# DEVELOPING AN OUTCOME-BASED ESP COURSE WITH BLENDED-LEARNING METHOD FOR COMPUTER STUDENTS IN HIGHER VOCATIONAL EDUCATION

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**Abstract**: This research aims to develop OBE-based English for Specific Purposes (ESP) teaching materials with blended learning methods for English courses taking studies in computer science, especially Informatics Management to obtain adequate English skills in competition in the IT Industry. OBE is an approach that emphasizes the sustainability of the learning process in an innovative, interactive, and effective manner. OBE influences the entire educational process from the curriculum design; formulation of objectives and learning outcomes; education strategy; learning method design; assessment procedure; and educational environment. OBE incudes not only a talent-training model but also the theoretical basis of curriculum design. This research employed stages of FOUR-D (Define, Design, Develop and Disseminate) model developed by Thiagarajan et al. (1974), with exclusion of the Disseminate phase. The findings in this study provide a comprehensive description of the course design, teaching materials and assessment methods. This study also verifies the effectiveness of course design samples from student feedback, teacher's reflection, and expert evaluation which confirm that OBE-based ESP teaching can be carried out and enable students to gain experience and competencies needed to carry out roles consistent with their area of expertise in the workplace.

Keywords: *Outcome-Based Education, Blended Learning, ESP*

## INTRODUCTION

The speed of innovation and the creation of advancement are growing so rapidly that they create a gap between the world of education and the needs of human resources in the work and society. The 21st century training is the job and procedure in overcoming any barrier between the instructive procedure in higher education with the world of work and the requirement for advancement. One methodology used to oblige the interest of giving quality training is Outcome-Based Education (OBE). The most generally acknowledged definition of OBE around the globe so far is given by Spady (1994) stating that Outcome-Based Education implies clearly focusing and sorting out everything in an instructive framework around what is fundamental for all students to have the option to do effectively toward the end of their learning encounters. OBE impacts the whole instructive procedures from educational program plan; definition of goals and learning results; training methodology; learning technique design; evaluation strategy; and instructive condition (Harden, 1999).

The move towards applying outcome-based education (OBE) in handling instructions at tertiary education has been one of the most widely considered topics in the educational sector in recent years (Mohayidin, 2008); (Yusoff and Fuad, 2014). Further, OBE has been increasingly adopted by institutions of higher learning as practicable, effective and creative routes towards the acquisition of positive learning experiences. Despite the fact that establishing an OBE system for education is the best way for a particular learner to reach the desired outcomes (Ortega and Cruz, 2016), research on outcome-based blended learning is still rare especially in Indonesia. One study was conducted by Wahyudi and Wibowo (2018) focusing on innovation and implementation of OBE and Washington Accord in mechanical engineering course. Another research was carried out by Suryanto, (2019) addressing the application of OBE in medical study and its impact in giving feedback on students' works.

Those two pieces of research underlined that OBE has given positive effects on both fields of knowledge. The main difference of those previous studies and this current research lies on the scope of topic in which this study focuses on English for Specific Purposes and blended learning using four-D approach proposed by Thiagarajan et al. (1974) in OBE framework. The discussion in this study presents a comprehensive course description including the design, development and evaluation stages. Furthermore, a module is also introduced as a sample to outline in detail the application of teaching materials and interactions among students both in formal classroom meeting and online. The development phase also compromises an approval and preliminary procedure where there is feedback from students and experts in the field of education, which will affirm whether

ESP output based-teaching can assist students by gaining the experience and aptitudes expected to be met in order to compete in workplace.

## METHODS

This research employed stages of FOUR-D (Define, Design, Develop and Disseminate) model developed by Thiagarajan et al. (1974). Define phase includes formulating planning; design phase accommodates developing teaching and evaluation materials; develop consists of assessment and response to reciprocity and disseminate incorporates the process of printing and distribution of teaching materials widely. This current research applied define, design and develop stages without involving the disseminate stage as it demands a long process and requires a lot of samples for testing. This Four-D model was adapted and integrated with OBE framework consisting of plan, implementation, measurement and improvement so that the teaching material produced was in accordance with OBE framework.

In the initial phase, several kinds of analyses were conducted. Needs analysis was done by distributing a set of questionnaires to the second semester students of the informatics management study program in order to analyse responses on the needs, shortcomings and desires (wants) of students (Nation and Macalister, 2010). Analysis of input from alumni and stakeholders from the world of work and industry was also conducted. The results of this analysis were used as a basis for the planning process where the syllabus is prepared and reviewed using a backward curriculum design. Learning objectives were arranged in line with the institutional vision and mission, vision and mission of the study program and graduate output. The syllabus reflected the strategy (learning plan) to achieve the expected output, as well as to measure results (assessment).

