

# Non Medical Prescribing Course -

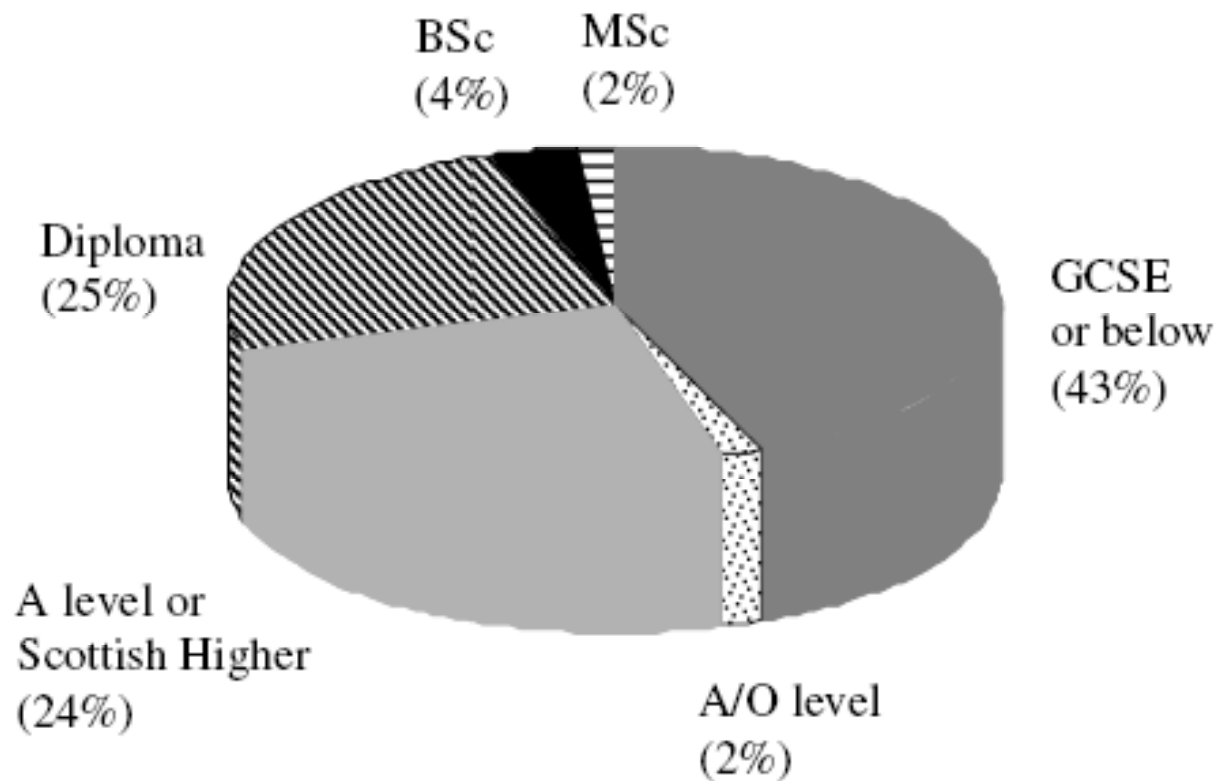


# Nurse Prescribing Course -

*"We needed more time on each aspect [of Pharmacology] until factors were absorbed and understood!!"*

*"I have always struggled with 'biology' etc so its not the lecturers' fault that I do not understand the sessions. I will revise at my own pace."*

- developed RLOs incorporating high quality graphics and audio to help students understand core pharmacology concepts

