

## Tribes & Cultures – Cross-disciplinary Communication: *Pinpointing the Issues for eLearning*

**Naomi Dreher**

Curtin University, Australia

N.Dreher@curtin.edu.au

**Heinz Dreher**

Curtin University, Australia

H.Dreher@curtin.edu.au

### **Abstract**

*Effective communication and co-operation across disciplines is needed to create and deploy eLearning systems so that they contribute to enhanced outcomes for students and teachers. Using a Grounded Theory methodology we probed the cultures of the participating tribes: the Educationalists; the Instructional Designers; and the Information Technology Specialists. Six salient themes emerged from the semi-structured interview data of respondents selected from the three tribes, each of which is described in detail in this article. These themes give rise to Six Rules of Thumb to help promote fruitful communication and interaction among the tribes and cultures of eLearning system stakeholders, and thus result in improved eLearning systems.*

**Keywords:** eLearning, Cross-disciplinary Communication, Tribes and Cultures, Instructional Designers, Information Technology Specialists, Educationalists

## **1 Introduction**

The creation of complex and sophisticated systems requires teams of specialists, often from disparate knowledge domains, to work co-operatively over time for the ultimate benefit of their users. This collaboration is more productive and the outcomes more beneficial and usable when the various stakeholders share each other's viewpoints, appreciate the differing disciplines contributing to the project, and have an understanding of the differences in the language used by the contributing specialist

professions. Here our focus is on e-learning systems, also known as Learning Management Systems, among other terms.

In this article, we tease out the issues potentially affecting the successful use of eLearning systems by students and teachers. Our assumption is that Jakob Nielsen's model of "System Acceptability" (1990 p145) holds for contemporary e-learning systems just as it does for computer systems more generally. According to Nielsen, systems need to be socially acceptable as well as practically acceptable. Within the latter category one would clearly count cost, and reliability, as important factors.

One of the most obvious aspects contributing to system acceptability and success is usability. Under this heading Nielsen (1990 p145) lists five factors: easy to learn; efficient to use; easy to remember; few errors; subjectively pleasing. The rise of Facebook, and social computing systems generally (Google, and others) are clear examples of Nielsen's model at work.

It is our contention that to create and deploy systems that promote these five attributes, the participating professional specialists would usefully understand and appreciate each other's standpoint and work co-operatively toward implementing a shared vision (that is to belong to the same tribe, and share the same culture). In our experience, the tribes have been in conflict, and the cultures clashing (to varying degrees). We think that pinpointing the issues relating to cross-disciplinary communication may be a step forward in realising a better learning and teaching experience for e-learning system users.

## **2 The Tribes**

The implementation of e-learning courses requires the utilisation of a range of disparate skills. Accordingly, eLearning platforms are commonly implemented and maintained via collaboration between three groups of professionals, each specialising in a subset of skills necessary for effective use of eLearning: Educationalists possess the necessary subject domain knowledge; Instructional Designers (ID) are specialists in e-learning pedagogy and the end-user operation of e-learning platforms; and, Information Technology (IT) Specialists support the users of e-learning systems by ensuring the back-end system is running efficiently and also by implementing any necessary add-on applications to enhance the e-learning system.

Evidently we have three tribes: the Educationalists; the Instructional Designers; and the Information Technology Specialists. Clearly we needed to discover first-hand what these eLearning system stakeholders thought about their roles.

### **2.1 Tribe 1 - Educationalists**

When considering online teaching and learning, an educator's responsibilities will differentiate greatly between (and even within) learning institutions – furthermore (and quite logically) the educator's degree of direct involvement with the e-learning system

is ultimately related to the format and extent of support provided. Generally speaking, an educator is normally required to develop learning objects/materials and upload these into the e-learning environment; deliver online course components and materials; facilitate and respond to ongoing digital communication with students; and provide a framework for the electronic submission of assessments. However, in a minimal support environment the educator may be required to setup the e-learning system, and design and implement course frameworks in addition to the abovementioned. Conversely, in a high support environment, Educationalists may only be required to provide learning materials to an Instructional Designer then confer regarding the particulars of adapting materials for electronic delivery; and respond to electronic student communications. The Instructional Designer (or designated IT support person) would manage the remainder of duties in consultation with the educator.

## **2.2 Tribe 2 – Instructional Designers**

Instructional Designers are specialists in the area of pedagogical adaptation for e-learning. They possess skills in information technology and pedagogy, often having worked in one or both of these areas prior to employment in instructional design. Despite the dual nature of this role, there is a general consensus amongst Instructional Designers that the focus of their work is education, where information technology is a tool to be applied transparently for the purposes of expanding educational horizons.

The primary task of an Instructional Designer is to assist Educators in the development and implementation of courses offered via electronic delivery methods – the end-users of these systems, the students, are always at the forefront of the Instructional Designer's decision-making process. Depending upon availability of resources and institutional policy, an Instructional Designer's key responsibilities may include some or all of the following:

- working in synergy with Educationalists to produce pedagogically effective online learning outcomes for students;
- quality assurance (checking content and system frameworks for consistency, accessibility and usability);
- awareness raising;
- provision of group and one-on-one training sessions for interested Educationalists;
- mentoring Educationalists in e-learning adoption and ongoing use (capacity building);
- multimedia authoring (tip sheets, learning objects, interactions, scenarios, situated learning problems, worked examples);
- web-authoring (wikis, blogs, html, Dreamweaver); and
- ongoing support for current e-learning practitioners.

