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Innovation in Vocational Training: An Action Research Project

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Abstract

Context: Vocational and Educational Training (VET) innovation is crucial in the new social-economic context to address unskilled job profiles and provide students with necessary social and professional skills. VET innovation involves a renewed approach to teamwork, adjustments to career paths, teacher-led instruction, and technological advancements (Cedefop, 2015; Cedefop 2022b).

Methods: An action research project: Observing and analyzing the context, through semi-structured interviews, focus groups, and observations, to design educational interventions aimed at addressing critical issues within the VET system (Asquini, 2018; Callini, 2018).

Findings: The analysis revealed that professionals face challenges in defining roles and tasks, technical-professional teachers lack teaching competencies, participation in students' formative project is unbalanced, and there is an emphasis on developing student-centered teaching techniques.

Conclusions: Based on contextual analysis and needs assessments, professionals have expressed a demand for a customized training program that initiates the redefinition of roles and responsibilities.

Keywords

lifelong learning, educational innovation, education and training needs, teacher training, VET in schools

1 Introduction

The first section of this article aims to highlight the context of the research. Attention is focused on how institutions of vocational education and training are responding to the economic and training needs. In particular, this study intends to shed light on the new training needs that emerged after the recent socio-economic changes in the framework of the post-Covid, NRRP (National Recovery and Resilience Plan) and Agenda 2030. The second section of the article will explore the action/training research conducted in Bologna (Italy), in a vocational training institution. This study started with an investigation of the training context and the professional's formative needs, conducted with qualitative methods and tools such as focus groups, interviews, and observations. The results will be presented together with potential further actions.



2 Innovation in the context of VET

2.1. Context VET in Italy

In Italy, Vocational Educational Training (VET) schools are divided into three and four-year training courses leading to vocational qualifications (EQF3) and diplomas (EQF4) in specific professions (e.g., cooking, mechanics, electrics/electronics, sales, etc.). These training programs are carried out by training institutions accredited by the Regions (Regional Council Decision no. 1695 of 15/11/2010) and established in Emilia-Romagna by Regional Law n. 5 of 30/06/2011. The learning goals are focused on competences, knowledge, and skills related to the professions and requested for the fulfilment of compulsory education (Ministerial Decree 139/2007). The VET pathway involves young people in search of vocational training and tries to respond to their different needs. Indeed, the VET educational offer focuses on specific training needs characterised by inclusiveness, considering the large number of non-Italian students involved, as well as students certified with special needs (according to L. 104/92) and students coming from school failures (Cascioli, 2021). Vocational schools are institutions responsible for training youth, aiming both to improve students' abilities and to satisfy the demands of the labour market (Cedefop, 2018). Therefore, they play a significant role in the current socio-economic environment.

2.2. VET in the new socio-economic environment

Contemporary society is facing a multiplicity of challenges, including climate change, the far-reaching consequences of the COVID-19 pandemic, and the rapid advancement of technological innovations. These challenges are having a transformative impact on the socio-economic landscape, engendering a pressing need for new tools and skills that can be readily applied in the labour market (Cedefop, 2019). These changes lead companies to interface with a decline in the professional skills acquired by young workers. In fact, up to 25% of SMEs (small and medium enterprises) are handling professional profiles that are unskilled in the job market (Zagardo, 2020). According to these new needs, vocational schools are renovating themselves, improving forms of collaboration, and transforming the training pathways, teaching activities, and the use of technology. In fact, according to Cedefop (2015; 2022b), innovation in VET is driven by various factors. These include the usage of digital tools, the reskilling and upskilling of trainers and other professionals, innovative teaching and evaluation methodologies, advances in the labour market, and the importance given to the necessity of building new professional and cross-functional competences. The key to tackling the socio-economic and educational crisis in which we find ourselves, could be represented by continuing education (OECD, 2021). In fact, investments in the school landscape are supported by the National Recovery and Resilience Plan (NRRP) and Goal 4 of the 2030 Agenda. Indeed, as explained in Reform 2.2, included in Measure M4C1 of the NRRP, the set elements aim to "*build a high-quality training system for school staff, in line with European standards, which promotes continuous professional and professional development. The school will provide guidance and coordination for training activities*"¹.

2.3. Role of teacher in the VET context

In the context of VET, both the learning environment and the interactions between professionals and students are fundamental for the development of students' consciousness and skills

¹ M4C1 - Reform 2.2: "School of Higher Education and Compulsory Training for school leaders, teachers and technical and administrative staff" (Relazione sullo stato di attuazione del Piano Nazionale di Ripresa e Resilienza, 2022).