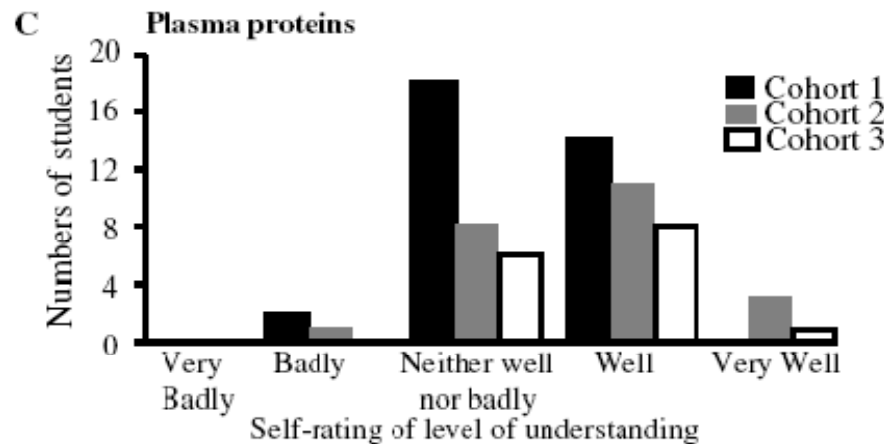
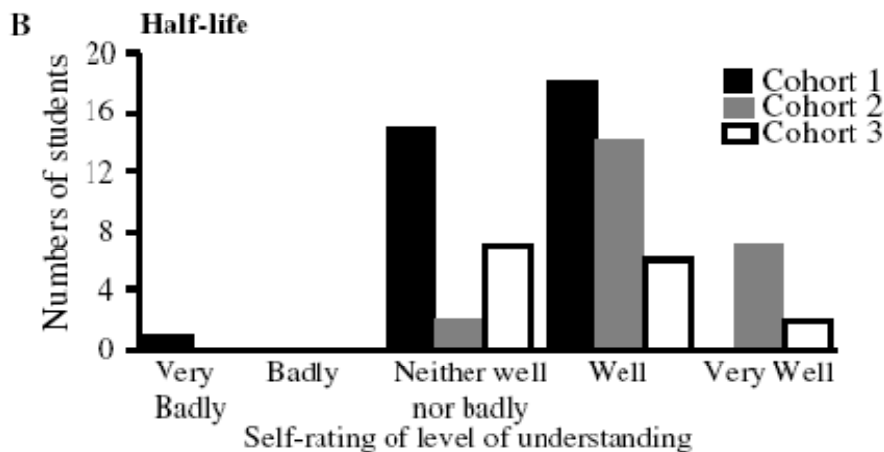
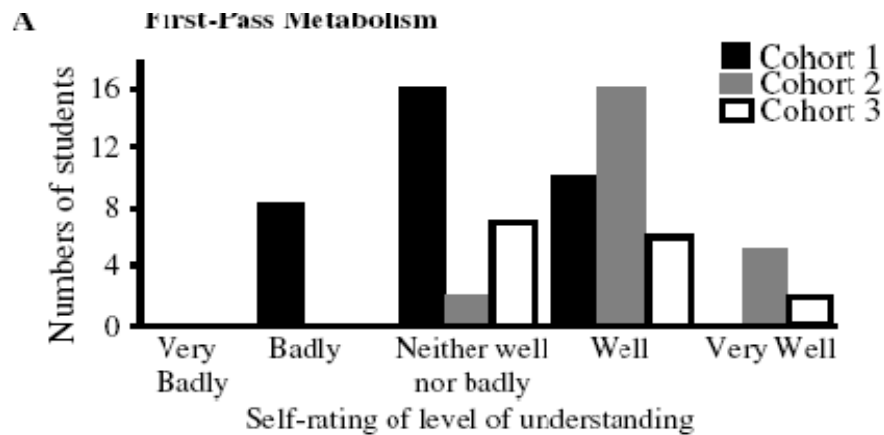


**Figure 1**  
**Highest Biological Science Qualifications.** Highest Biological Science qualifications of students on Nurse Prescribing Course. Combined data from September 03 and January 04 cohorts (70 students).

