EFFECT OF BLENDED METHOD ON LEARNING ACHIEVEMENT AND DEVELOPMENT ONLINE MATERIAL IN CURRICULUM INFORMATION DOCUMENT ONLINE SYSTEM (CIDOS) FOR COMPUTER APPLICATION COURSE

Norhafizah Ismail, Wan Zah Wan Ali, Aida Suraya Md Yunus, & Ahmad Fauzi Mohd Ayub
Faculty of Educational Studies,
University of Putra Malaysia,
Malaysia.
nhi.jmsk@gmail.com, wanzah56@gmail.com, aidasuraya@gmail.com,
ahmad_fauzim@hotmail.com

Abstract

The effect on learning achievement is a vital part of the tertiary education. It can be measured by summative evaluation whether using conventional, virtual or hybrid teaching and learning method. As the learning technology transforms to a new era and so do the alternatives come to generate the smoothness and effectiveness of learning outcome. Hybrid learning or blended learning is a combination of online learning components with conventional face to face (FtF) instruction. The objectives of this paper are i. determine the student's learning achievement without hybrid method, ii. determine the student's learning achievement with hybrid method, iii. differences between using the hybrid and without hybrid learning iv. develop online material implemented in Curriculum Information Document Online System (CIDOS). Hybrid learning with the contextualized method is a proven concept that incorporates in cognitive science, behaviorism and multiple intelligence theories in a learning environment. The Statistical of T-Test is used to analyze 66 respondents' test results for non-hybrid, hybrid and differences of both mean. It comprises of DTP 1 (33) and DEP 1A (33) within 5 months started from July 2010. In hybrid environment, CIDOS is a medium of online learning in Computer Application (BC101) that assists the first semester students to discover the meaningful learning objects in the context of the real world. The findings indicated that existence of a significant difference (4.10) in the learning achievement regarding to Learning Management System (LMS) exploration, assessment using CIDOS, teamwork project, time management and instructional technology skills in blended method.

Key word: *Hybrid or Blended Learning, Contextualized Method, learning achievement, CIDOS online material.*

INTRODUCTION

Hybrid learning based on contextualized approachAs a technology of learning has been improving from time to time, it frequently needs a new paradigm to remain in the educational system. Instruction handled by the educators in this kind of learning includes mixing synchronous instruction and asynchronous instruction using the emerging of educational electronic media (Mitchell P and Forer P, 2010). The blended learning approach can combines

face-to-face instruction with computer-mediated instruction in the field of science, engineering and information technology.

Learners and educators work together to improve the quality of learning and teaching. The ultimate aim of blended learning is to provide realistic practical opportunities for them to make learning as independent, useful, sustainable and ever growing (Buzzetto, 2006).

Hybrid learning increases the options for greater quality and quantity of human interaction in a learning environment. It offers learners the opportunity "to be both together and apart" (Wu J, Tennyson RD, 2010). A community of learners can interact at any time and anywhere because of the benefits that computer-mediated educational tools provide. Beside provides a good mix of technologies and interactions, resulting in a socially supported, constructive and learning experience.

A typical example of blended learning methodology would be a combination of technology-based materials and face-to-face sessions to present content (Cowie P and Nichols M, 2010). An instructor can begin a course with a well-structured introductory lesson in the classroom, and then proceed with follow-up materials online.

Hybrid learning can also be applied to the integration of e-learning with a Learning Management System (LMS) using computers in a physical classroom, along with face-to-face instruction (Mitchell P and Forer P, 2010). The example of LMS application is Curriculum Information Document Online System or CIDOS e-learning which has been using by Polytechnic of Merlimau since July 2010. Guidance and manual are provided in the early process and on-going to be used more sparingly as learners gain expertise in applying the system in offered courses (Division of Curriculum Development and Evaluation, BPPK, 2008).

Learning in a contextualized approach encourages the students to learn in the best way, retain the valuable knowledge and applied to the context of the student's own lives (ATEEC Fellows 2000). It focuses on a base learning on an overarching problem in the context of students' community. When the real contexts are mastered by the students, it will draw upon student's diverse skills, interests, experiences and cultures. After all, the students will be ready as self-regulated learners that stimulate self-interdependence among their learning groups.

