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MODELS AND STRATEGIES FOR DEVELOPING SUMMATIVE ASSESSMENT COMPETENCE OF TEACHERS IN VOCATIONAL AND TECHNICAL EDUCATION

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This study focuses on the development of summative assessment competence among teachers in vocational and technical education, viewed through the lens of well-established models in the specialized literature. The paper analyzes, from both theoretical and practical perspectives, the professional development and training models proposed by V. Mislitchi, L. Desimone, D. Clarke and H. Hollingsworth, and B. Joyce and B. Showers. Based on these models, the study highlights the key stages, characteristics, and dimensions that serve as theoretical and methodological benchmarks for designing training strategies tailored to the current educational context. The article provides operational guidelines for planning professional development programs, facilitating the transfer of best practices and enhancing the quality of summative assessment.

Keywords: *competence, summative assessment, models, strategies, professional development, vocational-technical education, teachers.*

MODELE ȘI STRATEGII PENTRU DEZVOLTAREA COMPETENȚEI DE EVALUARE SUMATIVĂ LA CADRELE DIDACTICE DIN ÎNVĂȚĂMÂNTUL PROFESIONAL-TEHNIC

Studiul de față vizează procesul de dezvoltare a competenței de evaluare sumativă la cadrele didactice din Învățământul profesional-tehnic, prin prisma unor modele consacrate în literatura de specialitate. În lucrare sunt supuse analizei, din perspectivă teoretică și aplicativă, modelele de formare și dezvoltare profesională propuse de V. Mîslițchi, L. Desimone, D. Clarke și H. Hollingsworth, respectiv B. Joyce și B. Showers. În raport cu aceste modele sunt evidențiate etapele, caracteristicile și dimensiunile definitorii, care constituie repere teoretice și metodologice pentru fundamentarea unor strategii de formare adaptate contextului educațional actual. Articolul oferă repere operaționale pentru proiectarea programelor de dezvoltare profesională, facilitând transferul de bune practici și consolidarea calității evaluării sumative.

Cuvinte-cheie: *competență, evaluarea sumativă, modele, strategii, dezvoltare profesională, învățământ profesional-tehnic, cadre didactice.*

Introduction

In the summative assessment process, teachers assume the responsibility to choose or develop appropriate assessment methods, to administer and interpret the assessment results, to use the assessment results by capitalizing on them in decision-making, to develop and apply scoring procedures, to communicate the assessment results considering various categories of audience (students, parents, administration, community), to recognize and avoid the unethical, illegal implications, and distorted effects of some assessment procedures. In this context, the summative assessment competence of teachers in vocational-technical education is outlined [10, p. 77].

Starting from these aspects, the summative assessment competence is defined as an integrative professional competence, which involves the coherent mobilization of knowledge, skills, values, and attitudes in real educational contexts. Strategies for developing this competence aim to consolidate all constitutive dimensions.

Each of these dimensions can be strengthened and deepened by applying theoretical and methodological models of professional training, which provide the necessary support for the development of summative assessment competence.

Theoretical Models and Applicative Strategies for Development of Summative Assessment Competence

A valuable explanatory framework for the progressive development of competence is provided by ***the professional competence training model proposed by researcher V. Mislitchi*** [9], which includes five successive phases:

- *The cognitive phase* involves familiarizing teachers with the content and structure of the summative assessment competence. This is achieved by theoretically explaining key concepts, illustrating assessment models and analyzing relevant case studies.

- *The analytical phase* involves the fragmentation of the competence into smaller components, which are learned sequentially: developing items, applying grids, interpreting results, etc. This stage is characterized by increased effort, the occurrence of errors and intense concentration.

- *The organization and systematization phase* consists of the gradual integration of these components into a coherent system, through sustained practice of the assessment sequences and correction of errors.

- *The synthesis and automation phase* involves the formation of a functional, fluent and adaptable competence, in which teachers apply summative assessment methods in an efficient and natural way, with reduced conscious supervision.

- *The refinement phase* marks the achievement of an advanced level of competence, characterized by speed, accuracy and adaptability in various educational contexts.

These phases can be integrated into the following strategies for developing summative assessment competence of teachers in vocational-technical education:

1. *Deepening knowledge* about summative assessment and specific standards in Technical Vocational Education (TVE), especially through continuous training and individual study.

