

IMPROVING THE QUALITY LEARNING THROUGH JOINT CONTENT DEVELOPMENT (CASE STUDY: E-COMMERCE COURSE)

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ABSTRACT

A very serious concern faced in the economics matter is the increasingly number of unemployment rates caused by the discrepancies between curriculum at universities with the ever-changing needs at the job market level. One cause of the discrepancies is a wide scope of knowledge within the industrial world. It then needs a significant contribution from various parties to developing the courses' content which can be widely accessed. Universities should from time to time commit to innovation and creativities to be prepared and flexible in encountering future challenges. In response, they may need the quality curriculum and content which are suitable to the work field. Such curriculum is expected to be resulted from the collaboration between experts along with the competent sources in each field, with expectation to be the competitive strength of a university particularly, and the education world in Indonesia especially. For students, such curriculum should be obtainable by using the learning method which counts not only on the conventional one (for example the Face-to-Face classroom method), instead, it can be utilizing the information technology such as e-Learning. This learning way can empower students to be more effective, flexible, and be easily exposed to a wider scope of knowledge. The concepts used in this joint content development are using the ADDIE outline as the instructional systems design (ISD).

Keywords: Teaching Content, Joint Content Development, e-Learning, ADDIE, ISD

INTRODUCTION

The impact of rapidly-changing science and technology has a great contribution to the practical aspect of humanity; one of them is of the economic and education aspects. One of the serious concerns nowadays is the problem of unemployment on a certain level which is caused by discrepancies between the curriculum at the universities and changing needs at the job markets. The targeted curriculum has been usually slow to keep pace in responding the market's needs to produce well-trained and knowledgeable graduates. One cause of the discrepancies that occurred between university curriculum with science and the needed skills is a very wide scope of knowledge within the industrial world. It then needed a significant contribution from various parties to developing the courses' content which can be widely accessed. Such challenges are indeed reflected by the reality within universities across Indonesia. To mention some, it consists of:

- The process of curriculum and content development is still limited within the university environment only; therefore the curriculum has no standard to be a competitive advantage for the universities in Indonesia.

- The lack of collaborating media to unite resource persons in the development of outstanding curriculum.
- The limited availability and used of e-learning media resulted from the lack of standar for this learning model.

Universities should from time to time commit to innovation and creativities to be prepared and flexible in encountering future challenges. Accordingly, quality curriculum and material, which are suitable to the work industry, are highly necessary. Such curriculum is expected to be resulted result from the collaboration between experts with the competent resurse person in each field, with expectation to be the competitive strength of a university in particularly, and the education world in Indonesia in general. For students, such curriculum should be obtainable by using the learning method which counts not only on the conventional one (for example the face-to-face classroom method), instead, it can utilize the information technology such as e-learning. That learning way can empower students to be more effective, flexible, and be easily exposed to a wider scope of knowledge. The Indonesian government in particular has provided facilities to enable collaboration between experts and sources parties.

This happens through the establishment of the INHERENT network with the Indonesian GDLN (Global Development Learning Network) facilities. The GDLN takes the form of DLC (distance learning center) at the four state-run universities: Universitas Indonesia (Jakarta), Universitas Riau (Pekanbaru), Universitas Udayana (Denpasar), and Universitas Hasanudin (Makassar). Universitas Bina Nusantara (Jakarta) or widely known as BINUS University along with STMIK MDP Palembang became joint parties which made collaboration came to reality. The college course selected to be develop was e-commerce. The main consideration for this collaboration, among others, are:

- STMIK MDP is a private university in Palembang which has possessed a good quality of IT infrastructure which minimizes any difficulties to apply digitalized learning material
- STMIK MDP has applied the ISO-9000 management system, which also focuses in quality material development through procedural arrangement and well-audited system.

METHODS IN USE

To gain the analysis and quality content, we have utilized the ADDIE approach or framework as the *instructional systems design (ISD)*. ADDIE stands for *analysis, design, development, implementation, and evaluation*; which are widely common used steps in *ISD* (Piskurich, 2003 and Allen, 2005). As related to the content development, ADDIE steps are shown at the following Figure 1.

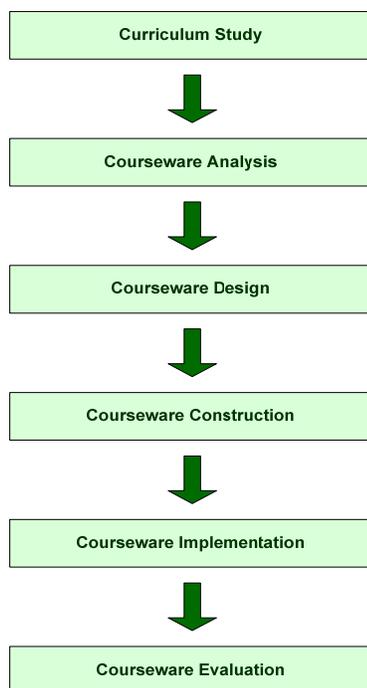


Figure 1 Content Development (Sembel, 2005)

Need Analysis in STMIK MDP

According to the steps in ADDIE, the need analysis was done through the discussion with the board of directors and lecturers at STMIK MDP Palembang. The purpose was to find the targeted study program, offered curriculum, and courses to be developed. The course of **e-commerce** then concluded as one for development. It was basically offered at the semester 3 to 8, and this course is taken by students from the various majors: Computerized Accounting (semester 3), Information Technology (semester 5) and Information System (semester 8).

