

ACETS Exemplar 12

Fetal Heart Circulation

John McLachlan

Peninsula Medical School

ACETS Exemplar 12: Baseline Survey

1	Teacher/academic's name	John McLachlan
2	Teacher/academic's position	Professor of medical Education
3	Teacher/academic's institution	Peninsula Medical School
4	Range of subjects taught	anatomy,embryology
5	Contact information	john.mclachlan@pms.ac.uk
6	Principal interest	anatomy
7	ACETS Officer	dleeder
8	Date of survey	1/24/2003
9	Do you know how to make web pages?	a little
10	Have you used the web in your teaching?	a lot
11	Do you use anything that you would consider a 'learning object' in your teaching?	a little
12	How would you rate your own computing skills against those of your colleagues?	average
13	How would you rate your own teaching skills against those of your colleagues?	expert
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 lot
18	Is this available as a free service?	completely
19	Have you made use of this support service before?	a lot
20	Would you expect that you would need to use this service to use learning objects in your teaching?	a lot
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/Emily
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?	very easy
26	Do you have your own computer at work	Yes
27	Do you use a computer at home for work	no
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 lot
31	To what degree do you expect the use of learning objects to enhance your teaching	a lot
32	To what degree do you expect the use of learning objects to enhance your students learning	a lot
33	To what degree do you expect the use of learning objects to make your work easier	a lot
34	Extra notes	

ACETS Exemplar 12: Interview

<i>Exemplifier</i>	Fetal circulation
<i>Exemplar description</i>	It's a blackboard based activity to allow first year students to gain a more thorough understanding of how the fetal heart works
<i>Interviewer</i>	Erin Mills
<i>Date and location of interview</i>	April 29 th , 2005 (with Paul Russell)
<i>Context of use</i>	It's used in the first fortnight of the first term for 1 st year medical students, as part of an anatomy course. During the plenary the resource, the learning object, is described and the website is given, as well as instruction on how to access. After that it is up to the individual student to use, as it is self-directed learning. It isn't a mandatory activity, but more of a resource and students can refer back to it later during their years here at the medical school. For example, when they are in the hospitals working with consultants, they might refer back to it, as a sort of refresher, so that they look as if they know what they are talking about when they get in there!
<i>How did you go about putting the exemplar together? Was it hard to design and/or conceptualise your exemplar?</i>	It was one of the easiest but the most complicated learning objects we have put together. It was easy because John [McLachlan] had a clear idea of what he wanted. As with others, the content expert comes up with the concept or idea, they might have drawings, or PowerPoint, and then we as developers come along, it's a constant yo-yo effect, you know, draft 32.
<i>How did you approach this work? How quickly were you able to come up with the activity design?</i>	We really approached it together, it was a joint effort. As I said John had a very clear vision of what he wanted, and it was one of the easiest. However, because of the complexity of the material, the content, it was a very complicated learning object. In terms of page length, it should have been one of the easiest, it only has 2, compared to others, with many more pages. This one, the problem was getting that information to the students, it was difficult to put into bite sized chunks, and we are still working on ways to improve that information.
<i>Was the kind of activity something the students were familiar with?</i>	Oh yes, it is quite a normal process for most of our students. We have some who have already graduated - 50% are just out of school. Some already have engineering degrees, or biology, even a few with Ph.D.'s The whole activity is very obvious to them.
<i>How did you find/identify your third-party materials?</i>	We looked at the internet, of course, as a start, basically for cost really, as there is no point reproducing something that is already available out there. The academic brings in CD's, but we expect them to look at these. We just brought in the Gold Standard multi-media for biology. It's full of animations and video clips and it would be daft to reproduce these too, as they are already there, and we pay for it. We can't lift directly, but we can use it for ideas, and then we can reproduce. We always strive for consistency, for example if blood circulation is usually red for arteries and the veins are blue, we keep this constant throughout. We try for continuity and pattern, we wouldn't get too artistic with these things, many developers as you know can get a little keen and want to be very artistic, but we can't do that, and my job is to say no, that's not correct. We basically did a Google search, for images, we have some favourite sites, that comes from experience, I like NLMH. We rarely use clip art, you can never find exactly what you are looking for. In terms of 3 rd party materials, we do look at lots, but we don't always use it, for example a drawing from a textbook, we might look at it, and decide not to use it, because we can improve on it, so we critically analyse it really.
<i>Did you use ACETS listed links and sources?</i>	No, we didn't need to. I did have a look once or twice, but didn't find what I needed, so I haven't had any reason to return to the website.
<i>Did you look at/use JISC sources?</i>	We used LTSN as part of JISC, for medical images. It was fairly useful. It is really a fantastic site though, but far too small.
<i>Did you use commercial sources?</i>	We buy databases such as AIMS, it is a medical image encyclopaedia, it's very good, as it uses real images from hospitals, the Bristol Biomedical Archive is poor, it looks as if some of the pictures were taken with a Kodak Brownie camera.
<i>Did you have to get clearance/permission to use the third party materials?</i>	We didn't need to get permission to use any of the materials, as they are part of the database that we already pay for. We can draw in images when we want to.
<i>How did you go about</i>	n/a

