

# Use of Pedagogical Diagnostic Methods in Secondary Education

Shakhzoda Abdullaevna Abdullaeva, Ismigul Berdimurodovna Khushmurodova<sup>—</sup>

**Abstract:** This article covers the issues of diagnosing the level of development of competencies of teachers of secondary schools, as well as the level of formation of key and subject-related competencies of students in the field of continuing education.

**Keywords:** pedagogical diagnostics, competences, methods, principles, tests, comparison, forecast, interpretation.

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## I. INTRODUCTION

In developed countries, such as the United States, Britain, Japan, Germany, China, Singapore, South Korea, there is a tendency to expand research to improve the use of pedagogical diagnostics to facilitate the learning process. In the modern context, when education is assessed as the most unique capital in developed countries, all stages of continuing education, including general secondary education, have been defined as "improving the process and tools for assessing the quality of education, introducing mechanisms to determine the results achieved."

Recognized in the world and in our country as a key force for sustainable development, it is especially important to create opportunities for students to receive quality education throughout their lives by reorganizing the educational process based on competent approaches and increasing the effectiveness of pedagogical diagnostic methods. This shows that the multifaceted and complex nature of the problem of forming a comprehensively mature, perfect person indicates the importance of the problem of pedagogical diagnostics for modern pedagogical theory and practice. This task is carried out through the teacher's skills, his maturity, deep professional knowledge, skills and qualifications, special knowledge and creates the need for the introduction of mechanisms to solve didactic and educational tasks through pedagogical diagnostics.

## II. MATERIALS AND METHODS

From the first days of independence, reforms in the continuing education system made it possible to organize and improve the mechanisms of didactic processes in a new context, improve the quality and effectiveness of education, and organize modernized education based on humane and democratic principles. At present, the system of general secondary education needs to improve the mechanisms for diagnosing and correcting deficiencies in didactic and educational processes in the pedagogical activity of highly qualified, creative and entrepreneurial personnel, capable of independently solving professional and life problems, capable of quickly adapting to new methods and technologies. Therefore, research is being conducted to educate teachers on the content of education on a scientific basis, to develop its organizational and technological base, to develop future development trends. At the same time, it is necessary to conduct targeted research to increase the ability of teachers working in the system of general secondary education to use pedagogical diagnostics.

Competencies should be diagnosed in teachers who are subjects of education: professional, personal, general, special; pedagogical features: mind, diligence, initiative, patriotism, creativity, dedication, humanity, leadership, etc. social activity: strong civic convictions, political activity, breadth of scientific and practical worldview,

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<sup>—</sup> Abdullaeva Sh.A., Professor of Tashkent State Pedagogical University named after Nizami.  
Khushmurodova I.B., Independent researcher of the Uzbek Research Institute of Pedagogical Sciences named after Qori Niyazi, Ph.D.

development of propaganda and propaganda skills ”[4].

However, mechanisms have not yet been created for diagnosing the levels of formation of basic and science-related competencies, which are developed by teachers of secondary schools and developed by schoolchildren. In this regard, the period requires the development of diagnostic methods for the level of formation of basic and scientific competencies in accordance with the age characteristics of teachers who are the subject of the pedagogical process, based on the priorities of professional, personal, cultural, special and continuing education, the personality and interests of students.

“Improving the use of pedagogical diagnostics in general secondary education: diagnostic methods: tests, comparison, comparison, forecasting, interpretation; principles: reliability, accuracy, objectivity, reliability, etc. ”[5, p. 67]. In this regard, analyzing the literature, we described the methods of pedagogical diagnostics from the point of view of the author as follows and divided them into classes (Table 1).

**Table 1 Classification of the main methods and principles of pedagogical diagnostics and their brief description (author's position)**

№	classification of pedagogical diagnostic methods	description of pedagogical diagnostic methods	principles of pedagogical diagnostics
1	<p style="text-align: center;"><b>TEST:</b></p> <p>Traditional tests: 1) Norm-oriented (identifying, auxiliary, alternative);                      2) Criteria-oriented (based on choice, based on comparison, mixed, ordering, etc.)</p> <p>Unconventional tests:                      A) Prediction                      B) Diagnostic                      C) Feedback</p> <p>In the pedagogical team (individual, group, mixed)</p>	<p>As a traditional concept: a set of standardized tasks.</p> <p>As an unconventional concept: a measure designed to ensure the objectivity of diagnosed pedagogical processes, to obtain a large amount of information in a short time, to achieve reliability, to ensure representativeness</p>	<p>Validity (lat. “Based on validus”)                      Front-line (public), individual, collective application</p>
2	<p style="text-align: center;"><b>OBSERVATION</b></p>	<p>Studying a famous pedagogical event based on scientifically based facts</p>	
	<p style="text-align: center;"><b>Scope: individual, group, collective.</b></p>	<p>Measurement of real pedagogical events based on digital systems, the study of the variability of the qualitative characteristics of empirical data in relation to the quantitative measurement</p>	<p><b>SCALE -</b>                      (in English: “scaling” - “Scaling”) unit of measure)                      1) a researcher of the external structure of a pedagogical phenomenon based on a digital system (based</p>

