

Towards the Use of New Methods for Formative e-Assessment of 21st Century Skills in Schools

Citation for published version (APA):

Rusman, E., Boon, J., Martínez-Monés, A., Rodríguez-Triana, M-J., & Retalis, S. (2013). *Towards the Use of New Methods for Formative e-Assessment of 21st Century Skills in Schools*.

Document status and date:

Published: 06/11/2013

Document Version:

Peer reviewed version

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

<https://www.ou.nl/taverne-agreement>

Take down policy

If you believe that this document breaches copyright please contact us at:

pure-support@ou.nl

providing details and we will investigate your claim.

Downloaded from <https://research.ou.nl/> on date: 30 Nov. 2021

Open Universiteit
www.ou.nl



Towards the Use of New Methods for Formative e-Assessment of 21st Century Skills in Schools

Ellen Rusman, Jo Boon, Alejandra Martínez-Monés,
María Jesús Rodríguez-Triana, Simeon Retalis

TEFA WS@ ECTEL 2013, Paphos, Cyprus, 18/09/2013

Outline

- Introduction
- The vision of Preaty
- A review of e-assessment methods and tools
- Conclusions and further work

Introduction

- **School curricula** pay special attention to 21st century skills and key competences
- ... however ...
- In many countries, the **assessment system** is still primarily focused on summative assessment of static knowledge and end-results

Introduction

- ICT technologies enable alternative assessment forms (e-assessment) and poses potential benefits
- ... however ...
- Teachers (and schools) have not adopted these technologies

Introduction


- **PREATY** (PRoposing modern E-assessment Approaches and Tools to Young and experienced in-service teachers)
- Goal:
 - Equip teachers in **primary** and **secondary** schools with **e-assessment strategies and tools** to formatively assess key 21st century skills and competencies.

The vision of Preaty

- Technology as a motor of change
 - Explore the existing proposals of ICT technologies applied to assessment
- Need for a change in the teachers' mind set
 - Design and organize training workshops
- Technology pull **and** user push

e-Assessment methods and tools

- Two approaches (at least) of ICT support to assessment
 1. ICT as an “off-the-shell” tool for in-class assessment methods

e.g: gForms to manage surveys, PowerPoint to make a presentation
 2.  Specific methods and tools especially thought for formative assessment

e-Assessment methods and tools

- Main methods (and tools) reviewed
 - E-portfolio
 - Learning analytics
 - Rubrics & Enriched rubrics

- Electronic version of the portfolio
- Show the process and results of a learning path
- Data-managing capabilities, offering different views of the data, feedback facilities ...

- Aspects considered:
 - Standalone tool or Integrated in a VLE?
 - Already used in schools?
 - Language
 - Cost, licence
 - Technical requirements

e-Portfolio systems

Tool Name	Integrated with LMS	Educational level	Languages supported	Cost	License	Technical requirements
Desire2Learn ePortfolio	Desire2Learn	Schools and Higher education	9	Contact Desire2Learn	Open source/ Institution	Hosted
Elgg	Moodle	Schools and Higher education	7	Free when self-hosted and maintained.	Open source/ Institution	Hosted or server
Epsilon Portfolio	Epsilon	Schools and Higher education	English	Free for educational sites	FTE basis / Institution	Hosted
Exabis	Moodle	Schools	English, Dutch	Free	Open source / Institution	Server
Mahara	Moodle	Schools and Higher education	21 (Greek, Italian, Dutch, Spanish)	Free	Open source/ Institution	Server
PebblePad	Moodle or Blackboard	Higher education	English	Requires payment	Comercial licence / Institution	Either
Sakai Portfolio	Sakai	Higher education	English, Spanish	Free	ECL License / Owner or institution	Either

Learning analytics

- Collection, analysis, and reporting of data about learners and their contexts,
- Purposes: understanding and optimizing learning
- Several approaches, from the interaction analysis methods to institutional approaches

Learning analytics - integrated in VLEs

Name	Primary users	Output	Integration level	Language	Free	User help and support
Analytics and Recommendations	Teachers and students	Statistical tables and graphs	(Moodle plugin)	English	YES	NO
Engagement Analytics	Teachers and administrators	Statistics	Moodle plugin	English	YES	YES
Excel Pivot Tables	Teachers, administrators, researchers	Statistical tables, diagrams, export files	(Part of Microsoft Office package)	Several (as many as MS office tools)	NO	YES.
GISMO	Teachers	Enriched statistical tables, bar diagrams, export files	Moodle plugin	English	YES	YES
MOCLog	Students, teachers, educational designers, and administrators	Statistics adapted to the user (CSV files.	Moodle package	English	YES	YES

