

The INAPP Dispositive for the Formative and Authentic Assessment of Key Competences in IVET

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In Italy, significant progress has been made in the lifelong learning strategy. However, regarding key competences, the policies and related technical-methodological frameworks do not yet provide sufficient and homogeneous references to training designers, neither to teachers and trainers. INAPP carried out (2018-2023) a research aimed at designing and testing a dispositive for the formative and authentic assessment of four key competences in the IVET System (EU Recommendation 2018): personal, social, and learning to learn; citizenship; entrepreneurship; cultural awareness and expression. This contribution presents the conceptual basis and design of the assessment dispositive at the conclusion of its testing, which involved over 50 training institutions in 15 Italian Regions. The testing has provided promising indications that seem to confirm the formative capacity of the dispositive and the informative potential of the reality-based assessment tool (reality tasks) to discern different levels of mastery among students and adopt appropriate teaching-learning strategies.

Keywords: lifelong learning strategy, key competences, formative assessment, IVET system, reality task

Introduction

In Italy, over the last 10 years, significant progress has been made in the policies that support lifelong learning. Some evidence of this is provided by the progress of the referencing process of the Italian qualifications to the EQF¹, carried out while implementing the EQF Recommendation (2017) and the Inter-Ministerial Decree (2018) establishing the National Qualifications Framework (NQF). The usability and portability of qualifications and competences within the National System for Certification of Competences is also improved thanks to the development of the technical-methodological and digital infrastructure of the *Atlas of*

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¹ The updated National Referencing Report was published in 2022. It is available at <https://europa.eu/europass/it/node/1312>.

*Work*² managed by INAPP³.

Despite the progress made, training designers, as well as teachers and trainers do not yet have, regarding the Key Competences—KCs (EU Recommendation 2018), especially for those related to the soft skill area, appropriate references that can guide them (such as standards, tools, and guidelines for managing the training processes). This prevents a full implementation of the KCs in the training paths and hinders the overall consistency of the curricula and their relevance to the labour market. Moreover, this condition is having a negative impact on the personal development opportunities of young people, as well as on the recognition and validation of the KCs.

In this context, from September 2018 to March 2023, INAPP promoted a research aimed at improving training and learning practices, but also at stimulating advancements in national policies. The research mainly focused on two objectives. The first one consisted of the design and testing of a formative and authentic assessment dispositive⁴ for four KCs: personal, social, and learning to learn; citizenship; entrepreneurship; cultural awareness and expression; it was addressed to initial vocational education and training (IVET) students⁵. The second objective was to set guidelines and other resources to support a full integration of the KCs in training process and to facilitate the adoption of the dispositive as well as its axiological, methodological, and organizational approach in VET curricula. The INAPP research team collaborated with authoritative experts from the scientific and professional community, and with trainers and coordinators of Professional Training Centres participating in a wide experimentation process⁶.

The Dispositive for the assessment of the KCs is one of the main outcomes of the research. This contribution focuses on the conceptual and technical framework of the dispositive, developed through experimentation, and in particular, on the approach adopted to the reality-task, the latter considered the core tool consistent with authentic assessment (Wiggins, 1993).

Theoretical Framework

A KC has been considered as an articulated and partially coordinated set of enduring internal dispositions (Bourdieu, 1980; 1997). These are habits; they seem to constitute an individual's character through repeated practice (Grządziel, 2024).

² “The Atlas of Work can be defined as a mapping of labour market sectors-professional activities, and qualifications, designed in order to monitor and evaluate how the market is moving within an extremely dynamic socio-economic context. This tool is divided into three pathways: 1) *Atlas of Work* describes the content of the work in terms of activities; 2) *Atlas and Qualifications* hosts the National Repertory of Education, Training and Professional Qualifications; 3) *Atlas and Professions* collects the regulated professions (covered by Directive 2005/36/EC) and the repertory of Apprenticeship professions” (Morreale e Ferri, 2022). To learn more: <https://atlantelavoro.inapp.org/>.

³ “The National Institute for Public Policies Analysis (Inapp) is a public research body of national relevance, under the supervision of the Ministry of Labour and Social Policies. The Institute carries out studies, research, monitoring and assessment of public policies in the domains of labour, education and training, social protection, active and passive labour policies, third sector, social inclusion, and policies having an impact on the labour market.” (<https://www.inapp.gov.it/en/institute>).

