

# Assessment literate teachers in Slovakia: the requirements for assessment literacy of teachers

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## Abstract

The general aim of the educational process is to continuously support and guide the learner to knowledge and to provide him with the best possible conditions and diversity of strategies to acquire the necessary competencies, as well as to create learning habits that are the basis of the lifelong learning. However, this has an expectation of the competence of teachers in the field of assessment too. The question arises as to whether teachers are prepared for a given challenge, whether they have adequate assessment literacy to perform their task at a given professional level. In the paper, based on a theoretical analysis of literary sources, we characterize the concept of assessment literacy, present the results of selected foreign studies, which focus on the analysis of teacher competence in the field of assessment and the development of assessment literacy in the training of future teachers. At the same time, we characterize the requirements for assessment literacy in the case of primary and secondary school teachers in Slovakia.

### Keywords:

Assessment literacy  
Classroom assessment  
Competencies  
Teacher training

## 1 Introduction

“The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.” – said Alvin Toffler, writer and futurist at Fortune Magazine.

In the late 20th century, Richard Riley - the former Secretary of Education for the Clinton administration - criticized the education system and its educational concept, and also pointed out that we prepare students for jobs and technologies do not exist yet ... and solve problems we do not even know about (Gunderson, Jones, & Scanland, 2004). At the time, the problem may have been too distant, and his ideas seemed to be futuristic, but for the current education, this critique is terribly topical when predicting future professions by 2050 (Figure 1).

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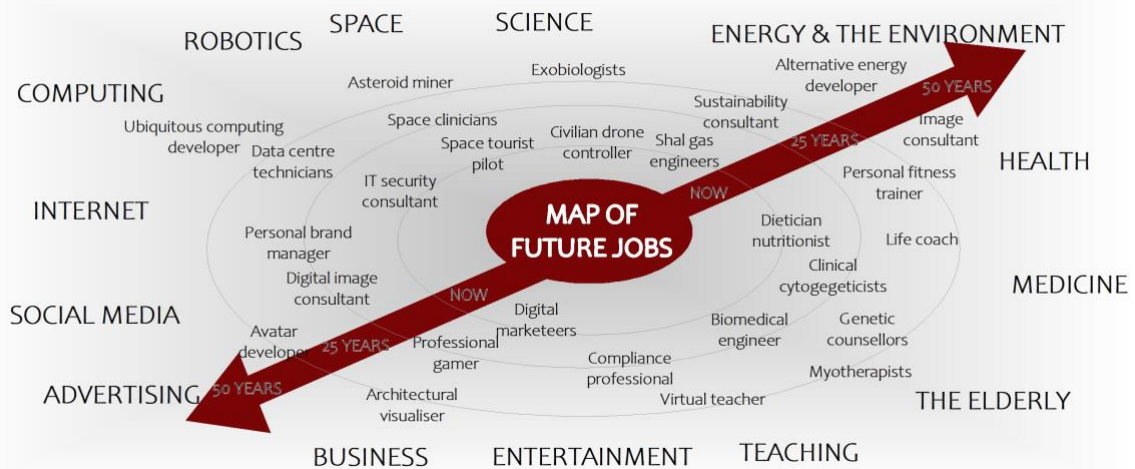


Fig. 1: Future professions by 2050 (Source: <https://www.kent.ac.uk/ces/Choosing/future-jobs.html>).

Not only pedagogical analysts and didactics of the educational process and technology are sensitive to urgent changes in the educational process, but also representatives of the World Economic Forum, which point to the need for skills (World Economic Forum, 2018).

According to Andreas Schleicher (2018) - director of Education and Skills and Personal Adviser to the OECD Secretary-General for Education - the global economy is no longer paying for the knowledge which is available by Google.

The abilities like thinking, problem-solving or expressing real problems in a mathematical context – or in other words, skills and abilities that are more difficult to measure but more important for today's knowledge society – pay off. As a result, the labour market value of routine cognitive knowledge and skills is reduced because it is easy to test/control and knowledge can be easily digitized and automatized. (Robinson, & Aronica, 2018).

The report on future jobs in 2018 – from the perspective of Central and Eastern Europe (e.g. I am from Slovakia) reflects the need for the following skills:

- Creativity, originality, and initiative
- Analytical thinking and innovation
- Active education and learning strategies
- Technological design and programming
- Emotional intelligence
- Critical thinking and analysis
- Leadership and social impact
- Comprehensive problem solving
- System analysis and evaluation
- Justification, problem solving and brainstorming (World Economic Forum, 2018).