			<p>on assessment)</p> <p>2) the study of the internal structure of the pedagogical phenomenon on the basis of a digital system (based on values, attitudes)</p>
1	<p>Predictions (Forecast)</p> <p>Application: in the teaching staff (individual, group, mixed)</p>	<p>Scientifically-based model.</p> <p>Development trends and prospects of educational processes.</p> <p>Scientifically substantiate, predict and predict future plans based on scientific evidence. It is also appreciated as one of the main manifestations of pedagogical activity.</p>	
2	<p>COMPARISON (in order)</p> <p>Individual, collective, group, mixed</p>	<p>Have reliable theoretical knowledge about the object, subject, studied pedagogical phenomena that determine their relevance to real life. For example, a comparison of the level of knowledge, skills, qualifications, competencies, skills, education. Or a method designed to determine the level of formation of spiritual and moral qualities: patriotism, humanity, tolerance, humility, etc.</p>	
3		<p>A pedagogical measure designed to ensure the stability of repetitive results in the same pedagogical conditions of the additional diagnostic period</p>	<p>Definition</p> <p>Group, individual, collective,</p>
4	<p>interpretation (Lat. "Interpretation")</p> <p>Scope: individual, mixed, collective.</p>	<p>The study, identification of diagnosed pedagogical phenomena on the basis of pedagogical ideas, theories, views (for example, on the basis of cognitive, gestaltological, axiological pedagogical theories, study, interpretation, identification).</p>	

		A pedagogical measure to determine the location, rating, location of diagnosed pedagogical phenomena in a specific order, process dynamics	MIXED Combined mixed, individual, collective
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If there are complex changes in general secondary education (changes in the conditions of education, curricula and programs, teaching methods and technologies, relationships between subjects of education at the level of an educational institution), an assessment of the results of these reforms should be used. However, this need should not negate the structural similarity (in terms of age, level of education) of the control and experimental groups in the two compared periods, i.e. it should be aimed at ensuring compliance with the necessary requirements for pedagogical experiments.

### III. EXPERIMENTAL RESULTS

In order to identify shortcomings in the pedagogical process, eliminate them in a timely manner, and eliminate knowledge gaps in students, pedagogical diagnostics was carried out in the 2017-2018 academic year among students studying in professional colleges and academic lyceums of the republic in the following areas (table 2).

**Table 2. Directions of study, the names of small specialties in which students took part in the experiment**

	Route name	specialty	Teacher	Diagnostic methods and principles
	Foreign languages	Work with foreign text (typing on a computer)	computer science	Comparison, prediction
		Travel Agent (Tourism Specialist)	story	Observation, comparative analysis
		Permission Inspector	story	Comparison
	Exact sciences (economics)	Technical programmer	Informatic	Comparative analysis
		Database operator	Informatic	Comparative analysis
	Exact sciences (technical)	Physics Assistant	physical	predict
		Technical programmer	Informatic	interpretation
		Chemical laboratory		tests
		Dizenfikator		Reviews, tests
		Technical chemist	chemistry	forecast
	Natural Sciences	Permission Inspector	story	Comparison
		Clerk	story	analysis

		Executive Secretary	story	analysis
		the acquisition		Comparison
		librarian		Comparison, tests

In total, 674 students of academic lyceums and professional colleges from Karshi, Samarkand and Navoi (the 2016-2017 academic year) took part in experimental diagnostics. Diagnostic tasks, consisting of several stages, were presented in order to diagnose their knowledge in the field of education. For example, in professional colleges and academic lyceums in the field of foreign education in small specialties: first-year students working with foreign text (typing on a computer), several options were offered:

1. Read the English text carefully.
2. Translate the text.
3. Place the text graphically on the computer in the cells of the "Insert" view.
4. What skills did you acquire as a result of completing the assignment?
5. What problems did you encounter while completing the assignment?

Submitted Text:

**STEPHEN KING**

Horror writer and producer.

Stephen Edwin King (born September 21, 1947) is an American author of horror, supernatural fiction, suspense, science fiction and fantasy. His books have sold more than 350 million copies, many of which have been adapted into feature films, miniseries, television series, and comic books. King has published 58 novels, including seven under the pen name Richard Bachman, and six non-fiction books. He has written around 200 short stories, most of which have been published in book collections.

