



2007 Flexible Learning Toolboxes and learning objects evaluation

Edith Cowan University

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Final report



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Executive summary

Background

This evaluation is aimed at providing qualitative feedback on the impact of Flexible Learning Toolboxes (Toolboxes) on e-learning in vocational education and training (VET), as well as making recommendations to inform future Toolbox and learning objects development with a view of improving the uptake and usage of student e-learning through the use of Toolboxes and the Toolbox repository.

The research was conducted throughout 2007 with a focus on the teachers' experiences with Toolboxes throughout 2006 and anticipated use in 2007. The evaluation was restricted to institutes of Technical and Further Education (TAFE).

The evaluation sought to explore the following aspects of Toolbox implementation:

1. The impact of Toolboxes and the Toolbox repository on e-learning in TAFE
2. How future needs can be met.

Underpinning these broad areas of inquiry were a number of sub-questions focusing on various aspects of Toolbox use and the use of the Toolbox repository.

Two forms of data were collected to provide a detailed picture of the use of Toolboxes:

1. Telephone interviews were conducted with 23 individual teachers. The interviews primarily addressed the issue of the impact of Toolboxes and the Toolbox repository, with some exploration of the perceived future needs of teachers. Four Toolboxes were selected as being of significance due to their design, contexts of use, or extent of uptake among teachers. These were:
 - 302 Child Services
 - 601 Frontline Management (<http://toolboxes.flexiblelearning.net.au/series6/601.htm>)
 - 607 Training and Assessment (<http://toolboxes.flexiblelearning.net.au/series6/607.htm>)
 - 401 Building and Construction (<http://toolboxes.flexiblelearning.net.au/series4/401.htm>).

Interviews were also conducted of users of the Toolbox repository as well as survey respondents who identified themselves as not using Toolboxes in 2007.

2. Five focus groups were conducted to explore the impact of Toolboxes and future directions. Focus groups were selected to provide a diversity of contexts and perspectives on Toolbox use.

This qualitative approach allowed the researchers to explore experiences of individual teachers and institutes in depth and, when read in conjunction with the previous 2006 National Usage Survey¹ which gathered quantitative data, provides a holistic picture of Toolbox usage across Australia in 2006 and 2007.

Findings

Each form of data collected was analysed to provide conclusions about impact of Toolboxes and the Toolbox repository in 2007 as well as implications for the future. The following findings are organised by these two foci of the qualitative evaluation.

¹ <http://toolboxes.flexiblelearning.net.au/documents/reports.htm#r18>

Key findings - impact of Toolboxes and the Toolbox repository

1. The Toolboxes for the most part are considered as effective as other forms of delivery in terms of learning outcome. In many cases, Toolboxes work best when integrated with other forms of learning.
2. The Toolboxes represent a range of learning designs where no particular learning design is valued over another. Some teachers make most use of case studies and scenarios, while others use the Toolboxes for developing content knowledge.
3. The potential of Toolboxes as resources for highly engaging and interactive learning depends upon the Toolbox itself and the expectation of learners. Some Toolboxes such as *Training and Assessment* are quite text heavy, while others, such as *Child Services* are quite interactive. There was a tendency for younger learners that could be classified as 'Generation Y' to have a high expectation of e-learning. Older learners appear to be less confident users of technology. However, they value the fact that Toolboxes provide them with flexibility.
4. Using Toolboxes appears to necessitate changes in the roles of teacher and learner. Teachers are finding that they need to be more facilitative than didactic in their approach. Learners are required to have stronger levels of self-regulation, particularly when learning online. Inducting learners into using Toolboxes appears to be an important contributor to their success.
5. Teachers would like to have Toolboxes with more interactivity and rich media, particularly audio. This is balanced by an acknowledgement of the bandwidth issues this creates. The issue of bandwidth has not been a major one for most participants except in some regional areas and where a Toolbox was delivered overseas.
6. There was a strong sentiment that Toolbox materials need to be authentic. Beyond the nature of the scenarios and informational resources to support them, some negative comments were received about the use of cartoons as graphical elements, which appeared in some cases to trivialise the material or provide inadequate levels of accurate graphical representation.
7. Industry acceptance of Toolboxes appears to be quite solid. The biggest negative determinant of Toolboxes' value to industry was the fact that they date very quickly. This was particularly true where legislation or training packages have evolved since specific Toolboxes were originally developed.
8. There was a general consensus among participants that Toolboxes contribute to the uptake of e-learning at their institution. In many cases, the implementation of learning is driven by management, however in others innovative teachers of Toolboxes appear to be acting as change agents within their organisation.
9. The openness of the Toolbox licensing was highly valued by participants. Teachers appreciated the opportunity to customise and distribute the learning materials without fear of contravening intellectual property policies.
10. The awareness of the Toolbox repository was not high, particularly among interviewees. In some cases, teachers were using parts of Toolboxes without knowing that these could be downloaded discretely from the Toolbox repository. It was recognised, however, that the Toolbox repository was in an immature, transitional state in the period under study.
11. Teachers appear to want smaller disaggregated forms of content and interactivity. There is also a strong desire to customise materials. However, there appears to be a lack of existing skills to do so or professional development.
12. The Toolbox Champion system was highly valued by teachers who were aware of it, however few teachers involved in this study knew of the system, or were aware of who their state champion was.

Key findings – future implications

1. Emergent technologies are perceived as having a role to play in future developments in e-learning for the TAFE sector. The most commonly valued forms of technology appeared to be:
 - Wikis (collaboratively developed web pages)
 - Blogs (online journals)
 - Podcasts (media presentations delivered to mobile and computer devices)

There was less consensus about the use of mobile phones in learning. Issues emerged relating to the cost associated with them as well as accessibility, particularly for regional learners.

2. Younger learners are coming into TAFE with increasing expectations of experiential approaches to learning and the integration of technology. At the same time, it appears that the student demographic is broadening and diversifying. This includes more mature learners seeking to study flexibly as well as learners with weaker literacy and numeracy skills. Regional Indigenous learners in particular are now required to do training to obtain financial benefits.
3. Participants generally asked for a greater range of resources in their particular teaching area. In particular several participants requested materials to be developed for diploma level learners.
4. The use of more modular and disaggregated learning materials appears to be a strongly developing trend. This suggests that the design of the repository and professional development and technical support for customising learning objects will become dominant issues in future Toolbox usage.