2. *Strengthening operational skills,* through applied practices, internships, workshops and assessment simulations.

3. *Developing value awareness and professional attitudes,* such as fairness, evaluation ethics, transparency and responsibility.

4. *Adapting evaluation to real contexts,* through collaboration with social partners and the use of digital tools for the design and application of authentic tests.

In essence, the integration of the model proposed by V. MIslitchi into the strategy for developing summative evaluation competence provides a coherent, phased and applicable framework that supports the authentic and sustainable professional development of teachers in vocational and technical education.

Research over the past two decades has established a solid consensus in the literature on the ***essential characteristics of professional development*** that can lead to increased teacher competence and, implicitly, improved student learning outcomes [3]. Landmark studies, such as those by M. Kennedy [8] and S. M. Wilson & J. Berne [11], highlight five fundamental dimensions:

a. focus on content;
b. active learning;
c. coherence;
d. duration;
e. collective participation.

These dimensions are considered critical elements in the design of continuing education programs [3]:

Focus on content is the central pillar of effective professional development. Empirical analyses - from case studies and correlational research at the national level to meta-analyses [8] - confirm that activities focused on disciplinary content enhance teachers' professional competence and lead to visible improvements in pedagogical practice, positively influencing student performance.

Active learning involves teachers' direct and engaged participation in processes of exploration, application and reflection, as opposed to passive transmission of information. Specific forms include observation of model lessons followed by interactive feedback and discussion, analysis of student work, facilitated discussions and pedagogical co-creation activities [3]. This approach stimulates the real transfer of knowledge into classroom practice.

Coherence refers to the congruence between teachers' training experiences, beliefs and prior knowledge, as well as alignment with educational policies at institutional and national levels [3]. Lack of coherence between these levels can diminish the impact of training.

Duration of training is also a critical determinant. Research indicates that programmes delivered over extended periods (minimum 20 contact hours) and distributed over a semester, accompanied by monitoring and feedback activities, foster sustainable changes in practice [3].

Collective participation involves the involvement of groups of teachers from the same institutional context (school, chair, department) in common training activities, stimulating the exchange of experience and the consolidation of an organizational learning culture [3].

Based on these characteristics, we highlight ***a Conceptual Model of Professional Development proposed by L. Desimone*** [3] (Figure 1), recommended for use in all empirical causal studies of professional development. The model represents interactive, non-recursive relationships between critical characteristics of professional development, teachers' knowledge and beliefs, classroom practice and student outcomes.

