training. The reduction in mandatory hours and the policy shift towards soft skills have weakened this dimension, penalising small and micro companies traditionally linked to vocational institutes. This gap between reform rhetoric and tutors' practical needs reflects the structural tension between educational ideals and labour-market conditions (Gentili, 2002; Allulli and Farinelli, 2014; Pastore, 2016; Pompei and Selezneva, 2017). In this respect, our analysis supports and refines the interpretation proposed by Pinna and Pitzalis (2020, 2021, 2024), who argue that school-to-work alternance policies reproduce inequalities across school types and territories, with a further nuance: PCTOs have increasingly favoured lyceums. The focus on orientation and transversal skills fits more easily with lyceum aims and typical host organisations associated with it (e.g. mainly cultural and non business organisations), while making it harder for small

companies to sustain long, resource-intensive training. Thus, asymmetries in the Italian school system are mirrored in host-organisation networks: actors with higher institutional and cultural capital adapt more easily with the reform's educational discourse, whereas those in less dynamic economic contexts remain marginalised. RQ2 explored the factors shaping the perceived educational value of PCTOs. Effectiveness depends on institutional, organisational and individual dimensions. A key determinant is the level of cooperation between internal and external tutors. Consistent with previous research (Salatin, 2016, 2018; Zadra, 2020), our results confirm that the success of PCTOs relies on continuous cooperation during design, implementation and evaluation. However, collaboration is often weak and limited to initial or final phases (Decataldo *et al.*, 2025; Recchi *et al.*, 2025). Furthermore, only around one in five tutors in our sample has received PCTO-related training, suggesting a lack of support for project implementation. Organisational resources also matter. Small companies struggle to offer structured experiences, whereas medium and large organisations – often public institutions or universities – can allocate staff and time, resulting in a higher perceived quality. This reflects the Italian productive system dominated by small companies with limited training capacity (Pastore *et al.*, 2022). Tutors also stress the persistent mismatch between school-taught competences and labour-market demands. Students often lack adequate preparation for technical tasks, reducing both pedagogical and occupational value of such programmes. This confirms earlier evidence of weak convergence between the education system and the labour market (Maisto and Pastore, 2017; Pompei and Selezneva, 2017), worsened by fragmented multi-level governance and uneven coordination among schools, companies and institutions (Giannoni *et al.*, 2024).

Taken together, RQ1 and RQ2 reveal a structural paradox: although PCTOs' formal aims are broadly shared, their implementation is hindered by systemic misalignments between education, policy and labour markets. Differentiation between lyceums, technical and vocational institutes is reproduced in host organisations, generating stratified outcomes. Rather than bridging school and work, PCTOs may reinforce social and educational inequalities (Fasanella *et al.*, 2025). Lyceum-linked organisations more easily embrace orientation goals, while those working with technical/vocational tracks – especially in weaker economic contexts – struggle to sustain employability and professional skill development, reflecting labour markets driven by short-term productivity and job-specific skills (Allulli and Farinelli, 2014; Salatin, 2016, 2018; Pinna and Pitzalis, 2021).

The results also challenge the common assumption that territorial differences play a dominant role in determining PCTO outcomes. Although this may be partly due to the composition of our sample, the research suggests that school type and

organisational features provide a better explanation for uneven outcomes than territorial disparity.

An original contribution concerns the mediating role of external tutors' education and professional background. Their human capital shapes how host organisations combine transversal and technical objectives, affecting both coherence and quality. This micro-level factor, often overlooked, helps explain how policy intentions are translated into everyday practices.

From a policy perspective, improving PCTOs requires systemic interventions: stronger governance that supports collaboration between schools, host organisations and territorial actors; recognition and professionalisation of external tutors through certification and training standards; and incentives enabling small and micro companies to participate. Curricular reforms should also reduce skill mismatch and foster real complementarity between school- and work-based learning. In conclusion, PCTOs reflect the contradictions of Italy's hybrid transition model: aligned with European lifelong-learning paradigms (Volles, 2016) but constrained by fragmented educational and economic systems. The emphasis on transversal competences has increased compatibility with lyceum culture while marginalising vocational tracks and the small companies connected to them. Consequently, PCTOs risk reinforcing, rather than reducing, symbolic and structural hierarchies in educational and occupational opportunities. Addressing this contradiction requires an integrated approach that treats schools, policymakers and labour markets as co-responsible for equitable and meaningful school-to-work transitions.

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