

# An Example of Online Resources Sharing in Accounting Courses

Jimmy Yau<sup>\*</sup>, Norris Lau, Shirley Huang, and Jeanne Lam

Centre for Cyber Learning, HKU SPACE,  
University of Hong Kong, Hong Kong SAR, China  
jimmy.yau@hkuspace.hku.hk

**Abstract.** A lot of e-learning materials have been developed for the blended learning courses nowadays and those features of accessibility and reusability should be taken into account. In this paper, we review the use of online learning resources from our part-time based accounting course in a full-time based accounting course. A survey was conducted to investigate the students' perceptions on the shared online learning resources. Furthermore, this paper compares our previous survey results collected from the part-time accounting students with the current survey results and discusses the differences in students' perception towards the shared online resources. Finally, we discuss the limitations and suggestions of online learning resources sharing based on the comparison results. The paper pinpoints the importance and awareness of online resources sharing for blended learning courses in an appropriate way by adopting the concept of knowledge management and instructional design.

**Keywords:** share online resources, knowledge management, blended learning, instructional design, online learning, e-learning.

## 1 Introduction

Blended learning has already been the next step towards our future as its benefits have been well recognized and proved in enhancing learning experience for learner-centric pedagogy (Macdonald, 2006; Naidu, 2003). Nowadays, most of courses are supplemented with various of online learning resources, likes audio or video podcast, online practicing exercises or quizzes, course discussion forums, etc., which are beneficial to both teachers and learners (Lam, Chan, & Yan, 2012). Coursera (Coursera, 2013), edX (<https://www.edx.org/>) & Open Learning Initiative Website (<http://oli.cmu.edu/>) are some popular examples. With these online learning resources, traditional face-to-face classroom learning has been transformed to a more practical, up-to-date and efficient blended learning context. Besides, the blended mode of learning has proved that it can extend students' learning continuum with the online learning components, such as integrating online learning resources into pre-class, in-class and post-class activities (Lam, et al., 2011).

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<sup>\*</sup> Corresponding author.

In the meantime, a lot of online learning resources have been developed and these resources certainly should be maintained with proper regulation or methodology. Andreas (2005) states that blending of e-learning and knowledge management functionality can help improve learning experience. Therefore, it is important to adopt appropriate ways to make use of knowledge management to share online resources so as to establish a long-term efficient and maintainable online learning environment.

This paper aims to evaluate the effectiveness of the use of shared online learning resources in two accounting courses (one is part-time and the other is full-time mode) as supplementary materials in our institution. A survey was conducted at the end of the semester for both courses. For the part-time courses, the survey results have been reported in a paper (Lam, Chan, & Yan, 2012). In this study, we collected students' feedback on their online learning experience from the full-time based course "Introductory Financial Accounting". By comparing the two survey results, the differences in students' perceptions and the level of their engagement in the blended mode of learning were discussed. Moreover, the results also helped to review the limitations and suggestions to improve the process of online resources sharing in blended learning application.

## **2 The Significance of Online Resources Sharing in Blended Learning**

Typically, a diverse range of online learning materials have been created and planned for re-use among courses within an institution. However, those online resources may not be a universal solution to courses of a subject. Thus, the issue of accessibility and reusability of those shared online resources should be taking into account. Priya Matta (2012) states that e-learning and knowledge management are closely coupled domains, as e-learning depends on knowledge management for "data dissemination". In other words, knowledge management is capable of bringing a qualitative change for the use of shared online resources in the way that the information is collected, processed, transformed and delivered (Matta & Singh, 2012). On the other hand, apart from the nature of data dissemination, the assurance of delivering content is another key component of online resources sharing. According to OCHA (2011), data dissemination means that data are standardized to share and can reach the widest audience with least effort on all parties involved. In the aspect of "content assurance" of shared online resources, it is necessary to provide students with valued-added content based on their demands and interests (Stehr, C, 2009). Therefore, data dissemination and content assurance are vital to achieve successful online resources sharing in a way to optimize the level of students' perceptions and engagement in each blended learning course (Fig. 1).