Finally it is good to examine students' learning outcomes by incorporating authentic assessment strategies. The method of Contextual Teaching and Learning (CTL) has been implementing by ATEEC since 1999. It is one of the regional cluster teams in a University of Wisconsin-Madison research project ("TeachNET") funded by the United State Department of Education. More over it emphasizes self-directed learning, collaborative learning, experiential-based learning and actively participating. Educational approaches have also been influenced by applied technology over the last decades, such as motion pictures, radio, television, computers and other emerging information and communication technologies (ICT) (Frank KAPPE ,2010).
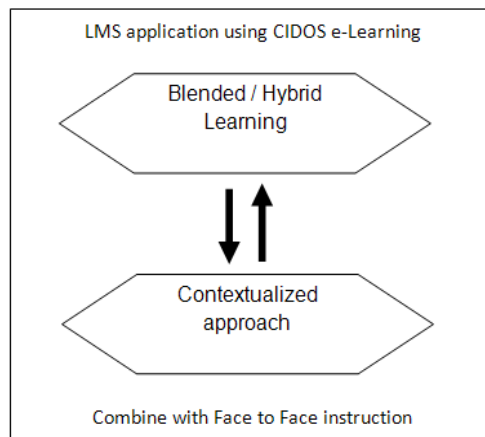
Figure 1.1: The environment of LMS and Face to Face Instruction
(Source: Illustration of the writer based on Emergence of Learning Management System, Frank KAPPE, 2010)

Problem statement

The delivery from traditional to online and recently hybrid method in polytechnics has been enhanced significantly by technology. This has also increased interest among potential technical students attracted by blended learning. Considerations for opting for online learning include need to balance work and education as well as the flexibility offered by polytechnics.

As a new transformation in polytechnic education by year of 2020, the need to conduct programs partially online and some have moved to the hybrid modes to take into account. As Rungtusanatham et al. (2004) states, the vital things are about the effective and efficient methods in online delivering material. The blended learning combines of online learning components with conventional face to face (FtF) instruction. LMS exploration needs the knowledge and skill in handling the icon in CIDOS.

Rivera, McAlister, and Rice (2002), who surveyed student satisfaction among the three modes of learning (face to face, fully online, and hybrid), found that student satisfaction was the highest with the hybrid learning model. The hybrid teaching method may eventually become the norm in higher education. Young (2002) concluded that the hybrid model posed the most substantive benefits for teaching and learning. The learning achievement for those who are using the hybrid method is raised as the problem to be solved. For being several decades in applying non-hybrid method, the learning achievement needs to be considered in order to prove that blended method as a new paradigm of learning experience. The online material needs to design as a reference for the students.

Research questions

1.3.1 What is the learning achievement for the students who apply hybrid learning?

1.3.1 What is the learning achievement for the
       students who do not apply hybrid learning?
1.3.2 What are the differences between hybrid learning students and non-hybrid learning?
1.3.3 What is the online material in CIDOS for the students as guidelines and notes?

Objectives

1.3.4 Identify the learning achievement for the students who apply hybrid learning.
1.3.5 Identify the learning achievement for the students who do not apply hybrid learning.
1.3.6 Determine the differences between hybrid learning students and non-hybrid learning.
1.3.7 Develop the online material in CIDOS for the students as guidelines and notes.

LITERATURE REVIEW

Vital Features of Contextual Learning applied in Polytechnics

Polytechnics in Malaysia provide courses which come in hands-on to create competent graduates in applying Engineering skills such as Civil, Mechanical and Electrical, while also train the service courses, which are non-Engineering such as Hospitality and Commerce. As a compulsory course, Computer Application (BC101) is offered the first semester of Polytechnic's student. This course blends online and face to face delivery. The substantial proportion (20%) of its content and assessment is delivered online. There is about 30%-70% from the instructions based on hybrid learning. It includes using conventional and CIDOS e-learning for distributing the digital contents and online learning matters. LMS consists of a set of learning or communication tools to plan, prepare, develop, deliver, communicate and manage the online course.

The vital features of contextualized learning focus on active participating learning which is beneficial to the student (Fahad N. Alfahad, 2010). Besides, it emphasizes the training of problem-solving abilities to students, making them become active and self-motivated learners. Learning and reference is closely related to the learners. As a guideline to the learners in obtaining the input of that course, the reference produced and suggested by Ministry of Higher Education under the Division of Curriculum Development and Evaluation (BPK). The reference is always updated based on the changes in the syllabus.