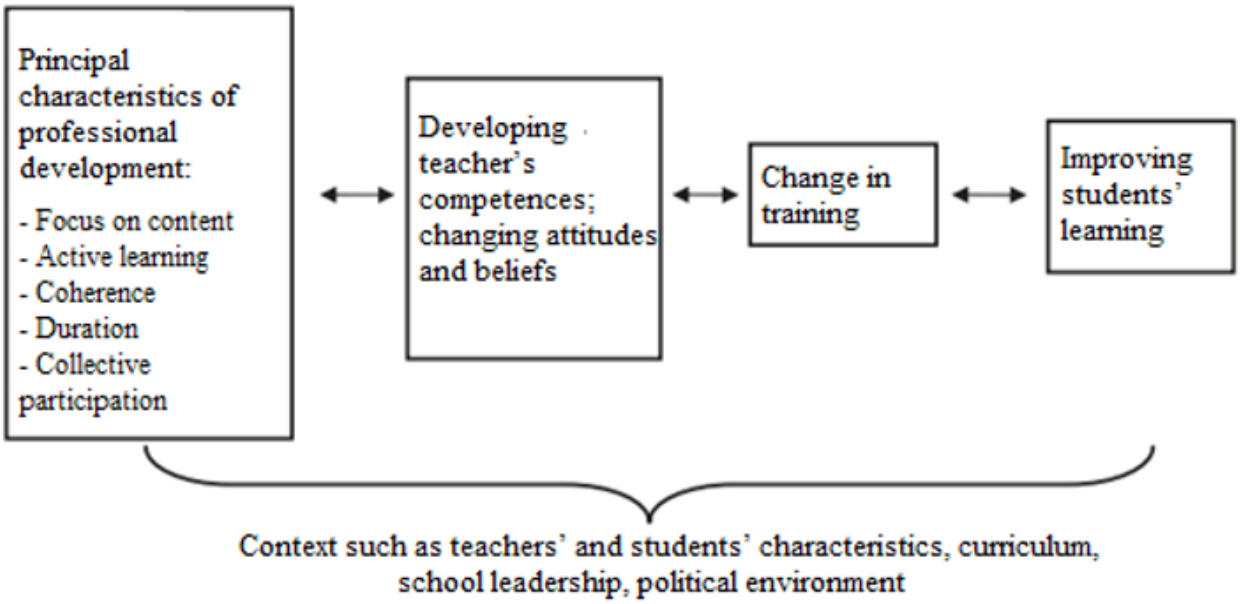

Figure 1. Basic Conceptual Framework Proposed for Studying Effects of Professional Development on Teachers and Students [3]

The figure illustrates how a basic theory of action on professional development generally unfolds through a succession of stages:

1. Teachers' participation in effective training programs;
2. Development of knowledge, skills and, eventually, change in professional beliefs;
3. Transfer of these acquisitions into teaching practice through adjustments to content and methodology;
4. Improvement of student learning outcomes as a result of pedagogical transformations.

The basic conceptual framework proposed by L. Desimone [3] represents a robust and empirically grounded theoretical scheme, intended to guide studies on the impact of professional development on teachers and, ultimately, on students. The fundamental characteristics of effective training - namely content relevance, active involvement, coherence, adequate duration and collective participation - directly influence the knowledge, skills, attitudes and values of teachers, generating changes in pedagogical practices and contributing to the improvement of learning outcomes, within a context determined by individual factors, curricular structure, institutional leadership and the political environment. The model brings a major methodological and theoretical value, providing a unified framework for testing causal relationships and for developing methods for rigorously measuring the effectiveness of training programs.

Referring to the conceptual framework proposed by L. Desimone (2009), the development of summative assessment competence in teachers in vocational-technical education can be guided by the following strategies:

1. ***Focus on Content.*** In this sense, training programs should integrate modules dedicated to modern summative assessment methodologies, such as standardized tests, practical tests, portfolios or integrated assessments. At the same time, assessment strategies must be adapted to the specifics of vocational-technical education, with an emphasis on practical competences and simulations of real situations. In addition, it is necessary to develop methodological guides and digital resources designed to support teachers in developing assessment items and calibrating scales.

2. ***Active Learning***. Training must include workshops and practical laboratories, in which teachers create, apply and analyze summative tests based on case studies or simulated situations, which would facilitate the exchange of experience and strengthen competences through professional collaboration. This process can be strengthened by practicing providing post-assessment feedback and using the results obtained to adjust teaching.

3. ***Duration.*** Instead of isolated interventions, it is recommended to implement modular, medium- and extended-term training that would favor immediate applicability in the classroom and continuous reflection on progress. Summative assessment should be conceived as a competence that is systematically strengthened within continuous development plans.

4. ***Coherence***. Teacher training should be aligned with educational policy documents, both the National Assessment Standards and the requirements of the National Qualifications Framework. In addition, the application of principles related to fairness, equity and transparency is fundamental to the validity of the assessment process.

5. ***Collective Participation.*** Inter-institutional projects, in which teachers collaborate to develop and validate summative assessment tools, can generate both standardization and innovation. Mentoring and peer review are also ways in which experienced teachers support the training of novice colleagues. In parallel, online platforms can facilitate the provision of mutual feedback and the continuous improvement of the tools used.

In this context, according to the framework proposed by L. Desimone, it is necessary to highlight *the impact on teachers and students*. Teachers gain confidence and professional competence in the design and application of summative assessments, which leads to rigorous and equitable teaching practice. Students, in turn, benefit from clear, objective and relevant assessments for the development of their professional careers. In addition, the summative assessment process becomes a tool through which the shared responsibility between teachers and students in relation to school progress and performance is strengthened.

