

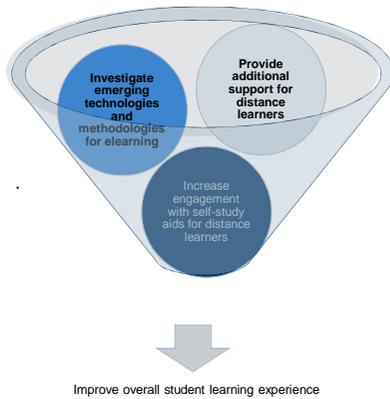
# The Changing Face of Educational Video: Explorations of the Role of Screen-Casting in Distance Education of Mathematics for IT

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## Introduction

### Motivation



Improve overall student learning experience

### Emerging Trends in ELearning

The cost of developing rich media resources is going down. Screencasting software for example, which is useful for creating educational video, is now inexpensive or free. This has led to a large increase in use of video screencasts in place of live instruction or to supplement it [1][2].

The screen-casting software used here was Camtasia Studio. However new products are emerging all the time including most recently recorders that capture right from within a web browser and for free e.g. screenr, screen jelly.

## Screen-casting



### Examples

Fig 1: Software Walk-through (Using Solver in Excel)

Resources					
	Materials	Labour	Testing	Profit	
Passive speakers	15	10	5	€200	
Active speakers	30	20	5	€200	
	90	120	35		

Decision variables	Passive	Active
Maximise profit	€0	
Constraints	Used	Available

Fig 2: Showing how to solve problems in written form (via tablet PC)

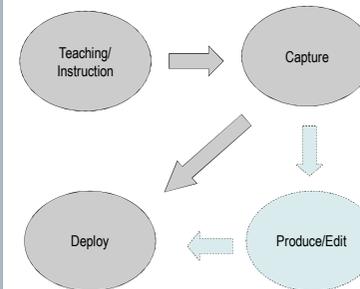
Find the initial solution using the Least Cost method.

Transport cost per tonne				Production (tonnes)
Site A	Site B	Site C		
Quarry 1	€7	€12	€9	110
Quarry 2	€11	€5	€7	90
Quarry 3	€6	€10	€13	80
Requirements (tonnes)	60	50	40	

## Development Methodology

The main aim strived for in this development was to make screencast creation a simple and fast process. For more details see <http://url.ie/64x>

Fig 3: Don't be seduced by post-production.



Videos were created according to a "publish or perish" motto which allowed a teacher to create many clips.

2007-8	59 clips on Introductory Mathematics and Statistics Available from: <a href="http://url.ie/64xk">http://url.ie/64xk</a>
2009-10	43 clips on Management Science. Available from: <a href="http://url.ie/64xc">http://url.ie/64xc</a>

### Student Evaluation

Average likert scores (1 = strongly agree, 5 =strongly disagree).

	Easy to follow?	Aided comprehension?	More (in other modules)?
2007-8 (respondents: 7 of 51)	1.9	2.1	
2008-9 (respondents: 14 of 49)	1.8	1.8	

## Comments

"Well structured and easy to follow. Also good narrative and set a good pace."  
 "I find the maths videos very good visually and instructively most of the videos were fine in detail but some you could do with a bit more and maybe a bit more explanation"  
 "I found the problems on differentiation started at too high a level - once I had a good grasp of the subject they then helped but I couldn't make head nor tail of them to begin with. The others I tried helped straight away."  
 "These videos/clips are very helpful and it would be good to see more of them - especially in stats."  
 "It is a very good idea and a very useful one. I hope you will develop on that and try to maybe implement it not only in [this] module"  
 "A little more detail as to where certain figures came from instead of assuming that we all know"

### What is the role of Video?

In short students said I want more, and I couldn't follow certain steps. Missing solutions steps has been also been a common survey comment over time on the module text (which are detailed custom-written notes in book form). Interestingly however students also claim that the text is often too detailed or too long (which they never say about the video). Satisfaction with the module text was lower than satisfaction with video: 2.7 and 3.3 for text versus scores for video of (normalised from two similar type questions - see above) of 1.8 and 2 for 2008-9 and 2007-8 respectively.

Is it video like a book, i.e. a resource to aid "self-study"? Or more...

### Future of Video

>> Google Apps for Education: Video >>

Tagging, rating and commenting  
 Scan (variable play speed and auto-indexing)  
 Quality: variable for bandwidth, offline viewing



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