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Reusability of Online Role Play: Learning Objects or Learning Designs?

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Disciplines

Arts and Humanities | Social and Behavioral Sciences

Reusability of Online Role Play: Learning Objects or Learning Designs?

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Abstract

This study tracks the uptake of online role play in Australia from 1990 to 2006 and the affordances to its uptake. It examines reusability, as one affordance, from the perspective of two often polarized constructs: Learning Object and Learning Design. The study treats "reuse" on two levels: reuse of an existing online role play and reuse of an online role play as the model for another role play. In keeping with terminology that has come into recent use, we propose that the first level implies the online role play is used as a Learning Object and the second level implies the online role play is used as a Learning Design.

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Introduction

It is not yet clear whether Learning Designs is a movement that will take off with the same momentum as the Learning Objects industry. This study compares the two by focusing on online role play as the example of courseware. Role play is deliberately chosen because it is a learning design that does not have its pedagogical basis in a content transmission model of teaching. Because it instead presents a constructivist learning environment, it may better challenge the current definition of Learning Objects.

It is also an area of teaching activity in Australian universities that is small enough that it can be investigated in detail via interview and case study rather than broad-brush survey methods.

Most papers on Learning Objects are very theoretical and divorced from a real context. By discussing Learning Objects and reusability in a concrete teaching and learning context, it is anticipated that recommendations will be more meaningful.

It is usually assumed that the lower the level of granularity (ie the smaller the size), the more likely academics would be to reuse the object. It is also assumed that lower levels of granularity would be more easily customised according to individual needs. However when investigated in the context of online role plays, the granularity argument may not be supported by evidence.

Background

Role Play and Online Role Play
Role plays are situations in which learners take on the role profiles of specific characters or organisations in a contrived setting. Role play is designed primarily to build first person experience in a safe and supportive environment. Role play is widely acknowledged as a powerful teaching technique in face to face teaching and role play online is also powerful, with some added benefits. Online role plays are conducted via email or a combination of email and web-based threaded discussion forum. Online role play provides a scenario and a set

of roles that students adopt in order to collaboratively solve a problem, create something, or explore an issue. Online role play is different from a simulation in that students interact with each other, via the computer, rather than interacting alone with a computer model.

Figure 1: Screen capture of online role play at University of Western Australia (Yasmeen & Fardon)

Online role play can add to face to face role play in two ways: asynchronicity and anonymity (Freeman & Capper, 1999; Chester & Gwynne, 1998; Bell, 2001;2002).

The asynchronous nature of online role play provides time for players to consider and research alternatives and use "out of role" discussions before making a "move". This asynchronous nature is of high educational value. Role playing is a good environment in which to test and play with possibilities, establish strategies, promote confidence and evaluate consequences of any response. Face to face role play usually lasts a short time and demands spontaneous action. While it may be of value to some training situations (e.g. sales presentation), it offers little opportunity for reflection. In contrast web-based role play can take weeks. This provides more opportunity for reflection, consolidation and internalization of the actions taken.

Unlike a face to face role play, online role play can be anonymous which provides distinctive features to support learners who may be intimidated, shy or otherwise unable to participate fully in a face to face situation, especially impromptu face to face role play. It has an added value for participants whose first language is not the language in which the role play is conducted. In some cases it may enable participants to be more creative and imaginative. Gender swapping is a common outcome of anonymity and one that is not as plausible in face to face situations. Online role play can provide practice leading into face to face role play if needed.

In Australia there has been pioneering work in asynchronous online role plays in university-level subjects in Politics by Vincent (1998), Linser (1999), and Fardon (2004); Economics by Freeman (1999); Psychology by Chester (1998); Engineering by McLaughlan (2001); Education by Bell (2001, 2002); Geography by Brierley (2002); and History by Wills (2002).

According to the taxonomy of simulations developed by Gredler (1992), these Australian examples fall into the category of multi-agenda/social-system/social-process simulations because "participants assume roles in a hypothesized social group and experience the complexity of establishing and implementing particular goals within the fabric established by the system. The differences and potential conflicts among the roles set in motion the dynamics..." Although all of the examples stress the academic theory and content of their university-level discipline area, they also stress the generic learning outcomes such as negotiation skills and communication skills that are the main outcomes of a social-process simulation. As participants work towards their social or political goals, they may experience a range of emotions such as pride, frustration, anger, rejection, acceptance, or conflict, therefore debriefing activities are an important part of any role play.