Recommendations

Based upon the data collection, and conclusions drawn throughout the report and presented in this executive summary, the research team would like to make the following recommendations:

1. **Multimedia in Toolbox designs** - Toolboxes would benefit from being designed with a greater level of interactivity and media use in mind. Consideration will still need to be made of bandwidth issues; however, this is decreasingly a problem with current Toolboxes.
2. **Visual style of Toolboxes** - Graphical material in Toolboxes would benefit from being as authentic as possible. In many cases, this involves the use of photographic rather than illustrative forms.
3. **Updating Toolboxes** - A continued focus on ensuring existing Toolboxes are up to date needs to be implemented to maintain industry confidence in the products.
4. **Toolbox structure** - An approach to structuring Toolboxes that maintains their potential for being used in a variety of ways (parts, printouts, presentation etc) should continue to be a focus in order to support the needs of teachers for flexible implementation.
5. **Intellectual property** - The open approach to Toolbox copyright is highly valued by teachers and should be maintained.
6. **Customising Toolboxes** - Teachers would like to customise Toolboxes, but many lack the skills and time to do so. Professional development to support teachers in this regard would be beneficial.
7. **Toolbox Champion** - The role of the Toolbox Champion should be well communicated throughout the TAFE system. There may be benefits from enhancing this role.
8. **Integration of emergent technologies** - Emergent technologies have the potential to greatly enhance learning experiences for end users. Care will be needed to ensure that these are integrated judiciously and with consideration of access and equity.
9. **Toolbox repository** - One of the strongest findings throughout the study was of the enhanced role of the Toolbox repository in meeting teachers' needs for flexibility. However, the awareness

of the system, its ease of use and support in customising materials could be enhanced through the following recommendations:

- Conduct a usability analysis of the Toolbox repository to identify ways in which it could be improved for end users
- Enhance the range of Toolbox materials within the Toolbox repository
- Provide training and support for teachers who wish to customise Toolbox materials for their own teaching needs.

Introduction

Background

The *2007 Flexible Learning Toolboxes and learning objects evaluation* builds on the findings from the 2004, 2005 and 2006 audits of Flexible Learning Toolbox usage. This evaluation explores the impact of Toolboxes on e-learning in vocational education and training (VET). The research provides feedback and recommendations to inform future Toolbox and learning object development with a view of improving the uptake and usage of student e-learning through the use of Toolboxes and learning objects.

The research team collected rich data from qualitative feedback gleaned from phone and focus group interviews from teachers and trainers. This report provides a synthesis of the Toolbox/learning object impact and aims to provide guidance to the subsequent development of future Toolboxes on strategies to facilitate and support impact.

Research aims

The *2007 Flexible Learning Toolboxes and learning objects evaluation* seeks to provide findings with regard to the following key areas of focus:

1. The impact of Toolboxes and the Toolbox repository on e-learning in TAFE

Toolbox questions:

- What are the reasons for choosing specific Toolboxes?
- What are the attitudes towards Toolboxes in terms of design and ease of integration into curriculum or use as optional resource?
- Why are some modes of usage preferred over others?
- What are the levels of satisfaction with Toolboxes as being engaging, interactive learning?
- What are the levels of satisfaction, by industry teaching area, in regard to Toolboxes meeting their needs?
- What are the levels of agreement that Toolboxes have contributed to the uptake of e-learning in the history of each institute?
- What are the preferred areas for Toolbox development in the future?
- Which components work well, and which areas need improvement?
- Are there opportunities for including new communication tools eg Blogs?
- What are some of the issues such as copyright/intellectual property (IP)?
- What is the satisfaction level with the current Toolbox Champion model?

Toolbox repository questions:

- What kind of learning objects are being accessed?
- Are there access difficulties? If so, what are these?
- How are the learning objects being used in teaching/learning?
- What support (including technical), if any, do teachers/trainers need to access and use?
- Do they increase the value/engagement of the teaching curriculum developed? How? Give examples
- What kind of learning objects should be added to the Toolbox repository?

- What level of granularity or size of learning objects is useful in teaching?
- Are the learning objects being customised?
- What improvements can be made to the Toolbox repository?

2. How future needs can be met?

To help determine future needs, a qualitative survey of instructors and target learners as well as an exploration of the environmental and cultural settings that impact on Toolbox use was performed. This exploration was framed by three main points of focus:

- Emergent technological trends that are likely to impact on Toolbox delivery and adoption.
- Impacts of funding and cultural changes in VET that will impact Toolbox scope and focus.
- The potential of Toolboxes to instantiate innovative and contemporary approaches to e-learning design.

Methodology and research approach

This research builds upon the 2006 audit of Toolbox usage, which gathered broad statistical data from the same user group (ie TAFE practitioners). A qualitative approach is employed in this study, which enables the team to more effectively answer those research questions that address attitudinal issues and in particular any issues that may emerge from the statistical data as well as those identified in the second research aim.

Data was collected in three stages:

1. Online survey of all TAFE institutes (this informed the *2006 Flexible Learning Toolboxes and learning objects: Usage Trends in TAFE²* audit).
2. Phone interviews conducted on the uptake of six Toolboxes selected to provide a range of settings (metropolitan, rural etc), qualifications (AQF (Australian Quality Framework) levels and trades) and learning designs.
3. Five face-to-face focus groups conducted across Australia that explore issues raised by the previous stages and future possibilities of e-learning in the TAFE sector with key users and implementers of Toolboxes and the Toolbox repository.

Phone interviews were used to provide detailed qualitative data about individual Toolboxes/learning objects and how they are used, while focus groups were used to enable comparison within and between cases, and the generation of new ideas and suggestions for improvement. For both telephone and focus group interviews, discussions were recorded and then transcribed. These transcripts were then analysed for themes, and summary reports were produced.

Selection of specific locations and products for qualitative research was based on information developed from the 2006 audit survey data whilst ensuring a range of respondents. Larger metropolitan institutes (eg Holmesglen) were targeted along with smaller regional institutes, and national representation was ensured by targeting big users of Toolboxes (eg WA, VIC, NSW and QLD), as well as smaller states and territories.

² http://toolboxes.flexiblelearning.net.au/documents/pdfs/toolbox_usage_2006.pdf

Data collection instruments

Data was gathered through focus group and interviews to answer the following key research questions:

- What is the impact of Toolboxes and the Toolbox repository on e-learning in TAFE?
- How can future needs be met?

The following stakeholders were consulted at different stages of the data collection process:

- instructors/teachers
- managers/Toolbox Champions
- database administrators/technical managers
- learners.

Table 1: Data collection methods

Instrument	Instrument forms, to determine:
Phone interviews	Questions gleaned from online questionnaire results. Includes perception of Toolbox materials, level of satisfaction, etc. <ul style="list-style-type: none"> • instructors/teachers • managers/Toolbox Champions • learners.
Focus groups face-to-face	Questions gleaned from online questionnaire and telephone interviews. Includes perception of Toolbox materials, level of satisfaction, etc. <ul style="list-style-type: none"> • instructors/teachers • managers/Toolbox Champions.

