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International Student Collaboration in Biosystems Engineering using Video Podcasts in Design Classes

ASABE Paper 141909810

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Trans-Atlantic Biosystems Engineering Network (TABE.NET)

- Funded by European Commission & US Dept. of Education Fund for the Improvement of Postsecondary Education (FIPSE)
- Virginia Tech (VT)
- University of Illinois at Urbana-Champaign (UIUC)
- University College Dublin (UCD), Ireland
- Universidad Politecnica de Madrid (UPM), Spain
- University of Bari (UniBari), Italy
- Agricultural University of Athens (AUA), Greece



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Trans-Atlantic Biosystems Engineering Network (TABE.NET)

- Internationalization of Biosystems Engineering (BSEN) curricula
- Develop a global awareness within the discipline
- Student & faculty exchanges
- Innovation and entrepreneurship module
- “What is Biosystems Engineering?” module
- **Design module**



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Initial draft proposal for design module / class / course

- 6 students per team (1 from each partner)
- Mentors
- Online collaboration
- Design solution
- Report
- **Compare existing design classes in each institution (Curran et al., 2011)**



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Desired outcomes

- Change in the students' outlook to utilize in their remaining years within the university
- Take actions that result in a more internationalized resume before they finish
- Second or third language acquisition
- International peer assessment, appropriate peer assessment across cultures, with a cultural awareness, and how to give feedback



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Santa Claus – Goal

- To implement a design, to test it and to evaluate its performance is the desirable goal connected to every learning activity regarding design
- Real impact
- Supports learning from experience



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Laundry list of approaches for international student collaboration

- Semester or year-long exchange experience
- Study abroad – semester at home, plus 2-8 week field implementation
- Winter session, Maymester (3 weeks), or Summer
- Staff and students go to partner site for short course
- Webinar (live + recording)



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Challenges

- Varying semester dates
- Opportunity cost for faculty
- Language
- Resources and costs
- Course credit approval



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Advantages of video podcasts

- Prior positive experience among partners
- Low opportunity cost for faculty with high potential payoff
- Technically feasible for students and part of their culture
- Critical evaluation competencies and feedback across cultures
- Flexibility to implement across partners
- Opportunity for language training



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Implementation

- Two learning outcomes could be added to classes
- Group work
- 1. Create a video with technical content for an international peer audience
- 2. Assess and provide feedback for content and clarity of videos created by international peers



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TABE.NET Partner	Module/Class	Number of videos	Topic
UCD	Biosystems Engineering Design Challenge	8	Micro wind turbines
UIUC	Introduction to Agricultural and Biological Engineering	10	Varied across discipline
VT	Introduction to Biological Systems Engineering	20	Varied across discipline
UCD	Biosystems Engineering Design Challenge	8	Use of biomaterials
	Buildings and Environment	3	Environmental impact of agricultural buildings
UNIBA	Rural Buildings	12	Farm buildings, poultry units, wine cellars, etc.
UPM	Agricultural Buildings	13	Farm buildings, animal housing, wineries, rural roads, etc

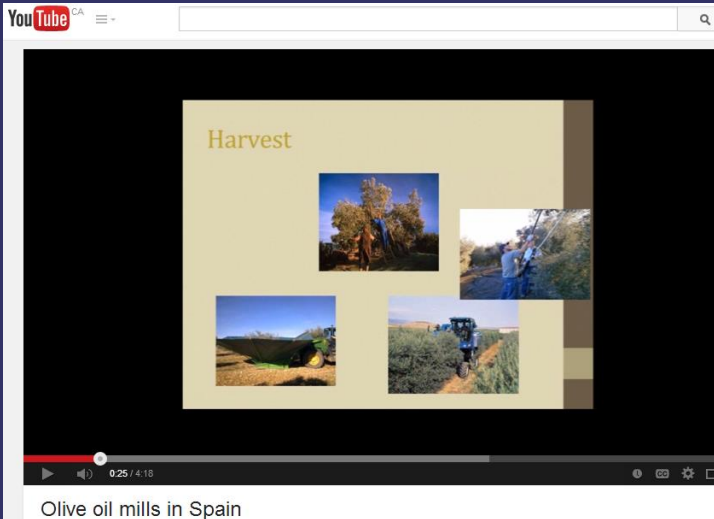


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YouTube view



Harvest

Olive oil mills in Spain

ALL COMMENTS (6)