The most important single factor influencing learning is the active engagement of the learner with the material or reference. The contextualized learning needs to connect, apply knowledge and content of learning and teaching with various situations. The other vital feature is to make use of group activities to encourage students to get involved and learn from each other. Contextual examples in learning should be interesting and familiar to students. It also stimulates the students to participate in learning activity, performs the analysis and exploration

with computer digital information. Furthermore, it increases knowledge, nurture certain learning habits that will have life-long benefits to them.

Figure 2.1: The vital features of Contextualized Learning by Fahad N. Alfahad, (2010)

Key Features and contexts of Hybrid Learning

Hybrid or blended learning covers the key features of the following:

      2.2.1 Experience of using Learning Management System (LMS) environment.

      2.2.2 Implementation the online quiz.

      2.2.3 Application of Netiquette in electronic mail.

      2.2.4 Instructional technology skills include scan, audio and video file creation, web design and handle the digital camera.

      2.2.5 Implementation the Case Studies or Projects.

      2.2.6 Presentation Skills.

      2.2.7 Implementation of Practical task in computer laboratory.

      2.2.8 Time Management Skills and Commitment to continue participate in online system.

Table 2.2.1: Differences between Hybrid and Non-Hybrid Learning

Number	Hybrid	Non-Hybrid
1.	LMS exploration	Without LMS exploration
2.	Assessment using CIDOS	Assessment using manual
3.	Implemented project in teamwork	Implementation practical individually
4.	Time management in CIDOS	Time management in class
5.	Instructional technology skill (Practical)	Instructional technology skill (Theory)

Table 2.2.2: Source of Boettcher, J.V & Conrad R, (2010), Online teaching survival guide: Simple and practical pedagogical tips. San Francisco, CA Jossey-Bass

340

Number	Proportion of Content delivered (%)	Category of Course	Typical Description
1.	0%	Traditional	Course with no online technology used- content is delivered in writing or orally.
2.	1% to 29%	Web Facilitated	Course which uses web-based technology to facilitate essentially a face-to-face (F2F). Use Course Management System (CMS) or web pages to post syllabus and assignments.
3.	30% to 79%	Blended/Hybrid	Course that blends online and face-to-face (F2F) delivery. Substantial proportion of the content is delivered online, typically uses online discussions and F2F meetings.
4.	80+%	Online	A course where most or all of the content is delivered online. Typically have no F2F meetings.

Technical and Vocational Institution – Polytechnics of Malaysia

The first Polytechnic developed in Malaysia was Polytechnic of Ungku Omar, Ipoh, Perak. It was introduced in 1969 through the Colombo Plan. The Polytechnic education was upgraded and enhanced with the endorsement of "Jawatankuasa Kabinet Mengkaji Pelaksanaan Dasar Pendidikan (1979), Jawatankuasa Kabinet Mengenai Latihan (1991) and Pelan Induk Perindustrian Negara (1985-1995).

Ministry of Education in Malaysia has been taking the responsible to produce the graduates as the semi-professional towards the fields of engineering, commerce, hospitality and Information Technology and Communication (ICT). It also provides the alternative channels to the institution of higher learning for the SPM holders, polytechnic and community college graduates.

The Division of Technical and Vocational Education or BPTV was introduced in 1964. But then it was restructured to Department of Technical Education or JPT in 1995. The main function of JPT is to ensure the continuous education plan and the growth of the technical and vocational education in Malaysia. The current number of polytechnics in Malaysia until 2011 has achieved 28 units as the following:

1. Politeknik Ungku Omar, Ipoh, Perak
2. Politeknik Sultan Haji Ahmad Shah, Kuantan,Pahang
3. Politeknik Sultan Abdul Halim Muadzam Shah, Jitra, Kedah
4. Politeknik Kota Bharu, Kok Lanas, Kelantan
5. Politeknik Kuching, Sarawak
6. Politeknik Port Dickson, Si Rusa, Negeri Sembilan
7. Politeknik Kota Kinabalu, Kota Kinabalu, Sabah
8. Politeknik Shah Alam, Shah Alam, Selangor
9. Politeknik Johor Bahru, Pasir Gudang, Johor