Tracking use of online role play in Australian universities

The growth of online teaching has been very rapid in the past ten years, yet implementation of role play in an online setting is growing more slowly. In a previous national study (2001-2003), the essence of effective online role play was distilled into a Learning Design from analysis of seven exemplar case studies and interviews with fifteen role play designers (Wills & Ip, 2003; Hedberg et al, 2002). Since that study the authors have tracked the growth of new designers and found additional designers who were missed in the first study because they had not published about their work or were not available for participation in project at the time. The current study identified role play designers in Australian universities via literature review, search of university teaching and learning websites, follow-up email survey with the original designers, new interviews with some of those designers, and personal approach.

Table 1: Growth of online role play in Australian Universities 1990 – 2006
* 10 of these 36 role plays are not currently running but most anticipate running again in the future

Growth in…	1990-4	1995-9	2000-4	2005-6
Number of **role plays** developed	2	7	22	36*
Number of **role play designers**	2	11	35	48

Some role plays have stopped after running three to four times either because the designer has moved universities and not yet restarted the role play in a new context or because the curriculum has changed and the role play has not yet been re-purposed for the new learning objectives. In the first interval there was a quadruple increase. In the second interval, as the internet began to gain credence in teaching, there was a three fold increase. There is only a small increase in the last interval but this covers two years so far rather than five years. A number of new role plays are developing in at least nine universities. Some designers quoted in (Alexander, 2005, p.105) worry that online role play would lose its impact if it lost its uniqueness. Online role play is far from being at saturation point yet, but it is growing.

Learning Objects
Wiley provides the following broad definition of a Learning Object:
"any digital resource that can be reused to support learning. This definition includes anything that can be delivered across the network on demand, be it large or small. Examples of smaller reusable digital resources include digital images or photos, live data feeds (like stock tickers), live or prerecorded video or audio snippets, small bits of text, animations, and smaller web-delivered applications, like a Java calculator. Examples of larger reusable digital resources include entire web pages that combine text, images and other media or applications to deliver complete experiences, such as a complete instructional event." (2000)

It is assumed that uptake and adoption of educational technology in teaching will be faster if teachers will reuse educational courseware developed by other teachers rather than reinventing the wheel. In the past it has been assumed that one hurdle to teachers reusing other teachers' courseware is that the courseware is a closed package that has been too large a chunk to implement as a whole in another teacher's context because they want to modify it for their own unique context. University teachers use educational materials, digital or otherwise, by breaking the materials into constituent parts, reusing those parts that are relevant to their subject, context and perspective, and reassembling those parts from the original package along with parts from other packages to form a new set of educational materials. It is assumed that systems which mirror teachers' natural instinct to reuse chunks in their own preferred order for their own context will assist uptake and adoption of educational technology. These assumptions have underpinned the Learning Objects movement. Associated movements are the Repository and MetaData industries aimed at providing assistance to teachers in finding and reviewing these chunks or Learning Objects.

There is no evidence yet that university teachers are taking to the Learning Objects approach although there has been significant activity in the schools sector (Learning Federation[1]) and vocational sector (ANTA ToolBox[2]). Perhaps it is early days but also perhaps sharing is not part of the academic teaching culture which in general is seen to not reward time spent on teaching. Academics also value their Intellectual Property in different ways from school and vocational teachers as publication is a major part of promotion processes. There is some evidence from our literature review that Centres for Teaching and Learning, whose role is to support university teachers, are interested in Learning Objects and Digital Content Repositories. Presumably this is because of the potential for gaining efficiencies in central courseware development.

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[1] http://www.thelearningfederation.edu.au/tlf2/

[2] http://toolboxcentral.flexiblelearning.net.au

Meanwhile others in the educational technology scene are philosophically opposed to the Learning Objects movement fearing that it does not provide teachers with a quality pedagogical basis for reuse of the Learning Objects. They fear it will escalate a cut & paste "Clip Art" approach to teaching based on a content transmission model and hinder the growth of high quality online learning environments based on constructivist pedagogy. So alongside the Learning Objects movement has developed the Learning Designs movement which posits that in education a more useful "reusable chunk" is not a piece of content but rather a generic design for a sequence of learner-centred activities, resources and supports.