The described changes in the need for skills also require changes in their assessment. All processes of human activity are closely related to the natural need for evaluation and evaluation, just as the educational process cannot be envisaged without an appropriate and usable evaluation.

## 2 Assessment literacy of teachers

Evaluation of student outcomes is one of the most important aspects of pedagogical work and the responsibilities of teachers. It is estimated that teachers spend up to 50 percent of their time on assessment-related activities (Plake, 1993), (Stiggins, 1999). Nevertheless, classroom assessment and assessment activity, regardless of time devoted, is an essential teaching function because not only does it contribute to all other teaching tasks (Brookhart, 1999a) (Brookhart, 1999b), but influences further decisions and their outcomes in the educational process. For these reasons, the information obtained from class evaluations must be meaningful and accurate; i.e., the information must be valid and reliable (Brookhart, 1999a).

According to Stiggins (1999), the quality of any class-hour classroom instruction depends on the quality of the assessment strategies applied. The assessment process can only be effective and prosperous for the learner if it is pedagogically mediated at a high level (Stiggins, 2012).

A fundamental requirement for qualitative teaching practice is (as it is also essential for the assessment process) that in order to be able to make progress in a certain area of life, to make progress in the profession and to achieve progress, we need to have clearly defined goals, requirements to meet goals and a suitable apparatus for reflection.

In foreign literature, the concept of teacher evaluation literacy is gradually being formulated and closely intertwined with trends in the field of school evaluation, which have gradually emerged in the last 25 years and have influenced the pedagogical community.

Focusing on the importance of assessment in the educational process and its aspects by emphasizing classroom assessment through formative assessment (FA) strategies in school practice (Stiggins, 2010), (William, 2010 ) as well as in terms of the training and readiness of future teachers (Volante & Fazio, 2007), (McMillan, Andrade & Heritage, 2017) literacy as well as an increase in the emergence of various variable definitions (Pastore & Andrade, 2019).

In the following, we are going to present how the pedagogical concept of evaluation literacy of teachers was conceptualized over time (see Table 1).

Authors	Definition/description
Stiggins (1995)	Assessment literate teachers are able to distinguish between correct and incorrect assessments, and as experts who are not afraid of the "mysterious and intimidating" aspects of assessment.
Stiggins (1999)	Assessment literate teachers: 1. Connect assessments to clear purposes 2. Clarify achievement expectations 3. Apply proper assessment methods 4. Develop quality assessment exercises and scoring criteria and sampling appropriately 5. Avoid bias in assessment 6. Communicate effectively about student achievement 7. Use assessment as an instructional intervention.
Fullan&Watson (2000)	The capacity of teachers – alone or together – (a) to examine and accurately understand student work and performance data, and, correspondingly, (b) to develop classroom and school plans to alter conditions necessary to achieve better results.
Shepard (2000)	Assessment literate teachers must be able to design and administer more than summative end-of-unit tests and exams if they are to realize improvements in schools.
McMillan (2001)	Teachers with a solid background in assessment are well-positioned to integrate assessment with instruction so that they utilize appropriate forms of teaching.
Paterno (2001)	The possession of knowledge about the basic principles of sound assessment practice, including terminology, the development and use of assessment methodologies and techniques, familiarity with standards of quality in assessment [...] and familiarity with alternatives to traditional measurements of learning.
Webb (2002)	The knowledge of means for assessing what students know and can do, how to interpret the results from these assessments, and how to apply these results to improve student learning and program effectiveness
Mertler (2003)	Assessment literate educators recognize sound assessment, evaluation, communication practices; they understand which assessment methods to use to gather dependable information and student achievement, communicate assessment results effectively, whether using report card grades, test scores, portfolios, or conferences, can use assessment to maximize student

	motivation and learning by involving students as full partners in assessment, record keeping, and communication
Mertler & Campbell (2005)	Assessing literate teachers recognize reliable assessment procedures, analysis of assessment results and their interpretation and communication: <ul style="list-style-type: none"> <li>• have knowledge and skills regarding the variability of assessment methods that are adequate to gather evidence of learning outcomes;</li> <li>• are able to use assessment strategies to motivate pupils and increase the effectiveness of the learning process; are able to engage students in the assessment process and take them as full partners in the record-keeping process as well as in the communication of assessment results</li> </ul>
Newfields, T. (2006)	Instead of conceptualizing assessment literacy solely as a set of given skills, perhaps we should also focus on the conditions needed to foster such skills. [...] For students, literacy assessment means knowing how to give good exams. For teachers, this is linked to the ability to evaluate students ethically and objectively, and from the point of view of professional test developers, every aspect of their work depends on assessment literacy.)
DeLuca & Klinger (2010)	The understanding and appropriate use of assessment practices along with the knowledge of the theoretical and philosophical underpinnings in the measurement of students' learning
Chappuis et al. (2012)	The knowledge and skills needed to collect data on pupils performance and learning outcomes and to make effective use of the information obtained from the process of analyzing these data, while implementing the assessment result in a targeted way to improve outcomes and to achieve pupils' learning progress.
Ashraf & Zolfaghari (2018)	Teacher assessment literacy is a key bond of connection between assessment quality and student outcomes.
Pastore & Andarde (2019)	Assessment literacy is an adaptive competence that requires the ability to apply knowledge and skills in flexible, creative, and responsive ways in different educational contexts. [...] Assessment literacy enables teachers to use and integrate assessment effectively into education.