The skill set for Instructional Designers is broad and largely based upon individual backgrounds and experiences – often Instructional Designers will work in teams, thus utilizing a greater range of skills and specialisations. An Instructional Designer will possess a combination of cross-disciplinary skills, which may include: multimedia authoring; web authoring; a detailed understanding of the possibilities and various applications of a variety of e-learning tools; an in-depth, end-user practical understanding of at least one e-learning system; a sound understanding of the application of pedagogical principles to e-learning; an understanding of face-to-face pedagogy; adaptive interpersonal communication skills; tech-savviness (the ability to self-learn and acquire new technology skills); experience as a Trainer and/or Educator; higher-level end-user computer skills; a keen attention to detail; and, an understanding of the principles of Human-Computer Interface design.

### **2.3 Tribe 3 – Information Technology Specialists**

People working in the technical support area of the Information Technology industry occupy a vast range of roles and responsibilities. In educational intuitions, where e-learning systems are in place, the responsibilities of IT personnel may include:

- supporting the e-learning system framework;
- implementing and supporting third party software;
- supporting staff with regard to technical e-learning system associated problems (help-desk);
- training staff in e-learning system technical use; and
- end-user and administrator understanding of many available software technologies.

As per the size of respective institutions, individual information technology personnel may be required to perform the vast range of these roles, or be required to specialise in more specific functions. Inevitably, unless roles are clearly defined, there will be some crossover between the responsibilities of an Information Technology Specialist and an Instructional Designer.

## **3 The Cultures – Tribal Communication**

Working together, these three groups of professionals create e-learning systems for the benefit of students. However, it may be observed in the field that these selfsame groups tend to work within their own cultures thereby producing a tribal effect that filters through in the design and implementation of these systems. For example, the IT Specialist provides a function to upload a document, however the positioning on the screen of its invocation button and its availability within a learning context and process is a lesser priority. Collaboration and a shared understanding are needed to cut across the ‘tribe & culture’ boundaries. We have studied such issues in a project named “Tribes & Cultures” <<http://heinz-dreher.is-cbs.wikispaces.net/Tribes+and+Cultures>>

in which we wanted to help e-learning system creators and users to respond in a positive way to the exasperation expressed in the following:

“This may be what you think I wanted designed, but you didn’t understand what I was really asking for.”

Our research has identified six key issues relating to communication and interaction among e-learning system stakeholders:

- Effective Help;
- Adaptability;
- Common Language;
- Rapport & Understanding Others’ Roles;
- Instructional Designer Help and Support; and
- Collegial Sharing (the e-learning Champion).

The above six items emerged as the dominant themes from our qualitative study in which the purpose was to establish an effective cross-disciplinary method of communication by identifying the behavioural and interaction issues that related to developing a shared vocabulary, culture and sense of purpose between IT Specialists and Educationalists.

Through our own brainstorming of ideas, and guided by the established literature comprising the criteria: learning theory and design principles; behavioural and interaction issues; design evaluation methodologies; cost effectiveness; empowering learners; and, evaluation of quality learning outcomes (Dreher & Dreher, 2011b), we constructed a semi-structured interview instrument (Dreher & Dreher, 2010) and administered it in tertiary education institutions to members from each of the three abovementioned groups of professionals involved in e-learning implementation.

The Grounded Theory (Glaser& Strauss, 1967) based analysis of our transcribed audio recordings of the semi-structured interviews revealed some 30 concepts, or themes, which were reported as having an effect on e-learning project usage outcomes. When we looked at a frequency-of-mention measure of these themes we found that there were six, right at the top of the list. These six most-mentioned issues are the focus of this article. In what follows we describe each concept-theme in turn and endeavour to explain its effect on e-learning system usage. To conclude, we offer six rules-of-thumb to help promote fruitful communication and interaction among the tribes and cultures of e-learning system stakeholders.

### **3.1 Effective Help**

The degree of effectiveness with which IT Specialists, Educationalists and Instructional Designers collaborate and support one another depends upon a range of factors, including the:

- communication skills and preferences of individuals (including communication method, adaptability, social inclinations and a common language);
- degree of rapport and mutual understanding of others' role responsibilities;
- availability of help and support from an Instructional Designer; and
- a collegial network led by an e-learning 'Champion'.

As online learning grows and develops into a larger entity, so too does the understanding of how to effectively support professionals working in this field. The provision of an effective system of help and support for Educationalists requires there to be accessible communication channels to Instructional Designers and IT Specialists. However, collaboration between professional groups can give rise to a number of issues including different preferred methods of communicating, and a lack of common language and understanding. In order to mitigate these various disparities a level of individual adaptability is required amongst participating stakeholders.

Interview data in which Instructional Designers, Educationalists and IT Specialists describe their own communication methods and also those of their colleagues from different disciplines was collected. Analysis of this data has revealed occupationally specific tendencies in communication styles that highlight a lack of co-operation amongst collaborating professionals from different disciplines.

