Online Resource Platform for Mathematics Education

Marisa Llorens
Technological University Dublin, marisa.llorens@tudublin.ie

Edmund Nevin
Technological University Dublin, edmund.nevin@tudublin.ie

Eileen Mageean
Technological University Dublin, eileen.mageean@tudublin.ie

Follow this and additional works at: https://arrow.tudublin.ie/engschcivoth

Part of the Civil and Environmental Engineering Commons

Recommended Citation

This Other is brought to you for free and open access by the School of Civil and Structural Engineering at ARROW@TU Dublin. It has been accepted for inclusion in Other resources by an authorized administrator of ARROW@TU Dublin. For more information, please contact yvonne.desmond@tudublin.ie, arrow.admin@tudublin.ie, brian.widdis@tudublin.ie.

This work is licensed under a Creative Commons Attribution-Noncommercial-Share Alike 3.0 License
Online Resource Platform for Mathematics Education

Marisa Llorens, Edmund Nevin and Eileen Mageean

College of Engineering and Built Environment, Dublin Institute of Technology, Ireland.
m.p.llorens@dit.ie, edmund.nevin@dit.ie, eileen.mageean@dit.ie

Rationale for Project

European Context:
– European Higher Education Area (EHEA)* Encourages the development of new competencies and skills through active learning methodologies.

Irish Context:
– National Strategy for Higher Education to 2030 (DES 2011)
  – Emphasises the need for teachers in higher education to...
  – By discussing solutions with their peers they are encouraged to think more deeply about the problem.
  – By discussing solutions with their peers they are encouraged to think more deeply about the problem.
  – Encourage self-learning
  – By discussing solutions with their peers they are encouraged to think more deeply about the problem.
  – Multidisciplinary opportunities to extend the project into other technical based modules.

Implementation

Phase 1:
• Student as co-creator
• Solutions to mathematical problems are recorded as videos.
• Consequently students determine their own learning by exploring rather than receiving knowledge.

Phase 2:
• Creating the online resource platform
• Online resources (e.g. quizzes) are created with student content (i.e. feedback videos).

Selected Results

The initial mathematical capabilities of students from a level 7 common engineering programme (DT097) were measured using a standard MDT.

The results (Figure 8) show a greater proportion of grades in the lower half of the range suggesting a poor grasp of key mathematical concepts.

A sample of student responses from a survey (n = 21) are illustrated above (Figure 9). Responses are based on a 5-point Likert scale. Additional responses (Figure 10) show a general preference for a mix of traditional and video tutorial sections.

References


Acknowledgements

Dr Brian Bovey Head of Learning Development, College of Engineering and Built Environment, DIT Bolton Street, The Learning Teaching & Technology Centre (LTTC), DIT. All the students who participated so enthusiastically.

* European Higher Education Area: https://www.ehea.info/