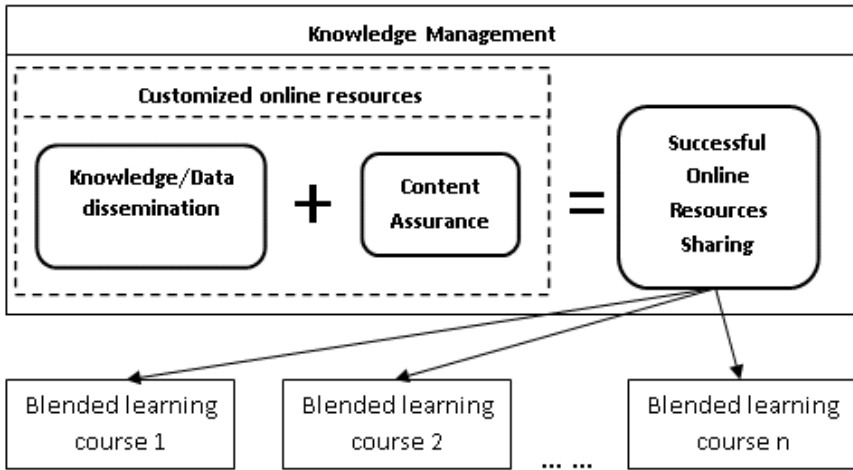


Fig. 1. The component of Online Resources Sharing

Zhang (2011) points out that specifically designed and developed e-courses are the most important elements in blended learning. The process of sharing online resources must ensure that knowledge is disseminated and value-added content is delivered in a flexible and accessible way. Shared online resources should be reviewed and evaluated by teachers and students respectively with proper procedure, such as knowledge management. In other words, online resources sharing is a subset of knowledge management and therefore, the appropriate process of sharing online resources becomes an essential element in deploying blended learning pedagogy.

### 3 Delivery of Blended Learning Course

#### 3.1 Information about Blended Learning Accounting Course

In this study, the course “Introductory Financial Accounting” of Higher Diploma in Business programmes under the HKU SPACE Po Leung Kuk Community College is being investigated. These programmes are offered to full-time business students for acquiring basic accounting concepts. To provide a more enriched learning environment, blended mode of learning was implemented with the direct use of online learning resources developed for “Basic Accounting” of the Advanced Diploma in Accounting part-time programme under HKU SPACE (Lam, Chan, & Yan, 2012). The online resources were delivered through the same online learning platform, SOUL 2.0. The students were provided with the same sets of course materials, streaming courseware and interactive learning courseware as supplementary learning materials, including Chapter Summary, Chapter Quiz, Self-test Question, etc. For communications, students were encouraged to make use of the Discussion Forum and Q&A Corner to share their views and inquire on the learning topics. Other SOUL 2.0 built-in functions such as Announcement, Calendar, Grading and User Activity

Report were also provided to students. User support for online learning services including 1-minute demos, FAQs and user guides could also be accessible in the online learning platform.

The Chapter Summary offered summarizes the content of each chapter and illustrates points with multimedia demonstration. Besides the content summary, it also includes some accounting real cases illustration. From the previous survey (Lam, Chan, & Yan, 2012), respondents reflected that it helped to deepen their understanding of the learning topics and served as a supplement to cover the insufficiency of other online materials.

The Chapter Quiz consists of 10 MC questions for students to review the levels of knowledge acquired in each chapter. From the previous survey (Lam, Chan, & Yan, 2012), the respondents stated that the Chapter Quiz helped them to get familiarize with the taught topics.

The Chapter Exercise consists of practical exercises with different accounting real cases. It has been proved itself as a useful online material to students in improving the comprehension of course content (Hung et al., 2011). From previous survey (Lam, Chan, & Yan, 2012), respondents stated that it did play an important role to reflect learning mistakes and helped them to drill answering technique.

## **4 Survey Results and Findings**

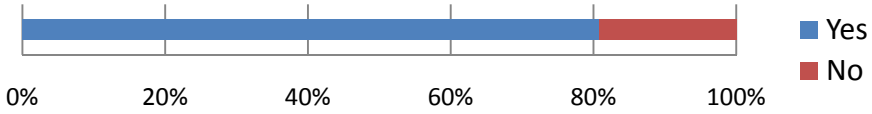
Five classes of full-time accounting students in “Introductory Financial Accounting” were offered to access the online learning resources as supplementary materials via SOUL 2.0 during the 3-month lecturing period. At the end of the course semester, students were invited to a survey in December 2012. A total of 234 student responses were received, constituting a response rate of 70.7%.