The selection of that course was based on the **problems encountered**, such as:

- This course is an applied theoretical study which then needs plenty of case study. The good case study requires quality sources, in this regard are practitioners with the first-hand experience of e-commerce business.
- Geographical physic of the receiver institution which is not located in big cities where infrastructurally haven't guaranteed the existence of the e-commerce business, then resulted in only a few practitioners found residing in Palembang area.
- STMIK MDP as the receiver institution desires the presence of more competent practitioners for each field eventhough they are actually coming from other cities which have a common practice of e-commerce. Yet, this matter faced with the limited time of those practitioners (the business people of e-commerce), and it even becoming a bigger challenge to bring them directly to Palembang to share their valuable experiences.

Besides the three problems mentioned above, there were some valuable feedbacks during the discussion process and data collection, such as: the tendencies from students to take the theoretical courses inconsiderately, especially the core courses because they think that those material were far from enjoyable. Some of them also concluded that such courses they have taken so far were inadequate on instructional designing. Table 1 below shows the average of students' passing percentage who have taken the e-commerce study.

Table 1 Students Average Passing for e-Commerce Course

Grade	Percentage (%)
A	33.8 %
B	35.5 %
C	24.2 %
D	4.8 %
E	1.7 %

Based on the data above, it seems that the percentage of passing average for this course is pretty well. However, after a considerate observation and evaluation, actually those who have passed the course then think that e-commerce just merely as a theory that still has plenty of problems as mentioned above. Besides challenges found at STMIK MDP, the e-commerce course was selected based also on the following considerations:

- Knowledge about e-commerce is still necessarily needed by the undergraduate-degree graduates, especially ones on computer-related study field, considering the business progress in the future which will be e-commerce savvy and a lot more challenges to apply it.
- The e-commerce course is increasingly needed especially in Palembang, mainly to accommodate the rapid progress of technology today and businesses which utilize this kind of tool (e-commerce). The good business growth in Palembang can indeed equip the local government of Palembang to increase the welfare of its people.

Based on the analysis and assessment toward the needs mentioned above, the solution offered is to make some corrections which cover:

- Redesigning the basic outline of study planning (in Indonesian: *garis besar perencanaan perkuliahan or abbreviated as GBPP*) which was made very complete according to standard instructional design.
- Developing course materials in digital form which can be attractive and easy to use.
- Using the video conference technology to cover the difficulties by bringing “live” those practitioners to the students at STMIK MDP as the receiver institution
- Executing the learning process by using the new *GBPP* as well as the new contents

The solutions offered above were executed in a detailed manner according to the ADDIE concept.

Steps Taken

To prepare the *GBPP* and e-commerce content to suit the expected instructional purpose, the ADDIE steps were done as shown in the Figure 2 below. Every step has output which become input for the next step (Piskurich, 2003 and Allen, 2005).

During the analysis step, a clear explanation on “gaps” was developed, between the expected output and both knowledge and skills possessed by every participant or audience as well as their behaviour. During the design phase, documents related to learning purpose, assessment instruments, exercises, as well as contents were acquired. During the development phase, digital based contents coming from real creativity were created. The contents were

also suitable to the delivery media set during the designing phase. During the implementing phase, several contents were delivered or distributed to some groups of students for the evaluation purposes of the content and learning effectiveness.

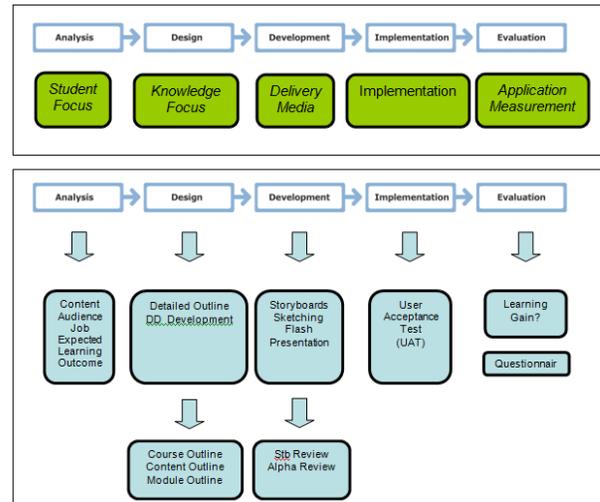


Figure 2 Phases Taken (Sembel, 2005)

Instructional Purpose

Based on Piskurich (2003), the instructional purpose was begun from analysis phase, which consists of the several steps: audience analysis, selection of delivery system and instructional analysis approach; and instructional settings.