Findings

The findings are in two parts:

1. Phone interviews conducted on the uptake of Toolboxes selected to provide a range of settings (metropolitan, rural etc), qualifications (AQF levels and trades) and learning designs.
2. Five face-to-face focus groups to be run across Australia that explore issues raised by the previous stages and future possibilities of e-learning in the TAFE sector with key users and implementers of Toolboxes and the Toolbox repository.

1. Phone interviews

For the purposes of exploring the experiences teachers have had with using Toolboxes, the following Toolboxes were selected, based upon their level of use and the extent to which they represent a range of designs and content areas:

- Child Services (302)
- Frontline Management (601)
- Training and Assessment (607)
- Building and Construction (401)

Some Toolbox repository users, and those who in the survey indicated they were not planning on using Toolboxes, were also selected to provide a range of perspectives. The following section summarises the findings on each of the above areas. Appendix 1 contains summaries of all of the interviews. Twenty-three interviews in total were conducted.

Overview

Table 2 summarises the interviews conducted around specific Toolboxes. Each of the Toolboxes is discussed in turn.

Table 2: Summary of phone interviews

Toolbox	Child Services (302)	Frontline Management (601)	Training and Assessment (607)	Building and Construction (401)
Strengths	Simple design Fun Ease of use	Media, particularly audio Interactivity Modularity Good content	Good content Attractive design	Efficient, Fit for Purpose resource Immediate feedback through quizzes
Weaknesses	Cartoonish characterisations Out of date Some navigation issues	Needs more interactivity Out of date Content not deep enough	Tries to cover too many disciplines	Cartoonish characters Quite basic
Quality of learning	Basic Limited social interaction	Good opportunity for flexibility and modularity See/Try/Apply effective process orientation	Weak in terms of feedback and assessment	Didactic and rather simplistic Lacking in authenticity Provides immediate feedback for knowledge building
Industry relevance	Good but decreasing due to out-of-date material	Good despite tendency to date	Generally good	Fair, but let down by the treatment
Level of motivation	Initially engaging, tends to trail off	Interactions effective, could have more interaction beyond use of media	Requires intrinsic motivation from learners	Engaging, could be improved with more media including video
Institutional acceptance	Developing	High	High	Fair. Not all teaching environments adequately equipped for e-learning
Student acceptance	High	High, particularly for older learners	Low for students with poor IT literacy Unpopular with task-oriented users	Good for younger students with high expectations of technology
Teaching challenges	Technical skills Requires facilitatory role	More facilitatory, need to create personal connections to online learners	Integration of Toolbox needs to be carefully planned, including induction for learners	Technical skills Requires facilitatory role
Modes of implementation	Varied	Varied	Varied	Varied
IP issues	None	None	None	None
Future directions	More modularised	Games and simulations Podcasts	Diploma level materials Podcasts and wikis	Deeper content Test banks Greater use of media
Awareness of Toolbox Champion	Limited	Varied	None	Varied

Child Services Toolbox (302)

The interviewees for the Child Services Toolbox were all female. Their levels of computer skills ranged from 'average' to being mildly technophobic. There was a general consensus among interviewees that resistance among staff to using the Toolbox is dissipating, with younger teachers being more enthusiastic in their adoption of the product.

The Toolbox is characterised by its simplicity in terms of navigation and visual representation. This was both a benefit and a problem to learners. Despite several interviewees noting the ease of navigation within the Toolbox, there was still some concern that learners had issues with retracing their steps to find specific parts of the product. This may be a reason why there was a tendency for learners to lose enthusiasm for it after a while.

The characters and setting were rather simplistic and this led to several negative comments about the 'cartoony' feel of the product and somewhat low level and patronising tone. It was also agreed that the Toolbox is quite out-of-date and this caused a loss of confidence. The ability to customise the Toolbox was seen as an important requirement but was seen as problematic because of the general lack of skills of teachers in this area.

Frontline Management Toolbox (601)

The teachers of the Frontline Management Toolbox came from a variety of backgrounds, and the product was used in a range of ways that reflect the diversity of the target users. One of the strengths mentioned in relation to the Toolbox was its flexibility in that it could be used as a supplement to teaching, or in a standalone online or blended face-to-face environment.

Effective aspects of the Toolbox design were the use of case studies and its process orientation through the See/Try/Apply model. The content was perceived as strong and with a clear and predictable structure. Its use of media and interactivity was also praised. The use of media did create some bandwidth issues for one group of learners though, and the fact that the content dated quickly was also mentioned as an issue. While the content was considered good on the whole, one interviewee did argue that it could have been deeper. The steep learning curve involved in coming to grips with the product initially was also mentioned as a potential problem.

The industry responds well to the Toolbox, despite its tendency to date. It is perceived as very relevant, with the issues covered in the scenarios being quite typical. There is a strong demand for the diploma, and this product helps to meet that demand. This industry relevance was accepted by students. On the whole they valued the product, though older students were more accepting because they valued the flexibility it afforded them. One interviewee noted however that the lack of depth of the product limited its motivational value. Another argued it was motivationally strong on the basis of the media and interactions within them. A third suggested there could have been more interactivity within the Toolbox to bolster this. It was also suggested that the Toolbox is best implemented along with other face-to-face strategies to stop its use from becoming stale.

Flexible learning was generally perceived as an important development in delivering training in Frontline Management so this approach was widely accepted at the institutional level, to the extent that one interviewee claimed the Toolbox had kick started the use of online learning at her institute. There were varied responses in terms of knowledge of the Toolbox champion model. Some knew their champions while others had never heard of the system. The use of the Toolbox has created a need for teachers to develop an approach to teaching that is less didactic than previous models. One interviewee noted that she gave more personally of herself to students to help break down the barriers created through online learning. Generally, it was felt that for the future a stronger emphasis on games, simulations and modularity would enhance the learning process.

Training and Assessment Toolbox (607)

As with the Frontline Management Toolbox, use of the Training and Assessment Toolbox varied greatly and was indicative of a large range of user and teacher needs in this area. The implementation of the Toolbox varied from being a support and used in conjunction with a range of other materials, including other Toolboxes; to a stand-alone online course. This also meant that the

Toolbox was implemented in a range of ways including as a CD-ROM, in class, and via a learning management system (LMS).

The strengths of the Training and Assessment Toolbox appear to be in its visual look and feel as well as the informational content within it. One interviewee argued that the Toolbox could not possibly accommodate the full range of disciplines involved in Training and Assessment while another noted that it was weak in terms of the level of support given to learners in assessment and feedback.

Generally, uptake of the Toolbox among teachers and trainers was limited. While the interviewees commented that it was highly relevant to industry, one noted that that opinion was not shared by many of the teachers at her institution, which has led to it being used as a support rather than a full learning system at her institution. Student attitudes were also mixed among the interviewees. On one hand the Toolbox was useful in alleviating the rather abstract nature of some topics such as training policy, while on the other, it also led to some frustration among learners with weak computer skills.