# Pharmacology RLOs



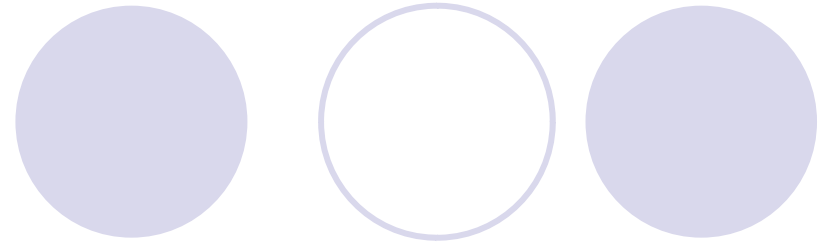
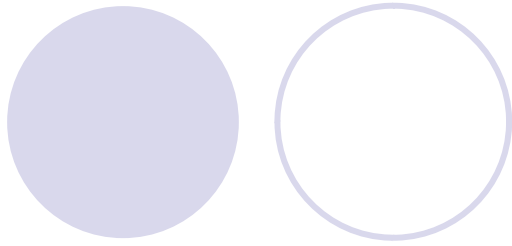
Exploring the synapse  
First pass metabolism  
Understanding half life  
Understanding bioavailability  
The lock & key hypothesis  
Excretion of drugs in the kidney  
Drug metabolism in the liver  
Agonists and antagonists  
Drugs acting at the synapse  
Plasma proteins in drug binding



**Table 7: Comparison of ratings of understanding of pharmacology concepts.**

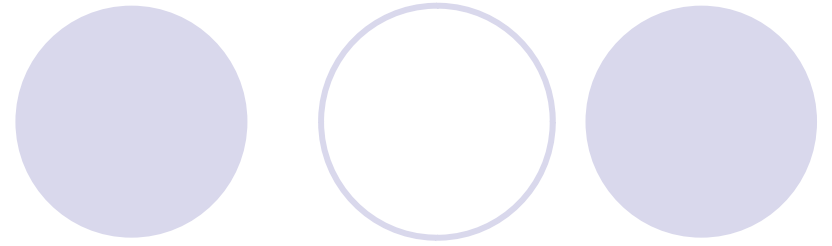
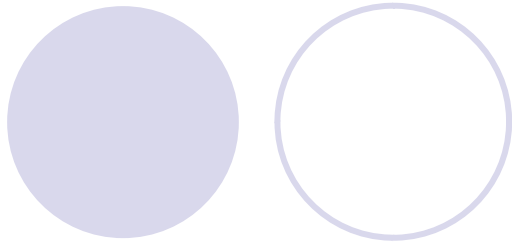
RLO Number	RLO Title	Chi Square	'p' value
1	Exploring the synapse	8.6	0.014
2	Bioavailability	16.5	0.001
3	Half-life of drugs	15.1	0.001
4	Understanding First Pass Metabolism	24.2	0.001
5	Lock and Key hypothesis	5.9	0.053
6	Plasma proteins and drug distribution	3.9	0.142
7	The kidneys and drug excretion	13.7	0.001
8	The liver and drug metabolism.	10.1	0.007

Kruskal Wallis test to compare the ratings of perceived understanding of each pharmacology concept between the 3 cohorts of students (2 degrees of freedom).



**Table 5: Student ratings of media attributes and size of RLOs.**

	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	N/A or missing
The images and animations were valuable components of the RLO	48%	45%	5%	1%	0%	1%
The on-screen text was useful and helped me assess the amount of information each section contained.	28%	54%	9%	1%	0%	9%
The RLO took longer to complete than expected	6%	19%	23%	37%	15%	0%
The narration made the RLO more engaging. I preferred this to text alone	32%	44%	7%	7%	0%	14%



**Table 4: Student ratings of usability of RLOs.**

	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	N/A or missing
The RLO was easy to use	39%	53%	4%	2%	0%	2%
The RLO was easy to navigate. I felt in control	42%	51%	4%	2%	0%	2%
The RLO was well structured and easy to follow	47%	47%	4%	1%	0%	1%
I liked the look and feel of the RLO	34%	47%	14%	3%	1%	2%

Percentage of students (cohort 2 and cohort 3) rating the pharmacology RLOs in terms of statements relating to usability.