Learning Designs

Based on a UK project called SOURCE for Software Use, Reuse and Customisation in Education[3], the Australian Universities Teaching Committee (AUTC) proposed a similar project: "In a climate where individual institutions are experiencing increased costs at the same time as they face increased demand for more flexible approaches to learning, AUTC considers there is benefit to be gained in developing shared resources and disseminating successful, generalisable templates between institutions." The University of Wollongong and Edith Cowan University won the bid for this major project on Learning Designs for ICT-based teaching. The aim of this project was to assist dissemination of the best online and multimedia projects previously funded by Australian government by distilling the essential Learning Design behind the project (Hedberg, Oliver, Harper, Wills & Agostinho, 2002). The three year national project culminated in a website which is available to all and contains exemplars, guides and tools for supporting high quality online learning in universities[4]. The categories of Learning Design in the site include Online Role Play.

The project proposed that quality learning comprises the following key elements:
- Tasks that learners are required to do.
- Resources that support learners to conduct the task.
- Support mechanisms that exist from a teacher implementing it.
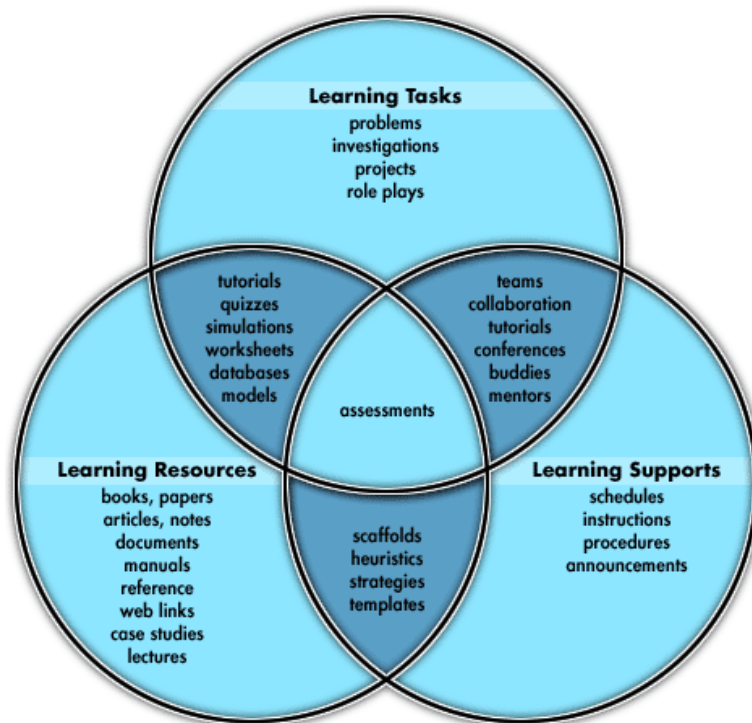- Assessment tying these elements together.

Figure 2: Key elements of a Learning Design, based on Oliver (1999)

The term **learning design** describes the various frameworks that can be used to guide the design and choice of these four elements in the development of a learning experience for students, particularly ICT-mediated learning

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[3] http://www.source.ac.uk/

[4] www.learningdesigns.uow.edu.au

experiences. The project evolved a graphical representation mechanism to describe and document the generic learning design foci in terms of the tasks, resources and supports that would be required in the learning setting. A 'Learning Design Sequence' representation uses the following graphical notation: Squares represent Tasks; Triangles represent Resources; Circles represent Supports; and Asterisks represent assessable tasks.