Another perspective is found in ***the Interconnected Model of Professional Growth formulated by D. Clarke and H. Hollingsworth*** [2], which represents one of the most influential contemporary conceptual frameworks in the field of professional development of teachers. Designed in response to the limitations of traditional linear models, this model proposes a dynamic vision of professional change, recognizing the complexity, contextual nature and multidirectionality of the process.

The authors' approach is based on a solid theoretical foundation, built on the contributions of leading researchers, such as M. G. Fullan & S. Stiegelbauer [4] and T. R. Guskey [5]. D. Clarke and H. Hollingsworth [2], emphasize that professional development does not occur through a rigid sequence of stages, but through constant interactions between distinct domains of professional experience. These interactions are mediated by two key processes:

- *reflection* - critical analysis and reinterpretation of experiences and results;
- *enactment* - the transfer of new meanings and knowledge into effective practice.

The model includes four interdependent domains [2]:

1. *Personal domain* - includes the teacher's knowledge, beliefs, attitudes and disposition towards change. The transformations produced here are essential for supporting sustainable changes in practice.

2. *Practice domain* - brings together the strategies, methods and techniques used in the educational process. It is the space where change becomes tangible and innovations can be tested and adjusted.

3. *Consequences domain* - reflects the observable results of student learning, including academic performance, motivation, engagement and acquired competences. This domain provides essential data for validating and recalibrating pedagogical changes.

4. *External domain* - integrates external sources and factors, such as training programs, educational policies, material resources, professional networks and the support of the educational community.

The conceptual structure of the model, represented in figure 2, [2, p. 951] highlights the bidirectional connections between the domains, as well as the fundamental processes that support professional change.

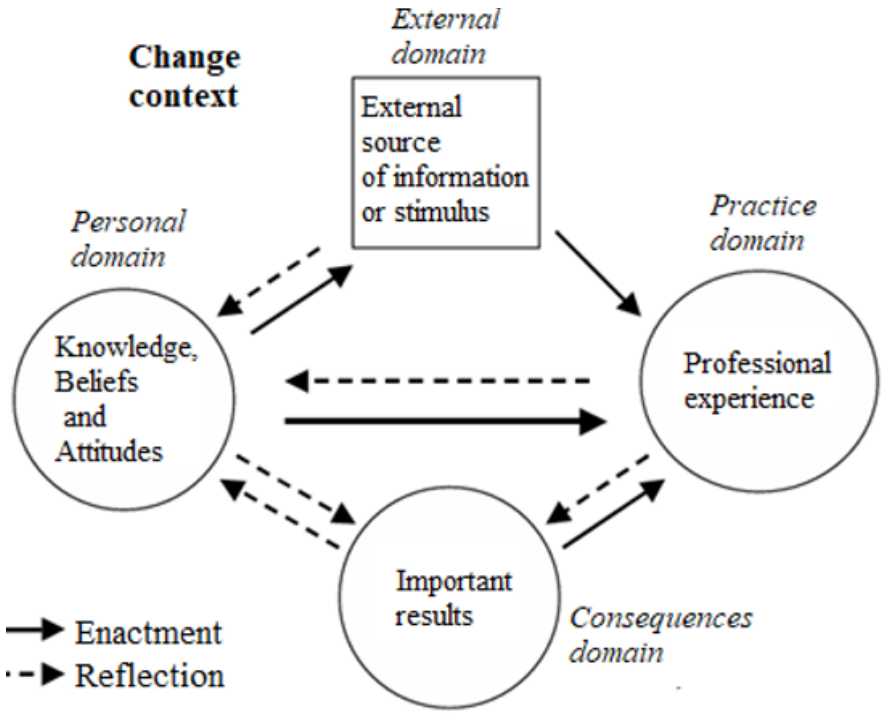

Figure 2. Interconnected Model of Professional Growth [2]

The model performs at least three major functions, each with distinct relevance in research and in the design of continuing education programs [2]:

1. *Analytical function* - constitutes a robust tool for classifying data on professional change of teachers, allowing:

- organizing information according to the four domains of change;
- identifying processes through which transformations in one domain correlate with changes in another domain;
- detecting structural patterns in the professional evolution of teachers.

2. *Predictive function* - facilitates the anticipation of possible sequences of change and development networks that may escape direct observation, supporting:

- formulating hypotheses regarding the mechanisms that can stimulate change;
- identifying innovative directions for professional development.