**Table 8: Ranking of RLOs against other learning resources.**

---

Learning Resource	Average Rank
Lecture notes	1.4
Text books	1.8
RLOs	2.9
Journals	4.1
Web resources	4.6
CAL	5.2

---

Students ranking of RLOs against other resources to support pharmacology learning (n = 11 students)

**Table 3: Students perceptions of the impact on their practice of RLO learning in pharmacology.**

---

Question 1	Do you recall/Did you use the RLOs that supported the course/Did you have any problems accessing them?
Question 2	What properties of the RLOs helped your learning? (prompt media components. Verbal, visual, diagrams, animations .....
Question 3	Have you used the RLOs again? (when, how often ...?)
Question 4	Have they had any impact on your practice?
Question 5	Do you see any value in this method of teaching pharmacology?
Question 6	Have you used other RLOs?
Question 7	Have you recommended the RLOs to others?
Question 8	Would you like to see more developed? What topics would you like to see developed as RLOs?
Question 9	Do you have any suggestions for improvements of the RLOs
Question 10	Do you feel confident in your understanding of the pharmacology of the drugs you prescribe?
Question 11	What is your highest biological science qualification?

---

Questions explored in the telephone interviews of nurse prescribing students one year after completing the course.



Do you recall/did you use RLOs during the course?

*'Recall vividly, really brilliant, absolutely brilliant'* Participant 83 (male)

*'I just thought they were very good'* Participant 44 (female)

# Have they had any impact on your practice?



*'Reinforced need to take drugs regularly due to my understanding of half-lives eg paracetamol'* Cohort 2

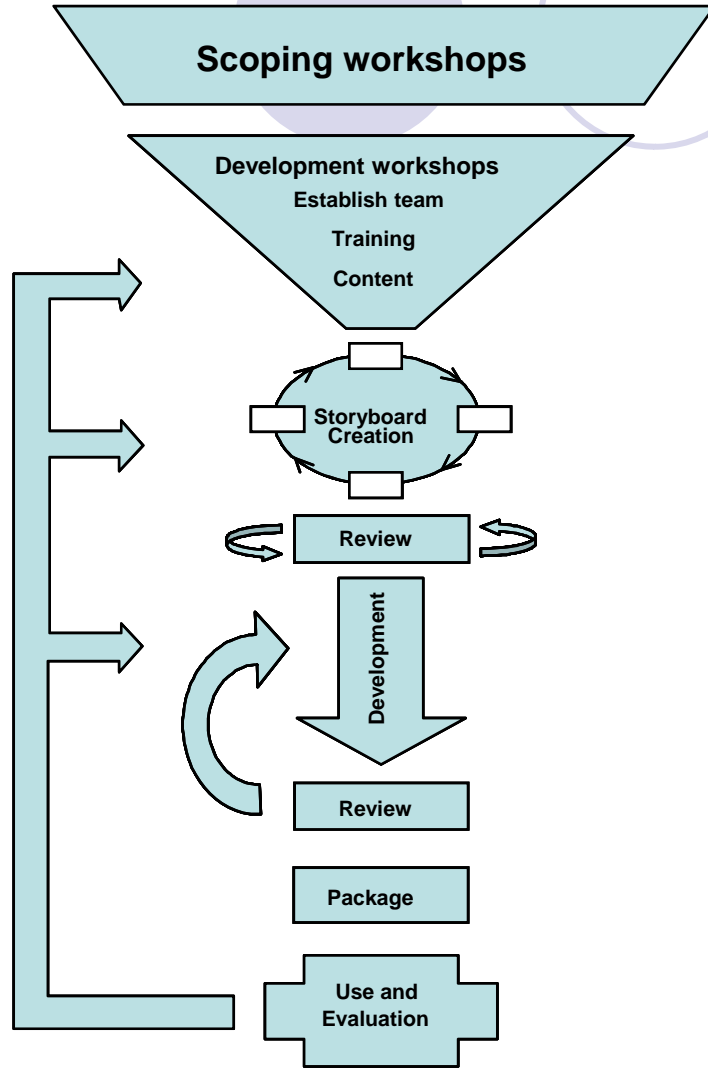
*'I feel the increase in RLOs will be very useful, I have used these a lot as part of my revision programme – as they help to visualise and interpret different concepts'* Cohort 2

*'I have been less impulsive in prescribing decisions, I am more likely to try alternative measures first, rather than just advising medication as I would have done in the past, particularly in the elderly'* Cohort 3