10. Politeknik Seberang Perai, Permatang Pauh, Pulau Pinang
11. Politeknik Kota Melaka, Balai Panjang, Melaka
12. Politeknik Kota, Kuala Terengganu, Terengganu
13. Politeknik Sultan Mizan Zainal Abidin, Dungun, Terengganu
14. Politeknik Merlimau, Melaka
15. Politeknik Sultan Azlan Shah, Behrang, Perak
16. Politeknik Tuanku Sultanah Bahiyah, Kulim, Kedah
17. Politeknik Sultan Idris Shah, Sungai Lang, Selangor
18. Politeknik Tuanku Syed Sirajuddin, Arau, Perlis
19. Politeknik Muadzam Shah, Muadzam Shah, Pahang
20. Politeknik Mukah, Mukah, Sarawak
21. Politeknik Balik Pulau, Bayan Lepas, Pulau Pinang
22. Politeknik Jeli, Jeli, Kelantan
23. Politeknik Nilai, Nilai, Negeri Sembilan
24. Politeknik Banting, Banting, Selangor
25. Politeknik Mersing, Johor
26. Politeknik Hulu Terengganu, Terengganu
27. Politeknik Sandakan, Sandakan, Sabah
28. Politeknik Betong, Betong, Sarawak

(Source from Department of Polytechnic Education, Ministry of Higher Education, 2011)

CIDOS as platform of implementing the hybrid learning in Polytechnic

Curriculum Information Document Online System or commonly known as CIDOS is a fully automated document management solution that manages the uploading, updating and sharing of digital information or digital content into one whole integrated component. It provides the medium for interaction between users including *Bahagian Pembangunan Kurikulum* (BPK) staffs, Polytechnic lecturers and students. Moreover, it also provides the interface for storing, evaluation, authorization and sharing of digital content and information.

CIDOS is an electronic document management system, which enables users to access information stored in the database. The end users consist of the lecturers and students. CIDOS' website can be surfed in the Uniform Resource Locator (URL) of http://www.cidos.edu.my.

The minimum system requirements of using CIDOS refers to the Operating System that supports both Windows and Unix, Internet Explorer 6.0 and above. Mean while, it compatibles with the client hardware requirements. For example, Pentium II, 64 MB RAM, 5 GB hard disk free space and supports 1024x768 display resolution. It will meet the server of Linux, Dual Xeon 2.4 GHz and 2 GB memory, server of PHP 5, MySQL 5.0 and above and Apache HTTP Server. The flow chart to enter CIDOS is given as the following Figure 2.3a and Figure 2.3b below.

Figure 2.4a: The process flow shows overview of CIDOS operations

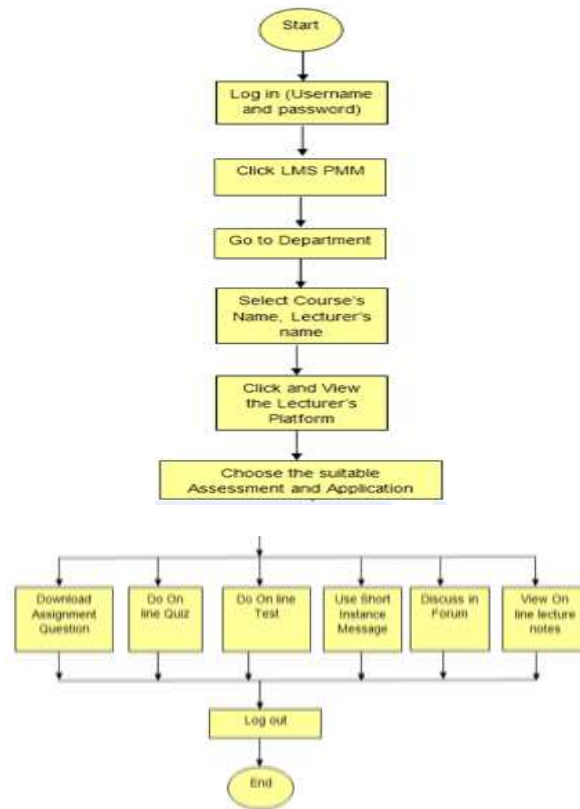(Source: Illustration of the writer, from web site of CIDOS, http://www.cidos.edu.my)

Figure 2.4b: The flow chart shows the step to enter CIDOS environment

(Source: Illustration of the writer, from web site of CIDOS, http://www.cidos.edu.my

Figure 2.4c: The basic interface shows the CIDOS environment

(Source: web site of CIDOS>BC101>platform of Norhafizah Binti Ismail> Quiz through http://www.cidos.edu.my)

Course of Computer Application (BC101)

This course is an elementary subject which offered to the first semester students in Polytechnic of Malaysia. It combines several Continuous Assessments such as Lab works, Online Quizzes, Project and Presentation as well as Test. The students will learn about theoretical and hands on skill. The topics consists of 5 different range of topics, for instance, Topic 1 (Computer System), Topic 2 (Word Processing), Topic 3 (Spreadsheet), Topic 4 (Internet) and Topic 5 (Presentation and Basic of Multimedia). The blended learning in the course applies in teaching and learning strategy which includes lecture, demonstrate, laboratory, discussion, one to one, game, quiz, brainstorming, ice breaker, question and answer and project (Bonk, Graham, 2006).