Learning Design as a Means for Facilitating Reuse of Online Role Play

The rationale behind the AUTC project was that effective description of online role play as a Learning Design would facilitate uptake of the teaching technique. The Learning Design sequence developed for generically describing it is enRole, Research, React, Resolve, Reflect.
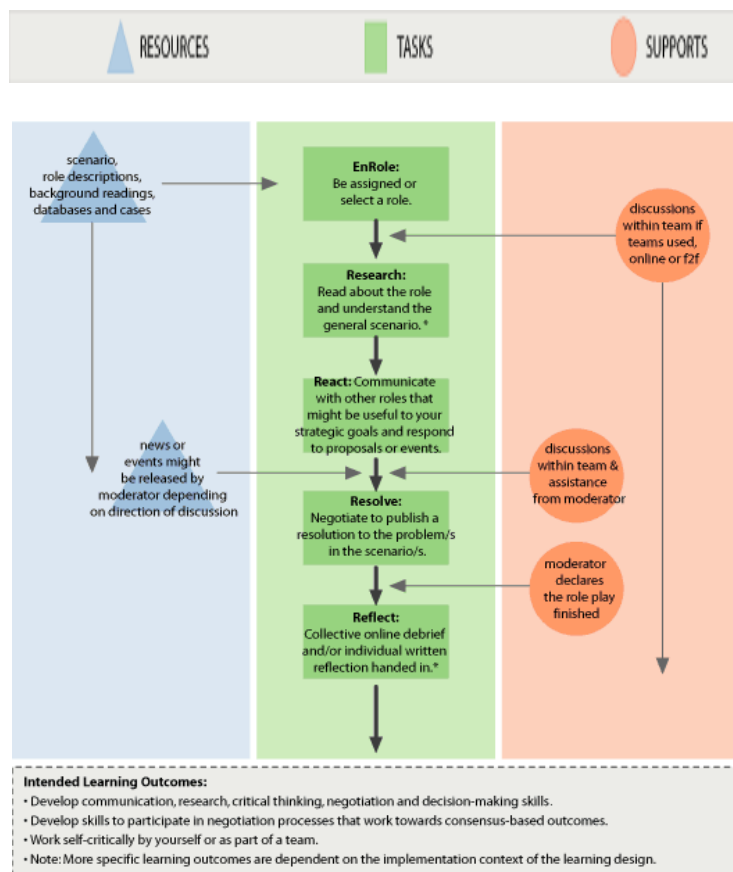

Figure 3: Learning Design Sequence for a Generic Online Role Play (Wills & Ip, 2002)

The project team considered that the Learning Design Sequence construct could be a form of documentation to serve as a "standard"/"common" communication mechanism to explain and illustrate different kinds of learning designs. Most generic guides and exemplar descriptions housed within this website use the mechanism, supported by additional documentation. This documentation typically includes a description of key features of the learning design and the nature of the tasks, resources and supports required. The role of ICT in the implementation of the learning design is also explained.

Main Focus of Chapter

Reusability, Learning Objects and Learning Designs

Because online learning has become a large investment for universities and is now a concern of Information Technology Services and Finance Directors as well as Educational Development Centres, "reusability" has become a topic of high interest. The term "reuse" is used loosely and often overlaps with other terms like "uptake", "adoption", "adaptation", "modification" and "dissemination". In tracking the uptake of online role play in Australia from 1990 to 2006, this current study treats "reuse" on two levels: reuse of an existing online role play and reuse of an online role play as the model for another role play. In keeping with terminology that has come into recent use, we propose that the first level implies the online role play is used as a Learning Object and the second level implies the online role play is used as a Learning Design.

Laurillard takes a similar approach to terminology in an unpublished presentation titled "A pedagogic focus for R&D: Generic e-learning activities as learning objects?" at an AUTC Learning Designs conference in Sydney, 2002, and in Chapter 7 of *Reusing Online Resources* (Littlejohn, 2003).

Of the 36 role plays developed during the 15 year period, 29 role plays (80%) were a reuse of another role play. Table 1 analyses the 29 role plays using the framework of learning objects and learning designs.

Table 2: Reuse of Learning Object and Reuse of Learning Design

Reuse by…	different teacher **same** discipline	different teacher **different** discipline
of **same** role play: Learning Object	6	0
of **same** role play **design**: Learning Design	5	18

Before the analysis it had been predicted that most role plays would fall into the category of "Reuse of same role play design by different teacher in same discipline" as this is the lesser "distance" to transfer. However results show substantial uptake of the Learning Design by different teachers in different disciplines. That 23 of the 36 role plays are reuse of a Learning Design supports the value of the original Learning Designs project: in a university context, Learning Design is currently a more useful concept than Learning Object.