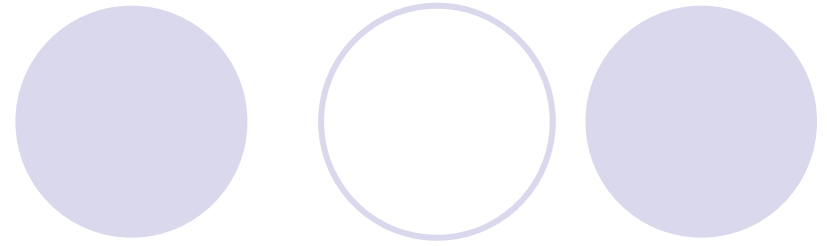


# RLO Development

# RLO lifecycle



# Community of Use



- Miniprojects
- Team-orientated
- Supported
- Workshops
- Communication



# Content Development










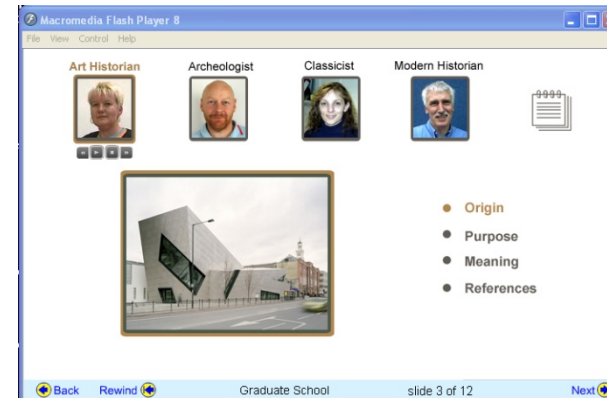
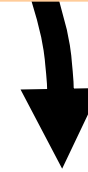
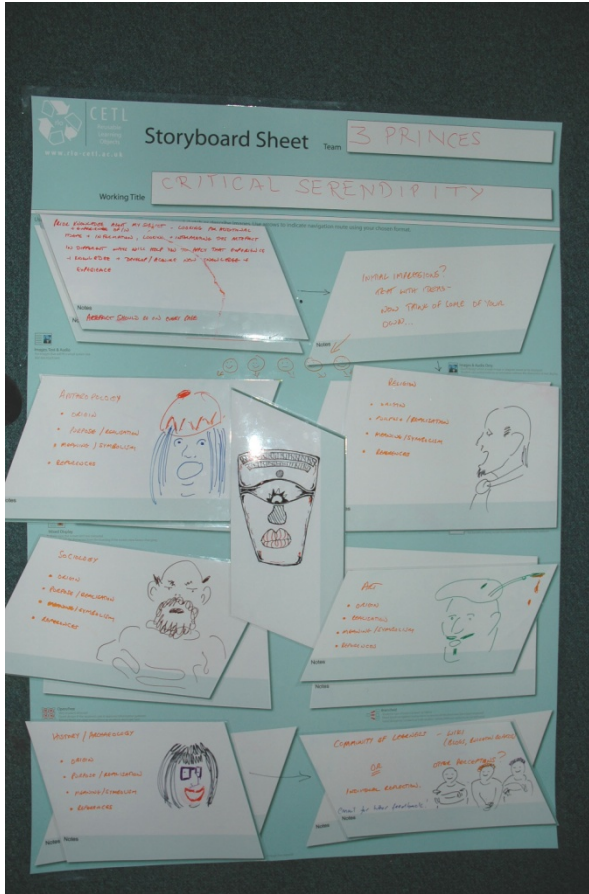
# RLO specification

UCEL		Reusable Learning Object Specification V2.0		4/1/02
Date:	Dev. Date:	Duration:	Topic:	ID:
Title:				
Author(s):			Developer(s):	
Learning objective:				
Keywords:				
Summary:				
Presentation:			Images etc:	
Activity:				
Assessment:				