⁴ The use of the word *dispositive* is consistent with Michel Foucault's works, in particular with *Surveiller et punir* (1975) and *La volonté de savoir* (1976). In *What is an apparatus* (2009), Agamben states that a dispositive “is a heterogeneous set”; it has a “strategic function and is always located in a power relation” (Agamben, 2009, pp. 2-3). Last but not least, it activates processes of subjectivation. Every assessment dispositive has the above-said four features.

⁵ We specifically refer to the Initial Education and Vocational Training system (IeFP), managed by the regional authorities, aimed at the acquisition of basic and vocational competences related to profiles linked to the world of work. The IeFP system provides: (1) three-year courses for the achievement of an Initial Education and Vocational Training Certificate attesting learning outcomes at level 3 NQF/EQF; (2) four-year courses for the achievement of an Initial Education and Vocational Training Diploma attesting learning outcomes at level 4 NQF/EQF (Source: ANPAL 2022 National Referencing Report to EQF).

⁶ Actors involved: Salesian International Higher Institute of Educational Research (ISRE); Italia Forma (IF); Central Training School (SCF); Italian Center for Salesian Women's Works—Vocational Education and Training (CIOFS-FP); National Federation promoted by the National Centre for Salesian Works—CNOS for the promotion of the Salesian vocational training offer (CNOS-Fap); Intellera Consulting and PTSCLAS.

Furthermore, a KC likely manifests itself in performance, constantly intertwining with technical-professional competences and basic symbolic skills. In a transactional perspective (Dewey & Bentley, 1949), the distinction among KCs (soft skill area), technical-professional competences, and basic symbolic skills does not have any ontological value, but a functional one for the purposes of research and assessment.

Consistent with the same perspective, we hypothesize that each KC is constituted by the transaction of *four dimensions: intellectual, strategic, methodological, and social and axiological* (Table 1).

Table 1

Dimensions of Each KC

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| <ul style="list-style-type: none"> • the <i>intellectual dimension</i>: it contains the resources related to factual, conceptual, procedural, and meta-cognitive knowledge; they allow an initial understanding, analysis, interpretation, classification of the problem. • the <i>strategic dimension</i>: the KCs mastery increases when a learner or a worker is self-directed. In other words, when they are both self-determined and self-regulated. • the <i>methodological dimension</i>: every KC probably activates behavioural script; simple or complex action schemas. They are acquired by experience, by training. They are a part of methodological (tacit and explicit) knowledge. • the <i>social and axiological dimension</i>: contains the resources that qualify competence as a socially recognisable and appreciable construct as it is oriented and defined by a specific set of values that manifests itself with others. |
|--|

Source: Giovannini and Santanicchia (2023).

The four dimensions of competence, which constitute the cornerstone of the adopted assessment model, are supposed to mobilise resources belonging to *knowledge cores*.

The *knowledge cores* are acquired through life experiences and are relevant on epistemological, axiological, and existential levels. Especially in the post-Fordist society, a re-reading of the history of the West, its experiences, its production in the sciences, art and literature—Bloom’s work (1994) represents a paradigmatic attempt—seems necessary in order to identify a canon, i.e. the knowledge cores. Knowledge and confrontation with this canon are probably necessary for an individual to have a “well-made head” (Morin, 1999; 2000). Each educational agency has to cooperate for achieving this objective. In the IVET context, they have to present a progressive character by levels of mastery, in order to improve the capability of designing and performing collaborative actions full of meaning, culture, and vision.

Consistently with the structural hypothesis of KCs assumed (four dimensions orchestrated to produce effective solutions to a contingent situation/problem), their assessment requires a *mixed-method assessment design* (Creswell & Plano Clark, 2018). Assessing competence requires the collection of a plurality of evidence for a more valid and reliable judgment (Greene, 2009). Under these conditions, collecting information elements on competence means acquiring data on the:

- *process* enacted by the person (structures of interpretation, structures of action, structures of self-regulation);
- *product* (as the result of the process, able to condense in itself and express all that was necessary to think, plan, build, revise, etc.);
- *learning transference*, i.e., on the person’s ability to act out the competence in multiple situations/context.