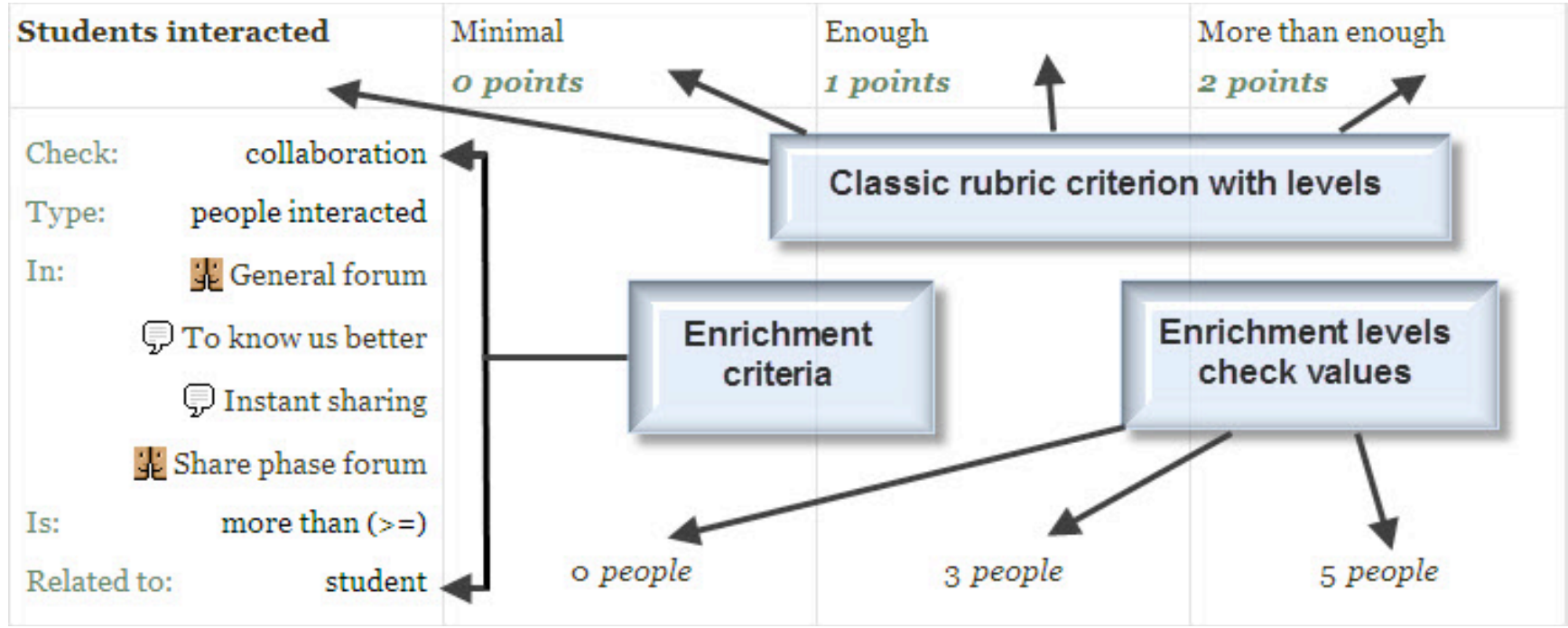
Learning analytics - Social network analysis tools

Name	Primary users	Output	Integration level	Language	Cost	User help and support
SAMSA	Teachers and researchers	Visualizations and SNA analysis.	Medium (BSCW / Synergeia. Forums...)	English	-	NO
SNAPP	Teachers and students	Sociograms with the interactions in forum	Integrated with several LMS (Blackboard, ANGEL, Desire2Learn, and Moodle)	English	Free	NO
NodeXL	SNA researchers and partially, practitioners.	.csv (text), .txt, .xls (Excel), .xslt (Excel 2007), .dl (UCINet), GraphML	Medium (Excel files).	English	Free (Lite version)	YES

Enriched Rubrics

- A traditional rubric, where part of the criteria are automatically computed by the system
- LAe-R: A Moodle plug-in
- LAe-R allows a teacher to add types of criteria associated to learning analysis indicators

Enriched rubrics



Enriched rubrics

- Tested with 12 in-service primary and secondary school teachers with positive results, but not tested in real practice
- One example of a tool that could help identify the opportunities and requirements of e-assessment tools at the target school levels

Conclusion and next steps

- Introducing formative e-assessment in the schools requires a change in the mentality of teachers (and other stakeholders) and more adapted tools
- Teacher workshops will be designed with the aim of contributing to both lines of work

Conclusion and next steps

- Principles for the teacher workshops
 1. Training on e-assessment
 2. Training on tools
 - Sketch scenarios using tools used at higher education (o, if any, at primary or secondary schools)
 - Identify requirements for primary and secondary education

The present activity/work was carried out as part of the Preaty project.

<http://preaty-project.eu>

This project is partly funded by the European Commission
LLP-1-2012-1-GR-COMENIUS-CMP
Project number: 526965



Lifelong
Learning
Programme

Partners are:

University of Piraeus Research Center, Greece
Center for the Advancement of R&D in Education, Cyprus
Politecnico di Milano, Italy
University of Valladolid, Spain
Cyprus Pedagogical Institute, Cyprus
Open Universiteit, Netherlands
Vocational Training Center EUROTRAINING SA, Greece



Lifelong
Learning
Programme



UNIVERSITY
OF PIRAEUS



CARDET
CENTRE FOR THE ADVANCEMENT OF RESEARCH
& DEVELOPMENT IN EDUCATIONAL TECHNOLOGY



CYPRUS PEDAGOGICAL INSTITUTE



Open Universiteit
www.ou.nl