### **3.1.1 Instructional Designer Communication Style (Preferred Methods)**

Instructional Designers are naturally adaptable communicators, able to successfully mitigate diverse communication styles in order to work cohesively with others – their dual backgrounds in information technology and education further assist them in a general understanding of occupationally specific terminology relevant to e-learning and related topics. When Instructional Designers work with a group of professionals from differing disciplines, they will act as project leader and clearly outline communication channels between project partners – it is common in these scenarios for Instructional Designers to perform a kind of mediatory role and translate occupationally specific terminology and understandings for Educationalists and IT Specialists.

### **3.1.2 Information Technology Specialist Communication Style (Preferred Methods)**

Information Technology Specialists carry with their working title a negative stereotype for deliberate communication aversion. Whilst this may be true of some IT Specialists, those that identify themselves as having a customer support oriented focus consider one of their key strengths to be an ability to communicate adaptively and explain IT related topics using contextually situated examples which are meaningful to the listener – such IT Specialists recognise students and educators as being the main consumers of online learning and so seek to support their needs.

Contrastingly, IT Specialists identified as having a machine oriented focus can be in part summarised by the following anecdotal statement from an IT Specialist of the customer focussed disposition:

“To some degree they’re very transactional people – there are some people that are actually in the back end that are not in ‘user land’ at all, they don’t understand what clients are, they just understand that there are complaints on a help-desk. They don’t have a person shouting down the phone, they don’t really care.”

Other traits of the machine oriented IT Specialist include: a specific focus on the functioning status of a particular piece of software or hardware, rather than a focus on the functionality of that software (i.e. how it is to be interacted with by end-user).

Whilst there is not sufficient evidence available in this study to reliably report on percentages of user-focussed as opposed to machine-focussed IT personnel actively involved in roles necessitating cross-departmental collaboration and communication, the need to appropriately allocate roles which cater to the communication skills and strengths of individual IT personnel is self-evident.

Information Technology Specialists who have a customer-focussed orientation are generally amenable to the Educationalist’s (the customer) preferred method of communication and will seek to avoid language confusion by contextualising explanations in a way that is meaningful to the individual Educationalist.

On the other hand, IT professionals whose attitudes are more machine-focussed have been described as: difficult to contact in any mode other than email; reluctant to meet face to face; preferring to remain anonymous in all communications; speaking in specialised terminology that is difficult to understand; and resentful toward customers who require repeat help.

### **3.1.3 Educationalist Communication Style (Preferred Methods)**

Generally speaking, where Educationalists are required to communicate or gain help and advice from IT or ID people, they have a clear preference for face-to-face communication. This is due to the fact that in these situations, Educationalists are in a position of inexperience and may not have a command of the subject-specific vocabulary necessary to accurately and succinctly explain their needs. When relying on methods of communication which eliminate the possibility for demonstration of the problem (such as telephone or email), educationalists must resort to overly descriptive terminology for which IT people have little understanding (for example, describing the Internet Explorer program icon as the “little blue E’s”, or giving the allocated unit title of a module of work for lack of the application-specific word ‘module’). Indeed in the words of an IT Specialist, “...from the user point of view, they’re not very good at telling a technical person what their problems or their aims or attributes or their situations are.”

One can argue that Educationalists, as the recipients of assistance from Instructional Designers and IT Specialists are customers in this collegial relationship and are therefore entitled to set the preferred method of communication. However, communication channels do not simply run in one direction and it is important to consider the needs of all contributors in order to establish the most effective mode of communication for all group members.

### **3.2 Adaptability**

Adaptability is a key ingredient for participants in any collaborative setting. Where professionals from many disciplines are collaborating in order to achieve some kind of goal in e-learning, the requirement for adaptability can be pinpointed to several key areas.

Educationalists new to e-learning and who have not yet gained a firm grasp of the necessary contextually specific terminology will have trouble communicating their needs via verbal and textual forms of communication (specifically, via email or telephone). Indeed several interview respondents with an Education background pointed out that this kind of lack of common language can create an ongoing series of reply emails where the sender (the Educationalist) is unable to accurately word their needs/request, hence the IT Specialist or Instructional Designer receiving the message may not be able to accurately decipher the intended meaning and respond with a reply that it is useful to the Educationalist. Furthermore, Educationalists with a low level of e-learning language understanding may not be able to correctly interpret the meaning of the reply message from IT or an Instructional Designer.

Given this information, it is clear that for an Educationalist the opportunity to physically point out or demonstrate an IT related issue to an IT Specialist will reduce the possibility of misunderstanding. Hence, for an Educationalist face-to-face interactions with an IT Specialist will reduce the degree of reliance on technically accurate verbal explanations and understandings, and also reduce wasted time and delays met by sending emails back and forth in attempts to communicate across the correct issue.

For an IT Specialist, however, the time taken to make office calls is unreasonable on a large-scale basis. Hence an adaptable system of communication, which can determine the most effective/efficient method of communication relative to the needs of the Educationalist, is necessary.

When communicating with IT Specialists, Educationalists can demonstrate adaptability by recognising their e-learning language ability level and requesting a method of help that is appropriate for their needs. Conversely, Educationalists do not demonstrate adaptability when they abuse such a system of flexibility by consistently requesting face-to-face support for lack of necessary vocabulary that results from a failure to take advantage of professional development opportunities in the area of e-learning.



