



Enhancing trust in e-assessment – The TeSLA solution ***(Trust Based Authentication and Authorship for Higher Education Institutions)***

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Webinar, 11 May 2020



Agència
per a la Qualitat
del Sistema Universitari
de **Catalunya**

INTRODUCTION



<https://edition.cnn.com/2013/05/29/opinion/mystreet-digital-anthropology/index.html>



Main reasons

- Globalisation
- Worldwide internet



Incheon Declaration and Framework for Action for the implementation of SDG 4 (2015)



<http://unesdoc.unesco.org/images/0024/002456/245656e.pdf>



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

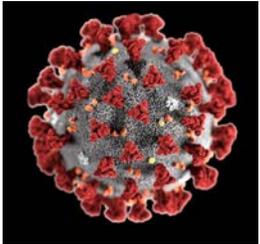


EMPOWERING
EHEA Paris 2018
EUROPE'S YOUTH

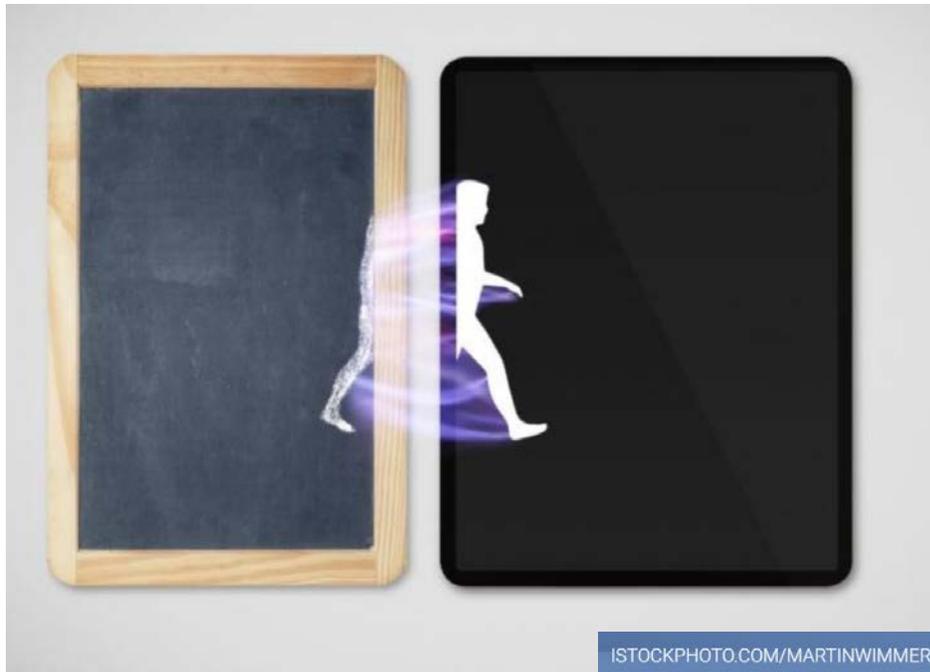
Conférence ministérielle européenne
pour l'enseignement supérieur



Digitalisation plays a role in all areas of society and we recognise its potential to transform how higher education is delivered and how people learn at different stages of their lives. We call on our higher education institutions to prepare their students and support their teachers to act creatively in a digitalised environment. We will enable our education systems to make better use of digital and blended education, with appropriate quality assurance, in order to enhance lifelong and flexible learning, foster digital skills and competences, improve data analysis, educational research and foresight, and remove regulatory obstacles to the provision of open and digital education. We call on the BFUG to take the issue of digitalisation forward in the next working period.



