Reusing Knowledge in Online Forums: A Pilot Study

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Abstract

While universities generate knowledge, they may not often effectively reuse and share that knowledge. Academic colleagues sometimes reinvent the wheels to recreate the same or similar type of knowledge and intellectual work. As the forum is a popular online teaching tool, this research focuses on the examination of how knowledge, created by a learning and teaching community in forums within an online learning environment, can be reused when a subject is run again or handed over to a different colleague later. It is qualitative interpretive research. To investigate the sharing and reuse of knowledge amongst academics, a focus group was conducted with eight experienced subject coordinators who have used online forums in teaching. They were from three different university schools and different disciplines. The participants produced a plethora of rich information regarding potential knowledge reuse about subjects, focusing on subject contents, assignment help, class discussions, learning difficulties and experiences. This study suggests that the development of a knowledge-sharing culture, university policies, or knowledge management leadership can effectively encourage sharing and reuse of knowledge within a university environment. This is an empirical investigation of a theoretical hypothesis raising issues for further research. The paper is based on a full understanding of the existing state of knowledge in the field and is an original contribution to understanding of the issues. The treatment shows evidence of critical evaluation and conclusions appear relevant and soundly based.

Introduction

Universities generate knowledge through teaching and research activities. The knowledge generated needs to be properly managed in order to make best use of it in the future. Although there is literature on knowledge management in universities, particularly regarding the capture of learning objects and research outputs, capturing knowledge generated in collaborative online learning environments, such as an online forum, is understudied. The research reported here therefore fills a gap. It involved a pilot project that focused on reusing knowledge captured in an e-learning environment. The particular tool studied was the online forums (also known as discussion forum or online discussion forum).

Online forums allow learners many opportunities to share and expand their learning. At Charles Sturt University (CSU), online forums are established e-learning components of every subject. The online forum is one of the oldest online learning tools popularly used. They are used every day within the teaching and learning community at CSU. Every semester, a great volume of information or knowledge is generated and shared through online forums due to the interactions between students and subject coordinators and amongst students themselves. Some of this knowledge has high scholarly value as well as practical merits. However this knowledge is not shared efficiently among colleagues who teach the
same subject in following semesters. To fulfil the true potential for knowledge construction, there should be ways of making use of online discussions from a previous semester. So far, there is no mechanism put in place to make this possible. It is therefore anticipated that a lot of “wheel reinventing” is going on. If online discussions are captured, and can be made searchable and are easily disseminated, teachers in a later semester could develop their work using these resources. Thus they can perform their teaching more effectively building upon the work of the previous lecturers.

This article discusses the above issues within the context of this research. It is structured as follows. The next section is a literature review, discussing research related to the study since no literature, specifically focused on knowledge recapture in online forums, was found. The research method follows, then the findings of the study and the discussion. The final section is the conclusion and points for suggested future research and lecturers. Pymm (2006) explored the use of online discussion forums in distance education for librarianship. The results revealed that students supported the idea of the forum even if they had not used it a great deal. Lecturers believed that forum added substantially to workloads while at the same time not fulfilling its promise of creating the virtual classroom. Schellens and Valcke (2006) focusing on collaborative learning in asynchronous discussion groups, found a possible link with enhancement of academic discourse and knowledge construction. In a related study, Schellens et al. (2005) explored whether assigning a role to students in asynchronous discussion group (e.g. moderator, summariser, thecetician) affected the level of knowledge construction. Multi-level analyses were applied to uncover the influence of student, group, and task variables and the specific impact of the assignment of roles. Results indicated that assigning students the role of summarizer resulted in significantly higher levels of knowledge construction.

Literature review

E-learning is an increasingly vital component in many educational settings. The use of e-learning tools, such as forums, provision of electronic versions of lectures and other course materials, and online assistance, are all used to enhance student learning. These tools are now particularly important for distance education students. One of the most popular and well established e-learning collaboration tools is the discussion forum, now an important component of higher education. Instructors and students rely on these asynchronous forums to engage one another for collaborative learning and knowledge construction. Discussion forums allow learners the opportunity to share and expand their learning within the cohort in a learning community.