### **4.1 SOUL 2.0 Access Information**

From September 15 2012 to January 11 2013, students could access the shared online learning resources via the HKU SPACE learning management system, SOUL 2.0. A total of 265 out of 331 enrolled students had accessed the course on SOUL 2.0, with an access rate of 80.1%.

### **4.2 Summary of Survey Results**

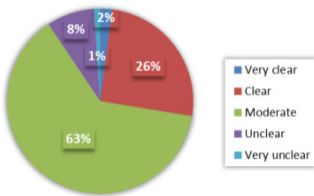
The survey comprised three parts of questions covering Online Course Design, Online Course Materials and Overall Comments. Same as the previous conducted survey, a screening question was asked to check whether the respondents had accessed the online learning resources on SOUL 2.0. A total of 168 out of 208 respondents (80%) had accessed the shared online resources (Fig. 2). Students who had not accessed the learning resources stated that they had not learnt about the provision of these resources online.



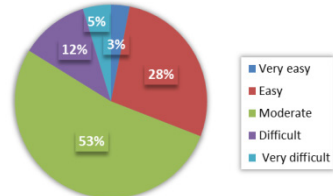
**Fig. 2.** Percentage of students who have been accessed the shared online resources

**A. Online Course Design**

Regarding the course setting, only 28% of respondents agreed that the course website and instructions in each activity were very clear or clear (Fig. 3). Around 31% responded that the online course materials were easy or very easy to navigate (Fig. 4).



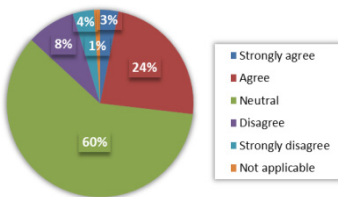
**Fig. 3.** Was the course website clear to meet your expectation at the start of the course?



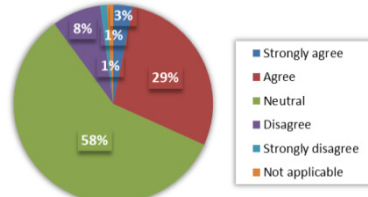
**Fig. 4.** Was it easy to navigate online resources materials?

**B. Online Course Materials**

In this section, students were asked about their perceptions on the online learning resources and whether the resources were beneficial to their learning process. Around 27% of respondents strongly agreed or agreed that the Chapter summary helped consolidate and deepen their knowledge (Fig. 5), while 32% agreed that the narration was clear and easy to follow (Fig. 6).



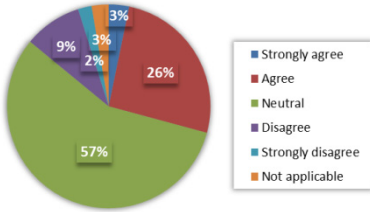
**Fig. 5.** Chapter Summaries helped consolidate and deepen your knowledge



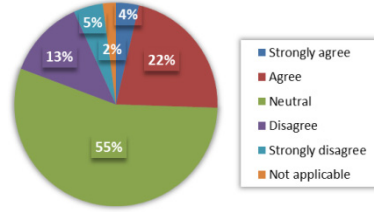
**Fig. 6.** Narration was clear and easy to follow

For Chapter Quiz, 29% of respondents strongly agreed or agreed that quizzes helped enhance their practice and only a quarter reflected that the questions were useful and allowed them to test their knowledge and skills (Fig. 7, 8). Regarding the Chapter Exercise, around the same percentage of respondents (23%) deemed that they were

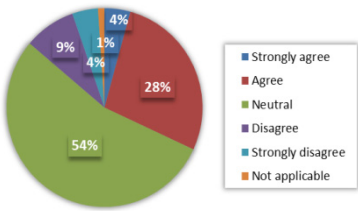
practical and interactive. Only 32% of respondents showed that the online course materials helped them review the course content after class (Fig. 9) while only 27% deemed that the given workload for the online course materials was appropriate (Fig. 10).