(Pellerey, 2006; Angotti & Fonzo, 2022). “*Teachers and trainers are at the forefront*” (Cedefop, 2022a, p.1) of educating young people. Teachers and trainers are responsible for transmitting the skills and the knowledge needed to prepare the students for the future world of work, as well as for conveying the key competences necessary to support their social responsibility, civic engagement, personal growth and human values (Cedefop, 2022a; OECD, 2019). Thus, “*It is essential that they (re)skill and upskill towards future-oriented competences, which they can then pass on to students*” (Cedefop, 2022b, p.1). Continuous training plays a fundamental role in responding to new educational needs. *Lifelong learning* puts the teachers and trainers in a perspective of continuous updating and learning. This reskilling is fundamental given the social complexity (Di Renzo 2013; Aleandri & Fiorentini, 2022) and professionals should be supported and equipped with the right tools to develop the required skills (Cedefop, 2022a; Foschi, 2021).

Within the context of VET, a close collaboration is evident amongst several professionals, including coordinators, tutors, educators, supporting teachers, and teachers. These professionals have different roles and levels of expertise, but their common goal is to prepare young people for the future profession while assuring their well-being (Angotti & Fonzo, 2022). Teachers are divided in the ones dealing with key competences (linguistics, mathematics, history, etc.) and the ones coming from the the work field and specialised in topics such as cooking, sales, mechanics, or other professions. However, VET requires them to master a dual set of competences, including both didactic and methodological competences, in addition to the professional skills required within their respective fields (Spadafora, 2022). The acquisition of transversal, digital, and technical skills is essential for professionals to effectively respond to daily challenges encountered in the workplace and to navigate the complexities of contemporary educational settings (Cedefop, 2022a). Additionally, they enable professionals to efficiently interact with students and to address the varied challenges that arise within the school context.

Teachers, trainers, and other educational professionals should be responsible for students' *significant learning* through structured and active teaching proposals (Pellerey, 2006). For this purpose, their ability to collaborate, cooperate, and improve their skills is important.

Significant learning strongly involves students, influencing cognitive, operational, and emotional dimensions. Thus, targeted courses based on a practical approach to learning are offered by VET institutions, whose reference models are in fact *Learning by doing* and *Work Based Learning* (WBL) (Dewey, 1916; Kolb & Fry, 1975; Alessandrini, 2017). The methodological concept is based on the following elements: experiential learning, learner involvement, personal and professional progress, attention to each student's interests, and support in their journey. Students can spend their training path alternating periods of internships with periods of regular attendance at school, which includes both laboratory and lectures. The goals are to make students more active in their educational pathway, experiencing practical activities and developing a sense of curiosity and exploration (Dewey, 1916; Kolb & Fry, 1975).

Considering the important roles of VET in this pedagogical and social-economic framework, and the roles of teachers in improving students' skills, the European strategy (Next Generation EU) invests in education and vocational training to reduce early school leaving, youth unemployment, and NEETs and to improve the learning of skills useful to new job market demands (Zagardo, 2020; PNRR, 2020; Agenda, 2030). Thus, the current action research project aims to define tools and methods for the innovation of co-design of VET learning and teaching context, on the basis of the competences required by the EU and their application to this field of education. Each professional can contribute to improving formative action and innovation with their resources, abilities, and way of acting (*Capability Approach*) (Alessandrini, 2014).

3 An action research project in Bologna (Italy)

The research, conducted in collaboration with VET organisation C.E.F.A.L. (European Consortium for Workers Teaching and Training) - dislocated in Bologna, Villa San Martino, and Faenza - aims primarily to explore and analyse this host vocational institution. The exploratory analysis of the context was conducted using qualitative analysis tools, such as focus groups and semi-structured interviews (Trincherò, 2002). During these focus groups and semi-structured interviews, the professionals involved in the educational activities of the C.E.F.A.L. were asked to identify the needs, problems, and strengths within the context, along with the aspects they wished to improve. All tutors and coordinators of the organisation were included; the teachers involved (approximately 10% of the total) were selected by subject in order to reach a representative sample, even if non-probabilistic.

In the first focus group crucial components, potential areas for improvement, and workplace strengths have been discussed with coordinators and tutors. This qualitative tool has given the opportunity to bring out the topics of relevance: the role of professionals, the students' vulnerability and competences, planning, programming, teaching strategies, the cross-cutting competences of teachers and students, and the "training company²" as a framework for the VET.

These themes have been deeply explored in semi-structured interviews, conducted online or on-site, with the coordinators (n = 6), tutors (n = 7), teachers (n = 15), and educators (n = 6). The topics were pre-determined, but the order in which they were addressed and the way the questions were phrased were defined as the interviews progressed, so as to allow the interviewee greater freedom of expression and the opportunity to raise issues that had not previously been considered (Corbetta, 2020; Viganò 2002). Once all the interviews had been conducted and recorded, an identification code was assigned to each interviewee. Data processing was made through careful transcription and subsequent content analysis, in order to highlight the emerging elements and to reveal which ones were common to different interviews. Afterward, a summary of the most recurring aspects was shared for reflection purposes with the educational institution, conveyed from a narrative perspective so as to avoid the alteration of the collected material (Corbetta, 2015; Clarke & Braun, 2022).