To ensure the validity and reliability of the evaluation act, the adopted dispositive included:

- a reality-based assessment tool (reality task);
- a set of highly structured assessment tools;
- a e-portfolio of competences tool, which is configured as a place of reflexivity for the learner guided by the educator and where the results of the different assessment experiences are collected.

Consistent with the authentic character of the assessment, the reality task was the core tool. The reality task has been undertaken in the research by paying close attention to the following qualifying aspects: it refers to a vocational technical product/service, or part of it; it has a character of reality (it is not an exercise) and, moreover, it has to be significant in the context of the educational goals of the IVET courses within which it is inserted; it brings real benefit to the target audience to which it is addressed and also to the community; it motivates the learner and enables him to increase his self-awareness, satisfaction, and pride in what has been achieved and recognized; it draws relevant and active links with the cultural basic competences.

Research Methodology and Population

The research design is configured as an action research: over 80 trainers and other representatives of the institutions involved, and a wide number of students collaborated in the design and revision of the dispositive.

Six administrations were carried out involving convenience samples. It is relevant to underline that the information collected through these administrations was primarily aimed at improving the dispositive and the related assessment process. This means administrations were designed as measurement operations strictly related to the context, defined “to enter the game of training”, providing suggestions to both students and trainers, including the coordinators of the training institutions involved. The aim was to increase awareness and improve the quality of training and organizational practices.

Some details of the administrations are provided in Table 2.

Table 2

Testing of the Assessment Dispositive: Population Involved

First phase
• four administrations (November 2018-2020): 10,000 tests (reality tasks and structured tests) to 1,641 (grade 1) IVET students; • 51 training centres (belong 17 national institutions) located in 14 Italian regions and Autonomous Provinces; • 17 technical-professional areas of qualification;
Second phase
• two administrations (2022-March 2023): 4,239 tests (reality tasks and structured tests) to 843 (grade 1-2-3-4) IVET students; • 15 training centres located in five Italian regions; • 5 technical-professional areas of qualification.

Source: Giovannini and Santanicchia (2023).

Main Findings

An Assessment Dispositive of KCs Validated by the IVET Community

The testing phase, starting from a first prototype of the dispositive led to an updated and validated version. Indeed, the exemplary cases of reality tasks defined, as well as the indicators and the process for their observation were improved thanks to a systematic interaction between research team and trainers. The highly structured tools were also changed according to the trainers' feedback; in the last phase, the following instruments were adopted: a reading comprehension test, the Learning Strategies Questionnaire (Pellerey, 1996; Bonazza & Giacomantonio, 2023), a revision of the citizenship questionnaire used in the 2016 ICCS IEA survey (Schulz et al., 2018a; 2018b), a problem-solving test, and a student questionnaire. In Table 3 the instrumental components of the final assessment dispositive are shown in their relationship with the dimensions of competence. In particular, the different highly structured tests have a specific relationship with the different dimensions, while the reality tasks and the e-portfolio are intended as transversal to all dimensions.

Table 3

Relationship Between the Assessment Instrumental Components and the Four Dimensions of Competence

Dimensions	Assessment tools		
	Highly structured assessment	Reality-based assessment	E-portfolio
Intellectual	Reading comprehension test Learning Strategies Questionnaire (QSA) Problem solving test	Reality tasks (integration of technical-professional and KCs)	Progressive training portfolio for self-reflection and documentation
Strategic	Learning Strategies Questionnaire (QSA) Problem solving test		
Methodological	Problem solving test		
Social and axiological	Questionnaire on civic and social competencies		

Source: Giovannini and Santanicchia (2023).

Focusing on the reality task-based assessment component, the research led to the construction and validation of 16 reality tasks for the four KCs. These tasks have a didactic progression for the four training years of the IVET courses: for each competence, four reality tasks were therefore defined to be adapted by the trainers in relation to the context (technical professional area of the course; basic competences to be developed, etc.). The research led to define 62 reality tasks customized by trainers following specific guidelines. Table 4 gives an example of the reality tasks for the entrepreneurship competence.