**Table 2:** Definitions and components of assessment literacy by different authors.

According to Gotch and French (2014) literacy assessment is a complex system of knowledge, skills and attitude which are consistent with well-defined learning objectives; interpreting student performance outcomes; using different forms, strategies and evaluation tools depending on external factors; proper administration of evidence and evaluation results; communicating the results of the evaluation to participants; carrying out the legal and ethical evaluation process. In this area the teachers with an adequate background, are well placed to professionally integrate assessment into education (McMillan, 2000).

Within assessment literacy, it is important to examine the dilemmatic issues for the assessment professional: whether he or she is and wants to be a reflexive professional, whether he knows and can be a reflexive professional. These questions create three dimensions of the teacher's competence in reflexive teaching.

- personality dimension - which presupposes that the teacher wants and has the will to obtain, analyze and evaluate information to improve their pedagogical work of the subject commission, whether the whole school. This dimension examines whether the teacher wants to be a reflexive professional.
- professional dimension - assumes that the teacher knows and can use, create, and develop assessment and pedagogical diagnostic tools - diagnostic methods and can use their results to improve and develop pedagogical activities - This dimension reflects whether the teacher knows and can be a reflective professional.
- ethical dimension - assumes that the teacher is aware of ethical principles and standards in the use of information in education, is objective in its analysis and fair in its evaluation. This dimension provides an answer to whether a teacher can be considered a reflective professional (Kasáčová, 2002).

### 3 Training of future teachers in the field of class-hour assessment

In the late 1990s, Stiggins emphasized that in order a teacher to be prepared to integrate assessment literacy into his teaching practice, he must become familiar with the theory and practice of school assessment, especially in his undergraduate teacher training (Stiggins, 1999). DeLuca and Klinger (2010) also point out that the training of future teachers does not ensure the acquisition of sufficient theoretical knowledge in the field of school assessment, nor the possibility of modelling different assessment strategies for teacher candidates (DeLuca & Klinger, 2010).

Several authors see a fundamental problem in the inappropriate structure and content of the curriculum: Otero (2006) and Stiggins (2007) pointed out in their studies that teacher training curricula provide little knowledge and guidance for class-hour assessment. Taras (2007) recognizes that conservative curricula hinder the effective integration of formative assessment, given that summative assessment also dominates higher education.

The results of the Volante and Fazio (2007) research show that future teachers focused their answers on summative assessment activities rather than the assessment of the learning process and much less on formative assessment activities (Volante & Fazio, 2007). Not surprisingly, both teachers and practitioners attach more importance to summative assessment because they are used for classification purposes (Stobart, 2008).

Volante and Fazio (2007) also point out that if teacher education programs run specific courses aimed at developing assessment literacy, this is not a guarantee that participants acquire an adequate level of knowledge in the field of assessment. The results of a qualitative study suggest that future teachers are ill-prepared to assess their students' learning process (MacLellan, 2004) and that there are also significant differences in their knowledge and skills.

MacLellan (2004) found in his research that future teachers have limited knowledge in certain areas of assessment theory. He pointed out mainly the shortcomings in the interpretation of the pedagogical goals of formative and summative evaluation. Earl (2006) pointed out that if teacher candidates did not gain metacognitive assessment practice during their studies and if teachers did not have the basic skills and assessment attitudes for the teaching profession, they would have limited ability to use assessment to support their students' learning process.

The research shows that teachers in practice have heard of the terms: assessment for learning, assessment as learning, assessment of learning, but do not know and cannot explain their meaning (Szarka, Brestenská & Ganajová, 2019), the research is also based on the fact that the interest in tools of formative assessment by teachers is low (Orosová, Ganajová, Szarka & Babinčáková, 2019, Matějka & Miština, 2022) It is possible to eliminate this situation in relation to teachers by preparing practical training for teachers to develop assessment literacy, emphasis on formative assessment in their subject and implementation of formative assessment in undergraduate preparation of students of pedagogical faculties.