Capture of teaching and learning knowledge in educational contexts

There is a wealth of literature regarding the capture of knowledge in diverse educational contexts, although little specifically focuses on online forums. For example, there is a vast literature (Aggarwal Adakha & Mersa 2006; Schell & Burns 2002; Teo & Gay 2006; Dolog et al. 2008; Payne & Reinhart 2008; Reinhart 2008; Seongheea & Boryungb 2008) focusing on the design and deployment of institutional repositories for capturing knowledge generated in universities. The focus of these repositories has been on capturing research outputs and publications (Dewe 2005) and learning objects (Chaudhry & Khoo 2007).

Pedagogical or educational value of online forums

The importance of online forums from a pedagogical point of view has been highlighted in the literature, with content analysis of forums having been undertaken by Marra, Moore and Klimeczak (2004) and by Dennen and Paulus (2005). Nevertheless there are mixed findings about the value of forums to students

Research and discussion of learning objects and their repositories have been particularly prolific in recent times. Learning objects are defined as small electronic units of educational information that are flexible, reusable, customizable, interoperable and retrievable (University of Wisconsin 2005). Roselli and Rossano (2006) described maximising the use of learning objects in online learning scenarios through the development of a repository collecting teachers’ experiences, and providing them with information on the learning scenarios most suited to
reuse of a given teaching resource. Okamoto, Kaya-
ma and Inoue (2002), as part of a larger project de-
veloping a web-based distance education system,
cluded a knowledge repository in their system as a
way of managing the multiple sources of data (e.g.
videos) generated by staff and students in the sys-
tem. Schell and Burns (2002) outlined the develop-
ment of Merlot, an online repository of learning ob-
jects designed to provide high quality, online material
to enhance college-level learning. In recent years,
Chaudhry and Khoo (2007) explored how a reposito-y of learning objects can help in sharing and using
teaching materials.

Another approach to capturing knowledge gener-
ated in e-learning environments has been through
the use of learning management systems (Grace &
Butler 2005; Kotzinios et al. 2005). Teo and Gay
(2006) suggested visualizing and personalizing
knowledge within a community of users so that
knowledge can be shared effectively. They also pro-
posed a knowledge-driven model of knowledge cap-
ture in computer systems for e-learning. Craig
(2007) reviewed the impact of web 2.0 technologies
on managed learning system (MLS) environments
and learning content management systems (LCMS).
He reported that an emerging generation of users,
influenced by social networking experiences and
empowered to create, publish, appropriate and re-
distribute content, may find the structures of LCMS
to be traditional and inflexible in contrast with the
user-centric approach of Web 2.0 services.

Gaps in the literature

As indicated above, there is a paucity of literature
focussing on the capture of knowledge generated in
collaborative, e-learning environments such as dis-
cussion forums. In order to explore the issues con-
cerned with the capture and sharing of knowledge
generated in CSU forums, it is important to discover
how teaching academics perceive them. As online
forums are managed by subject coordinators at CSU,
the researchers decided to investigate the issue from
their perspective. In particular, the researchers ex-
plored whether forums from past semesters are re-
used by teaching staff and, if so, in what ways this
knowledge is currently used, exchanged and stored.
The following research questions were explored in
the research and are addressed in this article:

- Do teaching staff perceive it is important to cap-
ture the valuable knowledge generated in on-
line forums for reuse purposes?
- How and why are past forums used in future
  sessions at present?
- What are the barriers to knowledge sharing at
  CSU?
- How can knowledge sharing be facilitated at
  CSU?

The research attempted to fill the knowledge gap
in the e-learning area, otherwise rich in investiga-
tions of a wide range of tools for diverse educational
contexts.

Knowledge sharing

There is no dispute that knowledge capture facilitates
knowledge sharing but, to make knowledge capture
worthwhile, there needs to be a culture of knowl-
dge sharing. This aspect has also been investigated.
Kim and Ju (2008) explored attitudes of university
faculty towards knowledge sharing. Results showed
that perception of its value is the most influential
factor in promoting knowledge sharing. Reward sys-
tems were the second most influential factor. Re-
spondents did not consider other factors such as
trust, openness in communication, collaboration and
communication channels based on IT infrastructure
to be key factors, finding that they do not have a sta-
stistically significant effect on faculty knowledge
sharing.