Its value as a learning tool was impacted by the task oriented nature of many of the learners who tended to build their learning experiences purely around assessment items. Inducting learners into using the Toolbox became part of the teaching process itself for two of the interviewees. By supporting the Toolbox through phone and Elluminate³ sessions, this teacher greatly improved the outcome. There was a general consensus in this area that the integration of learning technologies was something that is being driven by the institute rather than the teachers. This has, however, led to the exploration of some newer technologies such as podcasting and wikis. One of the interviewees claimed that there was a strong need for more training and assessment materials at diploma level as there was a growing demand in this area to provide the training necessary to break through a 'glass ceiling' in the training industry. None of those interviewed were aware of the Toolbox Champion system.

Building and Construction Toolbox (401)

The teachers interviewed for this Toolbox varied in their opinions of the product as well as of the technological literacy and student needs. They ranged from a very strong user of technology who had his learners develop video portfolios of their work as they progressed through the course, to much less confident teachers of technology who used the Toolbox as is and valued its efficiency.

The fitness of the Toolbox for purpose was one of its strengths identified by several interviewees, leading to time savings for the tutor in developing and delivering the learning. Another strength identified was the multiple choice tests which provided immediate feedback to learners.

Nevertheless, the interviewee with the strongest technical literacy was also the most critical of the product. He felt that the materials, while adequate in terms of their content coverage, were delivered in a superficial and trivial manner. The cartoonish treatment of the topic was inauthentic and also undermined some of the real issues in terms of using dangerous equipment. This was the reason he had learners create their own videos.

It was perceived that the look and feel of the product promoted user engagement along with the immediate feedback, though it was noted that more media, particularly video and audio, could further enhance it. As with the other Toolboxes, the product was delivered in a variety of ways. These included via an LMS, on a CD-ROM and through printouts. It was also used in face-to-face teaching both in disaggregated chunks and as a whole. In one instance it was used to enhance a program that did not relate specifically to building and construction.

The changing nature of the role of the teacher was noted in one instance. It was also felt that a greater level of support was required to provide teachers with the technical skills to modify the materials. Students had an expectation of the use of technology but not all teachers were well equipped to support that. There was limited knowledge of the Toolbox repository or the Toolbox Champion system within the users of this Toolbox.

³ <http://www.illuminate.com>

Toolbox repository

Five users who were identified as users of the Toolbox repository were interviewed to provide a more detailed picture of the modes of use and value of the Toolbox repository in teaching. Findings are summarised here by: main strengths and weaknesses; issues for teaching and learning; modes of implementation; ease of use of the Toolbox repository; ability to customise the materials; and future directions for the Toolbox repository.

Strengths and weaknesses

On the whole, learning objects from the Toolbox repository appeared to make a valuable contribution to the curricula of the teachers who were interviewed. Specific strengths of the Toolbox repository could be summarised as:

- Excellent materials in some defined areas that had value beyond their discipline. Mention was made for example of the Retail Toolbox being able to be repurposed for Hairdressing.
- Flexibility. By far the strongest response to the value of the learning objects was the flexibility they provided for learners. They were a valuable addition to other forms of teaching and were useful particularly where there were pressures placed upon workplaces to provide training or for mature age learners who required the flexibility of e-learning.
- Ease of use of learning objects. The small size of the objects and their relatively simple structure made them very easy to use.

Weaknesses of the learning objects were considered to be:

- Balance of 'general to specific' content. This was considered both a strength and a weakness. It was an inevitable tension that materials that are too generic lose authenticity, while those that are too specific suffer from a lack of context and relevance.
- Out of date materials. Some materials in the Toolbox repository are now out-of-date. Specific mention was made of the Hairdressing Toolbox which is now subject to a new training package.
- Basic content. Two of the interviewees commented on the simplicity of content, which was perceived to be too limiting for higher certificate learners.
- A lack of media. It was noted that greater levels of media, particularly audio could enhance the learning objects in the Toolbox repository.

Issues for teaching and learning

Students appeared to respond positively to the use of learning objects for the most part. They were valued as an alternative to dry, didactic teaching. However, the range of learners that were addressed in these interviews highlighted the following learning issues:

- More media was required. The use of media was highly valued by learners as an alternative to text and could be enhanced.
- Indigenous learners in particular required stronger levels of media, especially audio, in the form of narratives, and less text.
- Some of the interactions and exercises within objects became rather repetitive for some learners.

From the teacher's perspective a number of considerations were raised by the interviewees that could be of value for others considering using the objects. These included:

- The need for teachers to still form strong relationships with students. This was important particularly for the interviewee whose main cohort was Indigenous, but was also mentioned by others. It was emphasised that contact with the student was still necessary.
- Teachers needed more time to be able to find and implement materials for their teaching.

Implementation

As with the Toolboxes as a whole, learning objects from the Toolbox repository were implemented in a myriad of ways. These included:

- photocopied worksheets and notes
- uploading to an LMS
- via distance education
- via blended mode
- via face-to-face teaching.

The main issue that rose out of discussion of implementing learning objects related to the need for technological infrastructure within institutes to ensure that students could access the materials.

Ease of use of the Toolbox repository

The interviewees identified problems with the ease of use of the Toolbox repository. This was evident to the extent that one respondent had a colleague find and download materials for her. The main issues for ease of use related to:

- quality of the informational feedback provided by the search system
- limited range of objects
- not knowing what was in there to begin with
- inability to re-find objects that had previously been identified.

Ability to customise Toolbox repository materials

All of the interviewees expressed a desire to customise learning objects. This appeared to be in response to the tendency for materials to be either too generic or too specific to be useful. The extent to which they were able to successfully do so was to a certain extent dependent upon teachers' own levels of technical literacy. One teacher had attended a course on Toolbox customisation but still felt overwhelmed by the complexity of editing HTML, particularly through the use of Dreamweaver software.

Future directions

A range of suggestions was made for how the Toolbox repository could be improved and how newer technologies could be integrated into the materials. These included:

- Use of mobile technologies and blogs as well as podcasts. These tended to be similar comments to the general Toolbox interviews, however it must be noted that one teacher of Indigenous students highlighted a range of issues regarding the integration of newer technologies, not least of which was a tendency among impoverished remote communities to spend money on mobile phones which were of limited benefit.
- Greater depth and range of content
- A feedback system within the Toolbox repository that would allow users to offer suggestions as to how it could be improved.

Non-users of Toolboxes

The four interviews conducted of non-users of Toolboxes provided a range of responses. Each interviewee appeared to have different reasons for choosing not to use Toolboxes. The four participants can be summarised as:

- not having had an opportunity to use Toolboxes as yet
- choosing not to use Toolboxes because of a lack of support and/or training
- Using parts of Toolboxes to augment instruction and

- choosing not to use Toolboxes because of their design.

