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# Reuse Open Resources Educational Contents to Create Online Lesson for Vocational Training Program

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**Abstract**

This study focused on the use of virtual learning environment for the purpose of reusing and sharing digital learning material for vocational education. Blendspace was used as a case study of skill training education web-based platform. A total of 42 students at Centre for Instructos and Advanced Skills Training, who were attending train the trainer program were observed in creating and sharing lessons. A questionnaire on technology acceptance was administered. The result revealed that all respondents able to create a lesson in given time and most of them prefer to search their content based on learning objectives and learning activities. Results also show 92.9% willing to share their created lesson with others using social media, Facebook especially. It is hoped that the findings could contribute some insights on reuse of learning material for vocational education.

*Keywords: Reuse, Sharing, Vocational, Skill Training, Digital Learning*

## Introduction

A considerable amount of literature has been published on digital learning content. Hsu (2012) explained that web pages, pictures, audio, and video are web-accessible entities digital learning content that is distributed on the internet. The content of the course is the most important element that the learner will consider when using e-learning. The application of Information Communication Technology (ICT) especially multimedia into education gave a significant impact on the teaching content development and the communication methods to deliver relevant information to learners. This gives an idea of new concepts, and innovative teaching techniques, changing the way teachers teach and students learn in the instruction-learning process. Olufemi (2008) added that this changing landscape of education from curriculum, instruction, teaching and pedagogy to a whole learning process.

The research study by Attwell (2007) found that a well-designed course will impart its information clearly and effectively. However, it is hard to use and understand the content if it was presented in a poorly-designed program. Interactive contents are needed to give an impact and keep students engaged with the learning activity.

The purpose of this study is to ascertain the features of a web-based learning tool that enables to search available digital learning material, reuse it to develop a lesson and share it among trainers in vocational institutions. The study also attempted to identify the method in searching, selecting and compiling relevant learning material in web-based teaching and learning application.

## Literature review

**ICT in Vocational Education**

The integration of ICT in vocational education has strongly influenced both teachers and students to search for information much easier where it can save time and energy. However, there are constraints in financial, technological, and skill to implement ICT in the classroom. This is supported by UNESCO, (2008) report that focused on the issue whether information can be assessed and sent properly. M. Yasin, Amin Nur, C. R. Ridzwan, Ashikin, & Bekri (2013) concluded on their meta-analysis research that the application of ICT-based teaching with high-quality and technology updated platform should be given more attention in vocational education field.

**Open Resources Educational Contents**

A digital resources or learning object can be defined as specific learning activity or "chuck" of instruction. According to McKerlich, Ives, & McGreal (2013) any object used for learning that can be used in e-learning (digital format or otherwise ) are learning object. Implementing e-learning in vocational education would help trainers in skill training to use digital resources previously developed and stored in the repository. Fuchs, Muscogiuri, Niedere, & Hemmje (2004) stated that a digital library provides powerful and efficient functionalities for content management (acquisition, storage, indexing, access, and maintenance), manifold metadata for content enrichment, and structuring, as well as services for effective content search, access, an- notation, filtering, and dissemination. Chaudhry & Khoo (2008) also agreed that teaching material and learning object in repositories are important to facilitate sharing and reuse of digital content to enhance the quality of teaching.

**Sharing and Reuse**

Windle, Wharrad, Mccormick, Laverty, & Taylor (2010) used 3-stage model in developing open sharing content, which are resource choice and design, the development framework and concurrent sustainability planning. Some factors were also identified constraints and driving reuse as shown in Table 1.

Table 1: Common barriers and drivers for reuse (Windle et al., 2010)

| Content | Design Structure | Technical Allows | Access & User | Institution |
|---|---|---|---|---|
| • Provide core concepts<br>• Easily adapted<br>• Easily updated<br>• Reliable<br>• Creative commons licensing<br>• Copyright permissions | • Stand alone<br>• Self-contained<br>• Adaptable | • Allows adaptation & repackaging<br>• Searchable "repository"<br>• User-friendly Metadata<br>• Able to accept feedback | • Know they are there<br>• IT skills<br>• Interoperable system<br>• Repurposing tools<br>• Compilation tools | • Sharing culture<br>• IP and open sharing policy<br>• Support for embedding |

**Using Blendspace to Implement Sharing and Reuse**

Blendspace is a web-based learning tool that enables the teacher to blend together all digital content in one place and share with students. Blendspace incorporates media social to make sure it can attract students and users who engage with gadget like smartphone and tablet in this digital era. User can follow the blog by clicking on menu tab, as well as twitter and Facebook to keep updated and get the latest news on real-time basis.