Research method

This research aimed to elicit meanings from partici-
pants focused on the phenomenon of how knowl-
dge generated in online forums can be reused. As
indicated above, this topic has not been widely stud-
ded and therefore it is appropriate to use a qualita-
tive, interpretivist approach to research, in order to
explore the issues involved rather than a positivist
approach, intended to measure. The aim was to pro-
vide an in-depth understanding, not possible through
a quantitative approach to data collection, but well
suited to qualitative exploration of the viewpoints
and experience of subject coordinator.
Table 1. Advantages of Knowledge Reuse: Voices of Participants

<table>
<thead>
<tr>
<th>Category</th>
<th>Quotations</th>
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| Subject improvement | Using the knowledge gained in previous forums helps me to develop the subject and to build on what’s already in there.  
|                 | It would enable us to just streamline the subject and improve a few things if we could dig the old forums up and take that on next time.         |
| Time saving    | Because one had already been written so that was a major time saving.  
|                 | I agree the time saving is a really big factor from the academic point of view.                                                             |
| Subject revision | For my revision of that subject, I would look at what were the topics which were to be discussed during that week and try to relate them          |

The sample

The subject coordinators who took part in the research were university academics directly dealing with classes using online forums. They were the most suitable participants to inform the researchers of what and how subject knowledge is generated in an online forum and how it can be reused later. The research was a pilot study, involving a single focus group of eight participants invited from three schools representing different disciplines. They were from the Schools of Information Studies (courses offered through distance education only), Computing and Mathematics (on-campus and distance education), and Agricultural and Wine Sciences (on-campus only). The participants were selected from the three schools to represent a balanced mix of subject coordinators who teach in three different education modes – distance education mode only, distance education and on-campus study, and on-campus study only. Focus group participants were recruited through the researchers’ established contacts and also through promoting the research and inviting those who were interested in the topic during one of the internal seminars held at CSU.

Data collection

The interview schedule consisted of a list of eleven open-ended questions. The questions were pre-tested with five teaching colleagues of the researchers to ensure their ease of use and suitability for collecting the data required. After incorporating all the constructive changes, a more rigorous final version was used in the focus group.

Before the focus group began, each participant signed a consent form, in accordance with requirements of the CSU Ethics Committee. With permission of attendees, focus group discussions were digitally recorded by a digital recorder and transcribed by a trained transcription typist. Focus group participants were encouraged to voice their views freely, promoting a free information flow. Thus the focus group resulted in rich data, enabling the researchers to develop a deep insight into online forum knowledge reuse.

Data analysis

Data analysis initially involved detailed categorisation/coding of the data with key themes and categories emerging during that process. To link themes and categories to key quotations that might be used to support the findings, a “voice sheet” was set up for each theme. This is so named because it includes the quotations (“voices”) of participants. As each voice sheet was completed an overview or summary of the data in that voice sheet was written. An example of part of a voice sheet (without summary) follows, in Table 1. It is for the theme, “Advantages of Knowledge Reuse”, and includes just a few of the categories and quotations.

Findings

The findings include how online forums are used, the reasons for knowledge reuse and the need for the sharing of knowledge in an e-learning environment. They focus on the reuse of information and knowl-
edge from online forums, as well as generic issues of sharing and developing a sharing culture. Although the findings are categorised as themes, below, it should be noted that these are often not discrete. There is a considerable amount of overlap between them.

How online forums are used

Participants were asked how online forums are used in their teaching. Some subject coordinators used forums to supplement their face to face teaching. They found forums useful when students could not attend teaching consultations due to work or personal reasons. Subject coordinators, teaching in distance education mode, found subject forums very useful to enable staff and student interaction. There were many suggested uses for forums which ranged from preparation for assessment, to assistance with the reading for the subject including through the giving of examples, to the discussion by students of the topic in relation to their own work places. Respondents noted that:

The forum is the centrepiece of the assessment task so hence there are lots of forum activities.

A discussion might get started by a student about something they are reading and it’s to do with leading up to first assignment maybe but it’s relating to understanding what they are reading. They might ask a question I might come back onto the forum and give them an example in order to help clarify it that may lead to other students coming on and giving other the assignment examples.