Table 4

Reality Tasks (Exemplar Cases) for the Entrepreneurship Competence

IVET (years)	Entrepreneurship competence—reality tasks
1	THE FACTORY OF IDEAS: Produce a presentation (multimedia) of your professional sector, highlighting its value for society, in a way that is understandable to an inexperienced audience.
2	THE FACTORY OF IDEAS: Competition for the renewal of the Training Center: music space, exhibition of masterpieces, literary cafe-reading group.
3	THE FACTORY OF IDEAS: Starting from a problematic situation that concerns the professional field, produce together with your team a proposal and the related project of improvement of the work.
4	THE FACTORY OF IDEAS: Taking into account the innovations learned in the course, realize a business project based on the improvement of work organization, having attention to its social value.

Source: INAPP elaboration (2024).

The reality tasks were designed as consistent with a *repertoire of learning outcomes* divided into two clusters: learning outcomes specific to each competence; learning outcomes transversal to the 4 KCs. The *repertoire* was defined by analyzing both the KCs descriptors (EU Recommendation 2018) and the training standards of the IVET courses. Correspondently, relevant observation *rubrics of competences* (Brookhart, 2013; Tenam-Zemach & Flynn, 2015) were also designed: the indicators were divided into two clusters: specific to each competence or transversal to the 4 KCs.

The *repertoire of learning outcomes* for each KC indicates: the descriptor (EU Recommendation); an overall performance-related learning outcome graduated to the specific EQF-NQF level; specific or common learning outcomes, expressed in the form of performance descriptors of competence and declined on the four dimensions of competence. For each competence, together with the specific indicators, also the *knowledge cores* are provided. Table 5 shows the specific learning outcomes for the entrepreneurship competence.

Table 5

Specific Learning Outcomes: Entrepreneurship Competence at EQF-NQF Level 3 and 4

“Entrepreneurship competence” refers to the capacity to act upon opportunities and ideas, and to transform them into values for others. It is founded upon creativity, critical thinking, and problem solving, taking initiative and perseverance and the ability to work collaboratively in order to plan and manage projects that are of cultural, social, or financial value (EU Recommendation 2018).

	Qualification (EQF-NQF 3)	Degree (EQF-NQF 4)
	“Overall performance learning outcome” Cope with problematic situations in known contexts, readapting your own work, and contributing creatively and collaboratively to defining hypotheses for improvement.	“Overall performance learning outcome” Contribute to the improvement of the processes and functionality of the work organization of your sector, socializing technical solutions, and design hypotheses (including business), also with a view to the possible increase of their social value.
	“Knowledge cores” • Organisation • Enterprise • Design culture and problem solving • Value • Evaluation	“Knowledge cores” • Enterprise project • Product/service life cycle • Value chain
Intellectual	• With references to the cores of knowledge, it motivates: (1) The proposal (2) The planning path and the conclusions it reached.	• With a language rich of cores of knowledge references, it justifies the enterprise project based on the: (1) value of the products/services to the community (2) realism of the proposed path.
Strategic	• Contributes in the team to formulate a proposal able to answer the problem in a known context. • Contributes in the team to generate innovative solutions. • Supervises the outcome to be achieved in accordance with the directions received.	• Contributes inside the team to the development of a business/product project that has value for the community and that is realistic. • Formulates business or product creation hypotheses. • Supervises the outcome to be achieved by positively coping with difficulties and crises met.
Methodological	• Observes the work steps and schedule in the project path. • Conducts appropriate verification of the outcome of the proposal.	• Reworks the stages and timing of work based on what emerges from the actual path of the project. • Develops a business creation project in an area of reference of the training pathway. • The review takes into consideration the cultural, social, or financial value of the project.
Social and axiological	• Participates collaboratively in the work team. • Acts in accordance with professional rules/codes of ethics.	• Participates collaboratively and proactively in the work team. • Respects professional rules/codes of ethics and considers the possible impact of actions on others.

Source: Giovannini and Santanicchia (2023).

Table 6 indicates the *knowledge cores* for each KC, negotiated with the trainers as foundational themes-values, relevant for an accomplished education within the IVET system.

