

OPINION

by **Assoc. Prof. Eng. Katia Stoyanova, PhD** regarding a dissertation submitted for the award of the educational and scientific degree
„DOCTOR“

in Professional Field 1.2. Pedagogy, Doctoral Program 'Theory of Education and Didactics - Vocational Education'

Dissertation topic: ‘Adaptive Learning Models in Technical Vocational Education According to Students’ Professional Abilities and Interests

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This opinion has been prepared on the basis of the official documents related to the doctoral procedure of Iliyan Vasilev Vasilev, enrolled as a full-time PhD candidate in Professional Field 1.2. Pedagogy, Doctoral Program “Theory of Education and Didactics – Vocational Education” at the Department of Didactics. The procedure for admission to dissertation defense has been followed.

1. Data Summary of the Candidate’s Scientific Output and Activities

During the doctoral program, Iliyan Vasilev has produced the required publications corresponding to the topic of the dissertation. He has carried out teaching and research activities as an Assistant Professor at the Higher School of Telecommunications and Posts in Sofia. He has conducted seminars and laboratory classes for first- and second-year students in electrical engineering, electronics, and analog and digital circuit design.

2. Evaluation of the Scientific and Practical Results and Contributions of the Dissertation

The dissertation submitted for review comprises 219 standard printed pages (A4 format). It is structured as follows: introduction, four chapters, conclusion, contributions, references, and appendices (37 tables and 23 figures). The bibliography includes 247 sources in total (63 in Cyrillic and 184 in Latin script), as well as 10 internet sources.

In the **Introduction**, the author highlights the need for changes in education, particularly in vocational education and training, toward adaptive models. This necessity is determined by contemporary global trends, with a focus on the individual characteristics of students and their interests. The object, subject, main research goal, and corresponding sub-goals are formulated. The research hypothesis, which should be included at this point, is missing.

Chapter One: “Educational Models and Models of Vocational Training” includes five main sections in which various educational models by foreign and Bulgarian authors are examined and analyzed, contributing to the completeness of the theoretical aspect of the dissertation topic.

It is noticeable that different terminology is used concerning vocational education and training. It is necessary to adhere to the terminology defined in the Vocational Education and Training Act. In some places, abbreviations are written in full names; in others, they are not. A considerable number of grammatical errors are present. It is recommended that tables be formatted in a uniform manner.

Chapter Two: "Adaptive Learning Models in Vocational Education: Types and Conceptual Framework."

In it, the author of the dissertation presents five adaptive models as follows: "STRONG-VET," oriented toward working with talented students in vocational education, examined in detail theoretically, as well as its application in Bulgarian vocational education and training; the "LOOSE" model – a model for reorganizing students with persistent educational and behavioral deficits within the vocational secondary education system, The 'UM' model ('Model for enhancing the knowledge of high-achieving students and improving the progress of underperforming students in the main subjects of the State Matriculation Exams, specifically in mathematics and Bulgarian language and literature'), the author's adaptive model 'Vasilev' or 'Model for Maximum Utilization of Student Time within the Vocational Secondary Technical Education System During the Academic Year,' and an adaptive model for implementing a system for the Accreditation of Prior Learning (APL). Each model is described with its specific features, characteristics, and potential applications.

In this chapter, the five presented adaptive models are mainly presented in a theoretical context, examined in great detail.

Based on my personal experience in the system of vocational education and training for more than 40 years, I express my opinion in the context of the adaptive models presented in the dissertation. I believe that all students should be given an equal opportunities in the vocational education and training system, without being divided into "talented and gifted" and those with persistent educational and developmental deficits. In practice, teaching is traditionally carried out through the application of an individual and differentiated approach, oriented toward the student's personality, regardless of their potential abilities. Teachers use modern pedagogical techniques and technologies, and this approach does not hinder the development of students with higher cognitive potential. On the contrary, they are encouraged through solving tasks, developing projects, and other activities of a higher cognitive level.

Regarding the other students, their individual abilities are utilized through the application of various methods and tools, selected at the teacher's discretion, which also leads to progress in their development. In this sense, there are practically no limitations observed in the development of either group of students.

Outside of the mandatory classes, students who are willing are offered additional opportunities to expand their knowledge and skills through individual or group work, including in interest-based groups. It should also be noted that modular learning has a long-standing tradition in the Bulgarian vocational education and training system, especially in the preparation of personnel for various economic sectors, as well as a component of the dual education system. This model was successfully applied as early as the 1980s under the name 'Educational-Production Complex (EPC),' which confirms its practical effectiveness and sustainability.

Chapter Three: "Empirical Study" begins with the presentation of a conceptual framework and research design, which is based on the theoretical consideration of the adaptive model "STRONG" described in Chapter Two. The author formulates the main objective of the empirical study and the corresponding tasks. It is important to note here that there should be consistency with the main objective of the study, as presented in the introduction of the dissertation.

In this chapter on the specific study are included: a questionnaire designed for students (1027 students), a survey form (63 teachers of theory and practice from the vocational education and training system), as well as an expert form completed by 10 experts from academic circles were used. After their testing and the corresponding statistical processing, the results obtained are analyzed.

What stands out is the many details from a theoretical perspective, which I believe are not necessary in this chapter and in this volume.

Chapter Four - "Macroeconomic Analysis of the Environment for the Application of the STRONG Model" - the author has conducted an analysis of the impact of the STRONG model in the context of labor productivity, as well as the trends in the labor market in Bulgaria. It also presents the relationship between vocational education and training, overall factor productivity, and quality. Following are conclusions based on the conducted analysis and the direction regarding the need for institutional changes in vocational education and training. The problems facing Bulgarian vocational education and training are specified, which mainly relate to ensuring its quality in various aspects. The author has described the sequential steps on how the STRONG model could support vocational education and training.

This is followed by a conclusion specifying the changes that need to be made in both regulatory and organizational terms, after which the author presents the contributions of their dissertation work in both theoretical and practical-applied aspects, followed by the references and appendices.

Contributions:

The main contributions of the dissertation submitted for my review are primarily in the very detailed theoretical investigation of the issues related to the dissertation topic and the developed research instruments. The proposed model could be used to complement already existing practices.

The presented abstract reflects the content of the dissertation, and the literature used demonstrates the doctoral candidate's desire for a broader scope of the subject matter.


Recommendations:

My main recommendation to the author is aimed at the possibility of providing more specificity regarding the issues examined.

Conclusion:

The author of the dissertation demonstrates theoretical competence and the skills of a purposeful and motivated researcher. This gives me grounds to recommend to the esteemed academic jury to award Ilian Vasilev Vasilev the educational and scientific degree of 'Doctor' (PhD) in Professional Field 1.2. Pedagogy, Doctoral Program 'Theory of Education and Didactics - Vocational Education'.

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Prepared the opinion: 
(Assoc. Prof. Eng. Katia Stoyanova, PhD)