A lot of them [students] discuss their personal work situations. So if they’re expected to perform a task they might say what’s happening in their own work environment.

Participants agreed that reusing forum contents could facilitate class interaction and communication, particularly teaching in distance education mode or teaching first year commencing students.

I have used just a general communication thing depending on the cohort as well if it’s on campus or distance or if it’s a mixed mode. With distance students, I frequently post a weekly update this is where we’re up to, this is what you should be thinking about this is the topic you should be on.

Apart from the uses illustrated by the quotations, above, participants spoke of posting exemplary work, the opportunity for students to ask questions, to organise study groups and even to complain. The sharing of resources by students, and the lecturer alike, was seen as particularly useful. This was seen to be of benefit for the revision of a subject as well as for the current session.

A student might post a resource that you don’t know about. That’s really useful that you can incorporate in your subject outline. So it has that compounding affect.

Most participants also used the forum for class members to provide a self introduction. This was regarded as very important for distance education students who need to interact with each other through the forum during the whole session.

Reasons for forum knowledge reuse

There was a range of different content that participants reused, along with various reasons provided for doing this. For example, a subject coordinator remarked,

I each chemistry and students in first year in particular have a lot of trouble with different concepts and when they ask a particular question about a particular concept I’ll write a response to them or I’ll have a look and see what I’ve saved from previous sessions because frequently the same kind of questions are being answered and I often saved and refined based on how I’ve used a response.

Other reasons for reuse included the use of a different forum advisor who was not the subject coordinator and needed to visit a forum from a previous session. This assisted with meeting the need to find out more about how the subject was run before, what student concerns were, or how the previous coordinator handled the class matters. As one subject coordinator explained,
Sometimes we use markers or sometimes we use contract staff to manage the forums so this session I’ve had contract staff managing one or 2 of my forums … If they ask me a question I can say to them: “look I’m sure I posted something about that last session have a look through the forum messages”.

Participants talked about using a forum from a past session to know more about assignment-related questions from the perspective of a previous cohort. This prepared them to answer the questions from the existing class. For example,

I got the previous advice for the assignment because the assignment was repeated in the next session so the same advice that was given to them the previous session is basically recycled so just assignment help as well.

I do the same thing more with … the generic feedback on the assignments. So last session if we said students did poorly in the referencing of this and that, then we placed that before the beginning of the next assignment so hopefully we don’t get the same issues again …

As can be seen above, there were many reasons proffered for the reuse of information and knowledge from online forums. All the eight subject coordinators indicated at least one reason. An important reason that was widely supported was to learn and share experience from an academic who had taught a subject previously.

I did reuse the forum in the past, because there was a previous coordinator who was different to me … it wasn’t my information on the forum … I had to request that his subject be reactivated … Well to look at the sort of questions that the students were asking in that subject to see if they had problems with the assignment just to basically get a feel for that subject to get an overview of what people asked and what they struggled with.

**Advantages of knowledge reuse**

Participants discussed different advantages of using online forums in their university subject teaching. A number of these have already emerged in the discussion of the reasons for use, above. A key advantage of reuse was regarded as subject improvement, including assignment improvements:

I find using the knowledge gained in previous forums helps me to develop the subject and to build on what’s already in there from the students’ experience of the subject, their discussion of it. Then I can add, I can subtract, I can develop areas of the subject which are lacking … The end result is better learning for the students.

It would enable us to just streamline the subject and improve a few things if we could dig the old forums up and take that on next time.

I use a lot of material from the forum to guide how I’m revising subjects so if there are particular problems with an assignment then I’ve got that information on which to redesign the assignment or get rid of it altogether change parts of it, make the instructions.

Resources, of useful information and knowledge, were contributed to the forums by students. These useful resources were subsequently proved helpful in subject revision:

Often students identify resources as well. They write something onto the forum and say I found this fantastic website or this fantastic book that has helped me a lot with this you might want to know about it, I often took those things as well and recycled them when people started having problems in that area.