Share your thoughts

Top comments ▾

Luca Filannino 1 month ago

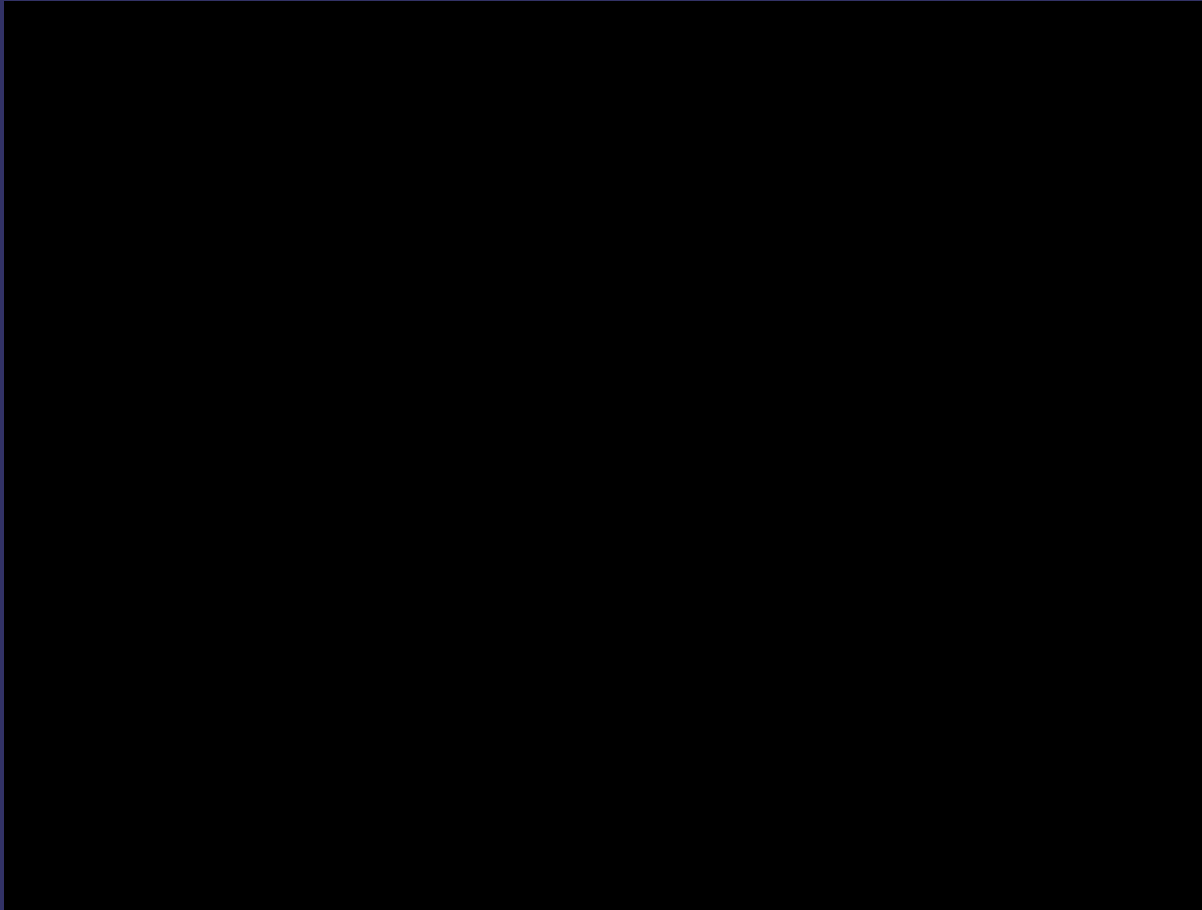
1. How well did Directly video address assigned technical content?
The video addresses the technical content very well the process of extracting oil from olives is addressed with clarity.

2. How well did the video communicate message - audio / image quality, rhythm and language / vocabulary?
That I felt the video ITS message communicated well, using simple language Which was easy to follow. not a very good quality recording.



