Original Paper

ITS Academy: Challenges, Opportunities, and Development Prospects in the Italian Technological Tertiary System

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Abstract

This paper examines the role of ITS Academy in the Italian tertiary education system, in light of the reform introduced by Law 121/2024. Through an empirical survey of students enrolled in ITS Academy and the analysis of ministerial and scientific sources, three strategic dimensions are explored: organization, educational innovation, and communication. Data collected through structured questionnaires and analyzed using statistical methods highlight strengths such as high post-diploma employability, connections to the manufacturing world, and laboratory-based teaching. However, critical issues emerge related to their geographical distribution, lack of remuneration for internships, and limited integration with the university system. A comparison with similar European models (French Brevet de Technicien Supérieur - BTS, German Fachhochschulen, and Swiss Universities of Applied Sciences - UAS) allows us to outline development prospects and improvement proposals for consolidating ITS Academy as a cornerstone of higher technical education in Italy.

Keywords: Tertiary Education, Dual Education, Post-Diploma Courses, Educational Innovation, Applied Research

1. Introduction

The aim of this research is to analyze the development prospects of ITS Academy in Italy, examining their strengths, weaknesses, and potential. The recent reform introduced by Law 121/2024 updated the tertiary system of higher technological education, which began in the 2024/25 school year. Dual training is planned, with 30–35% of the total hours spent in companies. The ITS Academy trains specialized technicians in strategic sectors, bridging the gap between secondary and professional university education. The diploma awarded is recognized at European level (EQF level 5 and EQF level 6), and the training areas cover 10 areas considered "strategic" for the country's economic development and competitiveness. These are:

- Energy;

- Sustainable Mobility and Logistics;

- Chemistry and New Life Technologies;

- Agri-food System;

- Housing and Built Environment;

- Mechatronics;

- Fashion System;

- Services for Businesses and Non-Profit Organizations;

- Technologies for Artistic and Cultural Heritage and Activities and for Tourism;

- Information, Communication, and Data Technology.

2. Research hypothesis

The research hypotheses were formulated to explore the relationships between different aspects of the learning experience and the level of satisfaction perceived by students. The following hypotheses were formulated:

- H1: Perceived teaching quality is positively correlated with overall student satisfaction;

- H2: Updated training content receives higher ratings in terms of effectiveness;

- H3: The availability of facilities and resources affects the perception of educational quality;

- H4: Student support is associated with greater motivation.

3. Methodology

This study is based on a quantitative and descriptive approach, aimed at collecting and analyzing students' opinions regarding the perceived quality of the ITS Academy training program they attended. A structured questionnaire was used, administered anonymously to students. The survey involved 250 first-year students from ITS Academy courses across Italy, of whom 195 were male (88%) and 55 were female (22%), with a mean age of 22.1 years and a standard deviation of 4.47. The questionnaire included 12 closed-ended questions on a Likert scale from 1 to 10, grouped into five thematic areas:

- Teaching Quality;

- Course Content;

- Facilities and Resources;

- Student Support;

- General Satisfaction.

The data were analyzed in aggregate form through: calculating means and standard deviations; comparing thematic areas and overall satisfaction; and verifying the hypotheses formulated in the initial phase.

To complement the empirical analysis, legislative sources, databases, and national ITS monitoring conducted by INDIRE were also consulted. These documents provided a useful framework for contextualizing the findings and understanding the guidelines and institutional objectives of the ITS Academy system.

4. Analysis and Results

Analyzing student responses, an average rating of 8.58 emerged. Specifically, the teaching quality area achieved an average of 8.40 with a standard deviation of 1.12, indicating a good level, albeit with some variability in responses; the course content area achieved an average of 8.80 with a standard deviation of 0.71, a figure that highlights high satisfaction with the relevance and timeliness of the offered content; the facilities and resources area achieved an average of 7.72, the lowest of the areas analyzed, with a standard deviation of 1.06, a result that indicates a more than good rating; the student support area achieved an average of 8.88 with a standard deviation of 0.73, the low dispersion indicating a fairly uniform perception among students; The overall satisfaction area had an average of 9.10 with a standard deviation of 0.40; this area recorded the highest value, confirming an excellent opinion by the students of the training experience as a whole.

The data collected are summarized in the following table:

Table 1. Student survey results

Area	Average	Standard Deviation
Teaching Quality	8,40	1,12
Course contents	8,80	0,71
Facilities and Resources	7,72	1,06
Student Support	8,88	0,73
General Satisfaction	9.10	0,40

5. Verification of the Research hypotheses

To test the hypotheses formulated in the initial phase of the research, an analysis was conducted on the averages of individual questions from the questionnaire administered to students. This allowed us to directly examine the relationships between key variables such as perceived teaching quality, overall satisfaction, effectiveness of training content, availability of resources, and student support. Each hypothesis was analyzed individually, with reference to the specific questions and the averages obtained, in order to determine whether they were confirmed, partially confirmed, or possibly not validated.