Time saving was seen as another reason for forum reuse. In addition, reusing knowledge in a past forum allowed the sharing of knowledge, experience and solution to a problem of a subject coordinator who had a different perspective. For example,

It saved me an awful lot of time [in] rewriting a guideline for the assignment, giving extra advice because one had already been written so that was a major time saving. I think also getting the different perspective from the previous lecturer and adding my perspective maybe hopefully helped the students in giving some guidance to doing a
good job on their assignment so for me it was a bit of a time saver and giving different perspectives.

I agree the time saving is a really big factor from the academic point of view but for the students as well I think the ability to understand better where they’re coming from and the things that they’re having trouble understanding is one of the advantages.

**Impact of knowledge reuse on effective teaching**

All the eight subject coordinators had observed different effects on reusing online forum knowledge in their university subject teaching. They mutually agreed that reusing forum knowledge and sharing experiences can improve teaching and learning.

Some of the past resources that the students had put up for their particular cohort I could reuse and redirect to them. It enabled these 2 different groups to get a specialist resource for their particular field.

I make myself a word document by cutting and pasting the useful parts from the forum … looking at all the students’ messages because it’s the ones where I respond is where I’m going to be able to use the information to build the subject.

One year I had a terrific class for research methods and they had great ideas and they made terrific comments and I remember I made a word document so that I could use some of that the next year.

When you’re updating your material there were lots of questions about needing the support in a particular area. I would use that information to rework the package for example work solutions to calculation type problems I would make … work solutions and embed them back into the distance package.

**Barriers in forum knowledge reuse**

Not all information and messages in the forums were seen as useful by participants. They were universal in their view that they had to choose what to use and what not to use in a forum. They also agreed that some academics do not know that they can capture or reuse the knowledge from a forum. As one participant pointed out: “Not knowing is a barrier.”

One knowledgeable person pointed out:

> You can actually archive the whole forum into the zip file … when I had someone else managing the forum for me, I said: “use the zip file from the last session; have a flick through it and, as needed through the session, I will point you to the resources.”

This information seemed to be unknown to most participants.

Participants also saw it as a barrier that not all members in a class could share important knowledge in a forum because of their lack of participation. The forum knowledge was not useful if there were not enough sensible and valuable contributions:

> There are quite a few students who … may be knowledgeable about the subject but they are not posting because of various reasons …. In one environment that I’ve been, they were just hesitant because they thought their English was not good enough to be posted on the forum.

The current zip-save method was inadequate. A major barrier was seen as the lack of an effective tool to archive the forum contents for effective reuse and to perform effective searches for the specific information required. There was also the problem of obtaining a student’s permission before reusing his/her forum contents:

> There was student-generated content that’s being uploaded to be shared with students within the cohort that form part of their assignment. In order for us to use that content within a research project or even to recycle it into subjects in subsequent sessions … we need to have student’s permission before we can use it again.

**Barriers for knowledge sharing in university**

Strongly associated with issues of reusing knowledge from online forums are the general issues of sharing and a sharing culture. The eight subject coordinators perceived the following potential barriers for knowl-
edge sharing in CSU. Generally, they agreed that there is no formal knowledge sharing policy and hence there was not enough effort put into sharing forum subject knowledge.

I just don’t think there is a process in place for that to happen at the moment, there is no learning community as such amongst us there’s no process set up.

I think people just are not aware… That has to be a barrier in itself…

Another barrier could be that academic members do not actually know how to share knowledge through forums or other e-learning tools in a university. Turnover of staff, where academics came and went was particularly mentioned:

The problem that I faced a couple of times is that there are people who are no longer at the university. They were agents or they were casuals or whatever they’re called but they taught in the schools before and they went away. So now you have a subject you have access to the forum there are things that you do not understand when the person is not there. Also so you might send them an email and they give you a reply.

The participants also brought up an important point that, for each individual, there was a limit on knowledge sharing (i.e. only to a certain extent that knowledge can be shared). Hence, sharing is restricted after an individual has reached his/her limit:

It’s not necessarily that we don’t share. It’s just to what extent is it going to be valuable information to share.

Another factor preventing knowledge sharing was that knowledge is sometimes considered private or people feel that individual knowledge was not for sharing:

Another barrier might be people not wanting to share their individual knowledge or property rights type of situation.