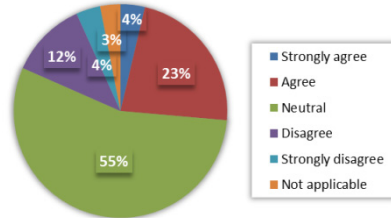
**Fig. 7.** Chapter Quizzes enabled me to enhance my practice



**Fig. 8.** Questions were useful and allowed me to test my knowledge and skills



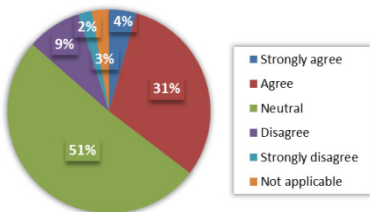
**Fig. 9.** The overall online materials helped me review the course contents after class



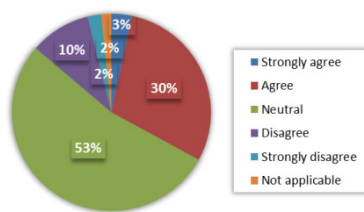
**Fig. 10.** My workload for online course materials was appropriate

C. Overall Comments

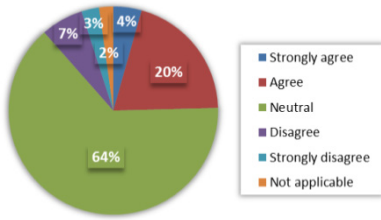
The latter part of the survey investigated the students' online learning experience with the shared online resources. 35% and 33% of respondents showed that the online course materials enhanced their understanding of the topics covered, and made their learning more flexible and accessible (Fig. 11, 12). 24% and 21% of respondents reflected that the online materials could enrich their learning experience, as well as made their learning more interesting and engaging (Fig. 13, 14). Overall, only 24% and 21% of respondents were satisfied with the quality of the online course materials and considered their instructor was helpful in facilitating online learning (Fig. 15, 16).



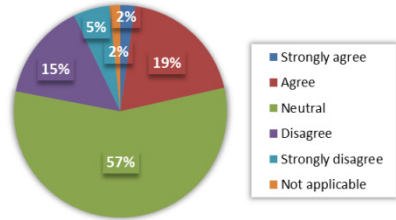
**Fig. 11.** The online course materials enhanced my understanding of the topics covered



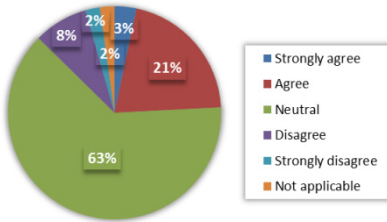
**Fig. 12.** The online course materials made my learning more flexible and accessible



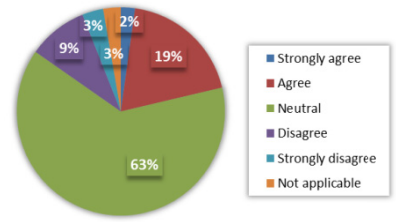
**Fig. 13.** The online course materials enriched my learning experience



**Fig. 14.** The online course materials made my learning more interesting and engaging

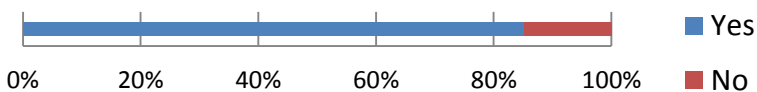


**Fig. 15.** Overall, I was satisfied with the quality of the online course materials



**Fig. 16.** Overall, the facilitation by the instructor for online learning on SOUL 2.0 was helpful in achieving my learning goals

Although a rather neutral response was received on the effectiveness of enhancing learning experience with the provision of shared online resources and on the satisfaction with the quality of resources, 85% of respondents were eager to have similar type of online learning resources in different course of the programme and 78% agreed that this type of online resources is an advantage to this programme (Fig. 17, 18).