Our motivation for tracking and analysing the role plays was to chart whether a role play can become a Learning Object in the same manner as packaged print-based simulations such as *BaFa BaFa* or educational software such as *SimCity*. Only three role plays in this study have been reused by others.

Three role plays that have become Reusable Learning Objects

1. Middle Eastern Politics
The first known university-level online role play developed in Australia, Andrew Vincent's Middle Eastern Politics at The University of Melbourne (1998), is a powerful example as it has been successful both as a Learning Object and as a Learning Design. Many of the 36 role plays now developed can track their ancestry back to Vincent's original Learning Design.
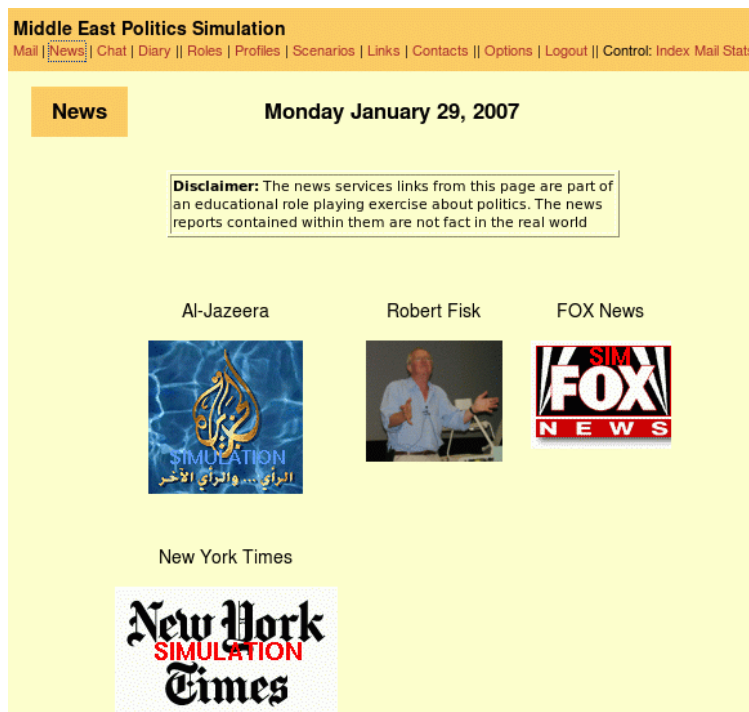
Figure 4: Screen capture from Middle Eastern Politics http://www.mq.edu.au/mec/sim/index.html

When Vincent moved to Macquarie University in another state and reused the role play there, the role play continued, and flourished, at The University of Melbourne. Middle Eastern Politics therefore counts twice as a Learning Object under the definition of reuse in this paper.

At Macquarie University it has been reused in schools and may be released as a part of a textbook, although we have not included these two examples in the table above which counts only university examples.

The simulation, which is set two or three weeks in the future, generally runs for three to four weeks and is played in the students' own time. It concludes with a real-time conference of three to four hours which addresses the issues that the students have been discussing in the preceding weeks. Once students are assigned to a team, and before the simulation begins, with the release of a scenario, they write a short profile of their character which is placed on the web-site and is accessible to all. The main role play proceeds in response to the scenario (see below). Once the scenario has been released, the simulation is largely student driven, although all messages are monitored by controllers for grading purposes and to ensure that the students remain "in character".

2. Pain Management Roundtable Discussion

Elizabeth Devonshire at the University of Sydney has likewise had success with both a Learning Design and Learning Object. Her original Learning Design for a Roundtable Discussion (RTD) in Geography at Macquarie University (see Brierley et al, 2003) has now been reused twice at the University of Sydney (Devonshire, 2006). Her University of Sydney Pain Management role play has recently been licensed to two international universities and therefore counts as a Learning Object twice in the table above.