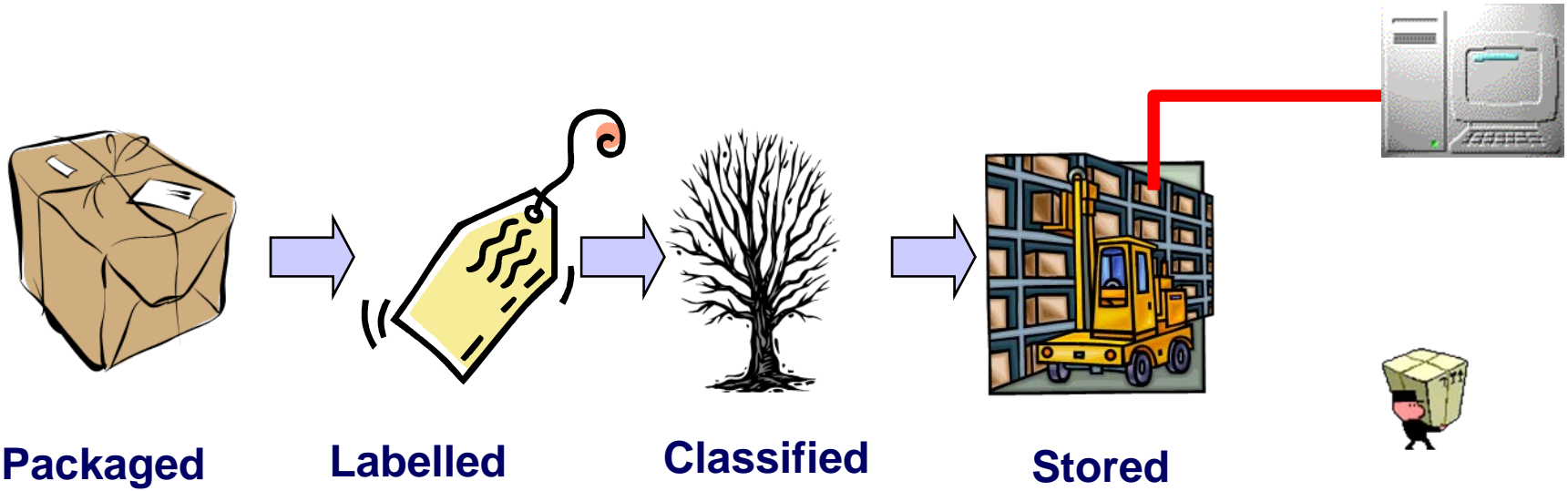
# RLO specification

UCEL		Reusable Learning Object Specification V2.0		4/11/02
Date:	Dev. Date:	Duration:	Topic:	ID:
Title: Risk Assessment in Manual Handling				
Author(s): Wendy / Rachel		Developer(s):		
Learning objective: <i>assess ergonomic factors vs weight</i>				
Keywords: Hazard; risk; task; load; individual capacity; Environment				
Summary:				
Presentation:			Images etc:	
<p><b>Hazard</b> - definition <sup>gaining the ability</sup> (substance or situation <del>likely to cause harm</del> to cause harm)</p> <p><b>Risk</b> - definition (probability of object/event causing harm)</p> <p><b>task</b> <sup>self assessment</sup> <sup>yes/no</sup></p> <p>holding load a distance from trunk? cautious loading/unloading? insufficient rest/recovery period?</p> <p><b>load</b></p> <p>Bulky? Slippery? Without Handle? Heavy?</p> <p><b>Individual Capacity</b></p> <p>operator in poor health? Client unable to co-operate? Operator unable to use equipment?</p> <p><b>Environment</b></p> <p>Insufficient level of lighting? Extreme of temperature? Extreme of humidity? Space preventing good posture? Floor level uneven? Work surfaces high/low, uneven level?</p> <p><b>Assessment:</b></p> <p>Give examples in your working life that you could use the above format for risk assessment!</p>			     <p>YES = HIGH RISK! NO = LOW RISK</p>	
Links (1):			Links (2):	
<p>H H O Regulations (1992) [60/269/EEC] Rabin's Topgun a force (2003)</p>			<p>Guide to manual handling (1st edition) RCN " " Load bearing capacity EC guideline (1991)</p>	
Glossary:				
T. L. I. E.				
Related concepts:			Ergonomics; Epidemiology of back pain/injuries	
Author's notes:			Dev's notes:	
Time:	30 mins	Total:		Total:
Last update: 13/11/2002			Page 1 of 1	