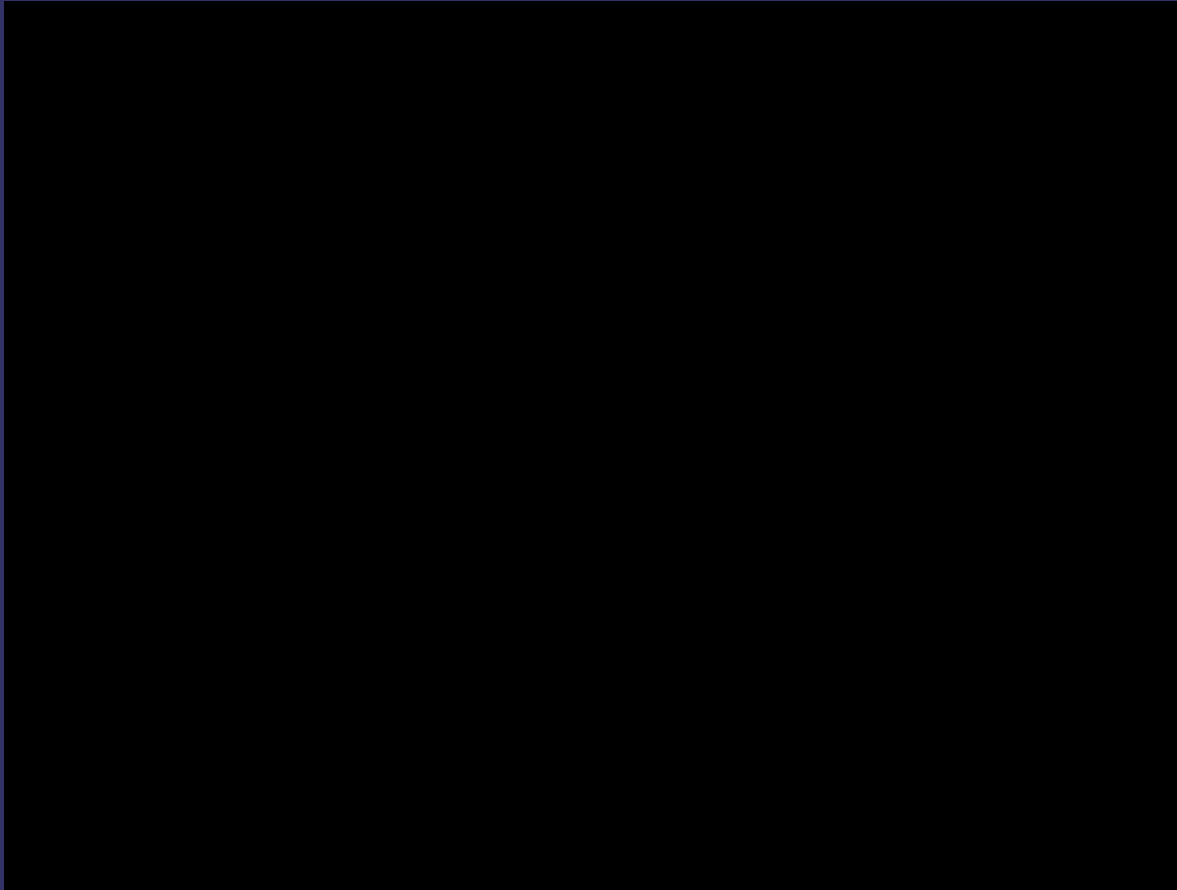
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UCD – Micro wind turbines



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UIUC – Gulf of Mexico Dead Zone