Not sharing knowledge. That does raise issues of privacy.

One of the barriers is that we’d probably need to look at the legal issues as well.

Ways to encourage knowledge sharing

To deal with these barriers, the eight subject coordinators suggested the following ways to encourage knowledge sharing.

They agreed that fostering of a culture of knowledge sharing is important:

This has to be a cultural thing within the school … I’d like there to be some cultural group or some kind of process and policy in place so that I can pass on my knowledge, it only needs to be brief. It doesn’t take an hour going through every nut and bolt that went on during the subject.

I think the senior people in whatever team, whatever group you’re working in have to develop a culture of what to share.

It’s a cultural thing as soon as people start talking about it and we embed it … we make people aware of one can zip a forum, so that it’s there in perpetuity.

It needs to be a culture. There’s so much potential but we’re missing it because we’re living in our little glass boxes.

A friendly environment is most important part of the culture …. For example I went to a colleague for some new subjects … he’s too friendly and let you in all the time … In addition, a little bit of cookie and biscuit and things like that helps enormously and that’s going to help the knowledge sharing.

They also discussed using some means such as information events, workshops, or seminars to create an opportunity of knowledge sharing:

I think you can encourage it through seminars, talk to people discussing ideas and so on, maybe a teaching seminar once a year. We used to have regular chats about teaching and I think we need to re-institute those chewing the fat sessions.
It’s the seminars there the places where people share the knowledge.

The most powerful things is what we’ve done to-day is to actually sit down and raise a few ques-tions and particularly with people from other schools.

Think a policy’s relevant if there’s ownership and it’s developed with the team and then that’s the generative agreement among the sharing people so it’s probably not useful afterwards but the gener-ation of the policy and the process that you go through is probably useful more so than the end product.

As technology has become a common part of aca-demic life, staff saw that using technological tools such as the World Wide Web or Internet could ena-blle knowledge sharing:

Our knowledge sharing should be part of resolv-ing key technical issues to make it happen.

It’s going to relate to whether we take the knowl-edge from our forums or whether we take it from a head or wherever it comes from.

Perhaps something like a casual morning tea but on a more open scale for more social interaction that includes your knowledge sharing and bits and pieces of all sorts of stuff.

I think there also needs to be a cultural change in the way knowledge is distributed.

As a university we need to have a look at the cul-ture, it’s very difficult pushing it from below if up at the top that’s not happening.

Another method is we talked about having semi-nars and so on within our school but actually hav-ing broader input finding out what people at other schools are doing like we have today not just with-in our own little community the sharing idea is much further and much further beyond.

The biscuits and cake, the soft lounge chairs and the … and the better technology.

A participant also addressed a need for an ap-pointment of knowledge manager to manage knowl-edge sharing practice and issues in an academic workplace: “Something like a professional knowl-edge manager in place will make a difference.”

Ways to facilitate subject knowledge sharing

The eight subject coordinators viewed that techno-logical tools may not work without some policies and practices put in place for subject knowledge sharing in universities. They discussed the following methods for knowledge sharing in CSU. The dis-cussed methods are such as setting up policies through leadership, system and structure in the university work system as they could encourage knowl-edge sharing:

Leadership! Leadership could address these meth-ods. For example, if the Dean’s keen on getting new technology working, then things are going to happen. But if leadership does not embrace this sort of culture, then it is very difficult to follow.

This university in itself doesn’t have a knowledge management system.

Discussion

It was discovered that many subject coordinators re-activated a past session online forum for use in their teaching in a current session. Some also re-activated an online forum from a same subject taught by a dif-ferent subject coordinator in the past. The participants considered that past forum information can be used in many ways. It helps a subject coordinator to find out student assignment questions and learning dif-ficulties from a past session of the subject. It allows the reuse of important reading sources, recommended by students. The current subject coordinator gets to know past student complaints or concerns and can improve the subject for the future. He/she can also reuse advice of a past subject coordinator teaching the same subject.