Despite each interviewee expressing a different personal experience, some common themes were evident in their interview responses. In particular these related to:

- A need for training in using and customising Toolboxes. This was particularly true for one regional user who was unable to come to grips technically with the product.
- A lack of awareness of the Toolbox repository. One teacher who was using components of Toolboxes may have been better served by using pre-modularised objects from the Toolbox repository.
- A lack of awareness of the Toolbox Champion system.
- A need to ensure Toolbox materials are media rich and motivating for learners. This came through several respondents. One in particular felt that there needed to be a greater learner focus in the design of Toolboxes.

Summary of Toolbox interviews

The range of responses from the interviews conducted reflected the diverse nature of the contexts in which the Toolboxes are used. Some of the conclusions regarding this diversity are:

- Toolboxes are used in multiple ways and contexts. These range from basic printed handouts to supplement face-to-face teaching to stand-alone learning modules.
- Learners have varied expectations and levels of intrinsic motivation. Age was frequently noted as a big determinant of this, along with whether the learner is full time or already in the work place. There can be high expectations of the use of technology from younger learners. At the same time some older learners are better able to cope with the Toolboxes because they are more independent. The negative side of this is that often older learners are more task-oriented and do not value the experiential learning inherent in Toolboxes.
- Institutional support for the use of Toolboxes, and e-learning generally, varies. In some cases, teachers were change agents for the adoption of Toolboxes, in others the use of Toolboxes was promoted by the institution itself. There was a general trend for institutes to be increasingly active in promoting technology into the curriculum.
- Teachers had varying levels of technical literacy, and the level of success in implementing Toolboxes aligned with this level. For technically literate Toolbox users, the Toolboxes appeared to provide a valuable mechanism for providing learning experiences. In some cases, they were a springboard for other forms of technology- based learning. Typically, the less technically literate teachers had more trouble integrating Toolboxes into their teaching and engaging learners in their use.

Despite the variety of responses and multiplicity of products and contexts addressed through the interviews there were some salient themes that emerged through specific Toolbox implementations as well as the Toolbox repository users and non-users. These key themes are listed below.

- The risk of Toolbox materials becoming out-of-date is a sizable one, particularly in rapidly evolving areas such as Child Care. Out-of-date materials have a strong impact on confidence in the product as well as their industry relevance.
- Teachers would like to be able to customise materials from the Toolbox. The ability to modify generic materials to specific contexts as well as remove or modify dead or outdated material increases their relevance.
- Stronger training and support is needed to enable teachers to effectively use and customise Toolbox materials.
- Toolboxes would benefit from a stronger level of interaction and media. Audio in particular is valued. The associated issue of bandwidth was mentioned by some teachers, but did not appear to be a very strong concern.

- Realistic visual environments were most valued. Photographic realism in particular was considered better than cartoons in both illustrative and instructional graphics.
- Toolboxes and online learning generally are changing the role of the teacher to a more facilitative one. This still has issues in terms of being able to develop relationships with students, having effective inductions into the use of Toolboxes and so on. Some face-to-face contact is still considered important.
- Intellectual property issues are negligible. While there was some acknowledgement of IP issues as a grey area for digital content, the open copyright policy applied to using Toolbox is highly valued by teachers.
- The Toolbox Champion system is highly valued among those that are aware of it, but this awareness is very limited. A greater role for Toolbox Champions and a strategy for enhancing awareness of the system would be beneficial.

2. Focus group meetings

To help obtain richer in-depth information, a series of focus group meetings were organised with groups of teachers/trainers who have been using Toolboxes. Remote, regional and city campuses were used, as shown in Table 3.

Open questions were asked to participants about:

- The Toolbox repository
- Toolbox usage
- Toolbox design
- Toolbox learners
- Toolbox implementation
- Toolbox teachers
- New technology and other resources

A template was emailed to participants with the key questions and sub questions that would be asked (see appendix 2). Also, the summarised interviews from each campus have been inserted in appendix 3.

Overview

Table 3 overleaf summarises the interviews conducted around specific Toolboxes. Each of the Toolboxes is discussed in turn. Following, is a summary of the focus meetings, summarised by theme.

Table 3: Summary of focus group meetings

	Brisbane (Southbank)	West Sydney Inst (OTEN)	Newcastle (Hunter)	Darwin (CDU)	Melbourne (Chisholm)
Toolbox usage	<ul style="list-style-type: none"> • Children’s Services (302) • Laboratory Operations (412) • Would like more Toolboxes in the trades areas 	<ul style="list-style-type: none"> • Retail (212 & 314), Events Management (806), Horticulture (304) and Equity (various) • Training and Assessment (TAA) (607) – though instruction needed at the start to get going with • Demand for Toolboxes to help with employability skills • More Diploma level needed • Should be more forward thinking about what is coming • Industry like the fact that students don’t have to be released from work. 	<ul style="list-style-type: none"> • Frontline Management- both as CD-ROM and in Janison • Retail Toolbox (212 & 314) • Hairdressing (407) needs updating • TAA (607) confusing on Janison, as discovery based learning is not good for the trades area 	<ul style="list-style-type: none"> • Tourism and Hospitality (110) • Retail Toolbox (212 & 314) • Indigenous Ecotourism (318) • Kitchen Operations (409) was well done 	<ul style="list-style-type: none"> • Cyber Hair Studio (407) was popular, though concern that cartoon style could trivialise learning • TAA (607) unpopular with both staff and students • Must be kept up to date – content and media
Toolbox design	<ul style="list-style-type: none"> • Students often have to learn how to use different interfaces 	<ul style="list-style-type: none"> • Toolboxes that are easy to use makes them popular eg Retail Operations (312) • Should be built in a manner that is easy to disaggregate, is currently too complex • Plug and play! • Have a large and diverse look and feel, technology and file structure – hard to modify • Don’t make to large – too time consuming for trainers • Should be able to change content quickly and easily • Smaller, easy to disaggregate and easily customised to suit the context and workplace settings 	<ul style="list-style-type: none"> • You need relevant content • Must be easy to access • Must be easy to change, and disable parts not needed (Flash makes it hard) • Must be simple to use and navigate • No training should be needed • Users should be able to easily pick ‘bits’ (shell) ie disaggregate to change style • Should be evaluated by end users before release for Interface, navigation, look and feel, how students find their way around the package, and instructional strategy 	<ul style="list-style-type: none"> • In general, Toolboxes are complex and difficult to use. Maybe a YouTube guide? • Difficult to edit • Interactive Toolboxes with photos, videos, stories, animation and audio are motivating for Indigenous • Computer skills, literacy and a lot of reading not appealing • Design should cater for different learners eg Gen Y versus older students • Don’t want complicated navigation systems and text eg Retail and Tourism 	<ul style="list-style-type: none"> • Problem and scenario based approaches were popular • Activities must be relevant and specific to student needs • Different approaches necessary in different implementations