Information Technology Specialists can demonstrate adaptability by contextualising their use of technical language in such a way that is relevant to the immediate needs of the Educator. Two methods for such a style of communication have been identified: firstly by communicating face-to-face with the Educator and pointing out specific program/content (or the like) features as the technical label is used; and/or secondly by using metaphors and similes, which are meaningful to the individual Educationalist [see rapport], to aid the explanation of technical procedures.

Information Technology Specialists do not demonstrate adaptability: firstly, if they avoid making office calls when it is clear that the Educationalist lacks the necessary vocabulary to accurately express their needs; and secondly by fixing the problem for the Educationalist without demonstrating (where indeed practicable) how the problem is fixed, thus hindering opportunities for the Educationalist to absorb new information and subsequently avoid asking the same questions in the future.

Adaptability for an Instructional Designer is generally considered to be an integral aspect of their role. Most Instructional Designers already possess an understanding of pedagogical and IT languages, at least so far as these languages apply to e-learning. Instructional Designers are able to speak in terms that will be understood by Educationalists and IT Specialists respectively. An extension of this shared understanding imbues Instructional Designers with the ability to translate between Educationalists and IT Specialists.

### **3.3 Common Language**

As can be seen, the need for adaptability during collaborations between professionals from disparate disciplines is not solely the result of differences in preferred communication methods; the concept of professional languages, more pertinently a lack of a common language, is a key and causal factor in effective communication, for the achievement of which, a common language understanding is necessary. Our Cross-disciplinary Glossary of Online Education (Dreher & Dreher, 2011a) offers some insight into this issue. How this can be achieved is not so easily stated.

Data analysis has brought to light several key areas in which language-based communication issues arise between Educationalists, IT Specialists and Instructional Designers. These areas are characterised below by one of three categories: a lack of understanding; misunderstanding; and, interpersonal communication skills.

#### **3.3.1 Lack of Understanding**

A lack of understanding is defined by a person's deficit of knowledge or their ignorance in a particular area of understanding. The word "understand" in this context is taken to mean comprehend, perceive the meaning of, or be thoroughly familiar with. Apropos e-learning and professional languages, a lack of understanding can arise when disciplinary specific terminology is used by any one member of a discrete profession whilst communicating with a professional from another discipline (such as an IT Specialist

speaking about ‘exchange servers’ to an Educationalist). In such a situation the message sender is assuming a certain level of knowledge to be held by the receiver, when in reality this knowledge is lacking. There may be an alternative lay term, which can be used as a substitute (‘email’ in this instance); or failing this, an effort to contextualise the explanation (e.g. via metaphor or simile) can be adopted [see adaptability].

### **3.3.2 Misunderstanding**

A lack of understanding does not always result in misunderstandings. Misunderstandings occur when a person tries to bridge the gap between their lack of understanding, or ignorance of content knowledge, and the correct (or implied) understanding. A misunderstanding implies an error, a misapprehension, or misconception, and can also arise through having incomplete or faulty knowledge. Data analysis has identified two key areas of misunderstanding in collaborations between key professional groups associated with e-learning: firstly, misunderstanding resulting from situations where a concept might have multiple, context driven, meanings; and secondly, misunderstandings resulting from a situation where the information provided is lacking in sufficient detail for a correct interpretation of the meaning to be possible.

#### **3.3.2.1 Conceptual Context Driven Misunderstanding**

Data analysis has brought to light several variations of situations where a concept has more than one translation: firstly, a concept may have a more literal translation outside a specific subject matter area (for example, accessibility, avatar, Blackboard, interaction, portal, server, user) [see Appendix 1]. To look more closely at ‘accessibility’, the literal translation of this word relates to the capacity of being easily obtained or approached, however, in an instructional design or IT setting, the same word relates to the capacity of a user interface to be accessed and used by a range of different people. Without a context specific knowledge of this term, a person outside instructional design may not link the literal definition to user interfaces, hence misunderstanding the intended meaning.

Another kind of misunderstanding can occur where a concept may have a different specialised meaning (outside the literal translation) across more than one discipline area (for example, accessibility, assessment, assignment, authenticate, banner, framework, header, interactivity, reusability, scenario, term, unit, usability, widget) [see Appendix 2]. To use the example of ‘accessibility’ again, whilst an Instructional Designer’s and IT Specialist’s understanding of accessibility is specific to user interfaces, an Educationalist’s understanding of the same word is centred around the degree to which an educational institution and its courses are accessible to a range of different student cohorts – just imagine the various possible scenarios leading to misunderstanding here.

Yet another opportunity for misunderstanding arises where a concept may have different specialised meanings within a disciplinary area, and be specific to some kind of geographical context (for example, course, Virtual Learning Environment) [see

Appendix 3]. To use the example of the word ‘course’ – this same concept inside Educational circles can either relate to units (symmetrised topics of study), or alternatively an entire subject of study (such as Computer Science, or Education). The possibility for confusion during cross-institutional collaborations is painfully evident.