Table 6

Knowledge Cores Identified for the IVET System (EQF-NQF 3 and 4)

Entrepreneurship	Citizenship	Personal, social and learning to learn	Cultural awareness and expression
Qualification (EQF-NQF 3)			
Organization	Community and society	Reason and knowledge	People and history
Enterprise	Democracy and Constitution	Styles of intelligence	Tradition
Design culture and problem Solving	Safety	Meaning/connection	Cultural values
Value, Evaluation	Sustainability	Memory	Self and other
	Participation	Method of learning	Self-communication

Table 6 to be continued

Degree (EQF-NQF 4)			
Enterprise project	Green economy	Experience as intelligent action	Tension and opposition
Product/service life cycle	Conversation	Sources and their reliability	Understanding and enrichment
Value chain	Agreement	Argumentation	Moral judgment
	Ethics		
	Digital citizenship		

Source: Giovannini and Santanicchia (2023).

The *common learning outcomes*, on the other hand, are resources that are cross-cutting to multiple KCs. Common resources traced to the intellectual dimension are those related to deep understanding, i.e. the ability to capture the meaning and significance of written and verbal communications. Strategic common resources are those that have to do with the ability to organize the processes of self-determination and, therefore, motivational, volitional, and social-relational skills of an individual confronted with a problem or challenge. Common resources, having to do with method, are those that enable one to proceed with order and logical sense when faced with a problem and that help one manage time according to commitments and deadlines. Finally, they are social and axiological common resources, those put in place whenever one is called upon to cooperate and share information and a sense of experience with others.

In the observation of “rubrics of competences”, the *indicators* are symmetrically divided into *specific* and *common*.

The following descriptive criteria were used in formulating the indicators:

(1) specificity and concreteness: the indicator must be punctual and verifiable (observable, documentable);
 (2) univocity: the indicator should be as minimally interpretable as possible and not rely on overly general adjectives (e.g., it should indicate what the index of lexical adequacy is, specifying unambiguously and explicitly what the terminology is and what (qualitatively-quantitatively) the baggage of terms to be brought into play consists of;

(3) level positioning: must be identified—in our case—relative to and/or as concrete *declinations of the characteristics* of the elements/dimensions of competence, referred to in levels III and IV of the EQF and NQF.

The indicators can be suitable for observation of the *process* or *product* and are chosen by the trainers according to the characteristics of the reality-task: within a wide battery of indicators, it will be necessary to choose which indicators to use, under the rule that at least two specific and two common indicators for each dimension of competence and at least five individual and five group indicators have to be selected for each KC. The specific indicators of entrepreneurship competence (Intellectual dimension and Strategic dimension) are exemplified in Table 7.

Table 7

Specific Indicators for the Observation of the Entrepreneurship Competence

Specific indicators		EQF-NQF 3	EQF-NQF 4
Intellectual	1 Uses concepts, words referring to the cores of knowledge to argue the proposal	✓	
	2 Uses concepts, words referring to the cores of knowledge to argue the project		✓
	3 Proceeds to handle the task by asking for relevant clarifications related to the directions given	✓	
	4 Introduces elements not specifically requested, which overcome the mandate received		✓

Table 7 to be continued

Strategic	5	Anticipates problems affecting the process or project		✓
	6	Proposes solution hypothesis for the problem	✓	
	7	Encourages the adoption of hypothesis for innovative solutions	✓	
	8	Advances proposals from an original point of view, as opposed to the prevailing approach		✓
	9	Recognizes the impact on the context of its proposed solution	✓	
	10	Assesses the impact on the context of its proposed solution		✓
	11	Makes assumptions about business creation		✓
	12	Identifies the elements of possible impact of its proposal	✓	
	13	Sees opportunities where others see only problems		✓

Source: Giovannini & Santanicchia (2023).

The *common* indicators are presented in Table 8 (intellectual dimension and strategic dimension). Some indicators, related to the common elements, overlap with the specific indicators defined for *personal*, *social*, *learning to learn competence*: the clearer understanding of the relationship between transversal and specific indicators is a significant result of the research.