**Fig. 17.** Do you want the online course materials to be available in other modules?



**Fig. 18.** Do you think that the online course material is an advantage of this programme?

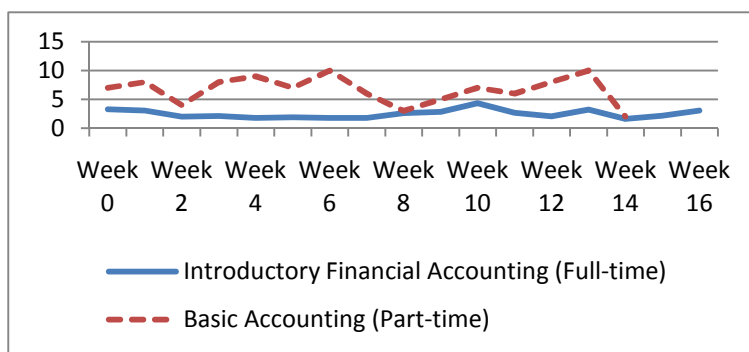
In terms of usefulness and effectiveness of online resources, students were asked to rate the types of online resources in order of preference, 43% and 36% opted for Chapter Summary and Chapter Exercise, while the rest goes to Chapter Quiz. The order

of students' preference is the same as the one collected in the previous survey on part-time students (Lam, Chan, & Yan, 2012).

From the open-end question on the resources preference, students claimed that there was lacking practical exercise during the normal classes, thus the Chapter Quiz did provide an opportunity for them to practise and evaluate themselves about the level of understanding of the chapter concepts. Besides, they also reflected that the Chapter Exercise could help them familiarize with each chapter more deeply and it was also convenient to be provided with instant feedback after submitting the answers, especially on the accounting learning nature. Regarding Chapter Summary, it was considered to be the most popular online resource among students. Students appreciated the animated content illustration with synchronized audio explanation. Last but not least, they said that Chapter Summary could effectively assist them to review and comprehend the main concepts of each chapter in a short period of time. These comments are very similar to the ones collected in previous survey.

## 5 Comparison of Findings

In terms of usage of the course on SOUL 2.0, the access rate of full-time accounting students is 80.1%, which is much higher than part-time students (60.9%) in the previous survey (Lam, Chan, & Yan, 2012). However the usage pattern is quite different between these two groups of students. The average access per user for full-time students is around 2-3 times per week, whereas that in part-time students is much higher, which is around 6-8 times per week (Fig. 19).



**Fig. 19.** Average access per user for full-time and part-time accounting students

By comparing the survey results collected with the previous survey results on part-time students (Table 1), a number of points have been noted. For the instruction in learning activities and navigation of the shared online resources, there is a 19-22% decrease in student s' perception. Moreover, a drop of 12% in perception on the usefulness of the shared online course materials for revision. In addition, in terms of flexibility and engagement related to the online course materials, there is a 16-24% decrease in students' perception.



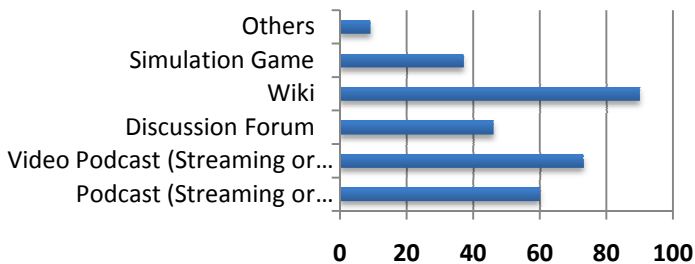
Percentage of students who had encountered problem in using the online system decreases; 17% compared to 25% in the previous survey. Similar to the feedback collected from previous survey, the majority of students looked for an improvement in navigation, interface and user-friendliness of the system page. Therefore, a continuous enhancement and adjustment of the SOUL 2.0 system interface is needed in the future. Finally, we received none of the report from students that are related to the access or functional problem in the shared online resources. Thus, it is further proved that the overall e-learning context is running at an efficient stage.

In addition, it was found that students' preference for the general types of online resources were different between two groups of students (Fig. 20, 21). It properly related to different learning mode of the students and details will be discussed in the latter part of the paper.