The content analysis highlighted specific themes and viewpoints, or "substantive responses", which were identified as categories or subcategories depending on the specificity and relevance (Clarke & Braun 2022). After the interviews and the context analysis, an observation phase started in the classrooms. The primary goal of the observation was to identify the didactic-pedagogical strategies used by the teachers, the tools, and the interactions between the different professionals involved in the pedagogical action. The observation was structured with an attempt to reduce the impact of the observer's presence in the classroom as much as possible, with the aim of not interfering with the dynamics (Coggi & Ricchiardi, 2020). The tool used in the first phase of observation is the logbook. It allowed the development of a systematic observation grid.

This research method is understood as "*the conduct of empirical research using differentiated research methods and the promotion of the professionalism of teachers (and of the pedagogical actors within school institutions and services for children) through the construction of common research pathways in the context of inter-institutional collaboration*" (Asquini 2018, p. 22, translated by the author). "*Research training is considered a*

² The training company is an alternative and innovative model that allows one to learn real work processes through the simulation of a work context. It can be defined as a company within the school that allows students to combine study and practical experience from which to learn lessons. Within this enterprise, craftsmen and experienced technicians act as teachers." (CEFAL, 2021; CIOFS-FP,2023).

methodological characterisation of research in schools and with teachers that is primarily and explicitly focused on the training/transformation of pedagogical and didactic action and the promotion of teacher reflexivity" (Id., p. 43, translated by the author).

4 Results and perspectives

The focus group data analysis highlighted some critical aspects that showed the need to train and update teachers' knowledge and skill, as well as to define a common didactic-methodological line to clarify their roles and tasks.

The most recurring topics were related to the necessity to develop some more effective teaching methods for groups of students with different degrees of knowledge and skills, and the use of the term "*fluid*" to define communication among professionals. This last one refers to the co-presence of tutors, educators, and teachers in the class group, which often leads to a misunderstanding of the roles and responsibilities of each professional. Indeed, according to the group of tutors and coordinators, it is necessary to create a balance amongst the professionals and increase the coherence in project design and teaching and learning organisation. "*What are we doing?*", "*Which path are we following?*", "*How can a student achieve his goals if his trainer is in difficulty?*" are the most frequent questions asked by professionals. Helping them to consider such uncertainties would be the first step to give them a common methodological line to follow.

Educational professions are becoming increasingly central and are evolving in response to changes in contemporary society. They have had to constantly rethink and redefine their roles at both educational and social levels, becoming more and more important and strategic over time (Cambi, Catarsi, Colicchi, Fratiniand Muzi, 2014). This aspect is emphasised by the professionals involved in the educational activities of C.E.F.A.L., who recognize the need to redefine their roles within the educational context. Thus, the first goal of the research project was to define the various roles involved in the educational-pedagogical activity, including professionals, and improving the collaboration, cooperation, and the sharing of methodological lines. Through the discussion between professionals - during the focus group – communication and collaboration will be promoted for questioning, resizing, and reviewing the roles involved in the training action. Seeking a scientific model of education is intimately related to teachers' preparation, who, as declared by Dewey (1910, 1933) and Schön (1993), should be both an "*investigator*" and a reflexive person able to provide a suitable environment for training and learning. In this context, after this first exploratory step, one of the future perspectives is research training with coordinators, tutors, educators, and support teachers to build an effective educational environment. In the VET context, the concept of teachers as an "*investigator*" and a reflexive person will not only concern teachers, but all professionals working with students.

5 Conclusions

This research explored, throughout the use of research-action/research training, critical aspects presented by the educational training context (Asquini, 2018). Focus groups, semi-structured interviews, and on-site observations are some of the qualitative instruments used to observe and analyse C.E.F.A.L. working environment. A pyramid of "priority interventions" was developed by analysing the data gathered during the first year. The initial element which was considered was the difficulty in defining the roles and responsibilities of professionals involved in educational interventions. Therefore, considering the training needs which were expressed during the focus group and interviews and taking into account the synergy between professionals, the first intervention seeks to redefine the roles inside this context through structured collaborative meetings. This meeting allowed for focused interactions between professionals with the goal of stimulating the co-construction of shared meanings about their roles, and strategies of intervention in the VET's context. In fact, roles should be defined both

to provide a solid framework for the training intervention targeted at learners, and to avoid potential misunderstanding during the didactic-pedagogical intervention. As a result, once the roles will be clarified and defined in collaboration with the professionals, it will be possible to intervene in other critical issues highlighted by the training participants: the teaching strategies used by teachers in the classroom. The research will be conducted in accordance with the design of a formative training program on cooperative and mutual learning for all educational professionals involved, with the aim of exchanging good practices, ideas, and intervention strategies.

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