Learning Achievement and Assessment of BC101

Learning achievement is an important outcome of learning that will determine the effectiveness of an education policy. It is driven by achievement motivation. Achievement motivation as defined by Maehr (1974) refers, first of all, to behavior that occurs in reference to a standard of excellence and thus can be evaluated in terms of success and failure. A second defining condition is that the individual must in some sense be responsible for the outcome. Third, there is some level of challenge and therewith some sense of uncertainty involved.

Computer Application is core and preliminary course for the students of first semester whether with Engineering or non-Engineering program. This kind of course provides syllabus that enrich the knowledge and skills to students relating to various types of computer systems, word processing, spread sheet, presentation and internet. The students need the combination skills of

theoretical, hands-on and etiquette or moral values. They will also have the opportunity to manipulate and create a variety styles to produce documents, presentations and spread sheets (BC101 Syllabus, Version 080510_1.1_ Effective: 1 Nov 2010). These features are evaluated to complete the learning outcomes in one semester.

In order to fulfill the requirement of the course, several items of the assessment should be completed. It covers the quiz, test, lab work, presentation and project which are carried out during lecture or practical hour throughout the semester. The learning outcomes evaluate the domain of affective, cognitive and psychomotor (Gardner, 1999).
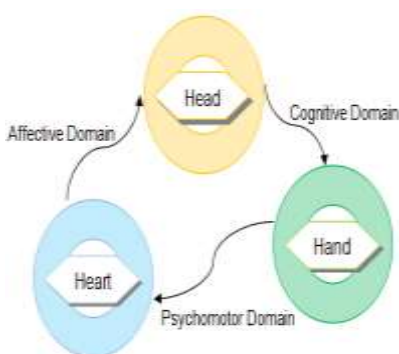

Figure 2.6: Schematic Diagram shows the relationship of Learning Domains

Lev Vygotsky's Social Development Theory,   1962

The hybrid learning is closely related to the behaviorist such as Wolpe, Lazarus, Bandura, Krumboltz, Dustin and George that views on human would always face the new experience. The potential to expose multiple types of attitudes normally occurs. Besides, human can control their own attitudes whether by influencing others and others will influence them (Ee Ah Meng, 2000). Lev Vygotsky's Social Development Theory, 1962 introduced 3 major themes which comprises social interaction as a fundamental role in cognitive development. MKO or More Knowledgeable Other is assist as teacher, coach, peers, younger person or even computers. Thirdly, solving the problem independently, playing the active role and learning becomes a reciprocal experience (Crawford, 1996).

Theory of Self Efficacy: ARCS Model of   Motivational Design by John Keller

The learning process assisted with the technology commonly influenced by the needs of self-efficacy. It affects human function in choices regarding behavior, motivation, thought patterns and responses, health behaviors and academic productivity. The students with high self-efficacy

in a learning mode are more likely to make extra effort, persist longer, grow and expand their skills. It encourages people to tackle challenging tasks and gain valuable experience.

Moreover, ARCS Model of Motivational Design by John Keller mentioned four steps for sustaining motivation in the learning process. It includes Attention, Relevance, Confidence and Satisfaction (ARCS). Attention can be gained by active participation, variability, humor, incongruity and conflict, specific examples or inquiry. In order to increase learner's motivation, relevance should be established by experience, present worth, future usefulness, needs matching, modeling and choice. The confidence helps student understand their likelihood for success, grow the learners, allow for success that is meaningful, feedback and learner control over leaning and assessment (Ng Yim San, 2007).

METHODOLOGY

The research strategy refers to quantitative, with the experimental method and the technique of Statistics T-Test to analyze the mean of Test 1 and Test 2 results in Computer Application for July 2010.