# Content Development

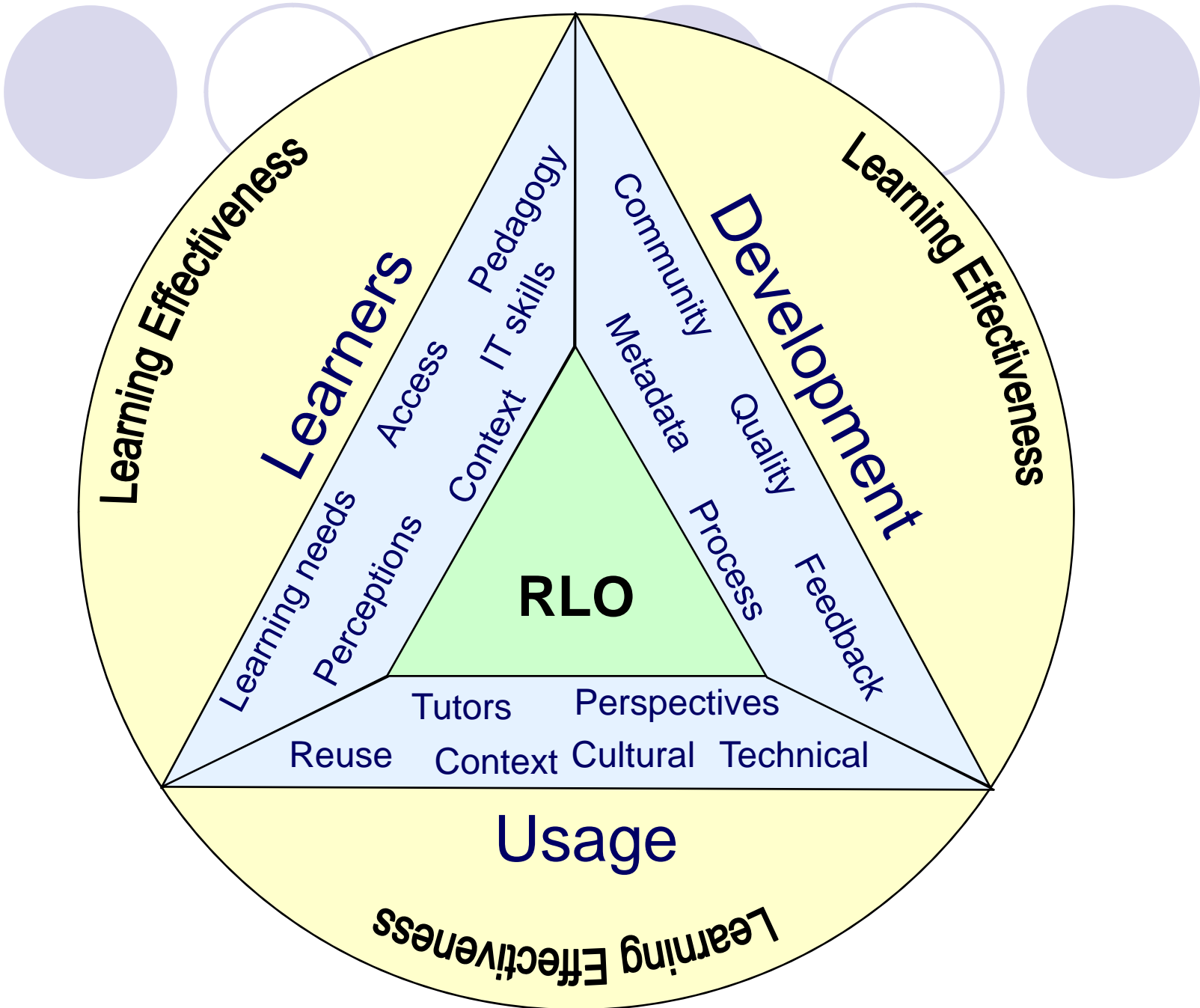


# Storage, use & reuse of RLOs





# Evaluation Methods



**Learning Effectiveness**

**Learners**

Learning needs  
Perceptions

Access

Context  
IT skills

Pedagogy

**RLO**

Community  
Metadata

**Development**

Quality  
Process

Feedback

Tutors

Perspectives

Reuse

Context

Cultural

Technical

**Usage**

**Learning Effectiveness**

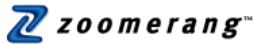
**Learning Effectiveness**

# Evaluation toolkit



- Electronic feedback for each RLO
- Student questionnaire – RLO feedback
- “Context of learning forms”
- Effectiveness of learning form
- Student focus groups
- Tutor interviews
- Cross case analysis tools
- LO community evaluation tools