	Brisbane (Southbank)	West Sydney Inst (OTEN)	Newcastle (Hunter)	Darwin (CDU)	Melbourne (Chisholm)
Toolbox repository	<ul style="list-style-type: none"> • Not many teachers knew about the Toolbox repository • Difficult to access and download • Useful if used properly <p>Can repurpose generic objects to other contexts, though skills needed</p>	<ul style="list-style-type: none"> • Very low usage rates, maybe 10% • A lot of education needed to raise awareness • Great concept having smaller resources • A lot of time needed to search and find resources 	<ul style="list-style-type: none"> • Very low usage rates • Time is a problem • Too difficult. Must be easier to use so part time staff can use without training 	<ul style="list-style-type: none"> • Very low usage rates • Time is a problem • Too difficult. Must be easier to use • Training and encouragement to use facility needed • Improve search facility – unit code, theme or keyword • Include all Toolboxes and all employment skills 	<ul style="list-style-type: none"> • Low usage rates • Not well communicated • None had used in teaching • Could increase the size of objects from 5 to 10mb • Difficult to find information • Not all Toolboxes included
Toolbox learners	<ul style="list-style-type: none"> • Need flexibility with a range of content to accommodate diversity • Cater for different learning styles 	<ul style="list-style-type: none"> • Must cater for different learning styles to build engagement and motivation • Friction between over 40's and Gen Y learning styles – animations, interactions and tools versus text on screen • Need different options - self paced interactive and easy printing • Younger students like interacting with media eg Financial Services (603) • Simple front end for learners with simple instructions 	<ul style="list-style-type: none"> • Different learners require different strategies • Gen Y versus older learners require different strategies • No help desk for students (24/7) for students in remote areas makes it difficult. Teachers cannot usually help with these queries 	<ul style="list-style-type: none"> • Very few can self-direct • Many forced to attend to qualify for the dole • Socialising important • 'Pre-training' module • Indigenous learners like computers, not books • More stories, pictures, audio, photos etc. 	<ul style="list-style-type: none"> • For younger learners need media, and motivating scenarios • For older, or task oriented learners need materials that can be accessed quickly, and comfortable with text • Task and experiential learners – age and lifestyle • Toolboxes offered flexibility for international students • Learners enjoyed materials that were relevant eg TAA (607) versus Panel Beating (503)! • Must understand the target audience and their needs

	Brisbane (Southbank)	West Sydney Inst (OTEN)	Newcastle (Hunter)	Darwin (CDU)	Melbourne (Chisholm)
Toolbox implementation	<ul style="list-style-type: none"> • Both Southbank and Skills Tech moving from Blackboard to Janison • Two staff allocated to help staff customise Toolbox resources for teaching • Students given learning style assessment to help guide learning • Teacher should provide the context, and more work should be done to develop content such as video 	<ul style="list-style-type: none"> • Currently too many technical skills and software needed • Updates and version numbers should be clearly given and made prominent • Try and keep updates centrally available to save duplication of effort • Should be centrally distributed by the Department of Education and Training (DET) to all users – teachers and students with clear version numbers and tracking • Head teacher approves which are uploaded and IT sets it up • Training needed for Janison 	<ul style="list-style-type: none"> • Put onto Janison and the whole lot is installed • Janison was clumsy, complex and difficult to use, when trying to disaggregate • Let students access the individual units, and download themselves ie it is taxpayer funded 	<ul style="list-style-type: none"> • Delivered through LearnLine (Blackboard) • Difficult to copy file structure • Remote students use CD-ROM • No policy or training or integration – dual sector problems • Library should be main source • Remote areas rely on CD-ROM and often don't know what they have 	<ul style="list-style-type: none"> • Delivered through TAFE VC (Blackboard) • Delivery is flexible in Small Business, and students can start at any time • Cyber Hair Studio is integrated into face-to-face delivery • KPIs (key performance indicators) are tied to expectations that courses have an online component • Have adopted a formalised approach to delivery • Students expect online information

	Brisbane (Southbank)	West Sydney Inst (OTEN)	Newcastle (Hunter)	Darwin (CDU)	Melbourne (Chisholm)
Toolbox teachers	<ul style="list-style-type: none"> Professional development (PD) needed for teaching strategies, and technological skills Scholarship program used where trainers given one day a week for a semester Role of the Toolbox Champion very positive, though some didn't know him. Should have more. 	<ul style="list-style-type: none"> Having trainers comfortable with technology makes Toolboxes more popular Many students need help on technology, so trainers must be able to help More PD needed on how to use Toolboxes, and how to customise them Teachers don't have time to attend PD Perhaps online training with Adobe Captivate snippets? The Framework could run regular newsletter with examples of different pedagogies and strategies Train experts in each discipline who then help others One day conference with focus on Toolbox implementation – showcase new ideas, patches, and pedagogies Champion considered very helpful. His training should be 'train the trainer' More Toolbox Champions needed 	<ul style="list-style-type: none"> Teacher enthusiasm and delivery strategy is also an important element in helping to engage students More PD needed for Toolbox and computer skills, though must provide teaching release PD to show how to integrate Toolboxes in lessons for flexibility, engagement and motivation. PD must come from top management and supported by faculty heads Toolbox Champion is very helpful and offers lots of training – not always well attended as staff have teaching commitments 	<ul style="list-style-type: none"> Trades haven't picked up Toolboxes as much More PD needed Generic sessions not so useful, need tailored PD July and December breaks are best Training should include how to make instruction more interesting versus didactic! 50-week teaching in 2008 for continual enrolment should make Toolboxes more valuable More support staff needed to help lecturers Toolbox Champion very helpful 	<ul style="list-style-type: none"> Toolboxes rejected by teachers in Horticulture as being too simplistic The quality of the technology was an impediment in teaching with Toolboxes PD needs to be formalised Time must be given for training in technology and how to modify Toolboxes Toolbox Champion considered important

	Brisbane (Southbank)	West Sydney Inst (OTEN)	Newcastle (Hunter)	Darwin (CDU)	Melbourne (Chisholm)
Technology and other resources	<ul style="list-style-type: none"> • Mobile devices with video • Wiki's and other social networking software 	<ul style="list-style-type: none"> • Web 2.0 and social networking tools that combine video, blogs, photos, forums etc (Ning) • Mobile content 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Wiki's, blogs, vodcasts, Google Maps • Mobile content for remote communities • Second Life for Retail • Make content available on DVD, as Indigenous communities own DVD's • Resources from the Leaning Federation 	<ul style="list-style-type: none"> • Possibly mobile content, wikis, blogs and other Web 2.0 applications, though care needed to deploy in an appropriate manner

Toolbox repository

The consensus from the institutes involved, was that not many teachers/trainers knew about the Toolbox repository. There was a perception that the Toolbox repository was difficult to use and required too much time to access and find required content, and that this prevented others from using it. Another criticism was the Toolbox repository didn't contain all the Toolboxes, which was confusing when searching for content.