**Research Model**

The proposed research model is developed to categorize various factors influencing intention to use Blendspace in as a learning tool to support sharing and reuse digital resources. Thirteen research constructs were mainly adapted from validated instruments. Figure 1 shows the process in Blendspace to develop learning material that incorporated the research construct. Each item for every research construct is explained in research methodology part.
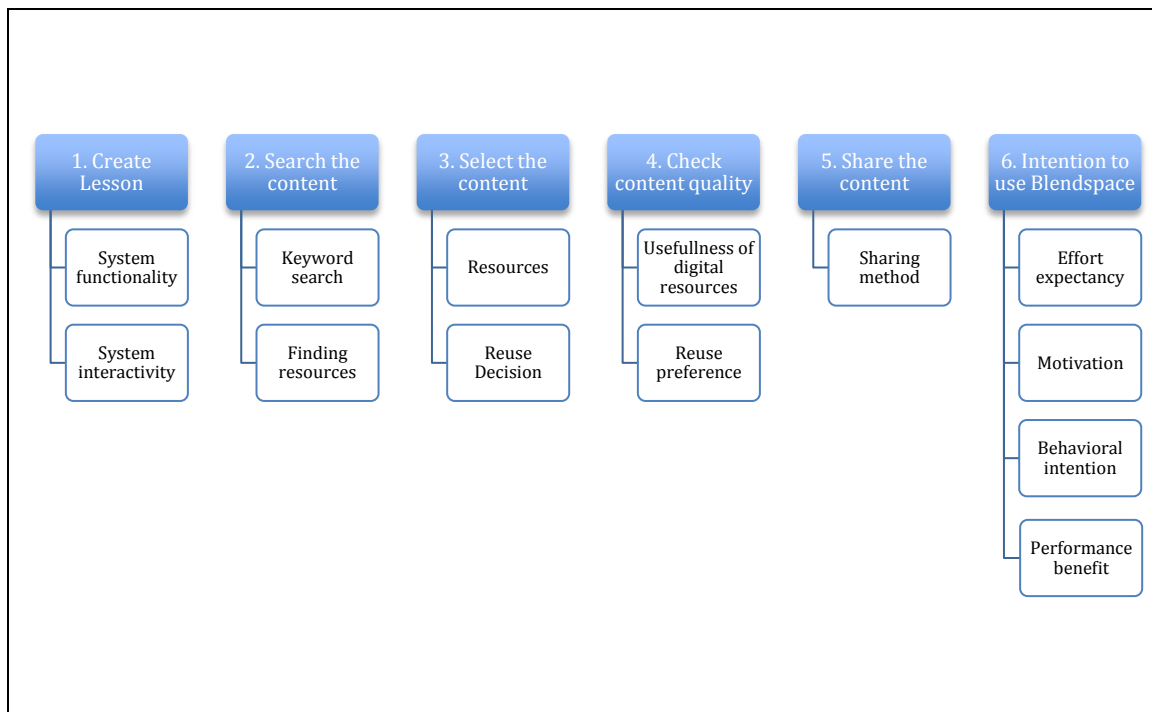


Figure 1: Research model

**Data Collection Method**

**Participants and procedure**

Participants for this survey were selected from five skill sectors and divided to eight fields of study. Field of study is referred to course qualification that been awarded Malaysia Skill Certificate Level 3 as a pre-requisite to enter this program at CIAST. Total of 200 students are attending this program, and 42 were selected to involved in this survey are from 15 institutions. In term of gender, different gap in a number of participants shows that more male students attended skill training institution than female.

During the survey, participants were given time to create lessons. They had to fill in Part D of the questionnaire booklet the keyword typed in search box and repositories stored the digital content that they used in the lesson. Information for every lesson and screenshot of one completed lesson for the course are presented under course heading. Every participant had to create a class, put lesson in it and share the class code so their peers can access the lesson.

**Instruments**

Questionnaire had been developed for respondents to give feedback on a booklet type survey. The questionnaire is in Malay because all respondents are native Malay speakers. The survey questions were about prior knowledge, features and usage of Blendspace. In this part, respondents will be given short brief information about how to use Blendspace. They will then choose a topic related to their course and create a lesson using Blendspace. Respondents will record their keyword and learning content they are using in the questionnaire booklet. Respondents have to answer the question based on their experience in creating lesson using Blendspace. All items for this questionnaire are mainly adapted from validated instruments reported in the relevant studies. Table 2 depicts the survey instrument consisting of 31 items to evaluate thirteen constructs presented on research model.