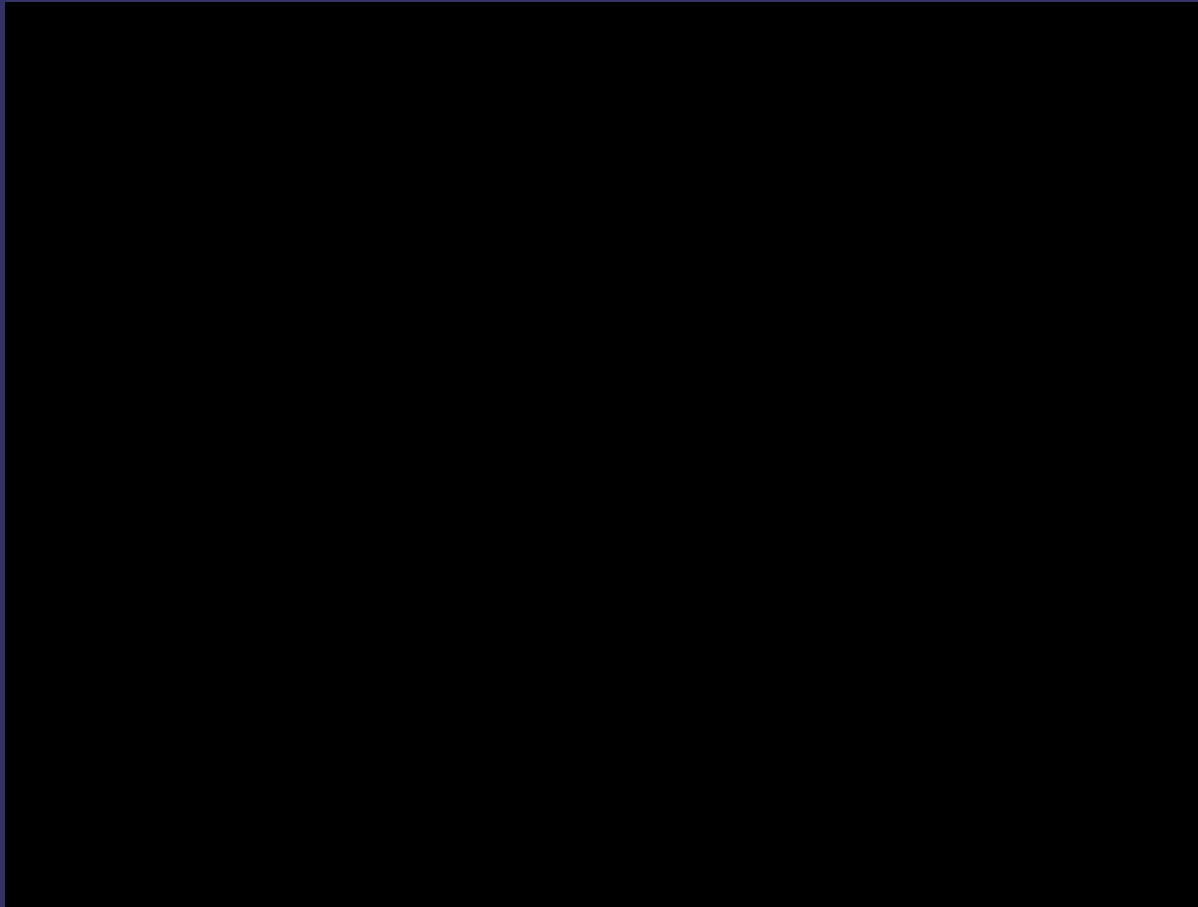
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VT – GM Foods



