

ACETS Exemplar 07*

Torque and Angle

Robin Shutt

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* Note: this project was unable to find suitable third-party materials and therefore did not complete an ACETS Exemplar learning activity. This report outlines their experiences and the progress they were able to make.

ACETS Exemplar 07: Baseline Survey

1	Teacher/academic's name	Robin Shutt
2	Teacher/academic's position	Lecturer
3	Teacher/academic's institution	University of East Anglia
4	Range of subjects taught	anatomy
5	Contact information	r.shutt@uea.ac.uk
6	Principal interest	anatomy
7	ACETS Officer	Dawn Leeder
8	Date of survey	1/24/2003
9	Do you know how to make web pages?	a lot
10	Have you used the web in your teaching?	a little
11	Do you use anything that you would consider a 'learning object' in your teaching?	not at all
12	How would you rate your own computing skills against those of your colleagues?	expert
13	How would you rate your own teaching skills against those of your colleagues?	good
14	How would you rate your own use of CAL against those of your colleagues?	good
15	How much relevant staff development and training is available?	a little
16	How much relevant staff development have you actually made use of?	a little
17	Do you have access to support in making electronic learning materials?	a little
18	Is this available as a free service?	with restrictions
19	Have you made use of this support service before?	a little
20	Would you expect that you would need to use this service to use learning objects in your teaching?	a little
21	Do you have a VLE (or equivalent) available to support your work?	Yes
22	What is the system called (e.g. WebCT, or equivalent local system name)?	Blackboard
23	Does it allow you to put teaching/learning materials online for your students	a lot
24	If so, do you do this or is it done centrally for you?	I do this
25	How easy is it for you to get teaching materials online?	quite easy
26	Do you have your own computer at work	Yes
27	Do you use a computer at home for work	Yes
28	What level of computer access do you think your students have in the institution and at home	very good
29	How much of this is Internet-enabled ?	a lot
30	How much teaching and learning materials are provided online for the students	a little
31	To what degree do you expect the use of learning objects to enhance your teaching	a little
32	To what degree do you expect the use of learning objects to enhance your students learning	a little
33	To what degree do you expect the use of learning objects to make your work easier	a little
34	Extra notes	The expectations above will change quite quickly, thus the answers applicable now may well be different once more material becomes available.

ACETS Exemplar 07: Interview

<i>Exemplifier</i>	Robin Shutt
<i>Exemplar description</i>	A PowerPoint presentation of torque and angle in the forearm and its relationship to physical properties.
<i>Interviewer</i>	Dawn Leeder (revised by Erin Mills)
<i>Date and location of interview</i>	14 January 2005, Queen's Building, University of East Anglia, Norwich
<i>Context of use</i>	Its context is in first year undergraduate study of biomechanics.
<i>How did you go about putting the exemplar together? Was it hard to design and/or conceptualise your exemplar?</i>	Conceptualising was quite easy, as I knew from various textbooks what I wanted to produce. Putting it together initially was very difficult because there were no available diagrams, descriptions or moving objects out on the web so I had to create my own and then had to decide a format in which to present those images I'd created. So no, it wasn't particularly easy and it's been through various stages of development. The starting point was a human arm, which was videoed and attempted to try and show torque and angle, which didn't actually work very well. From then I actually went to video of a skeleton and then tried to edit the video and add the lines and diagrams on to it, which again didn't work very well. So we then went to stills photography and put them together into a video such that I could actually annotate lines and drawings and that seemed to be the best way.
<i>How did you approach this work? How quickly were you able to come up with the activity design?</i>	The actual initial design was very quick it was subsequently trying to do things with that that I found I had to start going back again and try something else.
<i>Was the kind of activity something the students were familiar with?</i>	No. I had tried to describe or demonstrate previously with a wooden model, which they didn't seem to understand or grasp particularly well so their familiarity with the concept still was rather fuzzy; Hence my need to produce something which expanded on their understanding.
<i>How did you find/identify your third-party materials?</i>	We had little success searching the web so then I decided I had to produce my own materials. Both Dawn and I searched and searched the web. We tried every combination of key words for any kind of text or image. Nothing similar, just nothing. Eventually I produced it in PowerPoint. I tried Macromedia Flash, but when a couple of students tried it, they felt it would be better in PowerPoint, as they couldn't go back and forth through the information. I tried to demonstrate the biomechanics, many of the textbooks use stick drawings. I thought I could convey the information better if I used a human, to show what it would look like with muscles [and such]. Really it was just an iteration as I went along. I used a skeleton, and I started out with a video cam, but it was too difficult to edit, or demonstrate the angle. I put the stills together into a movie.
<i>Did you use ACETS listed links and sources?</i>	Well we looked at them yes, absolutely, in some depth. I looked at the ACETS website, the library, for images and text that I could use, I tried different key terms, but nothing similar.
<i>Did you look at/use JISC sources?</i>	Yes, some I did get some ideas after searching JISC for generating methodologies for displaying what I wanted to convey. After seeing a variety of ways, just through general browsing, I felt better, and more confident. I didn't use anything directly or get any direct ideas, but it gave me ideas [insight].
<i>Did you use commercial sources?</i>	No, not in terms of what were the actual images we were using. And I really didn't want to, because of the issues around copyright and reproducing.
<i>Did you have to get clearance/permission to use the third party materials?</i>	As I'm not using any, no.
<i>How did you go about getting clearance and with what success?</i>	N/a
<i>Was the exemplar easy to put together?</i>	I would say yes and no and I know that's not an ideal sort of answer. Yes in terms of what I wanted to do, but actually producing what to me was a viable exemplar was not that easy. So it was easy to configure in my mind what I wanted to do, but actually producing it wasn't
<i>What tools did you</i>	I used video cameras, computers, stills cameras, Macromedia software – I think it had Director