Table 2: Survey items

| Constructs | Items | Statement |
|---|---|---|
| System Functionality | SF1 | I find it is easy to login to Blendspace |
| | SF2 | I find that Blendspace's interface is user-friendly |
| System Interactivity | SI1 | I can communicate with other trainers via Blendspace |
| | SI2 | I can communicate with my students via Blendspace |
| Effort Expectancy | EE1 | I want to learn more about Blendspace |
| Motivation | MV1 | I find that by applying ICT in education can improve my image as a trainer |
| | MV2 | I find that by applying ICT in education can enhance my knowledge |
| Keyword Search | KS1 | Using keyword help me find appropriate learning content |
| Resources | RE1 | Video suggested is related to the topic |
| | RE2 | Image suggested is related to the topic |
| | RE3 | Weblink suggested is related to the topic |
| | RE4 | I feel confident to use suggested learning content in my lesson |
| Behavioral Intention | BI1 | I will use Blendspace in my class |
| | BI2 | I will suggest to other trainers to use Blendspace |
| Sharing | SR1 | I would like to share my lesson with other trainers |
| | SR2 | I want to use lesson created by other trainers |
| Performance Benefit | PB1 | Blendspace helps me to create lesson easily |
| | PB2 | Blendspace helps me to create lesson faster |
| | PB3 | I can learn to use Blendspace in a short time |
| Reuse Decision | RD1 | I choose learning contents that meet the learning objectives |
| | RD2 | I choose learning contents from university's learning portal only |
| | RD3 | I choose to learn that content related to sub-topics |
| | RD4 | It's hard to choose appropriate learning content |
| Finding Resources | FR1 | I'm looking for a title based learning content |
| | FR2 | I am looking for learning content based on learning activities |
| | FR3 | I am looking for learning content based on work activities to complete the task |
| | FR4 | I'm looking for learning contents by researching websites one by one |
| Usefulness of Learning Content | UC1 | Learning content from the internet does not conform to the information that I am searching for |
| | UC2 | I doubt the quality of learning contents from the internet |
| Reuse Preference | RP1 | Using my own notes to create lesson is easier than using learning content from the internet |
| | RP2 | I prefer to use the notes provided by the institute for the whole of my teaching process |

## Analysis and Findings

Data collected from the study were analyzed using SPSS 22.0. Questionnaire is divided into six parts to collect information about respondent's profile, facility to access digital resource, their opinion about using Blendspace and their intention to share the contents.

Learning content in video format had been considered among participants who will be teaching in technical course in specific field, showed by the means score of above 8 by this course: Electrical & Electronic (m=8.50), Computer (8.33), Mechatronics (m=9.20). 97.6% of participants said that Blendspace have a user-friendly interface, and they are all 100% agree it is easy to login. Communication features also gained positive review from respondents. Simulation was quoted number five in learning content

favorite list, this is in line with research done by Alazam, Bakar, Hamzah, & Asmiran (2012) that said that there a lack of simulation skill among vocational and technical teacher in Malaysia.

Positive feedback of 95.2% individually is looking for title based learning content and learning activities. 88.1% looking for work activities to complete the task, the same percentage with who's researching website one by one. They also found appropriate learning content by typing keyword when searching.

In term of reliability of the content, 97.6% positive feedback in item to evaluate resources selection confirmed that they confident to use suggested learning content in their lesson. Every survey respondent was given three options to choose their learning content. Choosing learning content that meet the learning objectives scored the highest percentage at 88.1% with a mean score of 3.05. 85.7% prefer to choose content that related to sub-topics with a mean score of 3.00 and 33.3% would like to choose from university's portal only with a mean score of 2.33. Figure 2 shows an example of the lesson that had been created during this research.
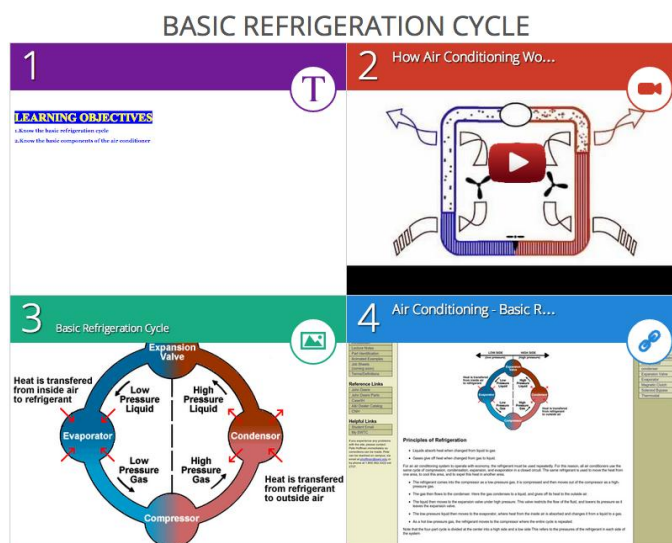

Figure 2: Lesson created by participant using Blendspace

**Discussion**

In this study, eleven types of learning content were suggested to be used in the lesson. Results found that PowerPoint presentation has been used a lot in developing lesson for Electric & Electronic, Computer, Mechatronics, and Welding. Participants from Multimedia are looking for content in video format. Manual is the most important type of content for Air-conditioning and Automotive course.