### **3.3.2.2 Misunderstandings due to Lack of Sufficient Detail**

Misunderstandings can also be caused by lack of a clear distinction being made between two concepts of a similar nature. For example, by providing the instruction (to a non-IT Specialist) to download Adobe Acrobat, however, failing to explicitly point out the pertinent difference between Adobe Acrobat Reader and Adobe Acrobat Professional to a specialist from a non-IT discipline. The pertinent difference here is that Acrobat Reader is just that, an application that can allow users to view Portable Digital Format (PDF) documents. Acrobat Professional builds upon the functionality of Reader by additionally allowing users to create and edit PDF documents (among other features).

Similar misunderstandings can ensue when a professional from any discipline neglects to partake in relevant professional development. However, it is necessary to consider various mitigating factors: Educationalists with a lesser level of IT ability have found that the assumed knowledge level at various e-learning professional development sessions has been too high, so they come away none the wiser and all the more confused; the vast majority of Educationalists interviewed for this study expresses that they struggle greatly with workload and finding the extra time necessary to attend professional development sessions; other Educationalists have reported that the timing of professional development sessions does not match their needs, hence the new skills are forgotten before the opportunity to practice them arises; yet other Educationalists (perhaps due to a combination of the above) have adopted a system of reliance upon IT personnel and Instructional Designers for assistance with all e-learning tasks (even simple file uploads).

IT Specialists and Instructional Designers alike have recognised the marked increase in difficulty experienced when working with Educationalists who do not seek to expand their knowledge and understanding of eLearning. Many of these difficulties result from misunderstanding ensuing from a lack of common language. For example, Educationalists who lack a repertoire of e-learning terminology commonly form requests that are incomprehensible and wrongly interpreted by IT and ID personnel. One possible scenario is that the Educationalist may be using a term (such as ‘podcast’) to incorrectly describe a related yet distinct concept (such as ‘screencast’).

It is however, important to remember that the responsibility to participate in professional development extends to all participants in cross-disciplinary collaboration. An understanding of the roles of others is paramount to successful collaboration.

### **3.3.3 Interpersonal Communication Skills**

In order to improve overall communication and minimise instances of misunderstanding occurring from lack of a common language understanding, there are a number of general guidelines that can be followed by all professionals working with specialists from outside their disciplinary area.

Acronyms exist in every specialised professional language and provide a wealth of possibilities for lack of understanding and misunderstanding. A person from another profession may just be unaware of a particular acronym and hence its meaning will elude them, however, there is also the possibility that their professional language has the same acronym but which holds a different meaning. For example, SME could mean either Small to Medium Enterprise or Subject Matter Expert – to confuse matters more both these terms hold significance in e-learning.

Individual collaborators, regardless of their specialisation, should try to pick up on the relevant language of the other professions; the language of e-learning is a hybrid of IT, Education and Multimedia Development after all.

### **3.4 Rapport & Understanding Others' Roles**

An understanding of another person's communication styles stems from an individual's understanding of the roles and responsibilities of their co-workers from within and outside their own discipline. This understanding is crucial to effective communication as it can reduce the possible cases which can lead to misunderstandings. Rapport refers to the harmonious relationship engendered by (near) perfect understanding assumed to exist and accepted as existing between the co-workers. This kind of understanding can only be made possible through exposure to the working world of others. The speed with which such an understanding can be gained is mitigated by many factors, one of which is the nature of the working relationships – be they consulting based, or more collegial.

Consulting based relationships are characterised by a lack of regular contact between individual project partners, this usually occurs in circumstances where IT or ID support has been centralised on an institutional wide basis and operates in a fashion akin to help-desk support. Such arrangements create a barrier to the establishment of rapport between collaborating groups of professionals.

Under work models where ID and IT help and support is departmentalised (or where centralised personnel are assigned individual departments), Educationalists are permitted more regular access to the same people. This kind of regular contact enables the establishment of a degree of collegial rapport and familiarity with others' work roles and practices.

There are key areas of difference between the roles and responsibilities of Instructional Designers, IT Specialists and Educationalists that, without a degree of collegial understanding and rapport, can give rise to communication breakdowns.

Similarly, Educationalists who understand the focus and demands of IT Specialists work roles will generally make more realistic requests and subsequently be received with a more positive disposition by the IT support personnel.

### **3.5 Instructional Designer Help and Support**

In situations, where imbalanced workload models persistently linger, good communication and effective methods of support are seldom practiced with efficiency. In such conditions Instructional Designers find it difficult to provide enough professional development and training opportunities for staff (whether these be formal group training sessions or one-to-one help and support) and also somewhat futile as the workload of most educational staff makes them difficult to access. Furthermore Educationalists feel that the format of most group training sessions provided (such as a two hour workshop every few months) is not pedagogically effective in improving their IT skills – this is for a number of reasons:

- new knowledge of a level for practical use cannot be gained from a once off two hour group training session with little to no practical component;
- the topic of any given group training session may not be immediately relevant to all participants – unless the new skills are practiced regularly, they will not be retained; and
- some educators feel as though their IT skills are so low that they will not understand the requisite level of IT knowledge expected at group training sessions.