<i>use?</i>	with Flash, and PowerPoint.
<i>Did you get any help?</i>	Yes from the technicians within the building - they helped in moving the skeleton and filming, in helping compile some of the videos.
<i>Were you pushing your skills in doing this?</i>	No
<i>Did you use pre-existing services/tools?</i>	Yes in terms of both technicians and the tools we used.
<i>Did you engage with colleagues in your own working context?</i>	Not other than the technicians in terms of production.
<i>Would that be the normal way you work?</i>	Yes and no, in some instances and not in others. In other areas I would turn to my colleagues but not in this particular one as it's my field of teaching therefore it's not something which they would be able to help me with.
<i>Did you engage with the ACETS project or X4L programme?</i>	To a certain extent I did look at how exemplars had been produced by other people, what format they were in, how they were presenting them – their length, their depth. So it gave me an idea of where I might fit this one in, in terms of what an ACETS exemplar was. So I used that as a standard as it were. We (DL and RS) also had a number of meetings and that was helpful in keeping me on track and informing my direction.
<i>Did you engage with other external bodies?</i>	No.
<i>Was the exemplar easy to deliver/use?</i>	Yes. Once it was put together it was very easy to use.
<i>Did it give pedagogical benefit</i>	It did according to my students. It made what they considered to be a complex subject simpler to understand and added to their interest to explore further, which is one of the important things I wanted to achieve.
<i>Did it give economies of scale and efficiency</i>	Still to be tested I would say.
<i>Did it give diversity of approach and experiment</i>	Yes absolutely, because as I said I had a wooden model, I had drawings and now this is another way of going over the same material, which they actually seem to find beneficial. The wooden model was very simple, an upper and lower arm attached by a bit of string. But students couldn't relate it to a human arm. When used in conjunction [to the PowerPoint presentation] it clarified what I wanted to convey, it was a good supplement. Students had the 'aha' moment, and better understood. Eventually I may not need to use Woody anymore, and just rely on the PowerPoint.
<i>Have you evaluated it?</i>	To a certain extent, with a small group initially and with a slightly larger group after that. I still hope to do a final evaluation by the end of next month (Feb 2005)
<i>What was the form of the evaluation?</i>	Verbal feedback with five students initially and with ten students secondly.
<i>What was the result of the evaluation?</i>	The result from the initial feedback was a complete change in the form of presentation. The result of the second feedback was that additional questions were added at the end to stimulate further learning.
<i>Did it meet your expectations?</i> <i>Did you think your expectations were too high to begin with?</i>	Not totally. I'd still like to do more with it and perhaps have more learning involved in it but I do realise if I do that it would make it more complex and perhaps not produce the learning objective. I don't think my expectations were too high to start with, I think I could achieve my expectations but I've learned from the feedback that if I did achieve those expectations it might be too much for students. They just didn't want the sophistication that I initially tried to do. Perhaps it could be something that follows on from this rather than being included in it. I certainly have met my student's expectations.
<i>How easy was it to use third-party materials?</i>	N/a
<i>Has this enhanced your teaching? In</i>	It has to a certain extent but it does require the students to be able to access technology in order to continue their learning and whilst they do do that it's not currently something I'd normally use.