Table 8

Common Indicators

Common indicators		EQF- NQF 3	EQF- NQF 4
Intellectual	1 Identifies the meaning of the required task	✓	
	2 Identifies, when guided, the meaning of each step and/or output that makes up the task	✓	
	3 Indicates a reason why the task is consistent with one's professional and/or personal goals	✓	
	4 Evaluates the extent to which the task is consistent with one's professional/personal goals		✓
	5 Selects the information elements on which to focus one's attention		✓
	6 Constructs relationships, connections between different information or related to different learning contexts		✓
Strategic	7 Deals with commitments because he or she is adherent to the demands of the training context	✓	
	8 Deals with commitments as he/she intuitively understands their utility for his/her professional affirmation		✓
	9 When faced with difficulties, proceeds without getting stuck, nevertheless seeking a possible solution	✓	
	10 Controls his/her own emotions to advance his/her own and/or the group's work		✓
	11 Carries out the commitments made	✓	
	12 Asks for help in times of crisis	✓	
	13 Does not become discouraged in the face of difficulties or impasses		✓

Source: Giovannini and Santanicchia (2023).

The observation of the reality-task is carried out through a four-level scale (never or almost never; sometimes; often; always or almost always). It will be the evaluator's responsibility—depending on the customization of the task and, therefore, the processes and products he or she can observe—to compose customized grids by selecting and creating groups of indicators. The process of customization of tasks is guided by a methodological and procedural path and specific operational sheets.

An overall representation of the assessment dispositive is provided below (Figure 1).

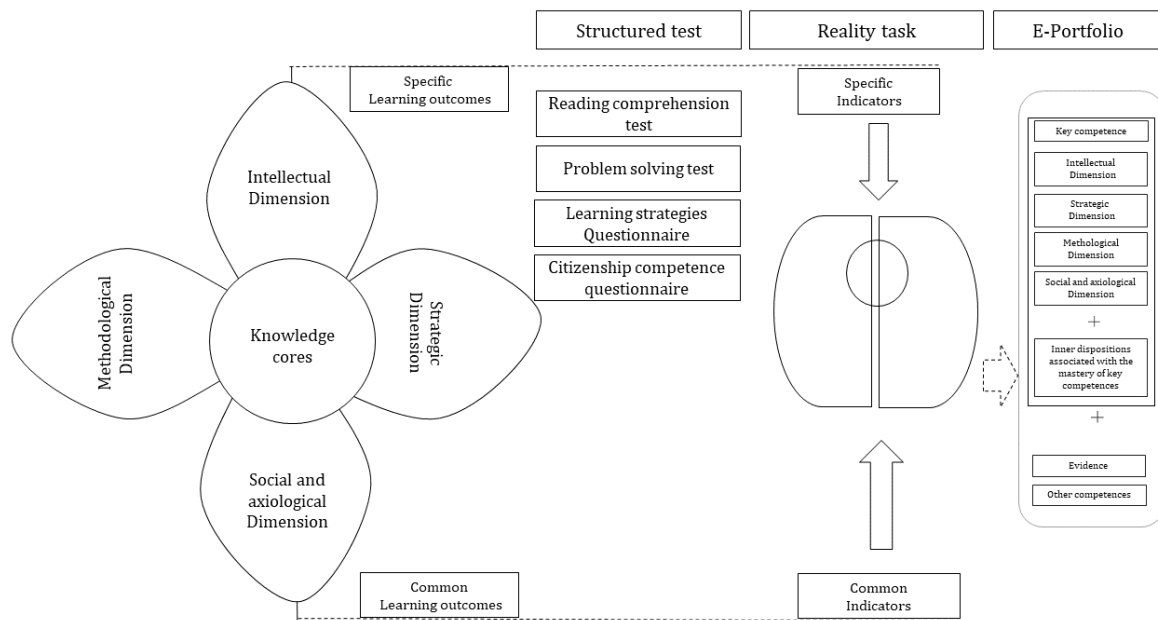


Figure 1. Assessment dispositive.

Informative Potential of the Reality-Based Assessment

The data presented below, which concern the administration of the reality task on entrepreneurship competence, were collected between October and November 2019. The feedback for teachers was divided into four profiles: population, training centres, classes, and individual students. In particular, the first data presented are related to the population profile.

The reality task was carried out by 15 training centres, for a total of 18 classes. The students involved in the testing were 363 (with reference to this specific KC). The number of invalid cases, that is those for which no information was recorded for about one third of the operational indicators (16 out of 49) was 18. The following analyses refer consequently to the remaining 345 subjects, correspondent to 95% of the initial population. 18.6% of the participants were female, while the remaining 81.4% were male. Table 9 describes the distribution of average scores (population profile). Students averaged 68.2% of the points available, or 100.9 points out of a maximum of 148. The results relating to the different dimensions of competence were quite similar, with a slight drop in the intellectual one, in which students averaged 26.9 points out of 42, or 63.9% of the total.