3. *Interrogative function* - generates relevant research and practice questions, such as:

- "What are the possible paths leading to changes in teachers' knowledge, skills, values or attitudes?"
- "How does the pre-existing theoretical framework affect the way in which classroom outcomes are interpreted?"
- "What outcomes of a new practice are perceived as significant in the specific context of the teacher?"
- "What are the institutional factors that may limit teachers' reflection on the effectiveness of their own practices?"

Through these functions, the model avoids both prescriptive rigidity and descriptive passivity, offering a flexible framework that is adaptable to various educational contexts.

A central element of the model is *the change paths*, which do not follow a single pattern, but are configured according to the context of each teacher. The initiation of change can start from the external domain (for example, participation in a training program), determining transformations in the personal domain, which, in turn, influence practice and, consequently, student outcomes.

Starting from the aspects presented above, we conclude that the interconnected model of professional growth constitutes a strategic framework for developing summative assessment competence in teachers in vocational-technical education.

The integration of this model involves:

- Strengthening the personal domain through training programs focused on deepening the concepts, methods and standards of summative assessment;
- Innovating the practical domain by applying summative assessment tools and methods adapted to the specifics of subjects and professions taught;
- Monitoring the consequences domain by analyzing and capitalizing on the real performances of students in order to optimize the instructional-educational process;
- Capitalizing on the external domain by establishing partnerships with the economic environment and using modern educational resources, including digital ones, to ensure the relevance of the assessment in relation to the requirements of the labor market.

Thus, the model developed by D. Clarke and H. Hollingsworth goes beyond the status of a simple explanatory scheme and constitutes an applicable operational framework, through which the process of developing summative assessment competence in TVE teachers is oriented towards coherence between personal development, innovations in summative assessment practice and improving student learning outcomes.

Another conceptual landmark is ***the Model for Effective Teacher Development developed by B. Joyce and B. Showers*** [7], which constitutes an essential pillar in the field of continuous teacher training. Its purpose is *to ensure the efficient transfer of knowledge and skills acquired in training programs to pedagogical practice*, so that the impact of training is visible and measurable in student progress.

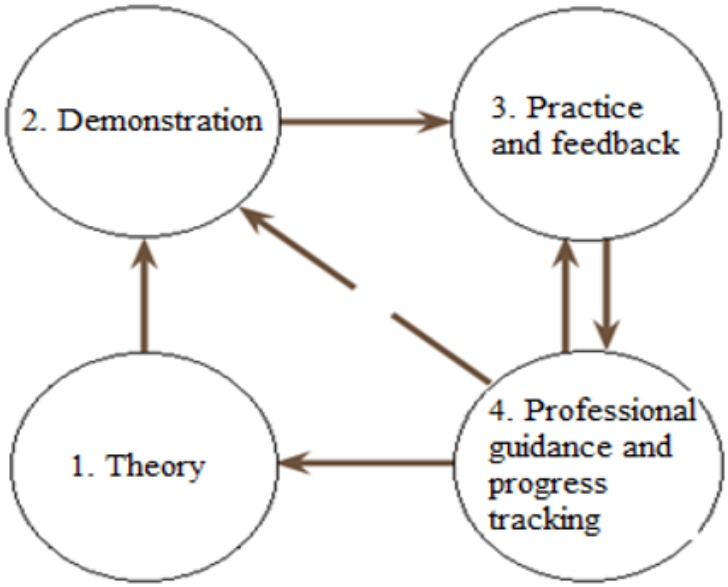

Figure 3. Model for Effective Professional Development elaborated by B. Joyce and B. Showers [7]

The authors identify four fundamental components [1], whose interaction decisively determines the efficiency of the training process and its applicability in real teaching situations. Figure 3 summarizes these components:

1. *Theory* – has the role of providing the conceptual foundation of teaching practices, by defining terms, explaining pedagogical principles and specifying the optimal conditions for implementing innovative strategies. It ensures a deep understanding of the pedagogical foundations and the optimal conditions for application [7].

2. *Demonstration* – involves observing an exemplary practice, through which the trainee can clarify his/her application mechanisms and acquire a concrete representation of the targeted strategies. It provides a concrete and replicable image of the targeted competence, supporting self-assessment [7].