Audience Analysis

In analyzing the audience, the student general characteristics, specific initial competencies and study styles were observed. The observation showed that 50% of students in semester 3 to 8 are not yet employed and mainly coming from middle level of socio-economic factor.

Selection of Delivery System and Instructional Analysis Approach

Instructional analysis of e-commerce course will use the Bloom’s Taxonomy approach (Figure 3 and Figure 4) to get detail picture of general instructional purpose (Bahasa Indonesia: Tujuan Instruksional umum or TIU), and its description in the specific instructional purpose (Bahasa Indonesia: Tujuan Instruksional Khusus or TIK) as well as their main topics and the targeted taxonomy level. To make understanding easier, the instructional analysis result was documented in the form of picture or diagram as part of the *GBPP* document.

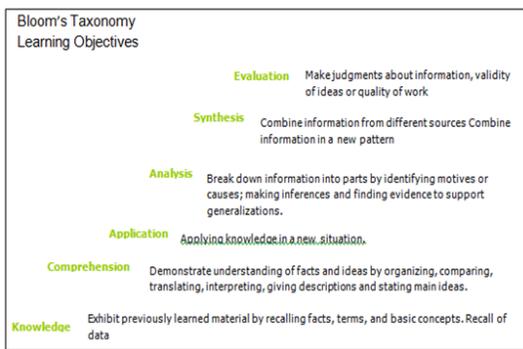


Figure 3 Bloom's Taxonomy Learning Objectives (Sembel, 2005)

	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
Typical Learning	List	Summarize	Apply	Analyze	Combine	Assess
	Define	Describe	Demonstrate	Separate	Integrate	Decide
	Tell	Interpret	Calculate	Order	Modify	Rank
	Describe	Predict	Complete	Explain	Rearrange	Grade
	Identify	Associate	Illustrate	Connect	Substitute	Test
	Show	Distinguish	Show	Classify	Plan	Measure
	Label	Estimate	Solve	Arrange	Create	Recommend
	Collect	Differentiate	Examine	Divide	Design	Convince
	Examine	Extend	Modify	Compare	Invert	Select
	Tabulate	Discuss	Relate	Select	Compose	Judge
	Quote	Extend	Change	Explain	Formulate	Explain
	Name		Classify	Infer	Prepare	Discriminate
	Who		Experiment		Generalize	Support
When		Discover		Rewrite	Conclude	
Where					Compare	
					Summarize	

Figure 4 Six Levels of Classification (Bloom's Taxonomy) (Sembel, 2005)

Based on the student's characteristics, the learning plan is not only designed for face-to-face system, rather, it is combined with non-classroom learning activities as well as with video conference facilities. The system combination above is based on the targeted instructional purpose in the e-commerce course

Instructional Settings

The instructional settings of e-commerce course cover several aspects such as: instructional strategies, type of media/reference, and mode of delivery. Instructional strategies are the mean to deliver the content to the students. This strategies can be shown with two different ways, such as: (i) interactive where students need to do activities/ interaction to get view of all the content, and (ii) non-interactive where students can get view of all the content directly without interacting with the system.

For type of media/reference, the plan is to use the combination of CD-ROM and internet. All course content to be delivered to the students are put into CD-ROM, and the lecturers and each student will get one. Interaction and content enrichment activities will be done through internet communication (discussion forum or mailing list).

The mode of delivery was planned in three methods: face-to-face (F2F), virtual class, and video conference (VC). In F2F, lecturers from STMIK MDP Palembang giving lecture at the college directly by using GBPP and the content developed. In

virtual class, the lecturers from STMIK MDP and subject matter expert (SME) meet with students in virtual class activity, done through the LMS (forum discussion, downloading and uploading the material). In VC, lecturers and invited practitioners should not meet with the students in the same physical room. They, however, still meet at the same time from different places. This method is highly suitable for courses delivered by practitioners with very limited time available.

The number of F2F meeting, virtual class and VC are designed to meet the instructional goal. An attention should also be paid to the learning process situation.

