Video Supports the Lecturing Star

Assessment of learning outcomes from constructively designed YouTube videos

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Aim

To assess the potential video demonstrations in supporting the learning requirements of students in the Spatial Information Sciences

and

supporting academic staff in course delivery.

Land Surveying Modules in DIT

School	Department	Course	Module	ECTS	NQAI	Full-Part	Semester
SSPL	Spatial Information Sciences	DT112/1	SSPL1001	5	8	FT	S1
SSPL	Spatial Information Sciences	DT112/1	SSPL1012	10	8	FT	S2
CONS	Construction Skills	DT117/1	CONS1008	5	6	FT	S1
CONS	Construction Skills	DT133/1	CONS1008	5	6	PT	S1
CONS	Construction Skills	DT117/1	CONS1009	5	6	FT	S2
CONS	Construction Skills	DT133/1	CONS1009	5	6	PT	S2
CONS	Construction Skills	DT117/2	CONS2009	10	6	FT	S1/S2
CONS	Construction Skills	DT133/3	CONS2009	10	6	PT	S1/S2
CONS	Construction Skills	DT149/2	CONS2022	5	6	PT	S1
CONS	Construction Skills	DT149/3	CONS3025	5	6	PT	S2
DSA	Architectural Technology	DT105	FT102/SP/2	1.5	7	FT	S1/S2
CBS	Civil & Structural Services	DT004/2	SURV2020	5	7	FT	S1
CBS	Civil & Structural Services	DT032/2	CIVIL2601	5	7	PT	S1
CBS	Civil & Structural Services	DT024/2	CBEH2108	5	8	FT	S1
CBS	Civil & Structural Services	DT004/2	SURV2021	5	7	FT	S2
CBS	Civil & Structural Services	DT032/2	CIVIL2602	5	7	PT	S2
CBS	Civil & Structural Services	DT024/2	CBEH2109	5	8	FT	S2

Background

- Over 300 students in DIT undertake a module in *Land Surveying* each semester
- Common need for basic information and instruction in the area of practical land surveying techniques
- 50% of contact time is normally dedicated to group-based field exercises which are formally assessed
- Relatively short '*one-on-one*' field demonstration time

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Pedagogical Objectives

- To enhance the students' *practical learning experience* a number of short videos with voice over instruction have been developed - mLearning
- Provide *support materials* for staff and learners - directly accessed in the field via web enabled platforms

Subject Component Matrix

	Sem 1								Sem 2							
Component	SSPL1001	CONS1008	CONS2009	CONS2022	DT105	DT024/2	DT004/2	DT032/2	SSPL1012	CONS1009	CONS2009	CONS3025	DT105	DT024/2	DT004/2	DT032/2
Introduction	■	■		■	■		■									
Error Theory	■	■		■	■		■			■						
Osi			■		■				■				■		■	
Linear Theory	■	■		■			■									
Taping	■	■		■			■									
Chain Survey	■	■		■			■									
Levelling	■	■		■	■		■		■	■			■			
Contouring	■	■		■	■		■		■	■						
Lasers	■	■		■	■		■		■	■	■	■				
Vertical Sections	■	■		■	■		■		■	■						
Earthworks	■	■	■	■					■	■					■	
Theodolites	■	■		■			■								■	
Angles	■	■	■	■			■				■				■	
Bearings	■	■	■				■				■				■	
Joins	■	■					■				■	■			■	
EDM	■		■		■		■				■	■			■	
Traverse	■	■	■								■	■			■	
Tacheometry												■			■	
Setting out			■								■	■			■	
Curves			■								■				■	
Verticality											■	■			■	
Asbuilt	■		■		■				■		■	■	■		■	
Advanced Survey Equipment					■						■	■	■		■	

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Video Material

10 video clips produced and uploaded to YouTube
- 5 levelling & 5 theodolite operations

http://www.youtube.com/my_videos?feature=mhum

Produced with DIT Telematics Facility (Roy Moore)
Streamed for HEANet by LTTC (Ken Lacey)