Success:

In the late 1970s and early 1980s, Stephen King published the books *Rage*, *Long Walk*, *Road Works*, *Running Man*, and *Losing Weight* under the pseudonym of Richard Bachman. The idea was to check whether he could repeat his success again, as he feared that his success was an accident, a coincidence. There is another explanation, which is that the standards of publication of that time allowed only one book per year. The name Bachman was not taken by chance; he is a fan of the musical group "Bachman-Turner Overdrive"

Text translated by students:

**Stephen Edwin King**

Stephen Edwin King (born September 21, 1947 in Portland, Maine) is an American writer. He worked in various genres of literature: thrillers, horror stories, fiction, fantasy, mysticism, drama and much more. His books have sold over 350 million copies. Known as the "King of Horrors." Based on the plots of his books, feature films and comics were shot. King has published 56 novels, 5 non-fiction books, 7 of which were published under the pseudonym Richard Bachmann. Stephen King's latest book, *Outsider*, was published on May 23, 2018.

He is the author of almost 200 stories, many of his works are included in the author's program. It is clear that events in the work took place in his native state - Mende.

Success:

In the late 1970s and early 1980s, Stephen King published stories under the pseudonym Richard Bachmann, such as *Figon*, *Long Journey*, *Roadworks*, *Running Man*, and *The Weak*. By publishing these works, the author doubted his success among a wide audience of readers, believing that his previous popularity depended on chance.

However, his work, published under the pseudonym “Bachmann”, brought him more popularity than expected. The author's use of this pseudonym indicates his high devotion to the Bachman-Turner Overdrive group [5, p. 78].

“+” (Familiar information in the text)	“-” (information in the text is unknown)	“?” - (based on the information in the text, a question arose)	“!” - (remember some pieces of information in the text)
Horror style writer (horror story: events involving mythological characters such as ghosts, vampires, zombies, devils). Winner of many contests.	Nickname "Richard Bachmann". I am making music. Most of the events in the work of Stephen King take place in the state where he was born and raised.	Why didn't he publish his books under his name?	The author of books that readers like. Based on these books, feature films were made.

The table shows that 86% of students working with a foreign text (typing on a computer) translated the text from English into Uzbek during a didactic diagnostic task. But ask them: “What skills did you have as a result of the assignment?” 71% found it difficult to answer the question. “What difficulties did you encounter while completing the assignment?” to the question “Terrible” style, which is understood by “mythological characters”, “We first hear about Stephen King”, “We did not understand the meaning of the word“ outsider”. Thus, the gaps in the receipt of new information by students were filled by an experimental teacher, and the meaning of new words was described with the help of a teacher when filling out a table based on an insert, and the information received by students in the text was expanded based on additional information.

Diagnostic methods consisting of tasks of the same type are useful if they are carried out several times in experimental groups. The teacher who experimented with diagnostics in this new context was able to draw the following conclusions:

- 1) in the field of foreign education in small colleges, professional colleges and academic lyceums: 1st year students working with foreign texts (typing on a computer) are required to develop the skills of accurate translation of the text, even if they have the ability to translate English texts into Uzbek tongue;
- 2) 64.7% of students who specialize in computer literacy fulfilled the requirements established in SST computer literacy, but typed based on spelling errors;
- 3) 38% of students were not interested in learning the meaning of new words found in the field of literature. Similarly, a travel agent (travel specialist), inspector of a permit office; in the field of specific sciences: technical programmer, database operator, physical laboratory assistant; in the field of natural sciences: chemical laboratory assistant, disenter, technical chemist; in the field of social sciences: pedagogical diagnostics was carried out in training groups of specialists, such as an inspector of a permission bureau, clerk, archivist, librarian. The purpose of student diagnostics is to develop a fundamentally new structure for the training of these specialists in professional colleges and academic lyceums - a creative approach, creative activity, a technological and methodological approach to innovation, innovative thinking, behavioral culture.

#### IV. CONCLUSION

Thus, the importance of methods, techniques, guidelines in improving the mechanisms for the use of pedagogical diagnostics in the process of general secondary education. Therefore, to improve the mechanisms for

the use of pedagogical diagnostics, it is necessary to develop methodological recommendations for conducting PD.

Guidelines to be developed include:

- instructions for the purpose and objectives of the PD;
- documents determining the procedure for the implementation of PD.
- Measurement of satisfaction of internal and external consumers - students, customers, employees (teachers), society and others;
- Evaluation of the quality of knowledge, skills and abilities acquired by students, including intermediate and final control procedures.

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