Respondent Description

The respondents are chosen from the results of Continuous Assessment in Test 1 and Test 2 for the first semester of Diploma in Manufacturing Technology (DTP 1) with 33 students and Diploma in Electronic Engineering (Control) (DEP 1A) with figure of 33 students chose. The description of the respondents can be classified as follows:

Table 3.1: The respondents' description by session of July 2010

Number	Program	Course / Code	Semester/Session	Quantity of students	Total (Overall)
1.	DTP 1	Computer Application/BC101	1/July 2010	33	66
2.	DEP 1A		1/July 2010	33	

Population and Sample

The research is based on the experimental, which refers to a quantitative method using the test to compare means of two groups of cases. The population of the research refers to all students in academic departments. The sample of respondents comprises the both 33 first semester students of Mechanical Engineering Department and Electrical Engineering Department in July 2010. The total of respondent is 66.

Description on Instrument

Gantt chart shows the research progress starts with the selecting of the scope and title, listing out the contents of the research, includes Introduction, Problem Statement, Objectives, Research Questions, Literature Review which based on sub topics below:

3.1.1 Hybrid Learning Based on Contextualized Approach
3.1.2 Key Features and contexts of Hybrid Learning
3.1.3 Technical and Vocational Institution – Polytechnics of Malaysia
3.1.4 CIDOS as platform of implementing the hybrid learning in Polytechnic
3.1.5 Computer Application (BC101)
3.1.6 Learning Achievement and Assessment of BC101
3.1.7 Lev Vygotsky's Social Development Theory, 1962
3.1.8 Theory of Self Efficacy : ARCS Model of Motivational Design by John Keller

The methodology includes the respondent description, population and sample, respondent instruments using the software of SPSS, creating Gantt chart, data analysis using the T-test, results and findings.

Figure 3.4: Gantt chart shows the list of task names, duration, start and finish with the summary task for the research

DATA ANALYSIS

Hypothesis Testing and the Statistics T-Test

The T-test is the most commonly used Statistical Data Analysis procedure for hypothesis testing. There are several kinds of t-tests, but the most common is the "two-sample t-test" also known as the "Student's t-test" or the "independent samples t-test".

The two sample T-test simply tests whether or not two independent populations have different mean values on some measure. It measures the mean differences for a pair of dependent variables for a group of respondents. The numerical variable with data in interval scale and ratio can be analyzed by using this method. The related data of the research refers to the marks of Test 2 BC101 (July 2010) which uses non-hybrid learning method and the marks of Test 1 BC101 (July 2010) which uses hybrid learning method.

Null Hypothesis:
There is no significant difference between mean of BC101 Test 1 marks for July 2010 and BC101 Test 2 for July 2010.
H_o: $\mu_{Test\ 1\ July\ 2010} = \mu_{Test\ 2\ July\ 2010}$

Alternative Hypothesis:
There is significant difference between mean of BC101 Test 1 marks for July 2010 and BC101 Test 2 for July 2010.
H_a: $\mu_{Test\ 1\ July\ 2010} \neq \mu_{Test\ 2\ July\ 2010}$

  The value of alpha, μ refers to the significance level used to compute the confidence level, comprises a number which is greater than 0 and less than 1. In this research, $\mu=0.05$. The confidence norm is the confidence interval for a population mean, using a normal distribution.

RESULTS AND FINDINGS

From the data analysis process, there are 2 programs include DTP 1 with 33 respondents and DEP 1A with 33 respondents in July 2010.

Table 4.1: Results of BC101 Test 1, Test 2 for DTP 1 and DEP 1A, July 2010

Number of Respondents	Program	Gender	Marks of Test 1 July 2010 (Hybrid)	Marks of Test 2 July 2010 (Non-Hybrid)	Program	Gender	Marks of Test 1 July 2010 (Hybrid)	Marks of Test 2 July 2010 (Non-Hybrid)
	DTP 1				DEP 1A			
Sample			33	33	Sample		33	33
Mean			53.00	53.27	Mean		58.06	49.58
Confidence interval			3.42	3.35	Confidence interval		3.00	5.87
Standard Deviation			10.03	9.81	Standard Deviation		8.79	17.21

Table 4.1 above indicates the results of BC101 Test 1, Test 2 for DTP 1 and DEP 1A in semester July 2010. By using hybrid method, DTP 1 scores 73 as the highest marks, while DEP 1A scores 70 as the highest marks in the Test 1. Furthermore, by using non-hybrid method, DTP 1 scores 82 as the highest marks, while DEP 1A scores 70 as the highest marks in Test 2.