To test hypothesis H1 (Perceived teaching quality is positively correlated with overall student satisfaction), the three specific questions from the "Teaching Quality" area were used (teacher competence - average 8.55, clarity of presentation - average 8.25, methodology used - average 8.4), resulting in an overall average of 8.4. Overall satisfaction was perceived with an average of 9.1, highlighting a very high level of student appreciation. The comparison between the two averages shows a positive relationship between perceptions of teaching and overall satisfaction. Direct analysis of the data suggests that teaching perceived as competent, clear, and methodologically effective contributes significantly to student satisfaction. Therefore, hypothesis H1 is confirmed.

Hypothesis H2 (Updated training content receives higher ratings in terms of effectiveness). The data collected confirms a very positive perception among students: the relevance of the teaching materials averaged 8.95, while the updating of the materials averaged 8.65. Both items were rated highly, suggesting that the updated content is perceived as effective and consistent with students' learning needs. Hence, hypothesis H2 is confirmed.

Hypothesis H3 (The availability of facilities and resources affects the perception of educational quality). The data collected shows that resources receive positive ratings, with averages of 7.92 for classroom adequacy, 7.86 for laboratories, and 7.38 for technology tools. The overall average for the "Facilities and Resources" area is 7.72, while the quality of teaching is rated at an average of 8.4. The comparison of the values suggests that the availability of resources contributes to the perception of educational quality, although it is not the dominant factor. In particular, available technology represents an area for potential improvement. Therefore, hypothesis H3 can be partially confirmed, with indications for improvement.

Hypothesis H4 (Student support is associated with greater motivation). The data show very high averages: 9.04 for the availability of tutoring, 8.78 for career guidance, and 8.83 for support services. The overall average for "student support" is 8.88, indicating strong student appreciation. These results suggest that support contributes positively to the learning experience and can be considered a motivational factor. Therefore, hypothesis H4 is confirmed, albeit indirectly.

6. Discussion

6.1 Strategic Dimensions of the ITS Academy System

The ITS Academy system is analyzed through three strategic dimensions: organization, innovation, and communication.

- Organization: The system should expand by integrating research and development centers and introducing the role of scientific researchers. It must offer a broader and more distributed

training program; adopt flexible learning models; and promote collaboration with companies and institutions to develop successful innovative solutions.

- Innovation: Innovation should include teaching methods adapted to students of the digital age, the development of multidisciplinary laboratories, and training program aligned with emerging professions and societal needs.

- Communication: Communication strategies should emphasize the strengths of ITS Academy programs, highlighting their opportunities and value to prospective students and stakeholder.

These strategic consideration were developed not only through the analysis of questionnaire response, but also through the consultation of legislative sources, databases, and the ITS national monitoring conducted by INDIRE. This broader documentary framework provided essential insights for interpreting the results and identifying key area for improvement and development within the ITS Academy system.

6.2 Labor Market Relevance and National Expansion

Intermediate and technical professions represent a significant segment of the Italian labor market. According to the recent Cedefop reports, 1.2 million workers in these role will be needed over the next five years.

The 4+2 system is proving successful: for the 2025/26 school year, the Ministry of Education and Merit has authorized 428 Technical and Professional Institutes to offer these programs, involving approximately 10,500 students - nearly one in four institutes nationwide.

6.3 International Comparison

An international comparison with countries such as Germany, Switzerland, and France, where dual training is well-established, is useful for highlighting the limitations and critical issues of the Italian ITS Academy model. Professional training at the tertiary level in Germany and Switzerland lasts 3 to 5 years, while in Italy it varies between 2 and 3 years, and in France it lasts only 2 years. Consequently, the qualification awarded also has different values: EQF levels 6 and 7 in Switzerland and Germany, where qualifications are awarded by academic institutions; EQF levels 5 and 6 in Italy, where qualifications are awarded by non-university institutions; and EQF level 5 in France, where qualifications are awarded by non-university institutions. In-company training is very strong in Switzerland and Germany, between 30% and 35% in Italy, and only 8-12 weeks in France. Research and Development is present only in Germany and Switzerland, and is absent in Italy and France. In Italy, the predominant training is of a technical-specialist nature, while in France it is of a technical-practical nature, in Germany it is of a scientific-applied nature, and in Switzerland it is of a professional nature oriented towards the job market. All system value soft skills, but with different approach. Longer and more structured program (like in Switzerland and Germany) allow for deeper and gradual development. Italian ITS programs are highly effective in a shorter time frame, while French BTS focus on autonomy and adaptability, though with less time available.

A summary is reported in Table 2.