Decision to use PowerPoint might be supported by the perception that PowerPoint can be delivered as files via a web browser, and easy to include embedded bitmap image objects in any number of formats as explained by Barker et al. (2004). This is consistent with the study done by White & Warren (2011) which showed there is little concern about the legal technicalities of reuse and often little or no awareness of them. PowerPoint presentations are seen as low risk for the most part and online resources reused are linked to, rather than copied or repurposed.

**Conclusion**

From data analysis of this survey as well as online lesson created by each of participants, Blendspace has been able to manage the task of searching, collecting and compiling digital resources. Most of the respondents do not agree that they can only choose content from the university's learning portal. This is due to there are many materials uploaded in personal portal has good quality and relevant to the subject. However, they also disagree that it is easy to choose appropriate content because they have to check one by one whether its meet certain criteria such as meet the learning objectives or related to sub-topics.

A web-based application that enable user to collect digital resources and share them with others, Blendspace is used to investigate pre-trainer's perceptions towards re-using available learning material and sharing its among trainers in Centre of Instructors and Advanced Skills Training. Results showed that there are many factors to be considered before the learning material can be selected and use and blend together as one lesson. Video and image are the most common learning content that trainers looking for to support the teaching material.

# References

Attwell, G. (2007). Personal Learning Environments - the future of eLearning ? *Lifelong Learning*, *2*, 1–8. Retrieved from http://www.elearningeuropa.info/files/media/media11561.pdf

Barker, E., James, H., Service, H. D., Knight, G., Milligan, C., Polfreman, M., & Rist, R. (2004). Long-Term Retention and Reuse of E-Learning Objects and Materials.

Chaudhry, A. S., & Khoo, C. S. G. (2008). Enhancing the quality of LIS education in Asia: Organizing teaching materials for sharing and reuse. *New Library World*, *109*(7/8), 354–365. doi:10.1108/03074800810888177

Fuchs, M., Muscogiuri, C., Niedere, C., & Hemmje, M. (2004). Digital libraries in knowledge management: an e-learning case study. *International Journal on Digital Libraries*, *4*(1), 31–35. doi:10.1007/s00799-003-0060-x

Hsu, I. (2012). Intelligent Discovery for Learning Objects Using Semantic Web Technologies. *Educational Technology & Society*, *15*, 298–312.

M. Yasin, R., Amin Nur, Y. F., C. R. Ridzwan, C. R. R., Ashikin, H. T., & Bekri, R. M. (2013). Current Trends in Technical and Vocational Education Research: A Meta-Analysis. *Asian Social Science*, *9*(13), 243–252. doi:10.5539/ass.v9n13p243

McKerlich, R., Ives, C., & McGreal, R. (2013). Measuring use and creation of open educational resources in higher education. *International Review of Research in Open and Distance Learning*, *14*, 90–103. doi:10.1002/asi

Olufemi, O. (2008). Pedagogical Approaches and Technical Subject Teaching through Internet Media. *Electronic Journal of E-Learning*, *6*(1), 53–66.

UNESCO. (2008). *Ubiquitous ICT for Sustainable Education and Cultural Literacy Report*. German.

White, D., & Warren, N. (2011). Open Educational Resources :, (July).

Windle, R. J., Wharrad, H., Mccormick, D., Laverty, H., & Taylor, M. (2010). Sharing and reuse in OER : experiences gained from open reusable learning objects in health. *Journal of Interactive Media in Education*, 1–18.

Olufemi, O. (2008). Pedagogical Approaches and Technical Subject Teaching through Internet Media. *Electronic Journal of E-Learning*, *6*(1), 53–66.

UNESCO. (2008). *Ubiquitous ICT for Sustainable Education and Cultural Literacy Report*. German.

White, D., & Warren, N. (2011). Open Educational Resources : (July).

Windle, R. J., Wharrad, H., Mccormick, D., Laverty, H., & Taylor, M. (2010). Sharing and reuse in OER : experiences gained from open reusable learning objects in health. *Journal of Interactive Media in Education*, 1–18.