#### 3.1 Standards for assessing literacy of teachers in the Slovak Republic

As is the case in everywhere, where there is classroom assessment, it is fundamentally emphasized that the goals and expectations for the learning process and the progress of the learner must be clearly stated in advance. It is similar with the expectations of teachers' literacy assessment. In order for a teacher to be able to develop in his or her professional career, the teacher needs to have milestones set with the requirements for achieving competence in a given field, and on the other hand, the opportunity to develop in further teacher education.

Requirements for knowledge, skills and competence of pedagogical staff members in Slovakia are specified and defined in the instruction of the Minister of Education, Science, Research and Sport of the Slovak Republic No. 39/2017 (MŠVVaŠ SR, 2017). Professional standards characterize competence profiles for individual categories and subcategories of pedagogical staff members and professional staff members of schools and school facilities teacher competence profile according to different areas, as well as in terms of evaluation of the course and results of teaching and learning, which represent the standards of teacher literacy in Slovakia. In particular, there are no standards of literacy assessment for teachers in Slovakia.

These standards are expected to gradually acquire literacy assessment by meeting specified requirements and achieving different levels of professional growth, but the precondition for entering a higher professional level is not ensured by sufficient teacher training in all areas of in-service teacher training, i.e., it is not given that all areas of the competency profile are developed evenly in pre-certification teacher training. We believe that if a teacher acquires basic knowledge and skills of pedagogical research in his undergraduate study, we can much more likely expect his active pedagogical-diagnostic attitude within his pedagogical practice.

Therefore, we consider it important that future teachers, as part of their undergraduate studies, have the opportunity to acquire the knowledge and skills necessary for literacy assessment which is necessary to start their teaching profession.

### 3.2 Model of the framework of teacher literacy assessment standards

In the following section, we present a model framework for literacy assessment standards for future teacher candidates. We understand the framework of teacher literacy assessment in the system of knowledge, skills and attitudes.

The future teacher is expected to have the philosophical and methodological knowledge of assessment, to know the concept of reflective and self-regulatory learning; is able to think in different taxonomic systems of forms and use different types of evaluation and characterize their psycho-didactic aspects; is able to characterize the attributes of summative and formative evaluation, knew various strategies and tools of summative and formative evaluation and has the theoretical and methodological basis for their application in practice. The teacher candidate should have information on school assessment legislation and methodological guidelines regarding the assessment and classification of pupils.

We believe that if a teacher acquires basic knowledge of pedagogical research in his undergraduate study, we can much more likely expect his active pedagogical-diagnostic attitude within his pedagogical practice. Therefore, it is essential that expectations of knowledge in the field of pedagogical diagnostics and pedagogical research appear in the standards.

Assumptions for the skills of future teachers can be characterized in three aspects of the reflexive role of the teacher in the classroom:

- finding out where the pupil is in his/her learning process;
- where the student is heading;
- how the student gets there (Szarka, 2017).

Based on the classroom reflective tasks, future teachers should be prepared to:

- set criteria for continuous assessment and for student learning outcomes;
- reflect on the actual learning process and compare it with the projected process, based on which to take corrective actions;
- evaluate the fulfilment of goals according to the set criteria of a successful student with regard to their developmental and individual differences and possibilities;
- use different types, forms and reliable tools of classroom assessment, implement self-reflection, peer and group assessment of students (cooperative methods) in accordance with the goals, content and tasks;
- provide students with regular ongoing feedback to improve their performance and behaviour and evaluate its effectiveness;
- on the basis of continuous assessment and testing to provide students with a reliable overall assessment of their level of knowledge, skills and behaviour;
- use the results of student assessment and teaching evaluation for further planning of educational activities;
- apply the tools of self-regulatory learning, metacognition and metacognitive assessment;
- involve their students into the assessment process.

The expectation of teachers to know and use different assessment strategies and tools, especially formative or developing assessment, in this model forms only a small segment of the teacher's assessment literacy, but they are essential elements of his classroom learning management. They play an essential role in the success of the learning process.

Formative assessment focuses primarily on the quality of the gained knowledge, with students working on goal-oriented tasks and assignments that require them to formulate their own ideas and conclusions, leading them to process information deeper, rather than focusing only on performance (Schunk & Swartz, 1993).

Reflexive activities in the classroom should be understood in a broader context. Their implementation into school practice in order to teach students to know their learning process, to get the most objective picture of their knowledge, skills, based on which they can then deliberately and purposefully plan their personal progress. Therefore, it is important to know the strategies of self-reflection and metacognitive reflection of students and it is essential that the teacher knows how to involve his/her students in the assessment process.