The RTD role play is built around the interactions of a multidisciplinary team, (4 health professionals), who are meeting regarding the management of a complex patient case. Each team member is represented by a small group of participants. These small 'consultant' groups prepare a position statement about the case. Then, one player from each group participates in the (online) team meeting, with external support/advice from their 'consultant' group. The team meeting enables exploration of the clinical decision making process within an inter-professional team context.

3. Idontgoto University

Likewise Maureen Bell's role play, Idontgoto University (Bell, 2001), is reused by other teachers at the University of Wollongong in the same subject and by teachers at the University's Dubai campus, thus scoring twice as a Learning Object in the table above. Her Learning Design is described on the Learning Designs website as Quick Start Role Play #2.[5]

At a mythical university, IDONTGOTO UNIVERSITY, a lecturer has used criterion-referenced assessment in a subject and all of the students have received 100%. This has scandalised some of the academics in the faculty and the story has hit the local paper, THE DAILY VIEW. A debate on criterion-referenced versus normative assessment unfolds in the letters to the editor pages.

Future Trends

Possibly, reusability in the form of Learning Objects is less likely in a university context because university role play designers are highly expert in the discipline area of the role play, such as Politics or Geography, and bring a wealth of knowledge into the moderation of the role play which is difficult to duplicate in another university. Course outlines are often closely aligned to the research strengths of the academics employed in the department. Reuse of comprehensive teaching materials is therefore less common in Universities than in schools and post-secondary education. Academics are more likely to adopt a Learning Design than a Learning Object, unless the Learning Object is small and can be incorporated into their Learning Design.

Reusable Learning Objects within Online Role Plays

Bennett, Lockyer & Agostinho (2004), who were all involved in the original national project, have looked at Learning Designs from a different angle than the study reported here. They investigated how university teachers make use of generic learning designs as a framework for incorporating learning objects into their subjects. A Learning Design can incorporate Learning Objects and if an online role play is built as a Learning Object then it is feasible that it could contain Learning Objects within it too. Scenarios, role descriptions, and resources produced for an online role play could all become reusable Learning Objects if developed

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[5] http://www.learningdesigns.uow.edu.au/guides/info/G1/Downloads/QuickStartRolePlay_2.pdf

appropriately. For example, a project at The University of Melbourne is currently investigating issues with reusing Cases, developed for Business School case-based learning, as Scenarios in role-based learning.

In this study, we found two instances where a component of a role play may be handed on as a Learning Object: *Save Wallaby Forest* by Kristin Demetrious[6] and *A Different Lunch* (Linser, Waniganayake & Wilks, 2004). In the first, a scenario in video format is being considered for reuse in a different department in the same university. In the second, a video-based scenario is being considered for reuse in a different department in another university.

It is interesting that in both cases the Learning Object is in video format. Because there is a high investment in quality video production, it is worth trying to find other uses for it. In both cases the video is a very powerful trigger for the role play. However according to one of the designers, video format can constrain reuse because the actors portray roles with real gender, age and ethnicity which cannot be modified for a different context, unlike a text-based scenario. The video scenario written for *A Different Lunch* is based in an early childhood setting. The role play issues have equal validity in a primary school setting but the video scenario precludes reuse in this new setting.

These are the type of design issues that affect reuse of low granularity Learning Objects. The second part of this study, still underway, will investigate the design issues for high granularity Learning Objects, that is, an entire online role play, by further analysing the three role plays already identified as Learning Objects in the previous section.

Other Affordances to Uptake of Online Role Play

In tracking the growth of online role play, this study was looking for *reuse* as an affordance to uptake but it also noted other affordances: Colleague, Presentation/ Conference/Journal Papers, Educational Developers, Role Play Engine and the Learning Design website from the AUTC project.

Table 3: Affordances for adoption of online role play in Australian universities

Affordance (in some cases more than one affordance)	1990-4	1995-9	2000-4	2005-6
1. Personal Handover as Learning Object	1	1	0	4
2. Colleague	1	1	1	3
3. Conference Presentation/Journal Paper		1	3	0
4. Educational Developer			10	12
5. Engine			7	5
6. AUTC Learning Design website				5

The first ten years of role play designers depended on a mix of the first three affordances. It was anticipated that after 2003 the AUTC Learning Design website would have impact however interviews indicate that although the website has been counted five times as an affordance to five new role plays, the other affordance for these role plays is an Educational Developer. It is the Educational Developer, not the academic, who accesses the website.