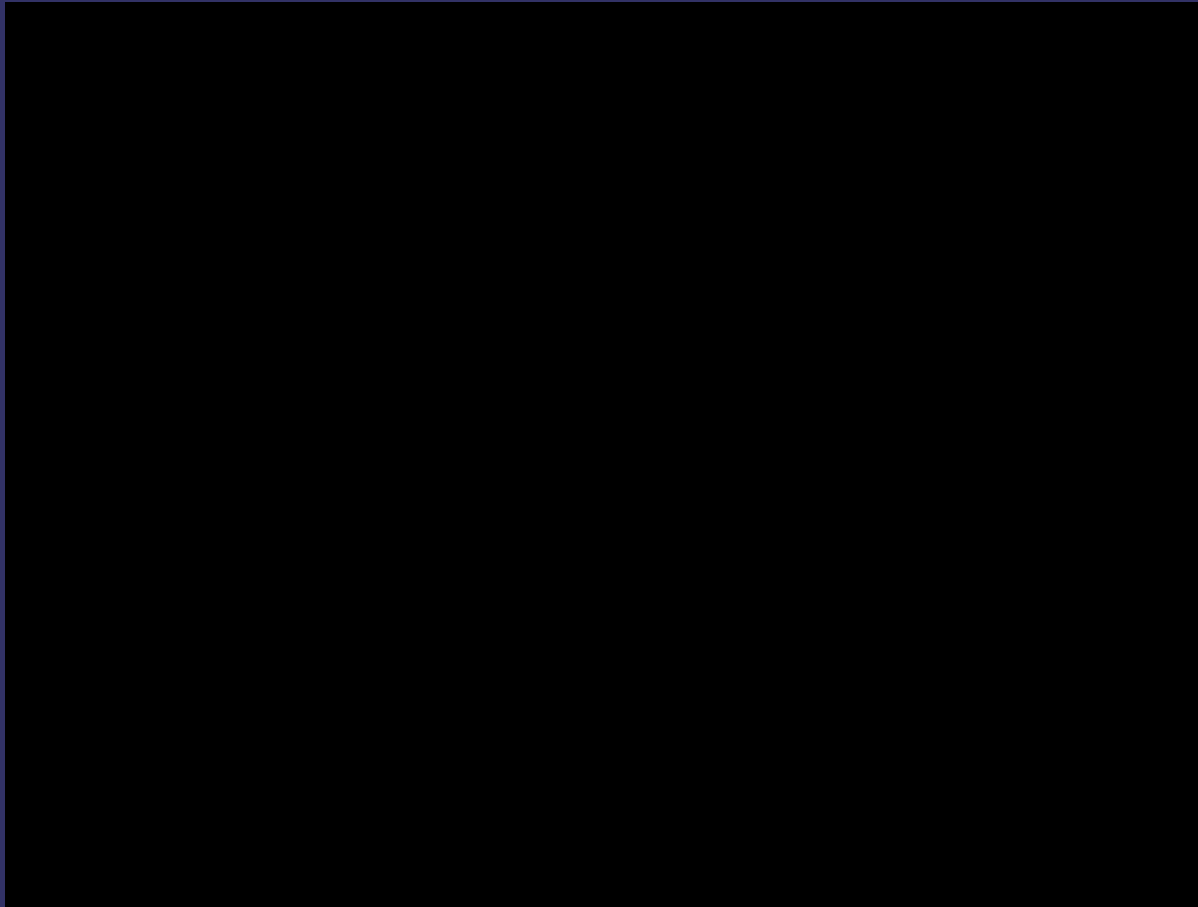
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UNIBA – Wine cellar



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UPM – Poultry housing



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Peer Feedback Example

- The video did a good job of discussing wind turbines in a way that was neither confusing nor boring. The images and audio worked together very nicely, especially the timing. The visuals were up long enough to read and didn't distract from the narration. There were a couple of spots where the audio was cut off, but other than that the speaker was easy to understand. Though the visuals were varied, the video could have been more creative with music or a short video clip.



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Before Video Experience	UNIBA n=40	UCD n=54
	(%)	(%)
Response rate	90	70
Has international experience (travel, language, family, friends)	44	89
First language, used at home	Italian (100%)	English (95%)
Some competency in a second language	81	66
Considered improving language skills	89	76
Considered sharing information with students abroad	67	39
Think that “students are the same the world over”	39	34
Prior experience of making videos	17	34



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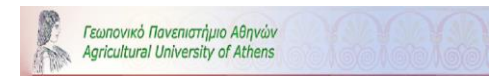
After Video Experience	UNIBA n=40	UCD n=54
Response rate	70	61
Considered to have improved international experience by making video	86	91
Increased interest in improving language skills	96	79
Positive experience of sharing information with international students	100	100
Changed view of students from other countries	29	36
Experience of making a video has improved communications skills	100	94
Feedback from international students was valuable	100	97



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Conclusions

- Video podcast with peer assessment and feedback is a very practical way of facilitating international collaboration
- Students said it was a positive experience and they had improved their communication skills
- Increased interest in language skills training
- Students found peer assessment interesting but challenging



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