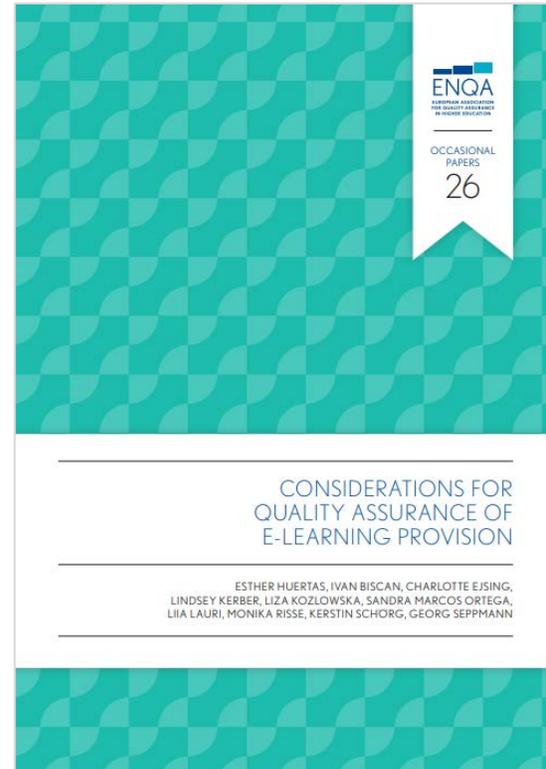
COVID-19



EMERGENCY REMOTE TEACHING

- Temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances.
- Return to the format once the crisis or emergency has abated.

Hodges, C; Moore, S.; Lockee, B; Trust, T and Bond, A. (2020).
<https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>



<https://enqa.eu/indirme/Considerations%20for%20QA%20of%20e-learning%20provision.pdf>

http://www.aqu.cat/doc/doc_79406656_1.pdf

Gap in online evaluation system



1 Lack of technologies to support authorship and authentication

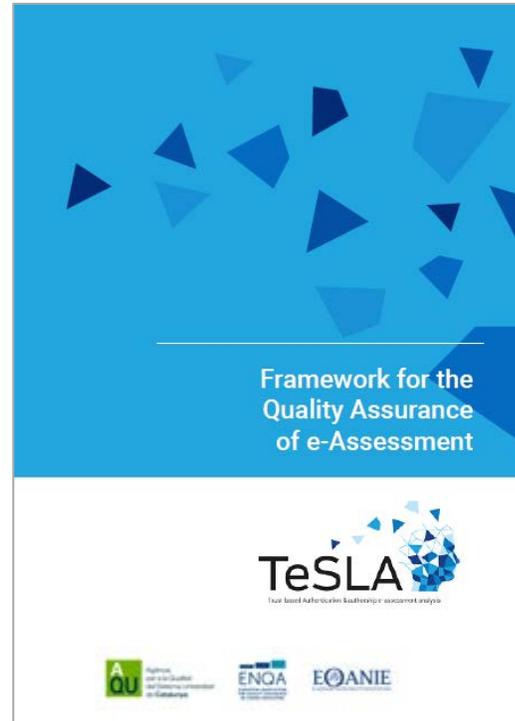
2 Lack of a European QA framework on e-assessment

TEACHER

- Did he/she copy from websites?
Now, I can check it with the plagiarism tool
- How can I enhance the assessment process using ICT?
Promoting continuous e-assessment by using TeSLA system
- Who has done the activity?
With facial and voice recognition, keystroke dynamics and forensic analysis I will be sure.
- Did he/she deliver the activity on time?
Time stamp and digital certificate will tell me.

STUDENTS

- When tough moments arise, copy-paste is the solution!
Forensic analysis, keystroke dynamics and plagiarism tool will detect it, I have to do the activity by myself.
- I asked my colleague to do the essay!
I can not do that. Teacher will know that I'm not the author using TeSLA.
- I couldn't deliver the activity on time because my Internet connection failed during the file transfer!
No worries, TeSLA will check that it was done on time.
- Can I pass the subject through online assessment?
For sure, if you did it!