More structured training must be given in how to access, search, aggregate, and integrate into current teaching practices with good pedagogical principles. Professional development must be accompanied with time allowance to free teachers/trainers from teaching responsibilities, otherwise attendance will be low.

Even though the Toolbox repository had a lot of criticism, it was perceived to have great potential. The concept of having small generic objects that can be repurposed for different contexts was very appealing. For example, employability skills could be used by all disciplines in their own context, if they were made easily available, and teachers/trainers knew how to use and integrate them into their teaching, with sound pedagogical principles.

Toolbox usage

Each institute used different Toolboxes according to their client needs, context and region. This data can be seen clearly in the quantitative section of this report. However, some comments were made about specific Toolboxes and other general issues related to Toolbox usage, which included:

- TAFE should be more forward thinking with Toolbox requirements, and have new Toolboxes available when new courses start.
- It would be useful to have more Toolboxes or objects developed that focus on employability skills.
- Many Toolboxes need updating, and new modules developed for Diploma level units.

The *Training and Assessment* Toolbox (607) received a lot of criticism about the style of learning it presented. Feedback indicated that it was confusing and required instruction to help students get engaged at the beginning. In general, it was unpopular with both students and staff. On the other hand, the presentation style of *Cyber Hair Studio* Toolbox (407) was popular, though some concern was raised that cartoon style interfaces can trivialise learning.

From an industry perspective, Toolboxes were considered very useful and relevant. Industry was particularly pleased that students could complete studies at the workplace, and didn't have to be released for face-to-face contact.

Toolbox design

A lot of discussion centred on the theme of Toolbox design. Key areas included student learning styles, interface, content, ease of use, size of Toolbox and ability to disaggregate.

Regardless of the student's learning style, it was agreed that learning activities must be authentic in nature, and specific to student needs. Also, content should be carefully considered for context and relevance, and evaluated by end users before being deployed. This includes content, interface design, look and feel, navigation, and teaching strategy.

All participants considered ease of use with a simple navigation system as being very important. For example, *Retail Operations* (212) was considered an easy-to-use Toolbox. There was concern that some Toolboxes were too complex and difficult to use. Participants felt that no training should be required to access and use a Toolbox. If complexity is required, then instructions should be provided using a 'YouTube' style video that is quick and easy to understand. Also, if the Toolboxes are too large, trainers are often not motivated to engage with them, as it takes too long to understand and engage with the requirements of the Toolbox.

Smaller, 'easy to disaggregate' Toolboxes that can be customised to suit the context or workplace setting are required. The focus should be on Toolboxes that are easy to change, and disable parts that are not needed. A 'plug and play' scenario was suggested, which aligns to the philosophy of the Toolbox repository, in a simplified format.

Toolbox learners

Younger learners (Generation Y), tend to be motivated by interactive media with videos, photos, audio and music. This was also true for Indigenous students who enjoyed stories accompanied with video, audio, photos and music. This type of learning could be accommodated through well-structured problem or scenario based learning designs. However, older, task oriented and more traditional learners wanted material that was quick to access, and in general, they were comfortable with reading text to learn required information.

It was considered that Toolboxes should cater for these different learning styles to help build engagement and motivation. Perhaps at the beginning of each Toolbox, students could be given a simple, clear option to choose the required learning style, as different learners require different strategies. It was considered that Toolbox design must cater for the target audience and their diverse needs; otherwise, students will lose motivation.

In remote areas, it was considered that very few students can self-direct their learning, and in many cases attend class only to collect unemployment benefits. For these students a 'pre-training' module would be valuable to help them understand expectations, and where the training will lead them. These learners are particularly interested in visual interactive media such as video, stories and photos.

Another problem students faced was the lack of helpdesk support on a 24/7 basis. This was particularly true for remote students, but also for regional and city students. Often, when students had technical problems in accessing information, the teachers could not help as they didn't have required expertise. A good helpdesk system could be useful for technical queries related to access and connecting from external sites.

Toolbox implementation

The two main platforms used were Blackboard and Janison. Opinion varied considerably about their strengths and weaknesses. Some considered Janison clumsy and complex, and others were moving from Blackboard to Janison. Most felt that it was often difficult to replicate the required file structures using these platforms, and strong technical skills were required for installing Toolboxes. In some institutes, staff were dedicated to the role of implementing and updating Toolboxes on the LMS. However, this wasn't consistent across institutes.

A key issue addressed here was keeping track of Toolbox updates and version numbers. Most institutes had difficulty with this and felt that version numbers should be made more prominent on the front of each Toolbox. *"As taxpayers fund these Toolboxes, why not have a central site that both students and trainers can freely access with clear version numbers and tracking?"* Their opinion was that this could save much duplication of effort in all institutes.

In remote areas where there is no LMS, Toolboxes are distributed on CD-ROMs. However, if there is no policy or procedure for distribution and training, problems quickly arise. Often in remote areas, trainers don't know what's available on the CD-ROMs. In these situations, libraries could take a more active role in cataloguing resources to help track the CD-ROMs and their updates.

A few institutes had developed a formalised approach to delivery, and have performance indicators tied to the number of courses that are delivered online. In some institutions, staff have been allocated to help teachers/trainers customise Toolbox resources for teaching and learning purposes. In this context, it was considered that more effort should be given to developing good quality content for the Toolboxes, such as videos, and trainers then provide the relevant context and activities.

An interesting idea for deployment of Toolbox resources in remote areas was to convert the content to DVD format. This would help many Indigenous communities who often own a DVD player and television, but do not have access to the internet or a computer.

Toolbox teachers

The main issue continually discussed in each focus group was professional development of teachers and trainers. The consensus of opinion was that professional development should be more formalised, and supported by top management and faculty heads. More training is needed with more resources made available to help buy out teaching time. Training should be aligned with July and December periods where it is likely that staff will not be teaching.

Training is needed for technology skills, computer skills, how to use Toolboxes, how to customise Toolboxes, and how to integrate Toolboxes. Also, training is needed for teaching strategies to help engage and motivate students, rather than using traditional didactic methods.

It was suggested that teachers could be supported by having short training videos available online. To support this, the Framework could run regular newsletters with information about training videos, examples of different pedagogies and strategies. Another popular idea was running a one-day conference with a focus on Toolbox implementation to showcase new ideas, patches, and pedagogies.

With the move toward flexible delivery, and the 50-week teaching year, training can be used to help make Toolboxes more valuable for continual enrolments.