Project Evaluation

1. Learning Platform Enabler
2. Student Engagement
3. Enhancement & Effectiveness of mLearning

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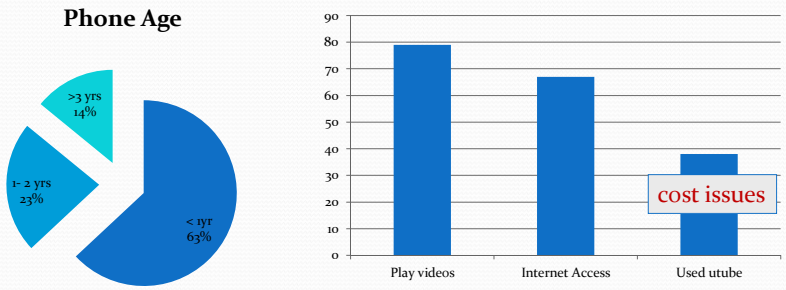
1. Learning Platform Enabler

Student Mobile Phone Statistics



Population size n = 93
Fulltime students n = 55
Parttime student n = 38

2. Student Engagement

- Quantitative evaluation of online access possible through YouTube / webcourses (DITs eLearning platform)
  - active engagement evidenced
- Qualitative feedback indicated that video:
  - 'compliments class material and should be used in tandem'
  - 'informative and will aid improvement in practicals'
  - 'are good as a refresher but prefer traditional notes'
  - 'good idea helpful as a refresher'
  - 'very beneficial for use in the field '
  - 'more videos on calculations required'

3. Effectiveness & Enhancement

- Pre- and post-test instruments used to evaluate student understanding
  - Factual recognition increased by 22 % (31 to 52 %)
    - 4 point Likert Scale (where n =93)
  - Retention measured
    - Practical assessment of field skills resulted in 97 % pass rate (where n = 40)
- Tutor Feedback
  - Standardized resource material
  - Re-useability = economical justification

Conclusions

- YouTube can deliver real potential for mLearning
- Collaborative constructive video design at a micro level enables complex instructional concepts to be contextualized
- No need to reinvent the wheel –
  - Course designers can tap into the YouTube cyber-library

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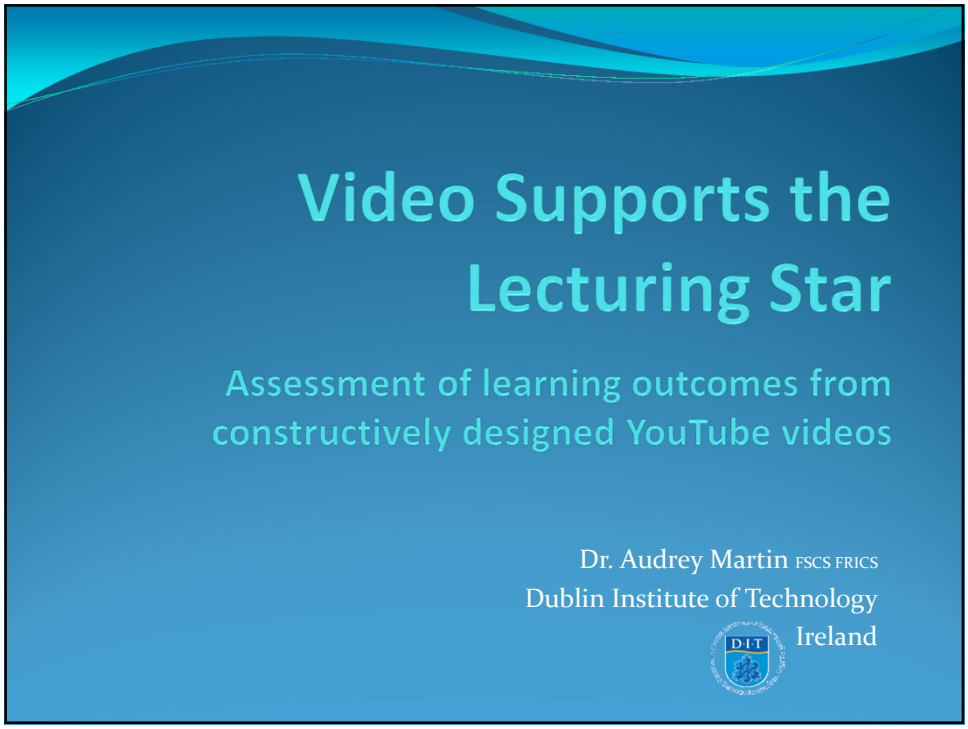
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