STANDARDS

1. Policies, structures, processes for QA of e-assessment
2. Learning assessment
3. Authenticity, transparency and authorship
4. Infrastructure and resources
5. Learner support
6. Teaching staff
7. Learning analytics
8. Public information



INDICATORS



EVIDENCE

1. POLICIES, STRUCTURES, PROCESSES AND RESOURCES FOR QA OF E-ASSESSMENT

*The institution has appropriate policies, structures and processes to ensure that e-assessment **conforms to ethical and legal standards** and is **embedded in the organisational culture and values**. In addition, the e-assessment proposal is **aligned** with the institution's **pedagogical model and academic and legal regulations** and ensures its objectives are achieved on a constant basis.*



1. **Two different scenarios** in regard to e-assessment policies:
 - ✓ e-assessment is **permitted**.
 - ✓ e-assessment is **not permitted**.
2. All HEIs have **well defined policies and QA procedures**.
3. **Traditional universities** that have recently included blended and online provisions should **develop specific policies on e-learning and e-assessment**.
4. New **ethical and legal issues**, national and European regulations, need to be revised and updated.

RESULTS

2. LEARNING ASSESSMENT

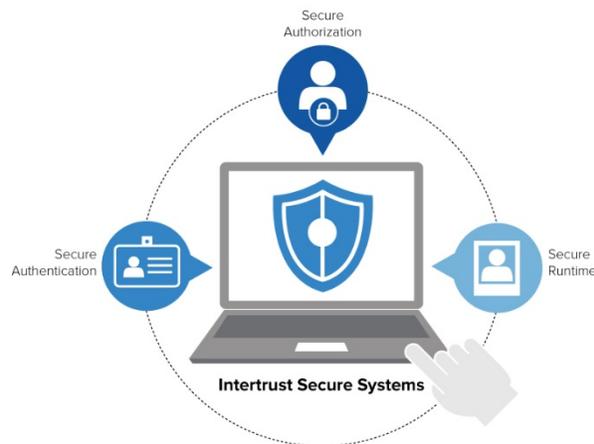
*E-assessment methods are varied, they facilitate pedagogical innovation and they rigorously determine the level of achievement of learning outcomes. They are designed to assure the **timely and fair** assessment of learning. As such, they are authentic, transparent and consistent with learning activities and resources. Digital assessment should also promote the participation of learners and adapt to the diversity of both learners and educational models.*



1. **Diversity of assessment methods is applied in all HEIs (SCL).**
2. **HEIs offer diversified methodology for assessing SEND learner (SCL).**
3. **Chosen assessment methods are aligned with learning outcomes.**

3. AUTHENTICITY, TRANSPARENCY AND AUTHORSHIP

The development and implementation of e-assessment include **protective measures that guarantee learner authentication and work authorship**. The e-assessment system is **secure and fit for purpose**.

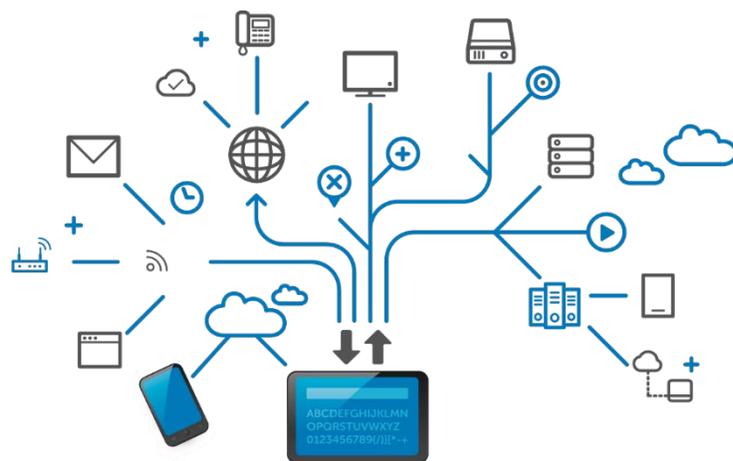


1. All HEIs address academic integrity issues (plagiarism). However, they need to **define the threshold level** of normal behaviour vs. suspicious behaviour.
2. Learners need to be provided with enough information to be confident enough to share personal data.
3. Implementation of a **full register** of external attacks and technical problems needs.

RESULTS

4. INFRASTRUCTURE AND RESOURCES

The institution utilises **appropriate technologies** that match intended learning outcomes and enhance and expand opportunities for learning.