In all the institutes, the Toolbox Champion was considered a very important resource. However, it was not possible for the Toolbox Champion to run sufficient courses to cater for everybody's needs. It was suggested that the Toolbox Champions could run 'train the trainer' courses for each discipline, and they could then help others in their discipline. A scholarship program was also suggested that could be used to train these experts, where perhaps one day a week is given for a semester.

Future technologies and other resources

Most of the discussions for future technologies were on mobile devices and web 2.0 applications. Mobile content was considered highly appropriate for remote communities and on-the-job training situations, in which online infrastructure was not available. Also, Second Life was suggested for retail and other disciplines that required 'real life' metaphors. Other suggestions included wiki's, blogs, vodcasts, Google Maps and Ning.

Also, it was perceived that other resources should be considered such as commercial training packages and also resources from the Learning Federation.

Conclusions

The research conducted throughout 2007 to explore the current and potential use of Toolboxes throughout the TAFE sector provided a range of findings. Qualitative data was obtained regarding the impact of the Toolboxes and Toolbox repository on e-learning in the TAFE sector via a series of interviews.

These findings were then used to provide a basis to go beyond the investigation of impact to include an exploration of future needs. This was done through a series of five focus groups in a range of states and territories. Conclusions have been drawn about the following key questions:

- The impact of Toolboxes and the Toolbox repository on e-learning in TAFE.
- Meeting future needs.

The impact of Toolboxes and the Toolbox repository

Toolboxes are considered valuable additions to the arsenal of teaching methods. As with the modes of implementation of Toolboxes, the extent to which the Toolboxes were used varied from being stand-alone teaching courses, to resources designed to supplement alternative methods. This variety appeared to offer teachers the flexibility they required in terms of integrating Toolboxes into their teaching.

While teachers were satisfied on the whole with the quality of Toolboxes, some findings evolved throughout the study that indicated a preference towards using parts of Toolboxes rather than whole products. This was because Toolboxes have a tendency to date, and a perception that not all of the scenarios or underpinning knowledge within specific Toolboxes are relevant to specific work or teaching contexts. There was also a significant difference between learner attitudes both between and within Toolbox implementations. Major factors that impacted on learner acceptance were their age as well as their location. Both of these appeared to be contributing factors to literacy and numeracy skills as well as technological literacy.

There appeared to be no preferred learning designs within Toolboxes. While many felt that the scenarios and case studies in Toolboxes were valuable, others commented on the utility of the smaller pieces of content. Generally teachers wanted more interactivity and media in Toolboxes, although there was some acknowledgement of the bandwidth issues that this raises, particularly for regional learners. A common comment was that the different types of activities and content within Toolboxes helped to support a range of learning styles.

Older learners appeared to be less accepting of e-learning materials generally. It appeared that Generation Y learners now have an expectation of some of their teaching being delivered through e-learning, and this was driving uptake in some situations. At the same time they wanted stronger levels of experiential learning and media in the materials. Older learners appeared to struggle initially with Toolboxes in some instances. One notable exception to this was a range of comments made in interviews about the task-oriented nature of older learners. In many cases, the use of Toolbox materials provided a valuable level of flexibility for this group. Some discussion took place in focus groups about the skills of young regional learners who appeared to lack some of the self-regulatory skills necessary when learning online.

Teachers generally noted that the role of teaching has evolved from a didactic to being facilitators. Several also noted that the Toolboxes were most effective when learners were appropriately inducted into their use and where teachers provided strong support to assist them in using the products.

The Toolbox repository had some issues in terms of ease of use and the ability to identify the scope of objects in the Toolbox repository. While this was an increasingly popular mode of using Toolboxes, common complaints were that there was a limited range of objects and that the search system did not always provide clear information about the nature of the learning objects found. Some teachers found specific learning objects too generic, others not generic enough. It is recognised that the Toolbox repository was in an immature, transitional state in the period under study. Nevertheless, there was a strong support in principle for disaggregated learning materials.

A common argument among teachers was that there was a need for greater support in being skilled in using both Toolboxes and the Toolbox repository. A frequent comment was that teachers wished to customise the materials but did not have adequate skills to do so. This was true both for the learning objects in the Toolbox repository as well as Toolboxes as a whole. There appears to be a growing emphasis on integrating e-learning within TAFEs. To a certain extent this appeared to be driven by management, although the extent of this varied between institutes. Teachers themselves often provided a strong catalyst for change. Many interviewees noted the role of other teachers in introducing Toolboxes to them.

There appeared to be a strong diversity of awareness of the Toolbox Champion system. Many of the interviewees had not even heard of Toolbox Champions. Others were well aware of this network. It appeared to help if there was a Toolbox Champion based at the institute itself. Of those that were

aware, all focus group and interview participants valued the service. In the focus groups a recurrent theme was a desire for the role of the Toolbox Champion to be better communicated and expanded.

The Toolboxes' open approach to intellectual property was widely valued among teachers. It appeared that the growth of Toolboxes had become somewhat 'viral' in that their use was spreading by word of mouth and that many Toolbox materials were being implemented in both formal and informal ways.

Future needs

Overall the level of enthusiasm for the integration of new technologies into Toolboxes varied as broadly as the range of Toolboxes and contexts of implementation. Several teachers have started to integrate wikis and blogs into their teaching, and the potential of podcasts as a delivery mechanism was a recurrent theme. However, there were some warnings about the use of high-end technologies' potential to disenfranchise learners who did not have access to them. In some cases, such as regional Indigenous communities, technologies such as mobile phones could be seen as financially detrimental. While bandwidth issues did not appear to be a major factor in the implementation of Toolboxes in this survey, the few instances where they were problematic did raise concern for the adoption of newer technologies and rich media.

The role of TAFE institutes appears to be evolving as they progress in their implementation of e-learning. Targeting a broader range of students and diminishing the number of contact hours with them has raised a range of issues with providing support both for learners and teachers in using Toolboxes. It must also be acknowledged that in their current form, Toolboxes still appear to provide some valuable additional resources to traditional face-to-face teaching.

One of the strongest emerging trends appeared to be the desire for teachers to integrate Toolboxes in ways that were personally relevant to them as well as the students. This places an emphasis on disaggregated materials that could be easily customised and repurposed in a range of ways. The logical vehicle for this would appear to be the Toolbox repository. Enhancing this aspect of the Toolbox project and providing the necessary professional development in utilising and customising materials will help meet the emerging needs of the participants of the study.

Summary comments

This report represents the culmination of a study into the use of Toolboxes and the Toolbox repository within the TAFE sector within Australia throughout 2006 and 2007. The study sought to explore the use of Toolboxes, their impact on TAFE institutes and the future potential of both Toolboxes and e-learning generally within the VET sector. These findings and the conclusions developed here have been summarised and distilled into a range of recommendations to be found in the Executive Summary that appears at the beginning of this report.

References

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