Available at [www.rlo-cetl.ac.uk](http://www.rlo-cetl.ac.uk)



Lucrezia Herman, zPro Subscriber

Home Create Survey My Surveys My Contacts

Support/Help My Account Log Out



Subscriber Resources

Zoomerang Features

Learn how to use 3 of Zoomerang's most powerful features in our recorded webinar:  
 Skip Logic, Filters & Crosstabs

Zoomerang Services

- Zoomerang Sample
- Survey Coach Consulting
- Survey Programming
- Survey Translation
- Confidential Deployment
- Telephone Survey Deployment

Knowledge Base

SEARCH

Zoomerang Forums

Exchange survey ideas and advice with other Zoomerang users.  
 Enter User Forums.



Get Started

CREATE A SURVEY

- » Create a survey from a template
- » Create a survey from scratch
- » Copy a previous survey



Recent Survey Results

Survey Name	Latest Response	Partials	Completes	Reminders
53 NUCL Exploring the synapse	11/01/2007	0	11	» <a href="#">Send</a>
74 NUCL Understanding First Pass Metabolism	11/01/2007	0	45	» <a href="#">Send</a>
18 NCTL Acids and alkalis introduction	11/01/2007	0	52	» <a href="#">Send</a>
NCTL109R Should Sarah smack her child?	10/31/2007	0	13	» <a href="#">Send</a>
38 NCTL Why critique research	10/31/2007	0	43	» <a href="#">Send</a>

» View all surveys

Display: 5 surveys



Recent Survey Drafts

Survey Name	Modified			
No Survey File Name (1)	10/26/2007	» <a href="#">Edit</a>	» <a href="#">Preview</a>	» <a href="#">Send</a>
RLO Feedback (Luc's suggested revision) (1)	10/26/2007	» <a href="#">Edit</a>	» <a href="#">Preview</a>	» <a href="#">Send</a>
NCTL108R Basic referencing using modified Harvard	10/14/2007	» <a href="#">Edit</a>	» <a href="#">Preview</a>	» <a href="#">Send</a>
50NSN Cell Division	10/12/2007	» <a href="#">Edit</a>	» <a href="#">Preview</a>	» <a href="#">Send</a>
Cell Division (1)	10/12/2007	» <a href="#">Edit</a>	» <a href="#">Preview</a>	» <a href="#">Send</a>

» View all surveys

Display: 5 surveys

**Zoomerang Sample**  
 2.5 million people.  
 500+ attributes.  
 In an instant.  
 Get A Quote

**Survey Coach**  
**Confident Results**  
 Live Training  
 Survey Design  
 Final Survey Review  
 Get Started

**Survey your contacts by phone.**  
 See results online.  
 Get a Quote



# Health 'RLO' communities

- Groups of HE lecturers (IP), 1 or 2 students, learning technologist, (graphic artist)
  - EBP, A&P, Practice skills, Pharmacology.....
- LOLA – cross sector HE, FE lecturers and NHS Trust
- ELI - Trust education development officers and trainers (NHS III) – service improvement RLOs
- SHOULD - Student generated RLOs – Learning disability nursing students
- Home Ventilation – Respiratory unit consultant, nurses, carers and users
- HIS – infection control staff – hand hygiene RLO for patients and relatives
- Critical care Trust staff – health and safety RLOs

# SHOULD Project – EdgeHill 2008



# More information ....

- Free RLOs and project info

[www.nottingham.ac.uk/nursing/sonet](http://www.nottingham.ac.uk/nursing/sonet)

[www.rlo-cetl.ac.uk](http://www.rlo-cetl.ac.uk)

- Sharing Learning Objects in Health

- March 24<sup>th</sup> 2009

- Subsidised £25

- Registration information at SONET url

- [Heather.wharrad@nottingham.ac.uk](mailto:Heather.wharrad@nottingham.ac.uk)