A model of ‘capacity building’ has been adopted in some learning institutions that have been able to support a much higher Instructional Designer to Educationalist ratio. Capacity building is designed to enhance the IT skills of educators (and subsequently their confidence) so that they can feel comfortable in taking charge of their online courses. In this format, Instructional Designers and Educationalists meet regularly, in person, on a one-to-one basis. Such a model holds several key benefits:

- the ability for Instructional Designers to mentor Educationalists through the best way to use a particular online learning system;
- help and support can be adapted to the individual needs of the Educationalist (for example, knowledge level, workload constraints, course requirements) and as such work to build the Educationalist’s confidence in their IT skills, thus avoiding attitudes of total dependency upon Instructional Designers from being developed; and
- methods can be developed which accommodate and reduce the workload of the individual Educationalist.

### **3.6 Collegial Sharing (the e-learning Champion)**

In situations where there are not enough Instructional Designers available to accommodate the needs of Educational staff, ‘Champions’ in e-learning are emerging from the educational field and adopting a mentoring role amongst their peers.

E-learning Champions are generally those Educationalists who have for some reason had more access to eLearning (for example, due to increased IT awareness and understanding; a more accommodating workload; exposure to regular one-to-one support from an Instructional Designer) and have been able to adapt to it relatively well. The role of an E-learning Champion is often unofficial and has emerged due to the lack of common language existing between Educationalists, IT Specialists and Instructional Designers.

The tasks of an E-learning Champion may include: liaising with Instructional Designers and IT Specialists; facilitate Educationalists sharing their knowledge about e-learning (developing an internal support network); providing tutoring on an as-needs basis; and the establishment of a departmental procedure for the storage of shared e-learning resources.

Educationalists who have worked exclusively with both an Instructional Designer and an E-learning Champion have reported preferring the interactions with the E-learning Champion due to the existence of a common language and the presence of collegial rapport between them and the Champion. An additional benefit of an E-learning Champion is that they reduce demand on IT Specialists and Instructional Designers in understaffed circumstances by acting as a liaison between E-learning Support Services and the Educationalists.

## **4 Six Rules of Thumb (Emerging from the Tribes and their Cultures)**

The purpose of the Tribes and Cultures research study was to identify the behavioural and interaction issues that relate to developing a shared vocabulary and culture, and sense of purpose between Information Technology Specialists, Educationalists, Instructional Designers, and other users, so that improved e-learning delivery methods may be developed and deployed in the future.

Salient among the themes discovered from our field data were the six issues elaborated upon in this article. We may now offer the six rules-of-thumb to help promote fruitful communication and interaction among the tribes and cultures of e-learning system stakeholders:

- The provision of “effective help” is a multi-faceted consideration that requires one to be dynamic in their approach toward the person they are helping.
- The ability to “adapt” to the culture of another tribe is a key aspect in providing effective help.

- One such adaption concerns the use of “language” when dealing with other tribes – professionals who regularly trade information with other tribes must become conversationally fluent in that tribe’s language.
- Over time, through regular interaction with the same people, “rapport and understanding” of the common areas for potential misunderstandings can be identified and mitigated.
- Cross-cultural communication runs more smoothly in the beginning when a translator is present – understand the need for the “help and support of an Instructional Designer”.
- Appoint an e-learning “knowledge champion” in your tribe; one who possesses the qualities of adaptability, bi-lingual interest, understanding and the ability to develop rapport. Engage with your E-learning Champion regarding all they have learned from the neighbouring tribes.

### **Acknowledgement**

This work results in part from the ALTC supported project “Tribes and Cultures: Frameworks for shared language and intent to cost effectively improve learning outcomes” (Project # CG7-450, Australian Learning and Teaching Council, an initiative of the Australian Government Department of Education, Employment and Workplace Relations). The views expressed in this report do not necessarily reflect the views of the Australian Learning and Teaching Council Ltd.

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## 5 Appendix 1 – Concepts with more literal translations outside specific subject matter areas.

Concept	Abbrev.	Standard Definition	Instructional Design	Education	Information Technology
<b>accessibility</b>		[1] The quality of being accessible, easily obtained or approachable.	[2] In relation to web-based information and computer software, accessibility refers to a user interface’s capacity to be accessed and used by as many people as possible (esp. persons with visual or auditory impairments).  [See also ‘universal design’.]	[3] Educational accessibility refers to the degree to which education, educational institutions, course offerings etc. are accessible to varying cohorts of people – consideration is given to economic, geographic, social, racial and gender related factors.	[2] In relation to web-based information and computer software, accessibility refers to a website’s ability to be accessed and used by as many people as possible (esp. persons with visual or auditory impairments).  [See also ‘universal design’.]
<b>avatar</b>		[1] A Hindu concept to describe the physical embodiment of a deity (esp. Vishnu) in human, superhuman or animal form.  [2] A computer users’ representation of him or herself in digital form; applicable to virtual reality environments or cyberspace in general).	[2] A computer users’ representation of him or herself in digital form; applicable to virtual reality environments or cyberspace in general).	[1] A Hindu concept to describe the physical embodiment of a deity (esp. Vishnu) in human, superhuman or animal form.  [2] A computer users’ representation of him or herself in digital form; applicable to virtual reality environments or cyberspace in general).	[2] A computer users’ representation of him or herself in digital form; applicable to virtual reality environments or cyberspace in general).

