ENQA NETWORKING EVENT
DIGITALISING HIGHER EDUCATION:
QUALITY ASSURANCE OF E-ASSESSMENT
Brussels, 20 June 2018
INTRODUCTION

- On-campus programmes
- Procedures in place
- Formal education

- Online & blended programmes
- Development

QAA

Challenges
- Instructional design (innovation).
- E-assessment (authorship and authentication).
- Experts with experience in e-learning.
TRADITIONAL EXAM / ASSESSABLE ACTIVITY (I)

CRIME SCENE

TRADITIONAL CHEATING

FINAL EXAM

Question 1
Name: Maria
Ok!
But cheating at a final exam everyday becomes more difficult!
...UNLIMITED IMAGINATION...
WHY TeSLA?

E-learning provision is becoming more widespread in the EHEA

There is not a European framework on e-assessment

The concept of quality in e-learning is as complex as the reality of e-learning itself

There is a lack of technologies to support authorship and authentication

Resolve the gap in the current online evaluation system

Need

ACADEMIC INTEGRITY & TRUST
TeSLA MAIN OBJECTIVES

Define and develop an e-assessment system, which ensures learners authentication and authorship in online and blended learning environments while avoiding the time and physical space limitations imposed by face-to-face examination.

Support any e-assessment model (formative, summative and continuous) covering teaching and learning processes as well as QA aspects, privacy and ethical issues, and technological requirements.

http://tesla-project.eu/
CONSORTIUM

18 Partners

8 Universities
4 Research Centers
3 Enterprises
3 QA Organizations

[Logos and names of participating institutions]
TeSLA WORK PACKAGES

WP 1. Project Management (UOC).
WP 2. Requirements and modeling of the educational model (UOC).
WP 3. Data privacy and ethics (Namur).
WP 4. Quality assurance in online higher education (AQU). ENQA & EQANIE.
WP 5. Design and implementation of trusted assessment mechanisms (Lplus).
WP 6. Integration of the framework in learning environments (Watchful).
WP 7. Design and development of pilots (SU).
WP 8. Pilots evaluation (OU).
WP 9. Communication, dissemination, liaisons and exploitation (protOS).
TIME PERIOD

2016

3 YEARS

2018

1st Pilot
Small educational pilots
Course 2016/17 1S

2nd Pilot
Medium Test-Bed pilots
Course 2016/17 2S

3rd Pilot
Large scale pilots
Course 2016/18

1st Pilot SMALL EDUCATIONAL PILOTS
Course 2016/17 1S

2nd Pilot MEDIUM TEST-BED PILOTS
Course 2016/17 2S

3rd Pilot LARGE SCALE PILOTS
Course 2016/18

TeSLA

An Adaptive Trust-based e-assessment system for learning
PILOTS / GOALS

1st Pilot
Small educational pilots

2nd Pilot
Medium test-bed pilots

3rd Pilot
Large scale pilots

2016
2017
2018
2019

3 years

1st testing of INSTRUMENTS

✔ To TEST the protocol of communication among partners for pilot’s execution (external dimension) and the implementation protocol at partner level (internal dimension).

✔ To SELECT the most suitable activities for e-assessment process at subject level.

✔ To TEST the modular technologies on an isolated manner in activities.

✔ To REFINE learning activity for e-assessment.

✔ To TEST and DEFINE the authorship and authentication instruments.

✔ To TEST the full integration of the system and its scalability.

✔ To REFINE modular technologies and the European e-assessment framework.

✔ To VERIFY the reliability of the authentication and authorship.
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

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

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

FR and VR Anti spoofing
Avoid authentication vulnerabilities in face and voice recognition

TeSLA INSTRUMENTS (I)
TeSLA INSTRUMENTS (II)

**What**
- **Authentication**
  - Face Recognition
  - Voice Recognition
  - Forensic Analysis
  - Keystroke Dynamics
- **Authorship**
  - Forensic Analysis
  - Plagiarism
- **Confidence**
  - Face Recognition Anti spoofing
  - Voice Recognition Anti spoofing
  - Plagiarism
  - Time Stamping

**When**
- **During activity**
  - Face Recognition
  - Face Recognition Anti spoofing
  - Voice Recognition
  - Voice Recognition Anti spoofing
  - Keystroke Dynamics
- **After activity**
  - Face Recognition
  - Voice Recognition
  - Forensic Analysis
  - Plagiarism
  - Time Stamping

**Biometric profile**
- **Required**
  - Face Recognition
  - Voice Recognition
  - Forensic Analysis
  - Keystroke Dynamics
- **None**
  - Face Recognition Anti spoofing
  - Voice Recognition Anti spoofing
  - Plagiarism
  - Time Stamping
Assure and guarantee the quality of e-assessment processes in HE

METHODOLOGY

EXPERTS

PROCESS

IMPROVEMENT
QA PILLARS IN THE TeSLA PROJECT (II)

Institutions

- WP2: Educational framework
- WP3: Data privacy and ethics
- WP5/WP6: Trusted assessment tools
- WP7: Design and development of pilots
- WP8: Pilots evaluation

ASSESSMENT METHODOLOGY

- Recommendations
  - Assessment methodology
  - TeSLA pilots
  - Institutions

EVIDENCES

REGULAR PANELS

REPORTS

EXPERTS

METHODOLOGY

PROCESS

IMPROVEMENT

TeSLA Framework

D4.7

D4.4
D4.5
D4.6
HEAD PANEL
Composition:
- 1 Academic
- 1 QA professional
- 1 Student
- 1 Technological expert
- 1 Secretary

Tasks:
- Improvement of assessment methodology.
- Improvement of pilots.
- Approval of regular panels reports.
- Harmonization role.