3. *Practice and feedback* – provides the opportunity to practice the demonstrated strategies in a controlled setting, allowing for the receipt of constructive feedback and facilitating the progressive consolidation of skills. It allows the consolidation of skills in a protected context, with the possibility of immediate feedback [7].

4. *Professional guidance and progress tracking* – is based on continuous and reflective peer collaboration, which supports the sustainable integration of new strategies into current practice and fosters their permanent adjustment. It creates a peer framework for reflection, support and continuous adjustment for effective integration [7].

Although professional guidance and progress monitoring are central to the process, it is essential to emphasize that *all components of the model are indispensable for the acquisition of competence*. Without a combination of theoretical study, demonstrative observations, and opportunities for practice with feedback, the development of the skills necessary to apply new pedagogical strategies remains extremely limited. This approach does not imply that the components must be used in a fixed or completely separate sequence [6]. Teachers can initiate the implementation of a new method by analyzing the theoretical rationale, continuing with additional observations and practical exercises under controlled conditions, accompanied by constant feedback. Thus, the transfer of the strategy into the active teaching repertoire is achieved gradually, concomitant with continued participation in pedagogical training and reflection.

In the context of vocational-technical education, the development of teachers' competence in the field of summative assessment can be effectively addressed by applying the components of the Professional Development Model developed by B. Joyce and B. Showers. Based on the above, the following strategies are outlined:

1. *Theory,* which offers specialized modules that present the principles of summative assessment, the types of available tools and techniques adapted to the specifics of vocational-technical education. This stage includes the presentation of case studies and practical examples that illustrate how to apply summative assessment in real teaching contexts, as well as the development of digital resources and methodological guides designed to support teachers in the design of assessment tests.

2. *Demonstration,* consists of sessions in which experienced teachers apply summative assessments in front of colleagues, highlighting pedagogical reasoning, calibration of scales and interpretation of results. This stage allows for the observation of the integration of summative assessments with practical activities and professional competence objectives, providing a concrete model of good practices.

3. *Practice and feedback,* involves the effective practice by teachers of the design and application of assessment tools, both individually and in teams, with immediate feedback from mentors or experienced colleagues. This allows for rapid adjustment of strategies and development of competences through direct experience, reinforcing both theoretical knowledge and practical skills necessary for summative assessment.

4. Professional guidance and progress tracking, involves mentoring, pedagogical assistance and continuous reflection. More experienced teachers support teachers at the beginning of their careers, monitoring the application of assessments, providing personalized recommendations and facilitating the adjustment of teaching strategies according to the needs of students. Also, monitoring the impact of training on teachers' competencies and student performance, together with the analysis of assessment results, reinforces a culture of continuous improvement and shared responsibility in the educational process.

The model for effective professional development proposed by B. Joyce & B. Showers is distinguished by its robust and scientifically substantiated character, being applicable in diversified training contexts, such as continuing professional development. Thus, by capitalizing on each component within a coherent and systematic whole, the model provides a solid methodological framework for developing teachers' competence to effectively use summative assessment in vocational-technical education, implicitly contributing to increasing the quality of the educational act.

Conclusions

In summary, the analysis of the models presented above reveals that the development of summative assessment competence in teachers in vocational-technical education requires a complex approach, which combines the theoretical with the practical, individual and organizational dimensions. Although the models analyzed differ in their structure and proposed stages, they converge in supporting the idea that continuous training, peer support and critical reflection are fundamental pillars for strengthening summative assessment competence. In addition, several essential directions are outlined: the need to calibrate and harmonize training strategies with the realities of practice; the integration of mentoring processes and interprofessional collaboration as mechanisms to support development; the valorization of experience and critical reflection as ways to internalize change; as well as the creation of a flexible organizational framework, capable of encouraging innovation and adaptability.

In this sense, the models should not be viewed in isolation, but in a complementary relationship, offering theoretical and methodological benchmarks that, when adapted to the specifics of vocational-technical education, can underpin a coherent and sustainable approach to professional training. Thus, the development of summative assessment competence is not only a goal of continuous training, but also a premise for increasing the quality of the educational act and the professional prestige of the teaching staff.

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