THE E-COMMERCE COURSE

By paying attention to the problems and the existing needs, the e-commerce course developed has a description and the general instructional purpose (Chaffey, 2007 and Turban, 2005). In the description part, students are informed that e-Commerce course consists of the e-commerce basic concept itself and the e-business so the students understand the business practice, by using support from information technology, especially the internet from the management discipline point of view. Based on the level of Bloom's Taxonomy (C1-C6), the general instructional purpose consist of:

- Students can identify the e-commerce and e-business basic concept (C1)
- Students can describe things about weElectronic payment system (C2)
- Students can show business function in the e-commerce (C3)
- Students can analyze the e-commerce and e-business strategy (C4)

Based on the general instructional purposes above, the instructional analysis was done in more detailed to elaborate the general purpose in every meeting and targeted topic target, including the system and delivery media (Aldrich, 2005). The developed content can be seen at the following Table 2 below.

Table 2 Developed Content

No	Work Process	Format	Final
1	Presentation content (Figure 5)	HTML	14
2	Multimedia content	Flash	3
3	Supporting content	PDF/URL /DOC	14 x 3
4	Video content (Figure 6)	FLV	3
5	Teleconference content	DOC	2
6	Exercise content	PDF	14 (three questions combined into one file)
7	Pre and Post-Test	Web-based	28 x 10 Multiple Choice



Figure 5 Example of Presentation Content



Figure 6 Example of Video Content

After the content finished, the implementing process performs by using the EDUHUB Portal (Figure 7). This portal was built to accommodate the sharing contents built by inter-universities, and the nature of this portal is working as LMS which can be shared with other universities (Piskurich, 2003). The EDUHUB Portal was built by using the DIKTI's INHERENT network.



Figure 7 Example of the Class Information Output for Students

Besides uploaded to the Eduhub portal, the content was also made into CD (Figure 8). By using CD, students can learn even outside the class time without too much depending on the internet connection to LMS.



Figure 8 Example of the Interactive CD Frontpage

The video conference session is done at DLC UI (part of GDLN facilities) connecting three places: DLC UI, STMIK MDP Palembang, and BINUS University.

CONCLUSION

From the implementation result (learning process and questionnaires filled by students and lecturers), we have gained several important facts: (i) students and lecturers are highly enthusiastic to use this material during the learning process, (ii) students consider this e-commerce content as very attractive, fun and easy to understand, (iii) classrooms become more interactive and the sharing knowledge can be done among the lectures and among the students themselves, (iv) there occurs other needs to develop other courses.

Yet, there are also some feedbacks, such as: (i) the quality of video conference which still needs more improvement, (ii) the quality of internet infrastructure which still needs to be more well developed, (iii) the socialization of facilities needs to be improved continuously by government to enable more and more lectures in utilizing such facilities

From the things above, we can conclude that the content development by inter-universities can really improve the quality of any college course.

REFERENCES

- Aldrich, Clark (2005). *Learning by Doing: A Comprehensive Guide to Simulations, Computer Games, and Pedagogy in e-Learning and Other Educational Experiences*. Pfeiffer, San Fransisco.
- Allen, Michael W. (2006). *Michael Allen's E-Learning Library: Creating Successful E-Learning: A Rapid System for Getting It Right First Time, Every Time (Michael Allen's E-Library)*. Pfeiffer, San Fransisco.
- Barczyk, C., Buckenmeyer, J. & Feldman, L. (2010). Mentoring Professors: A Model for Developing Quality Online Instructors and Courses in Higher Education. *International Journal on E-Learning*, 9(1), 7-26. Chesapeake, VA: AACE.
- Calandra, B., Barron, A.E. & Thompson-Sellers, I. (2008). Audio Use in E-Learning: What, Why, When, and How?. *International Journal on E-Learning*, 7(4), 589-601. Chesapeake, VA: AACE.
- Chaffey, Dave (2007). *E-Business and E-Commerce Management*. Third Edition. Pearson Education Limited, England.
- Cicco, G. (2009). Online Versus In-Class Courses: Learning-Style Assessment as an Advisement Tool. *International Journal on E-Learning*, 8(2), 161-173. Chesapeake, VA: AACE.
- LaPointe, L. & Reisetter, M. (2008). Belonging Online: Students' Perceptions of the Value and Efficacy of an Online Learning Community. *International Journal on E-Learning*, 7(4), 641-665. Chesapeake, VA: AACE.
- Pařová, D., Rěvészová, L., (2010). *Experience with the Distance Learning Bachelor Study in the Field of Finance, Banking and Investment*. International Journal: Emerging Technologies in Learning (iJET). Volume 5, Special Issue 2 :”MIPRO 2009”, March 2010, hal 27 – 31.
- Piskurich, George M. (2003). *AMA Handbook of E-Learning, The Effective Design, Implementation, and Technology Solutions*. AMACOM.
- Sembel, Sandra (2005). E-Learning Content Development. Presented at In-Houses Training at Binus University incooperation with Bespro on August-September. Jakarta
- Turban, Efraim, Dave King, Jae Kyu Lee, and Dennis Viehland (2005). *Electronic Commerce: A Managerial Perspective 2006*. 4 th Edition. Prentice Hall.