<i>getting clearance and with what success?</i>	
<i>Was the exemplar easy to put together?</i>	Yes, again we had to do a lot of yo-yoing back and forth with John. As he says
<i>What tools did you use?</i>	We used Flash MX
<i>Did you get any help?</i>	No, it was all done in house between John, as content expert, Rob, he's no longer here, but he basically designed it, and I managed the whole process.
<i>Were you pushing your skills in doing this?</i>	No, not at all, but it's something that we will constantly improve on, and as we produce more of these learning objects we build on what we know.
<i>Did you use pre-existing services/tools?</i>	No.
<i>Did you engage with colleagues in your own working context?</i>	Yes, many of us were involved. 2 people here work on it 50% of their time; it's like having a full time person dedicated to it. I also asked Dawn Leeder's group [UCEL] to look at it, we tend to show it to them, to see if they are interested, and to dialogue with them over quality, if they were going to use it though, they would peer review it of course.
<i>Would that be the normal way you work?</i>	Yes, we work on a variety of projects together.
<i>Did you engage with the ACETS project or X4L programme?</i>	No, again we didn't really need to. I did look at both sites a couple of times, but really there wasn't anything of use. If they sent us updates, like LTSN and the Academy of Higher Ed does, I might see something I'd be interested in. Since we don't get any information, I am assuming the material is the same as when I looked at it earlier.
<i>Did you engage with other external bodies?</i>	Yes, Dawn's group.
<i>Was the exemplar easy to deliver/use?</i>	Yes, it was on Blackboard, the 'web' and students log in to access the web pages. The learning object is grouped with a number of other resources, they just scroll down to find it. Once they find it, it is simple enough to use, the click what they where they want to go. This part is relatively easy, but I have heard from students that they need to visit it several times, the information is somewhat overwhelming. We've done our best, but I'm still not happy with it, as it is still too complex. The first time you use it, you really have to go back and forth a few times, this is in some ways good, but it can be off-putting. The feedback told us the same thing, that it takes a long time to start it, but once you get it, it's great. Students can move around the learning object and zoom in for more detail. There is also a formative assessment at the end of the resource. For example, "After birth A) the <i>ductus arteriosus</i> becomes the <i>ligamentum arteriosum</i> OR B) the <i>ligamentum arteriosum</i> becomes the <i>ductus arteriosus</i> "
<i>Did it give pedagogical benefit</i>	Yes, I think it did. Speaking for John, Students can come back and visit it throughout their years here, it's a reference that is always available. It also helps to get a difficult concept like this across. If we can present it in such a way that meets their learning needs and in a time controlled way, it helps with their learning. For the visual learner, it is very useful, and we are working on ways to make it audio for those who learn more by audio, and we hope to add something to it later.
<i>Did it give economies of scale and efficiency</i>	Yes, definitely, and in a couple of different ways. There is the time saved by using the resource, in teaching, the benefit to students and even to developers in what we can learning by having the object.
<i>Did it give diversity of approach and experiment</i>	Yes, I think it did. Having the resource offers a number of diverse ways that the instructor and students can interact, it is a highly interactive method. It is definitely a very diverse learning tool and it can be modified to suit different needs of learners and instructors at different times.
<i>Have you evaluated it?</i>	Yes, we paid a half dozen students and we have also heard feedback from word of mouth.
<i>What was the form of the evaluation?</i>	Students trying out learning object and then answering questions based on how easy it was to use etc.
<i>What was the result of the evaluation?</i>	We made a number of changes based on what we heard. 3 major changes were made since it was first released to students in 2003.
<i>Did it meet your expectations?</i>	It's not a mandatory course, but the learning object fits with the curriculum, not directly, but if we've done our job, it should be inter-related. We use the AMK test, it's the same questions as we give to 5 th year students, all cohorts get the same exam. They are doing well if they get 5%, it's