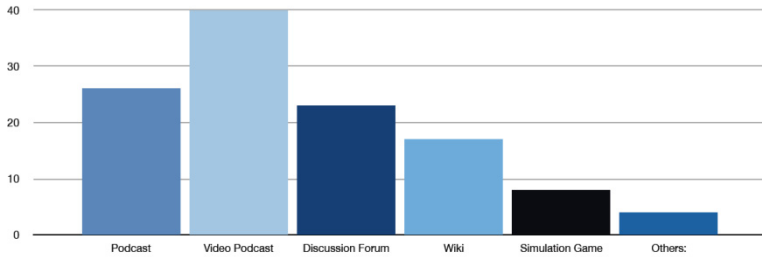
**Table 1.** Survey results of full-time and part-time students

Survey Questions/Statements	A	B	Difference
The instruction on the course website was clear to guide you what to do in each activity.	28%	50%	-22%
It was easy to navigate online resources materials.	31%	50%	-19%
The overall online materials helped me review the course contents after class.	32%	44%	-12%
My workload for online course materials was appropriate.	27%	39%	-12%
The online course materials made my learning more flexible and accessible.	33%	49%	-16%
The online course materials made my learning more interesting and engaging.	17%	41%	-24%

A: Percentage of students who strongly agree or agree in Introductory Financial Accounting (Full-time)  
 B: Percentage of students who strongly agree or agree in Basic Accounting (Part-time)



**Fig. 20.** General types of online learning material that helped in enhancing my learning experience



**Fig. 21.** General types of online learning material that helped in enhancing my learning experience (Previous survey result (Lam, Chan, & Yan, 2012))

## 6 Discussion

### 6.1 Difference in Survey Findings

The essentials for online resources sharing compose of data dissemination and content assurance. According to the above results, the shared online resources were disseminated to learners successfully with no report of access issue. In other words, the goal of “data dissemination” was achieved. However, with respect to students’ perception in the overall comments, it indicates that the nature of “content assurance” of online resources sharing may need to be reviewed.

#### 6.1.1 Learning Mode

Students studying in full-time or part-time modes of learning have different learning habits and preferences. Part-time students usually engage in daily work, therefore they may have limited time for traditional learning, such as going to library or having face-to-face discussion with classmates. In this case, compared to full-time students, they will have a higher demand of the shared online resources as those resources can be accessed anytime and anywhere. Thus, it aligns with the survey results indicating that there is a higher percentage of flexibility and engagement of online course materials for the part-time students (Lam, J. & Cheung). On the other hand, full-time students usually have more time to interact with the tutors and classmates. They can get hold of tutors and classmates for assistance in learning more easily. Thus, it can explain the difference in perception on the usefulness of shared online resources between part-time and full-time students. Besides, full-time students normally enroll to more courses within a semester compared to part-time students. Therefore, the former may concern the online learning activity as an extra workload. It sheds light on the difference in the usage pattern of the online materials between the full-time and part-time students in our study.

#### 6.1.2 Computer Literacy and Personal Preference

Students have diverse degree of information technology competency and different prior learning experiences (Yuen, Hung, Lam, Lau, & Duan, 2011). For instance, the working students usually have advanced experiences in using the computer system and they are used to navigating the desired resources according to instructions.

Similarly, students may have different learning styles (Keefe J. & Gardner, D, 1995). Thus, they will have preferences to difference types of online learning resources. In addition, different types of shared online resource may be suitable for different students, like most of the full-time students prefer to access Wiki as their favorite online learning material whereas part-time students prefer video podcast according to our surveys (Fig. 20, 21).

### 6.1.3 Teacher Participation

Teachers' participation and support for both teachers are an essential element in blended learning (Garrison & Kanuka, 2004). However, in our study, students were provided with the online resources only as supplementary materials without integration with the teaching plan. Quizzes and exercises were not be used in the class discussion. This may explain the decrease in the level of engagement of students in the current survey results.

## 6.2 Suggestions to Improve the Effectiveness of Online Resources Sharing

To ensure effectiveness of online resources sharing, a number of suggestions can be taken into account. First, we need to consider the characteristics of students to which the shared online resources to be provided, such as their learning mode, their computer literacy and learning styles and preferences. Secondly, we need to provide support for both learners and teachers in the blended learning. Thirdly, most importantly, online resources should be fine-tuned before sharing or re-using in course delivery. A feasible approach is to implement knowledge management methodology and instructional design process by academic stakeholders in advance and to refine the existed learning resources from time to time according to the evaluation results. In this paper, we only focus on the third suggestion.