Table 2. International comparison of professional tertiary education systems

Feature	ITS Academy (Italy)	BTS (France)	Fachhochschulen (Germany)	UAS (Swiss)
EQF Level	5 - 6	5	6–7	6–7
Time	2 years - 3 years	2 years	3–5 years	3 years (Bachelor) + 2 years (Master)

In-Company Training	30–35%	8–12 weeks	Extensive collaboration	Strong practical integration and projects with the company
Research and Development	Absent	Absent	Present	Present, practice-oriented
Employment rate	>80%	75–80%	High	>90%
Main Type of Training	Technical-specialist	Technical-practical	Scientific-applied	Professional market oriented
Soft Skills Development	Strong focus on teamwork, communication, problem-solving	Emphasis on autonomy and adaptability	Integrate into project-based learning	High focus on leadership, collaboration, and innovation

This comparison shows that while the ITS Academy system is highly effective in terms of employability, it would benefit from structural reinforcement and greater synergy with universities and research institutions.

6.4 Strengths, Weakness, and Critical Issues

Strengths identified include:

- High student satisfaction;
- Effective 4+2 study programs, allows you to shorten study paths;
- Strong connection to the labor market through dual training;
- Specialization in innovative sectors;
- Practical, lab-based, and in-company training;
- Lower costs compared to university course;
- European recognition via Europass Diploma Supplement;
- strong student support and relevant course content;
- Tertiary-level qualification.

Weaknesses include:

- Low social recognition, limiting student enrollment;
- Unpaid internships;
- Limited territorial coverage.

Critical issues to address:

- Strengthening multidisciplinary laboratories;
- Recognizing study periods for pension purposes;
- Enhancing collaboration with University, especially in research and development sector;

- Providing remuneration for internships;

- Reducing disparities in organizational capacity among ITS Academy;

- Building a more cohesive territorial network.

6.5 Opportunities and Final Reflection:

The ITS Academy system offers strong employment prospects, with rates exceeding 80%. It represents a promising effort to bridge the gap between education and employment, integrating theoretical learning with structured work-based experiences.

The participatory governance model, involving schools, companies, and local authorities, is a key strength that enable continuous curriculum updates aligned with labor market needs.

Finally, the analysis of collected data allowed for the indirect testing of the research hypotheses, confirming excellent student satisfaction and validating the overall effectiveness of the ITS Academy model.

7. Conclusion

The analysis highlighted the strategic role of the ITS Academy system in the professionalizing tertiary education landscape in Italy. The data collected through a questionnaire, supplemented with legislative sources, databases and national ITS monitoring, confirmed a high level of student satisfaction and the validity of the training model. The information derived from the analysis of the research hypotheses highlighted how factors such as the quality of teaching, content updating, student support, and connections with the world of work contribute significantly to the positive perception of ITS Academy programs. The international comparison highlighted strengths and areas for improvement, suggesting the need to strengthen the organizational dimension and synergy with the university research community. In particular, the integration of multidisciplinary laboratories, recognition of internships, and greater territorial coverage represent priority objectives for consolidating the system. In conclusion, the ITS Academy model represents an effective response to the needs of the labor market, capable of combining technical training, practical experience, and the development of transversal skills. To ensure its growth and sustainability over time, investing in innovation, communication, and participatory governance will be essential.

References

Bundesministerium für Bildung und Forschung - BMBF. http://www.bmbf.de

Cedefop - https://www.cedefop.europa.eu/it

Cedefop (2022). The future of vocational education and training in Europe. Publications Office of the European Union.

Cottone N., & Tucci C. (2025). Dagli ITS Academy l'alternativa all'università più legata al lavoro. Il Sole 24 ore (04/08/2025).

Eurydice - https://www.indire.it/progetto/eurydice/

Eurybase - Eurydice Network Database on European Education Systems. http://www.eurydice.org

INDIRE (2025). ITS Academy 2025 Monitoring. https://www.indire.it/progetto/its-istituti-tecnologici-superiori/overview-monitoraggio-its-academy-2025/

INDIRE (2025). Sistema terziario di istruzione tecnologica superiore. Monitoraggio Nazionale 2025. INDIRE.

Legge 121/2024 (Italy). "Establishment of the tertiary system of higher technological education".

Markowitsch, J., & Bjørnåvold, J. (2022). Scenarios for vocational education and training in Europe in the 21st century. *Hungarian Educational Research Journal, 12*(3).

Ministère chargé de l'enseignement supérieur et de la recherche - BTS Thematic Area. https://www.enseignementsup-recherche.gouv.fr/fr/brevet-de-technicien-superieur-bts-45915

Ministero dell'Istruzione e del Merito - MIM - ITS Thematic Area. https://www.mim.gov.it/tematica-its

OECD (2022). The Landscape of Providers of Vocational Education and Training. OECD Publishing.

OECD (2023). Education at a Glance at 2023. OECD Publishing.

Scuole Universitarie Professionali Svizzere. https://www.orientamento.ch/dyn/show/4654

Tucci C. (2025). La filiera "4 +2" supera la sperimentazione diventa ordinamentale. Il Sole 24 ore (08/09/2025).

TuttoITS. https://tuttoits.it/