



**Article Evaluation : „Changing Paradigm Assessment
-Towards a New Assessment Using ICT” - European Journal of Education,
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Context of research (country, scale, outline of approach)	
Country, scale, outline of approach are not specified in this articol.	
Summary (200-300 words) of main findings outlined in the article.	
<p style="margin: 0;"><u>E-Assessments in Mathematics Education: Benefits and Challenges</u></p> <p style="margin: 0;">– <u>Benefits</u></p> <p style="margin: 0;">Traditionally the E-assessment can be justified in a number of ways:</p> <ul style="list-style-type: none"> • It can help avoid the meltdown of current paper-based systems; • it can assess valuable life skills; • it can be better for users – for example by providing on-demand tests with immediate feedback, and perhaps diagnostic feedback, and more accurate results via adaptive testing; • it can help improve the technical quality of tests by improving the reliability of scoring. • In mathematics it can augment the paper based tests by using computer algebra software or spreadsheets • it can smooth communications between schools and examinations authorities. <p style="margin: 0;">The new paradigm in e Assessment will support and develop the new educational goals:</p> <ul style="list-style-type: none"> • Interactive displays which show changes in variables over time, microworlds and simulations, interfaces that present complex data in ways that are easy to control, all facilitate the assessment of problem-solving and process skills such as understanding and representing problems, controlling variables, generating and testing hypotheses, and finding rules and relationships. • ICT facilitates new representations, which can be powerful aids to learning, and the development of metacognitive skills, creativity, communication skills, and the ability to work productively in groups. 	
Summarise (100-200 words) what you have learnt from this article and how it can be applied to your TEMP project.	



1. In our school

- we teach students about new technologies (for students who have specialization mathematics-computer science, mathematics-computer-intensive or intensive mathematics and English)
 - we integrate the new technologies (use computer applications in lessons, the Internet as a resource in teaching, etc.)
 - we educate through technology (e-learning or virtual platform).
2. The skills associated with using ICT in the educational process are the creativity, innovation, communication, research, flexibility and adaptability, personal initiative and managing self-choices.
 3. The use of ICT in education is associated with active participatory teaching methods, such as: the project method, the scientific inquiry, the on-line learning. The use of ICT in teaching, learning and assessment is a long-term goal and not all students are yet able to benefit from it. New methods are needed to streamline this type of learning.
 4. Mathematical competence is the ability to develop and apply mathematical thinking, logical and critical thinking in solving practical, every day problems and to develop optimal research skills for solving any kind of problem. Current programs are trying to transfer the theoretical skills to practical information.
 5. The main purpose of assessment should be to improve student performance. Use of ICT in assessment is required for the rapid feedback it provides so that student's shortcomings can be identified and addressed at an early stage. To monitor the students progress in mathematics we apply grade tests that can be initial tests (applied at beginning of school year), formative tests (applied at the end of each learning unit) or summative tests (applied at the end of the semester). These tests require students to complete the solution and the teacher can follow the development and the fairness of judgment. Feedback is achieved through discussion and analysis of tests, which involves allocating more time than in computer-based tests.

We believe that transformative testing using complex simulations, multiple samples of student performance over time, integration testing and measurement with new skills training is more effective in math learning. We consider useful and interesting data-mining techniques and individual tutoring, but this requires access to virtual learning environments.

Tutorials systems (ITS) achieved adapting the level of difficulty of tasks to individual progress and needs of the student. There are programs that provide qualitative information on the case of incorrect or seeking patterns in student work to adjust the level of difficulty.

– **Challenges and Caveats (especially in Romania)**

- insufficient IT infrastructure in schools and even at home
- lack of coherent governmental education policy
- training of teachers to design smart tests in their area of expertise
- the lack of conclusive and scientific evidence to support the efficiency over traditional methods
- the lack of pedagogical methods to support the ICT use and the eAssessment
- the danger of cutting teacher-student communication

– **Conclusion**

It is necessary for teachers :

- to develop concrete hands on e-assessment, to implement it in a controlled environment and scientifically analyse the benefits
- Continually monitor the progress of students and accordingly adjust the testing .