### 6.2.1 Knowledge Management and Instructional Design

A knowledge management (KM) system is similar to an educational system in which useful knowledge is created from information or data found in available resources. One typical six-step process for KM functions is "acquire, create, synthesize, share, use to achieve organizational goals and establish an environment conducive to knowledge sharing" (Zhang, Chan, Lally, Shen, & Fox, 2003). This process can be used in the sharing of online resources among different courses.

Based on the development process for blended learning courses (Lau et al., 2011), here are the proposed steps for the reuse of shared online resources in blended mode of learning (Fig. 22):

1. *Acquire appropriate online learning resources*

Teachers and instructional designers will first acquire the target online learning resources based on the topics of the taught course.

2. and 3. *Create and Synthesize desirable learning resources by applying instructional design to the selected learning resources*

After collecting some appropriate learning resources, the teachers will then prepare the revised teaching plan and detailed lesson plan. Based on the target learning

outcome, the online learning resources are integrated into the traditional classroom learning for blended mode of learning (Cheung, Lam, Lau & Shim, 2010). In this stage, the selected online resources may need to be fine-tuned by technical developers to incorporate other relevant and recent information.

4. *Share the course specific learning resources*

The specific online learning resources will be shared to learners via the learning management system with proper facilitation from teachers.

5. *Evaluate the course-specific learning resources*

It is then important to evaluate and determine the effectiveness of the shared online resources according to the learning outcome.

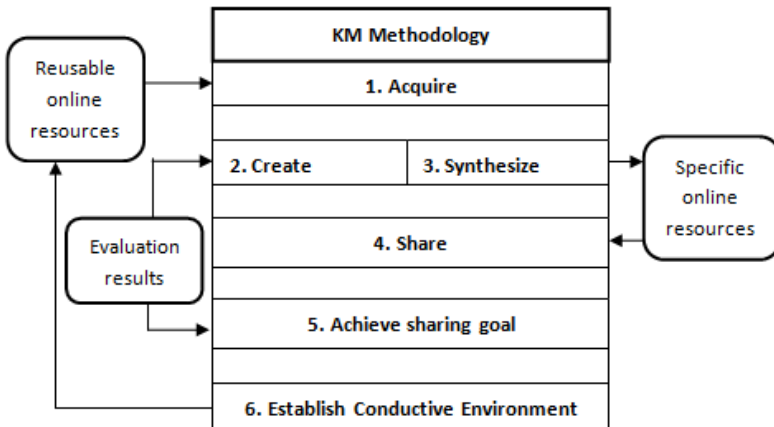
6. *Contribute the course- specific learning resources*

The course-specific learning resources will become a new set of shared online resources in the conducive environment of knowledge management. The above process will be iterative to refine course-specific learning resources to align to students' needs and competence. (Lam, Lau, Shim, Cheung, 2013)

**6.2.2 Target Learner Evaluation**

Blended learning focuses on students and the online learning resources are co-built by teachers and students through appropriate and continuous research, evaluation and refinement process. It aims to establish suitable shared content for maximizing the learning experience within the course. Eventually, valuable and reusable online learning resources will be accessible and can be shared among similar courses in the future.

In short, the ultimate goal of this approach is to maximize the level of usefulness of the shared online resources for different students. In other words, students could find every piece of learning resource as useful as they expected before participating in the blended learning course.



**Fig. 22.** Online resources sharing with Knowledge Management

## 7 Conclusion

From our study with full-time accounting students, a rather neutral perception on the shared online learning resources was obtained. It draws our awareness on the proper approach in the use of shared online resources in variety of blended learning courses. That is, direct re-use of online resources to blended learning courses may not be an effective approach, even the taught topics are under the same subject. It is necessary to review and refine the content of learning resources before sharing and the refinement should be align to the study mode, teaching preferences, students' needs and competence, etc.

We believe that by adopting appropriate KM and instructional design approach, the knowledge sharing in terms of assurance of delivering content and the learning experience with the sharing online resources in blended mode of learning can be enhanced. This paper lays out the awareness and corresponding suggestions of online resources sharing; it could serve as a useful reference for institutions to develop and manage shared online resources across different blended learning courses in the future.

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