1. **Different VLE are used by HEIs.**
2. HEIs should have **centralized technical support in place** (ticketing system, guidance and procedures for technical staff...).
3. HEIs should **collect feedback from all key stakeholders on the use of the VLE.**

RESULTS

5. LEARNER SUPPORT

Learners are **aware of, have access to and use effective and well-resourced support services** for counselling, orientation, tutoring and facilitation in order to increase student retention and success.

Learner support covers **pedagogical, technological and administrative related needs** and is part of established institutional policies and strategies.



1. All HEIs have **well-established support mechanisms** to meet all learners needs (administrative, technical and pedagogical).
2. **SEND learner receive an appropriate and wider range of support.**
3. **Learners should be provided with technical guidance.**
4. Learner's feedback need to be revised and redesigned (when necessary) in order to improve support services.

RESULTS

6. TEACHING STAFF

Teaching staff are **skilled and well-supported** in relation to the development of the **technological and pedagogical requirements and e-assessment methods**.



1. Teaching staff should be **trained on the innovation of the pedagogical practices** (including e-assessment) and should **receive technical training**.
2. Teaching staff should be **provided with updated information, guidelines and well-defined procedures** to deal with the **academic integrity** and the implementation of a **new assessment system**.
3. Procedures for the evaluation of teaching staff feedback should be in place.

7. LEARNING ANALYTICS

The institution has an **information management system (IMS)** that enables agile, complete and representative collection of data and indicators derived from all aspects related to e-assessment methodology and authenticity and authorship technologies.



1. All HEIs **agree** on the **potentiality and value of having an IMS in place** for the improvement of the learning process.
2. HEIs need to enhance an IMS for the **systematic collection of data related to the QA of e-assessment.**
3. HEIs should clearly **define the process around the use and analysis of personal data** (build trust).

RESULTS

8. PUBLIC INFORMATION

*The institution appropriately **informs** all stakeholders of **e-assessment methods and resource requirements**. Learners are informed of hardware requirements, learning resources technology and the provision of technical support provision.*



1. All HEIs have **well-established systems and accurate information available.**
2. HEI websites are:
 - student-oriented;**
 - easy to navigate;**
 - structured based on the needs and requirements of users.**and provide transparent information on:
 - how new technologies for assessment ensure fair and correct results;**
 - software and hardware requirements.**

CONCLUSIONS

- **The framework has been proven to be useful** for the enhancement of QA in HEIs that implement e-assessment.
- **E-assessment should be considered from a holistic perspective.** Review procedures should **analyse how each HEI integrates e-assessment** within its teaching and learning process and organizational culture.
- **Fully online universities comply with most of the elements** included in the framework, while **traditional universities** offering distance education **should take into consideration the elements included in the framework.**



THANK YOU FOR YOUR ATTENTION

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ACKNOWLEDGEMENTS

This work is funded by the TeSLA project (Grant Agreement Number: 688520 – TeSLA – H2020-ICT-2015/H2020-ICT-2015). Thanks are also given to head panel members: António Teixeira (Universidade Aberta, Portugal), Stephen Jackson (Assessment, Research & Evaluation Associates Ltd, United Kingdom), Esther Andrés (ISDEFE, Spain), Inguna Blese (University of Latvia, Latvia)



FUNDED BY THE
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TeSLA INSTRUMENTS

DOCUMENT ANALYSIS

Involves the analysis of written material using a qualitative analysis package that describes discourse and its interpretation

Plagiarism tools



Analyses written material and detects similarities among various written documents



Forensic analysis

Determines the authorship verification and authorship attribution of written documents based on the comparison of current documents with stored data

AUTHENTICATION

BIOMETRICS

Allow the clear identification of humans based on some specific physical characteristics or special behaviour

Facial recognition



Analyses facial expressions in two stages: facial detection and recognition

Voice recognition



State-of-the-art audio description method. Speaker segmentation and cluster grouping

Keystroke dynamics



Measures how the user writes in regards to pressure and time-based measuring

CONFIDENCE

SECURITY TECHNIQUES

Deploy a security service provided by a layer of communicating systems

Timestamp



Generates a sequence of encoded information identifying when an event is recorded

Digital signature



Guarantees the authenticity of a digital message or document by a mathematical scheme