Concept	Abbrev.	Standard Definition	Instructional Design	Education	Information Technology
<b>Blackboard</b>	Bb	[1] A hard, dark surface typically made of slate and used by teachers for writing on with chalk.  [2] A Learning Management System / Virtual Learning Environment commonly used by universities.	[2] A Learning Management System / Virtual Learning Environment commonly used by universities.	[1] A hard, dark surface typically made of slate and used by teachers for writing on with chalk.	[2] A Learning Management System / Virtual Learning Environment commonly used by universities.
<b>interaction</b>		[1] An action, communication or reaction between two or more things, persons or objects.	[2] An interactive activity or task for students to participate in.	[2] An interactive activity or task for students to participate in.	See [interactivity].
<b>portal</b>		[1] A fictional or technological gateway that connects two or more places.	[2] An Internet based website which provides connections to other websites, services and facilities.	[1] A fictional or technological gateway that connects two or more places.	[3] A gateway or framework that provides access to other destinations, information or tools.
<b>server</b>		[1] Someone who serves or an object that is used for serving.	[2] A computer (usually connected to a larger network) that is dedicated to a specific purpose (e.g. file server, application server, web server, LMS server).	[1] Someone who serves or an object that is used for serving.	[2] A computer (usually connected to a larger network) that is dedicated to a specific purpose (e.g. file server, application server, web server, LMS server).

<b>Concept</b>	<b>Abbrev.</b>	<b>Standard Definition</b>	<b>Instructional Design</b>	<b>Education</b>	<b>Information Technology</b>
<b>user</b>		[1] A person who makes use of a thing.	[2] A person who uses a computer or Internet-based service.	[1] A person who makes use of a thing. [2] A person who uses a computer or Internet-based service.	[2] A person who uses a computer or Internet-based service.

## 6 Appendix 2 – Concepts with several disciplinary specific meanings, outside more literal translations.

Concept	Abbrev.	Standard Definition	Instructional Design	Education	Information Technology
<b>accessibility</b>		[1] The quality of being accessible, easily obtained or approachable.	[2] In relation to web-based information and computer software, accessibility refers to a user interface's capacity to be accessed and used by as many people as possible (esp. persons with visual or auditory impairments).  [See also 'universal design'.]	[3] Educational accessibility refers to the degree to which education, educational institutions, course offerings etc. are accessible to varying cohorts of people – consideration is given to economic, geographic, social, racial and gender related factors.	[2] In relation to web-based information and computer software, accessibility refers to a website's ability to be accessed and used by as many people as possible (esp. persons with visual or auditory impairments).  [See also 'universal design'.]
<b>assessment</b>		[1] The process of measurably evaluating the knowledge and skills of a learner.	[2] Any form of measurably evaluating the knowledge and skills of a learner – this may be formal or informal, documented or undocumented, self-evaluation or administered.	[3] A formal process of measurably evaluating and documenting a learner's knowledge and skills within a defined subject matter area.	[1] The process of measurably evaluating the knowledge and skills of a learner.
<b>assignment</b>		[1] An assigned task, particularly as a specified job or part of studies.	[2] An assessable task given to a student as part of their studies.	[2] An assessable task given to a student as part of their studies.	[3] To demarcate a variable through assigning it with a core value or representation.

<b>Concept</b>	<b>Abbrev.</b>	<b>Standard Definition</b>	<b>Instructional Design</b>	<b>Education</b>	<b>Information Technology</b>
<b>authenticate</b>		[1] To establish as genuine, to prove that something/someone is as it claims to be.	[2] The process by which a program executes a check on a request (e.g. when a user enters their password, the program must authenticate the password against the username and the database contents).	[1] To establish as genuine, to prove that something/someone is as it claims to be.	[2] The process by which a program executes a check on a request (e.g. when a user enters their password, the program must authenticate the password against the username and the database contents).
<b>banner</b>		[1] A sign, typically a long piece of cloth stretched between two poles, or towed from the back of a plane, bearing a motto, emblem, insignia, etc.	[2] A type of advertisement/announcement (immediately relevant to current course content), appearing most commonly across the top of a web-based Learning Management System. Often banners are used to contextualise a webpage and assist with website navigation.	[3] Subject specific: e.g. the title of a newspaper as it appears on the front page; a strongly supported ideal or belief (esp. by a person or group of persons).	[4] A type of advertisement (usually graphical), appearing most commonly across the top of a web page.
<b>framework</b>		[1] A supporting structure, typically skeletal in nature.	[2] The basic re-usable structure of a learning system, including the organisation of layout and design components, into which learning content can be uploaded.	[3] The basic re-usable structure of a resource (inc. lesson activities, units of study, courses of study).	[4] A re-usable design for a software program, website or digital document.
<b>header</b>		[1] A brief segment of information situated at the top of a document.	[2] A section of information, separate from the body text usually containing essential information about that page.	[3] A line of text, placed at the top of a page that contains information about the document.	[4] A block/packet of data containing information about a file.