Formative assessment studies clearly show that it helps students develop attitudes (intrinsic motivation) for better performance and systematic work (Shepard, 2005), and it is unlikely that students lose confidence in the learning process and in the ability to make progress (Vispoel & Austin, 1995). This is the basic pillar of lifelong learning and its sustainability.

A reflective attitude assumes that teacher candidates are prepared to evaluate as objectively as possible, taking into account the individual progress of the pupil; respect the pupil's personality in the assessment; develop pupil assessment literacy; evaluate and classify students without prejudices and stereotypes; assist students in choosing positive role models, appreciates the student's personal and social skills; promote pupils' self-regulatory learning, independence and responsibility for the results of their work; and take their students as partners who are also responsible for assessing learning outcomes and learning.

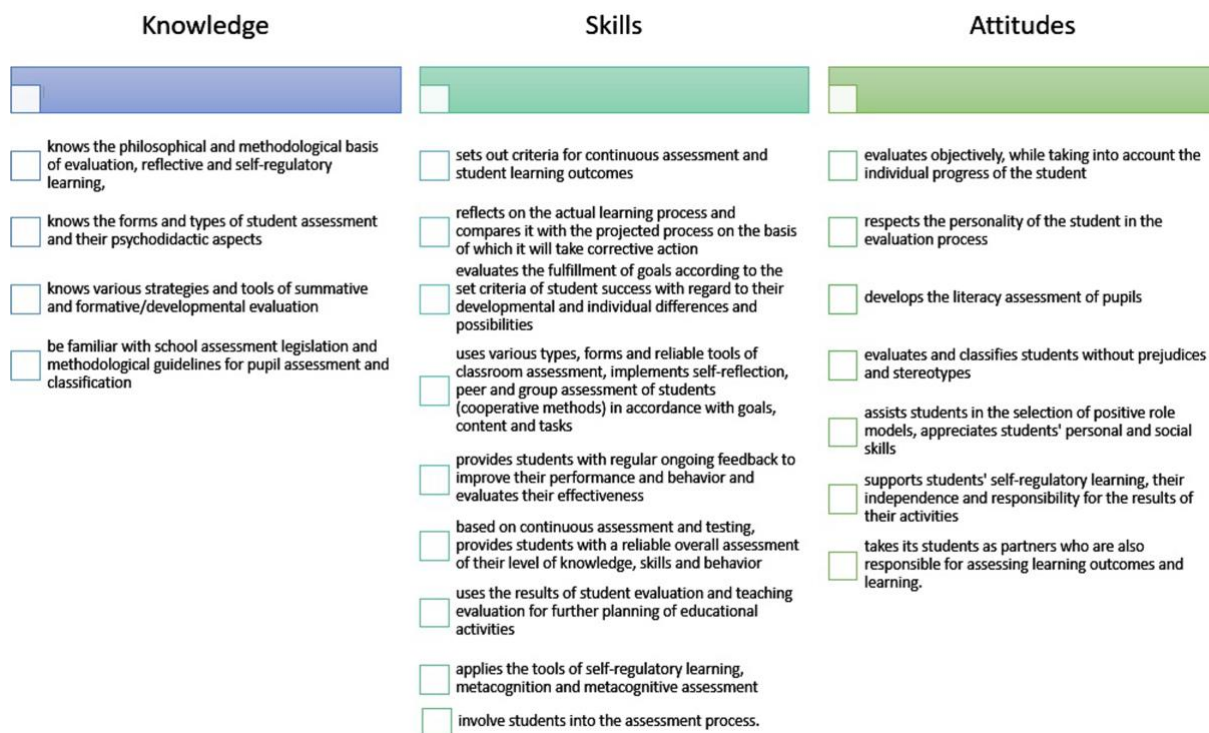


Fig. 3: Model of the framework of teacher literacy assessment standards.

## 4 Conclusion

In the changes implemented so far in terms of school reforms, the emphasis was on changes in content, methods, resources in the teaching process, but little attention was paid to changes in class-hour assessment strategies, and teacher training in terms of assessment literacy.

The reform measures concerning primary and secondary education and the content reforms of higher education are independent of each other, and it is the teacher training that is feeling the negative impact of this mismatch between mutual interests.

The current harmonization processes give a chance to re-evaluate the structure and content of existing teacher education programs and to purposefully innovate also in terms of the development of teachers' assessment literacy.

The presented model of the framework of standards of assessment literacy can be the basis for the creation of study programs that accept that the key element of real innovation are the teachers and their competencies.

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