	normalized with their cohort, and they can find out how they are doing against their peers. We rely on the fact that the students understand what they are doing.
<i>How easy was it to use third-party materials?</i>	Yes, but much of what is out there is not very good.
<i>Has this enhanced your teaching? In what way?</i>	Yes, it has certainly. It gets used in the plenary as a discussion piece, students have full access to it, and doing each RLO enhances the next one, and both students and instructor benefit
<i>Has this enhanced your students learning? In what way?</i>	Yes, again, I think it benefits both students and instructors. The RLO's get better with time, and students have more resources to use in their learning.
<i>Can you report back on the success of this assessment?</i>	Not really, the evaluation was based on what the students told us, they were not real faults or criticisms, but comments for additions to the resource. We will do a full evaluation perhaps at a later date.
<i>How important was it that you were able to get hold of third party materials to use in your teaching?</i>	Not that important, we just look mainly to see what kind of competition is out there. If we have 3 rd party materials available, that we are happy with, we make it available to the students.
<i>Has the use of learning objects made your work easier?</i>	The process of doing each RLO enhances the next one, it's a continuous process. As John says even with the yo-yo process, we all benefit, by having some ownership.
<i>Would you do it again?</i>	Yes, again and again and again.
<i>Was it hard to adapt materials or teaching practices to do this?</i>	No, I don't think so.
<i>Has this changed your practice?</i>	No it has not, it was one of many steps we have practiced already.
<i>Any other points or comments?</i>	Yes, one of the biggest things is that an academic comes in with pre-conceived ideas of what they would like to see. The textbook shows 'a' and 'b', but when the developer comes in and we try to display it, and once we start to explore the actual process, suddenly different questions about the process or how it works start to get asked, as we are putting it together. We use textbooks to re-package information to students, and most academics will have their favourite 3 or 4 books that they like to draw on, and students walk away with the same message, but when an academic starts to question how does it get done, or happen, these are new questions. The result is that the academic learns more about their own subject –normally the process rather than the result.

ACETS Exemplar 12: Reflective Diary

There is no reflective diary for this exemplar.

ACETS Exemplar 12: Semi-structured Learning Design Statement

<i>Learning Design Name:</i>	Fetal Heart Circulation
<i>Learning Designer(s):</i>	John McLachlan, Paul Russell, Rob Stillwell
<i>Institution(s):</i>	University of Plymouth
<i>Course Context(s):</i>	As part of first year, Blackboard based learning object. Intended to be used in first 2 weeks of anatomy course for first year medical students.
<i>ACETS exemplar ID:</i>	12
<i>LD period:</i>	First year medicine, used during first 2 weeks, learning object remains on web as permanent learning resource
<i>LD duration:</i>	It can take 30 minutes to complete, but can be used again and again as a resource

<i>In order to attain the following learning objective(s):</i>	<i>Specific learning objectives</i>	To introduce students to: basic concepts of fetal anatomy and processes of fetal heart circulation		
	<i>General learning outcomes</i>	To close learning gap – to ensure all students have same foundational knowledge and to give all students equal access to learning materials in a format that will facilitate knowledge around the difficult concepts related to fetal heart circulation.		
<i>With prerequisite(s):</i>	First year undergraduate medicine			
<i>Trigger(s):</i>	Term begins with plenary, learning object is discussed in detail and offered as an optional and not mandatory resource.			
<i>The following persons/roles:</i>	<i>Name</i>	<i>Type (staff, student)</i>	<i>Description</i>	
	Student learner (SL)	Student	First year medical students	
	Subject expert (SE)	Instructor	Offers support with RLO during and after tutorial session if necessary	
<i>Perform:</i>	<i>Which roles?</i>	<i>Do what?</i>	<i>How?</i>	
<i>Learning activity(s):</i>	SE	Use object for demonstrating concepts in a plenary session	Digital projection	
	SL	Access learning object, complete resource, including self- and formative assessment	Log onto university Blackboard, locate Fetal heart LO resource, navigate through options, complete on-screen tasks begin, complete resource, including self-assessment and formative assessment. Can view images, text throughout RLO, can also discuss with other students, instructor.	
<i>Support activity(s):</i>	All	Initial introduction of RLO during plenary.	Interactive discussion (and question period) during class to discuss resource in detail.	
<i>Using environment(s) or scenario(s):</i>	All	Classroom, Blackboard	Blackboard used via Internet on users desktop computer.	
<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	Access Blackboard and Fetal heart LO	
<i>Knowledge object(s):</i>	All	Fetal heart LO and related web-based resources	Observe, learn and reflect	
<i>Test object(s):</i>	SL	Formative assessment	Reflective questions related to knowledge of concepts described in learning object.	
<i>Search service(s):</i>	N/a			

<i>Communicate service(s):</i>	None. Information regarding the learning object is announced only once during the initial plenary during first two weeks of term.
<i>Announce service(s):</i>	None, only a general announcement {for all courses] is available, but not specific to learning object.
<i>Other elements or notes:</i>	<p>It's not good enough to just post it. It is important for students to be made aware of the resource. They need to have a clear path. Like pin the tail on the donkey 😊</p> <p>There are plastic life-like models available, but e-learning can enhance a difficult concept like this. Students come in with a variety of backgrounds, not all necessarily have the same background, and not all have biology for example. E-learning can also help out economically, especially with distance learning, this course has both distance and on-site learning, the plenary is distance, all the students see the same plenary, but the problem based learning takes place at the location they are at.</p>