Table 4.2: Comparison of mean, standard deviation and Two-Tailed T-Test (DTP1 and DEP 1A, July 2010)

Program	Marks of BC101	Respondents. N	Mean Test 1 (Hybrid)	Mean Test 2 (Non-hybrid)	Standard Deviation Test 1	Standard Deviation Test 2	Confidence interval	Two-Tailed Student's T Distribution
DTP 1	Marks of Test 2 July 2010	33	53.00	53.27	10.03	9.81	95%	0.8212
DEP 1A	Marks of Test 1 July 2010	33	58.06	49.58	8.79	17.21	95%	0.0191

The total mean of Test 1 (Hybrid) for DTP 1 (July 2010) is 53.00 with the confidence interval=95% and standard deviation=10.03. For the mean of Test 2 (Non-hybrid)=53.27 with standard deviation=9.81. Meanwhile, for DEP 1A, the mean of Test 1 (Hybrid)=58.06,standard deviation=8.79. Furthermore, for the Test 2 (Non-Hybrid), the mean=49.58, standard deviation=17.21 with confidence interval= 95%.
The difference of using hybrid learning and non-hybrid of DTP 1 is -0.27. For DEP 1A, the difference of both hybrid and non-hybrid is 8.48. The findings show that there are significance

349

differences between mean of BC101 Test 1 marks (July 2010) and Test 2 marks (July 2010) for DTP 1 and DEP 1A.

A low value of probability p ($p < 0.05$) means that this null-hypothesis should be rejected. In other words, low p means that there is significant difference between the two groups being compared (Grant, Michael, M. 2002). In this research, p=0.0451. The value of probability, p is shown in the Table 4.3 below. Thus, the mean for Test 1 (Hybrid)=55.53, mean for Test 2 (Non-hybrid)=51.43 and the differences of mean between hybrid and non-hybrid=(55.53-51.43=4.10).

Table 4.3: T-Test hypotheses about two groups, DTP 1 and DEP 1A, July 2010

Mean/Standard Deviation/Probability	Program	Value
Mean for Test 1 (Hybrid)	DTP 1 and DEP 1A	55.53
Standard Deviation for Test 1 (Hybrid)		9.41
Respondent size		66
Mean for Test 2 (Non-Hybrid)	DTP 1 and DEP 1A	51.43
Standard Deviation for Test 2 (Non-Hybrid)		13.51
Respondent size		66
Probability		0.0451

Development of online material in CIDOS

Online Study Guide

These online notes are for first semester students who are working through course of Computer Application (BC101). The topic selected is Topic 6: Presentation and Basics of Multimedia. The notes are focused on important icons, ribbon toolbars, exercise of designing slide in Power Point 2010. The students can view from the platform of lecturer when enter the system by inserting the registered user name and password.

Content of Online Notes

Generally, Topic 6 provides facilities to design a professional multimedia presentation. It comprises the exercises, sample of quizzes and notes. The sub topics to be proposed in the online material are as follows:

5.2.2 Introduction
5.2.3 Advantages of Power Point
5.2.4 Keyboard shortcut of Power Point

5.2.5   New Features in Microsoft Point 2010
5.2.6   Interface of Power Point 2010
5.2.7   Ribbon Toolbar Concept
5.2.8   Display and Forms of Slide
5.2.9   Principles of Multimedia
5.2.10 Introduction of Digital Camera
5.2.11 Upload image file from digital camera to
        computer
5.2.12 Practice the procedures in Video Editing

Benefit of Online Notes

The intention of online notes is to help and assist students learn and obtain the basic knowledge theoretically before they practise during Computer Application class. There are also some lab work questions on individuals.

CONCLUSION

Conclusively, the findings suggest that, in combination with traditional learning method, the use of blended lecture instruction can provide significant difference (4.10) compared to the non-hybrid method. The learning achievement in hybrid is 55.53 and non-hybrid is 51.43. This result is promising since students able to obtain an experience of using the Learning Management System which refers to CIDOS with the registered user name and password. The applications include in CIDOS are uploading, downloading the question of exercise and assignment, online quiz and test, short instance message, forum and online lecture notes. In the light of the findings, it can be concluded that there is no evidence against using hybrid method as an integral part of instructional design in Polytechnics specific to "Computer Application (BC101)" course. Although the traditional method can be a fundamental way to complete the needs of teaching and learning, the other methods also can fulfils the learning outcome. Meanwhile, e-learning should be supported by a good internet access and continuous commitment from the students. The hybrid method enables the mix of face to face and e-learning to suit the better learning achievement.