It was found that, due to certain barriers, at pres-ent knowledge is not shared efficiently among col-leagues who teach the same subject in sequential semesters; nor is the same subject coordinator reusing
information from forums efficiently. One of the barriers identified was a lack of a systematic way to manage forum messages for effective retrieval purposes. An online forum can contain messages that are not organised and no search engine is available meaning that subject coordinators cannot effectively retrieve messages based on a key word search. It can be a lengthy and time consuming process to browse through all the messages from a very large class to locate information about a specific topic or to investigate a doubt. It is a major barrier when a subject coordinator was not aware of the right to re-activate a past forum for reuse. Another barrier was the lack of contributions to the forum from students and hence there was little knowledge for sharing. Some classes, with a majority of students from non-English speaking backgrounds, may have less input and less knowledge to share because students are shy about contributing. In a subject with inadequate contributions, the forum does not hold enough valuable knowledge for reuse.

The focus group highlighted an important point that fostering a collegial relationship, through more informal discussions, workshops and seminars can facilitate knowledge sharing amongst the teaching academics. It was suggested that schools or the university should also implement policies to encourage knowledge sharing and effective reuse of knowledge in the same or similar subjects. The focus group believed that leadership and cultural change in a school or university would impact on how much knowledge could be shared and reused.

To explain how the importance of knowledge sharing enables knowledge reuse, the figure above has been developed to show their relationship. Figure 1 also proposes a knowledge sharing practice in the university.

In Figure 1, the two oblong boxes show the benefits and barriers towards knowledge sharing in the university e-learning environment. Currently, the size of the benefit box is smaller and embedded in the barrier box. If there are no barriers, the benefit box will become the size of the barrier box and the barrier box disappears. Through the two rectangular boxes, Figure 1 explains that a university should find ways to encourage knowledge sharing and use methods or tools to facilitate knowledge sharing. Ways to encourage knowledge sharing and methods or tools for knowledge sharing, as in the two boxes, have effects on increasing the benefit of knowledge sharing in the university environment. The effect will lead to the fulfilment and enjoyment of advantages of reusing forum contents in the previous session, such as subject teaching and learning improvement, time
saving from reinventing the wheel in the same subject materials, enabling subject revision, sharing resources and reusing past assignment feedback.

Two dotted line arrows that connect the rectangular boxes to the benefit box indicate that universities have not encouraged or facilitated knowledge sharing in the current state. The dotted line arrow from the benefit box to the advantages oval is showing that the process to realise benefits from knowledge sharing in a university is not currently active; the inactivity hence does not provide the advantages of knowledge sharing as in the advantages oval. If a university can put in place some policies and practices that encourage knowledge sharing and methods or tools that facilitate knowledge sharing, benefit for knowledge sharing will be realised in the university environment. In other words, the two dotted line arrows will be turned to normal solid line arrows. As a consequence, the realized benefit will result in an enjoyment of the advantages of reusing previous session forum contents. As a result, the arrow between the benefit box and the advantages oval will turn to a normal solid line arrow.

Conclusion and future direction

On a whole, this research emphasises the importance of sharing knowledge amongst the teaching academics and the creation of a culture of knowledge sharing in university.

Capturing knowledge in online forums can significantly bring benefits to both staff and students in improving learning and teaching. More specifically, being able to capture and to reuse online forum knowledge will enable the teaching academics to have the shared experience and subject knowledge in their next round of teaching of a same subject. The findings indicated that a lot of “wheel reinventing” of subject material writings can be saved and teaching preparations can be improved by reusing knowledge from past sessions. Although the focus group used for this research, was conducted in one university, it is believed that the findings are applicable to the reuse of knowledge in e-learning environments in general.

This research focuses on the reuse of knowledge amongst academia. With a different aim that focuses on learning and teaching improvement, there is possibly a need to extend the research to obtain student perspectives apart from seeking input from teaching academics. The research is currently based on the results of a focus group study. Some future work could be carried out to interview individual subject coordinators or also students to strengthen the data and findings as in a process of data triangulation.

Notes

1. For the purpose of this paper, a subject refers to an individual unit of study (usually one semester in length) that is worth a certain number of credit points. For example, a standard subject is of 8 credit points at Charles Sturt University (CSU). A series of subjects make up a course such as a Bachelor of Applied Science (Library and Information Management).

References


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