REGULAR PANELS
Composition:
- 1 Academic
- 1 QA professional
- 1 Student
- 1 Technological expert

Tasks:
- Pilot assessment \(\rightarrow\) Assessment report.
- Improvement of assessment methodology.
- Institutions.

1st PILOT
SMALL EDUCATIONAL PILOTS
Course 2016/17 1S

2nd PILOT
MEDIUM TEST-BED PILOTS
Course 2016/17 2S

3rd PILOT
LARGE SCALE PILOTS
Course 2016/18

2nd PILOT
MEDIUM TEST-BED PILOTS
Course 2016/17 2S

3rd PILOT
LARGE SCALE PILOTS
Course 2016/18
ESG (2015) are the basis for the assessment methodology developed in the TeSLA project.

**METHODOLOGY**

1. **PART 1. INTERNAL QUALITY ASSURANCE**
   Development of internal quality assurance elements

2. **PART 2. EXTERNAL QUALITY ASSURANCE**
   Design of the external review methodology for the pilots

3. **PART 3. QUALITY ASSURANCE AGENCIES**

**Same standards for HEI (face-to-face or online)**
1. POLICIES, STRUCTURES, PROCESSES AND RESOURCES FOR QA OF E-ASSESSMENT

The institution has appropriate policies, structures, processes and resources to ensure that e-assessment is timely and fair, and it includes ethical and legal considerations. Besides, the proposal for the e-assessment is aligned with the pedagogical model of the institution and ensures the constant achievement of its objectives.

Main aspects:

• Organisation and protection against academic fraud
• Accessibility to students with special educational needs
• Adoption of new technologies to ensure the expected quality of e-assessment
• Technical support
• Electronic security measures
• Alignment with educational objectives and pedagogical models
• QA procedures for external partners

2. ASSESSMENT OF LEARNING

E-assessment methods are varied, facilitate pedagogical innovation and determine rigorously the level of achievement of learning outcomes. They are consistent with course activities and resources and adapt to the diversity of learners and educational models.

Main aspects:

• Informed and consistently applied
• Reflect innovative pedagogical practices
• Encourage the use of a variety of assessment methods
• Understand the diversity of learners
• Learning feedback is timely given to students
• Satisfaction procedures and student appeals processes
The development and implementation of the e-assessment include protective measures that guarantee learner authentication and work authorship. The e-assessment system is secure and fit for purpose.

Main aspects:

All-inclusive fail-safe technology development plan for:

• Technologies, data protection and privacy requirements
• Building and maintenance of the infrastructure and processes for the ongoing review of technologies
• Ensure the operability and security against external attacks

Code of conduct on academic integrity, including sanctions and good practice

The institution utilises the appropriate technologies that match the course content in order to enhance and expand learning for all types of students’ needs.

Main aspects:

• Ease of use for all students
• Consider ethical and legal aspects
• Constant update in light of technological changes
• Support of a variety of methods and tools
• Sufficiently tested prior to its use
• Ensure coverage and the setup of the required technical system
• Accessible for SEND students
5. STUDENT SUPPORT

Students are aware, have access and use effective and well-resourced support services for counselling, orientation, tutoring and facilitation in order to increase retention and success. Student support covers pedagogical, technological and administrative related needs and is part of institutional policies and strategies.

Main aspects:

- Student support policies
- Access to timely and adequate support services
- Satisfaction procedures with student support

6. TEACHING STAFF

The teaching staff is skilled and well-supported in relation to technological and pedagogical requirements and e-assessment methods.

Main aspects:

- Teaching staff is trained and proficient
- Procedures to identify the support requirements of the teaching staff
- Adequate, accessible and timely technical and pedagogical support services
- Satisfaction procedures
The institution has an information management system 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.

Main aspects:

- The institution collects, analyses and uses relevant information from stakeholders for the effective management of the e-assessment methodology.

The institution appropriately informs all stakeholders of pedagogical development, the e-assessment method, and resources technology. The institution publishes reliable, complete and up to date information on pedagogical methods and technical support. Students should be made aware of the hardware requirements and learning resources technology and technical support.

Main aspects:

- The institution publishes reliable, complete and updated information on e-assessment methods, students' technical requirements and institutional technical support.
CONCLUSIONS

• The **ESG are the basis** for quality assurance of any provision of higher education, including virtual learning environments.

• The assessment methodology can be considered as an **initiation** to reflect more broadly on the specificities of the quality assurance of **e-learning** and that specifically of **e-assessment**.

• The assessment methodology **will be adapted if necessary** so that at the end of the project a **fully applicable e-assessment methodology will be provided**.
THANK YOU FOR YOUR ATTENTION

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