RECOMMENDATION

Blended learning with the contextual method can be expanded to variety of programs in the polytechnic. The scope and dimension of research can be generalized to the specific program such as Diploma or Advanced Diploma (Polytechnic of Premier). In order to sustain the using of Learning Management System, that is CIDOS, the system administration and students can set the web browser with Really Simple Syndication (RSS) to keep them update with the information in CIDOS. The access rate and speed to the system need to be enhanced and stabilized in the future

time. In order to increase the usage of CIDOS, the interface should be designed in more user-friendly and easy-to-use to make the learning process more attractive. There is a need for further research studies in different subject area, students' levels, and development models in hybrid learning for the next phase.

REFERENCES

ATEEC Fellows (2000). *The best of both worlds: teaching a hybrid course.* Academic Exchange Quarterly 2004-12-22.

BC101 Syllabus, Version 080510_1.1_Effective: 1 Nov 2010, Academic Sector, Department of Polytechnic Studies, Ministry of Higher Learning.

Boettcher, J.V & Conrad R, (2010). *The online teaching survival guide: Simple and practical pedagogical tips.* San Francisco, CA Jossey-Bass

Bonk, Graham, (2006). *The Handbook of Blended Learning,* San Francisco: Pfeiffer.

Buzzetto-More NA and Sweat-Guy R. (2006). *Incorporating the hybrid learning model into minority education at a historically black university.* Journal of Information Technology Education. 2006;5:153-162.

Cowie P and Nichols M (2010). *The clash of cultures: Hybrid learning course development as management of tension.* Journal of Distance Education. 2010;24(1):77-90.

Crawford, K. (1996). *Vygotskian approaches to human development in the information era.* Educational Studies in Mathematics. (31) 43-62.

Department of Polytechnic Education, Ministry of Higher Education, Malaysia (2011)

Division of Curriculum Development and Evaluation, BPK, (2008). Ministry of Higher Education, Malaysia.

Ee Ah Meng, (2000). *Psikologi pendidikan 1*. Shah Alam: Penerbit Fajar Bakti.

Fahad N. Alfahad, (2010). *Interactions in e-learning in undergraduate courses.* Asean Journal of Teaching and Learning in Higher Education, 2 (1). pp. 3-11. ISSN: 1985-5826

Frank KAPPE (2010). *GUTL (Graz University of Technology, Austria) Frank KAPPE (Graz University of Technology, Austria) Virtual Worlds for academic, organizational, and life-long learning (ViWo 2010),* The 18th International Conference on Computers in Education 2010.

Gardner, Howard. (1999). *Intelligence Reframed: Multiple Intelligences for the 21st Century*. New York: Basic Books.

Grant, Michael, M. (2002). *Getting a grip on project-based learning: Theory, cases and recommendations. Meridian: A Middle School Computer Technologies* Journal, 5(1).

Keller, J. M. (1987). *Development and use of the ARCS model of motivational design*. Journal of Instructional Development, 10(3), 2-10. John Keller's Official

Maehr, M.L., 1974, Culture and achievement motivation, *American Psychologist*, 29: 887–896

Mitchell P. and Forer P. (2010). *Blended Learning: The Perceptions of First-year Geography Students.* Journal of Geography in Higher Education. 2010;34(1):77-89.

Ng Yim San, (2007). *The Efficacy of Computer Assisted Language Learning (CALL) in Fostering Autonomous Learning Among ESL Upper Secondary School Students.* Internet Journal of e-Language Learning & Teaching, 4(1). pp. 32-45. ISSN 1985-6024

Rivera, J., McAlister, K., & Rice, M. (2002). *A comparison of student outcomes & satisfaction between traditional & web based course offerings.* Online Journal of Distance Learning Administration, 5(3), 151-179.

Rungtusanatham, M., Ellram, L. M., Siferd, S.P., and S. Salik, (2004). *"Toward a Typology of Business Education in the Internet Age",Decision Sciences.* Journal of Innovative, Education, 2004, 2(2), 101-120.

Vygotsky, L.S. (1978). *Mind and society: The development of higher mental processes.* Cambridge, MA: Harvard University Press.

Wu J, Tennyson RD and Hsia T. (2010). *A study of student satisfaction in a blended e-learning system environment.* Computers & Education. 2010;55:155-164.

Young, J. (2002). *Hybrid teaching seeks to end the divide between traditional and online instruction.* Chronicle of Higher Education, 48(28), A33.