Table 9

Distribution of Average Scores by Dimensions of the Entrepreneurship Competence

Dimension	N	Max	Media	Std. dev.	Points (%)
Intellectual	345	42	26.9	6.4	63.9
Methodological	345	27	19.2	4.0	71.3
Strategic	345	43	30.1	6.6	69.9
Social and axiological	345	36	24.7	5.5	68.7
Entrepreneurship competence	345	148	100.9	19.4	68.2

Source: Giovannini and Santanicchia (2023).

As Table 9 shows, the standard deviation was contained. Nevertheless, the differences between the students were significant (individual profile). Table 10 presents the profiles of two students who attended the same class and who performed the task aimed at estimating the mastery of the entrepreneurship competence. The individual profiles present the normalization of the score obtained for each dimension (points) and the related stanine points (PS). They allow a normative assessment: in fact, they compare the score of the individual student with that of the population who carried out the reality task.

Table 10

Profiles of Two Students With Very Different Mastery of Entrepreneurship Competence

Dimension	Stud.	Points	Max	PS	Stud.	Points	Max	PS
Intellectual	1	3.5	10	3.7	2	5.8	10	5.8
Methodological		0.0	10	-0.1		8.1	10	7.1
Social and axiological		0.8	10	1.1		8.5	10	7.8
Strategic		2.0	10	2.0		8.8	10	7.7
Entrepreneurship C.		1.4	10	1.4		7.6	10	7.4

Source: Giovannini and Santanicchia (2023).

As shown in Table 10, observing the stanine points of the two students by dimension of competence emerged two very different profiles, almost the opposite ends of a segment: the stanine points of the first one are systematically very low—almost excessively low—while those of the second one are high (close to average, but in excess, it is only the score relative to the intellectual dimension). On the one hand, therefore, there was a student who showed the need for an immediate integrative intervention; on the other, a student who could have instead covered (simplifying) the role of tutee of the first.

Conclusion

The first objective of the research was to design and test an assessment dispositive of four KCs. The results confirmed the “formative” nature of the assessment approach adopted, based on active methodologies and its capacity to contribute to the transition from a lecture-based teaching model to a competence-based one (KCs strictly connected to technical-professional ones). The teachers’ perception of the assessment dispositive, as measured by focus groups, can be summarised in the following main statements: (1) the dispositive seems sufficiently sustainable; (2) it appears as a formative assessment tool; (3) teachers note the relationship between the assessment dispositive and the teaching-learning strategies used to facilitate the development of KCs.

The experimentation confirmed the sustainability of the components included in the initial prototype, namely: reality tasks, which show their informative potential on the mastery of the KCs; highly structured tests and the e-portfolio. From a methodological point of view, the experimentation confirmed the sustainability of the four-dimensional structure of the KCs (intellectual; strategic; methodological; social and axiological) and its relationship with the *knowledge cores*. Moreover, the experimentation has led to refining the system of learning outcomes and indicators, specifying the two clusters: specific/common. This distinction was stimulated and appreciated by teachers.

In line with the chosen research approach, aimed at the professional development of learning professionals (trainers-evaluators and also coordinators of training centres), they had the opportunity to follow the evolution of the dispositive and to validate its model, structure, purpose, process of administration, and outcomes. From a

procedural point of view, it was possible to test different forms of collaboration between the experts of the research teams and the trainers, for example in the production and administration of the reality task: the data processed were returned to the trainers involved and used for supporting a systematic reflection, going to design good practices that could be used again in the future.

The research, including two peer learning activities conducted in March 2023 with the participation of national and international researchers and socio-institutional stakeholders, has identified two additional areas of investigation that INAPP has begun recently. The first area concerns the design of a methodological solution to introduce references for the treatment of KCs within the *Atlas of work*, and the second pertains to the development of trainers' strategic competences, with particular reference to their mastery of KCs (mainly soft skill area) and their ability to handle (design; didactics and teaching; assessment) KCs.

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