Concept	Abbrev.	Standard Definition	Instructional Design	Education	Information Technology
<b>interactivity</b>		[1] The allowance of a two-way flow of information e.g. human to human, or human to artifact.	[2] The allowance of a two-way flow of information esp. between a computer and its user.	[3] The allowance of a two-way flow of information esp. between a teacher and a student or between students.	[2] The allowance of a two-way flow of information esp. between a computer and its user.
<b>reusability</b>		[1] The degree or capacity to which a thing can be used again.	[2] The likelihood that a content package can be transferred to a different eLearning infrastructure without modification.	[1] The degree or capacity to which a thing can be used again.	[3] The possibility that a section of source code can be used in more than the application for which it was created with little or no modification.
<b>scenario</b>		[1] A course of action or sequence of events.	[2] A context, which is often constructed and presented to students as an example, through which learning may take place. See also case study.	[2] A context, which is often constructed and presented to students as an example, through which learning may take place. See also case study.	[3] A course of action or sequencing of events, which may be used as a simulation for planning or predicting outcomes.
<b>term</b>		[1] An expression used to designate a word or classification of words (e.g. medical terminology).	[2] A division of an academic year. In some educational institutions a semester or trimester may be divided into two terms, therefore in a semester system one year would contain four terms (six in a trimester system).	[2] A division of an academic year. In some educational institutions a semester or trimester may be divided into two terms, therefore in a semester system one year would contain four terms (six in a trimester system).	[3] An abbreviation of ‘terminal emulator’, a term is some kind of display architecture, which allows the user to interact with a command line interface (text-based operating system).
<b>unit</b>		[1] A single undivided thing.	[2] In Australian education, a ‘unit’ is the term used to describe one subject, which is taken over the duration of a semester/trimester.	[2] In Australian education, a ‘unit’ is the term used to describe one subject, which is taken over the duration of a semester/trimester.	[3] The term used to refer to individual units of source code. A unit cannot be longer than one.

<b>Concept</b>	<b>Abbrev.</b>	<b>Standard Definition</b>	<b>Instructional Design</b>	<b>Education</b>	<b>Information Technology</b>
<b>usability</b>		[1] The ease with which a particular tool or object can be put to use by specified users with specified goals.	[2] The ease with which a particular eLearning course, LMS or other related educational technology product can be put to use by specified users (esp. teachers and learners) for the purposes of supporting the pedagogical process.	[1] The ease with which a particular tool or object can be put to use by specified users with specified goals.	[3] The capability of a software program or hardware device to be understood, learned and used by specified users for specified purposes.
<b>widget</b>		[1] Any miscellaneous object, which has been designed for a specific purpose (esp. relating to graphical user interfaces) the name of which eludes the speaker.	[2] An element of a graphic user interface, usually displaying some kind of data arrangement, which may be moved around and customized by the user.	[1] Any miscellaneous object, which has been designed for a specific purpose (esp. relating to graphical user interfaces) the name of which eludes the speaker.  [2] An element of a graphic user interface, usually displaying some kind of data arrangement, which may be moved around and customized by the user.	[2] An element of a graphic user interface, usually displaying some kind of data arrangement, which may be moved around and customized by the user.

## 7 Appendix 3 – Highly specialised definitions across disparate geographical locations of individual professions.

Concept	Abbrev.	Standard Definition	Instructional Design	Education	Information Technology
<b>course</b>		<p>[1] In Australian education a ‘course’ relates to an entire subject of study (e.g. Engineering, Computer Science, Education), which is comprised of many smaller units (topics).</p> <p>[2] However, some Australian education institutions use the USA nomenclature whereby a ‘course’ is a unit of study (e.g. Communications 101, Education 101).</p>	<p>[1] In Australian education a ‘course’ relates to an entire subject of study (e.g. Engineering, Computer Science, Education), which is comprised of many smaller units (topics).</p> <p>[2] However, some Australian education institutions use the USA nomenclature whereby a ‘course’ is a unit of study (e.g. Communications 101, Education 101).</p>	<p>[1] In Australian education a ‘course’ relates to an entire subject of study (e.g. Engineering, Computer Science, Education), which is comprised of many smaller units (topics).</p> <p>[2] However, some Australian education institutions use the USA nomenclature whereby a ‘course’ is a unit of study (e.g. Communications 101, Education 101).</p>	<p>[1] In Australian education a ‘course’ relates to an entire subject of study (e.g. Engineering, Computer Science, Education), which is comprised of many smaller units (topics).</p> <p>[2] However, some Australian education institutions use the USA nomenclature whereby a ‘course’ is a unit of study (e.g. Communications 101, Education 101).</p>
<b>Virtual Learning Environment</b>	VLE	<p>[1] The term commonly used in the UK and Europe to describe a software system, normally working over the Internet, which is designed to support various aspects of online education for both teachers and learners; commonly including learning materials, communication tools, electronic submission, support systems and administrative</p>	<p>[1] The term commonly used in the UK and Europe to describe a software system, normally working over the Internet, which is designed to support various aspects of online education for both teachers and learners; commonly including learning materials, communication tools, electronic submission, support systems and administrative</p>	<p>[1] The term commonly used in the UK and Europe to describe a software system, normally working over the Internet, which is designed to support various aspects of online education for both teachers and learners; commonly including learning materials, communication tools, electronic submission, support systems and administrative</p>	<p>[1] The term commonly used in the UK and Europe to describe a software system, normally working over the Internet, which is designed to support various aspects of online education for both teachers and learners; commonly including learning materials, communication tools, electronic submission, support systems and administrative</p>



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		systems. See also Learning Management System.	systems. See also Learning Management System. [2] A term used by Instructional Designers to describe a virtual world such as Second Life.	systems. See also Learning Management System.	systems. See also Learning Management System.
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