However there are another five instances where the Framework is starting to have impact but they have not been counted above as the role play has not yet been finished and not yet used with students. In addition there are a further four instances where the Learning Design Framework has lead to the development of a simplified template or guide for online role play at a particular university. Slowly the Learning Design Framework is beginning to be one of the influences on the design of online role play.

Another affordance is the availability of tools and engines. In many of the examples a role play generator called *Fablusi* is an affordance[7]. In six examples *Simulation Builder*[8] is an affordance and in one example it is

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[6] Online Teaching & Learning Fellows Case Study on Deakin University website: http://www.deakin.edu.au/teachlearn/cases/files/2003oltf/case06.htm,

[7] www.fablusi.com

[8] http://www.mmc.arts.uwa.edu.au/studentprojects/staff/simulations

WebQUEST[9]. In future, it is possible that LAMS, the Learning Activity Management System[10], may become an additional affordance. These tools are an exemplification of the particular role play Learning Design followed by the tool developer.

Implications of this study
Outcomes from the study reported in this chapter, which tracks use and reuse of online role play as an example, imply that reusability must encompass Learning Designs not just Learning Objects.

Reusability must also encompass the notion of Learning Objects at many levels of granularity:
- the stereotypical notion of video clips as Learning Objects as well as
- entire role plays packaged as Learning Objects and
- Learning Objects within Learning Objects.

Learning Objects, repositories and Content Management Systems have been presented as being solutions to reuse, however they are really only underpinning technologies to support a university's explicit approach to facilitating reuse. A university's approach must build on existing affordances and provide reward and recognition for both *contribution* to repositories as well as for *reuse* of Learning Objects and Learning Designs retrieved from them. A national project approved since this study concluded will provide funds for a national repository of online role plays and introduces Peer Review as a reward structure for contribution to it. The project does not provide funds for building new role plays but it does reward reuse by funding collaboration between existing role play designers and potential new users:

Project EnRoLE builds a community of university teachers who are using online role play and develops a repository of sharable/reusable role play learning designs with an associated peer review process. In two years it aims to double the number of role play designers by scaffolding beginners and establishing national and international role play partnerships.[11]

Repositories and Content Management Systems must be able to handle Learning Designs as well as traditional Learning Objects. The previous national project on Learning Designs[12] suggested that Learning Designs currently require multiple formal descriptive systems such a visual sequences, templates, exemplars and guides. All these need cross-referencing in any educational repository making it more than the usual index of Learning Objects.

The finding that Educational Developers are currently one of the main affordances for uptake of Learning Designs and Learning Objects implies that position descriptions for Educational Developers need to clearly articulate their role in identifying opportunities for reuse and designing for reuse.

The indispensable role of Educational Developers in mediating and facilitating reuse and reusability also impacts the design of repositories: decisions need to made as to whether the repository is designed for use by Educational Developers or for use by university teachers as the interfaces will be very different.

Conclusions
Working from a twenty year tracking of online role play in Australian universities, this chapter provides evidence to support integration of the two worthwhile constructs of Learning Objects and Learning Designs when applied in the context of universities. It outlines implications for the work practices of Educational Developers and designers/managers of repositories.

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[9] http://webquest.sdsu.edu/

[10] http://www.lamsinternational.com/

[11] http://cedir.uow.edu.au/enrole/

[12] http://www.learningdesigns.uow.edu.au/

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Key Terms and Their Definitions

Educational Developer: instructional designer or learning designer in a university education centre that supports and develops university teachers

Learning Object: *"any digital resource that can be reused to support learning"* (Wiley, 2000)

Learning Design: generalisable template for a learning activity describing the sequence, tasks, resources and supports

Online Role Play: a scenario and a set of roles that students adopt in order to collaboratively solve a problem, create something, or explore an issue via email or a combination of email and web-based threaded discussion forum

Repository: an indexed collection of Learning Objects supported by a Content Management System

Reuse: overlaps with other terms like "uptake", "adoption", "adaptation", "modification" and "dissemination"