<i>what way?</i>	Obviously I will be doing more in the future. In that respect yes, it has enhanced my teaching.
<i>Has this enhanced your students learning? In what way?</i>	Yes, definitely. They now understand more easily what they had difficulty with before.
<i>Can you report back on the success of this assessment?</i>	I would say I'd like to do a final assessment before I report back on that, I would think that would happen within the next month, certainly by February 2005.
<i>How important was it that you were able to get hold of third party materials to use in your teaching?</i>	N/a
<i>Has the use of learning objects made your work easier?</i>	I would say it's hard to evaluate, I would suggest that it has but I couldn't categorically say that it has.
<i>Would you do it again?</i>	Yes I would, I think for the interest I would have myself and from the small amount of feedback from my students, they find it useful so I think I found it beneficial, some of it enjoyable so yes I think I probably would.
<i>Was it hard to adapt materials or teaching practices to do this?</i>	Not really because the way it is now in a PowerPoint format is one they are familiar with therefore they don't have to do very much.
<i>Has this changed your practice?</i>	To a certain extent, not greatly; but certainly in using this as a method of trying to convey a certain problem it's slightly different from what I would have done before.
<i>Any other points or comments?</i>	I don't think so. [added April 6/05] I think students did learn using the PowerPoint module, but generating discussion on Blackboard was extremely difficult. Very little interest in discussion though. Fast track students given new laptops to use while doing their clinicals at hospitals, to continue on with the discussion as they go about their clinicals, but nothing. No discussion. We did try some strategies to facilitate discussion, we [the lecturers] posted questions on Blackboard, we even engaged in answering the questions, disagreeing with some, to show them how to get involved, but still nothing.

ACETS Exemplar 07: Semi-structured Learning Design

<i>Learning Design Name:</i>	Torque and Angle
<i>Learning Designer(s):</i>	Robin Shutt
<i>Institution(s):</i>	School of Allied Health Professions, University of East Anglia, Norwich
<i>Course Context(s):</i>	Undergraduate Occupational and Physiotherapy students (set mandatory courses)
<i>ACETS exemplar ID:</i>	07
<i>LD period:</i>	Semester 1 of 1 st Year. Module is part of a mandatory course called "Biomechanics"
<i>LD duration:</i>	Through 1 st semester. Module is used during a lecture [doesn't stand alone], and later posted on web for students to use on own. Length of discussion (using the PowerPoint module) is approximately 1 hour and is done by lecturer as part of larger class discussion.

<i>In order to attain the following learning objective(s):</i>	Specific learning objectives	Minimal: Understanding the change of force with angle in the forearm Optimum: Applying the changes above to clinical applications	
	General learning outcomes	Minimal: applying biomechanical principles to other areas Optimum: Clinical application of these principles to treatment	
<i>With prerequisite(s):</i>	Basic understanding of Newtonian physics with regard to forces and movement. Educational level is A level and above. None. More about coming with an understanding gained from doing biology or human biology courses at the FE level, but some have this understanding but many don't, that's why the course helps and why I designed the module in such a manner.		
<i>Trigger(s):</i>	START: in a lecture as part of the curriculum in movement studies for Physiotherapists. Initiated by the lecturer who will demonstrate the resource with subsequent access by the students. END: ends when students move on to applied principles rather than theoretical. Students also have continual access.		
<i>The following persons/roles:</i>	<i>Name</i>	<i>Type (staff, student)</i>	<i>Description</i>
	Student learner	students	Undergraduate physiotherapy students
	Technicians	staff	Technical assistants in video etc.
	Lecturers	staff	Lecturer in Allied Health professions
<i>Perform:</i>	<i>Which roles?</i>	<i>Do what?</i>	
<i>Learning activity(s):</i>	staff	Demonstrate and promote the learning resource LO to students as part of lecture series (50+) students. Liaise with technical staff to make available on server/VLE (Blackboard)	
	students	Watch learning resource LO as part of lecture, ask questions when appropriate, and return to the learning resource at later stages.	
	students	Offer formative evaluation in small focus groups.	
	students	Demonstrate clinical application in summative assessment	
	Staff	Assess understanding within clinical context in summative assessment	
<i>Support activity(s):</i>	lecturer	Helps student understanding by using additional teaching aids (Woody) wooden moveable model of forearm in small group teaching and /or one to one tutorials	
<i>Using environment(s) or scenario(s):</i>	All	lecture rooms, computer lab or via Blackboard	
<i>Using:</i>	<i>Which roles?</i>	<i>Use what?</i>	<i>To do what?</i>
<i>Tool object(s):</i>	All	Internet-enabled computers, Blackboard	Access learning resource LO
<i>Knowledge object(s):</i>	Student	Learning resource LO	Work through teaching material.

<i>Test object(s):</i>	Student	Learning resource LO	Review learning and answer test questions. No formal test at this point, perhaps later will include a question on PowerPoint module. Fast track group of students do have a formal test, and part of testing examines understanding of wooden model, texts, and ACETS module.
<i>Search service(s):</i>	N/A		
<i>Communicate service(s):</i>	Staff	Blackboard, respond to emails on individual basis [of which there are very few]. Intention is to generate discussion around any material posted on Blackboard, including them module. Hard to generate discussion.	Facilitate discussion
<i>Announce service(s):</i>	Staff	Blackboard	Notify students as to availability and access
<i>Other elements or notes:</i>	Further development of learning resource to continue – along with student feedback and other staff input		

Completion Survey

Recorder:	Dawn Leeder
Date:	14 January 2005