The results from the first stage were used as a basis for making improvements in the design phase. Teaching material was written for 12 meetings consisting of four modules with 12 units in total. Each chapter was explained in a theme and each meeting focuses on certain abilities that must be achieved by students. Learning activities were organized or implemented based on the OBE framework in which activities were carried out on the basis of student achievement that has been targeted at the syllabus. The teaching method was based on blended learning as a mixture of online and face-to-face meetings in one integrated learning activity. A backward design was implemented as a basis for the development of teaching materials and learning activities.

The last stage was developing the assessment process of learning outcomes, validation and practicality testing of the teaching materials produced. In addition, there was also a response process for advanced improvement where the results of assessment, validation and practicality testing were concluded and used as a basis for improvement and revision of the teaching material produced. The validation process included two things including content validation and construction validation. Content validation was implemented to evaluate whether the instructional material designed is relevant to the syllabus and blended learning teaching methods. Construction validation was applied to evaluate whether or not the teaching material component is relevant to the stated indicators. To validate this teaching material, an expert judgment in the related field was used.

Moreover, testing the level of usefulness (practicality) was also carried out to determine the practicality of teaching materials. The results of the assessment, validation and practicality testing were summarized and were further applied as the basis for the renewal process or revised for the next process cycle. Thus, the PDAC (Plan-Do-Act-Check) cycle was applied to achieve the expected results. There are two types of data in this study namely qualitative and quantitative data. Qualitative data were collected through observation sheets, evaluation lists of teaching materials and validation form. Meanwhile, quantitative data were obtained from needs analysis questionnaire.

## RESULTS AND DISCUSSION

In the operational extent of the study program, the OBE paradigm is actualized in the form of curriculum and supporting tools. The curriculum is a blueprint of the educational process that can determine the quality of graduates from a study program. OBE is a learning method that provides an establishment to what students should do. At OBE, learning outcomes are recognized first and planning learning methods and assessments are adjusted to outcomes afterwards (Harden, 1999). This is different from conventional learning techniques where the topic taught is determined by the supporting lecturer, and then from this topic the outcomes will be distinguished. This research is intended to develop OBE-based English for Specific Purposes teaching materials with blended learning methods and integrate a number of processes including course design, assessment and teaching and learning methods that provide an establishment for expertise that can be mastered by students.

OBE highlights that learning achievement can be met from the aspects of knowledge, skills and attitudes as indicated by social, economic and academic cultural conditions. The results and discussion in this paper covers some viewpoints including the course design, case study taken from a sample (Module 3) and assessment. The course design including the terms task chains and driving maps were adapted from a study conducted by Du and Wang, (2019). The main difference lies in the additional formulation of green ethic to the learning objective and the specific focus on tasks related to tourism issues.

The results and discussions feature the point of representation on how the course in this study was planned and arranged, starting from analysing course objectives, setting up output tasks to visualizing tasks through driving maps and the results of hand out practicality process through a try out. For each of the phases, we adopted standards and attributes of OBE as referenced in the former section. The principles of "clarity of focus" and "designing back" were taken into consideration when concentrating on the course objectives. The process of designing ESP course in this study was made based on the adaptation of blueprint proposed by Du and Wang, (2019). They mentioned that in order to accomplish the quality of "achievable and accessible" there was a process of designing dynamic and progressive task chains and visualized the task chains through flow charts that were called "driving maps". The driving maps were composed for each module to express the correspondence between required communication capabilities for the learners' "future role" and the established output tasks.

Based on the fact that OBE follows the standard of "designing back", the important initial step of course design lies on setting the clarity of outcomes. Outcomes of an ESP course originate from experiences and skills that will support learners' requirements in the prospective workplace. Designing processes concerning this ESP course incorporates: needs analysis—the decision on teaching objectives—construction of situational output tasks—visualize tasks through task chains (Figure 1). With the end goal of this blueprint, the research was firstly conducted by doing needs analysis through a set of questionnaires, given to learners, alumni and stakeholders to specifically comprehend the requirements of the IT business on the point of view of English working capacities. The three types of needs analysis of the questionnaire were responded by 76 learners (students who are taking an English class), 38 alumni, and 22 stakeholders with the highest percentage (40,9%) from IT Department in tourism businesses.
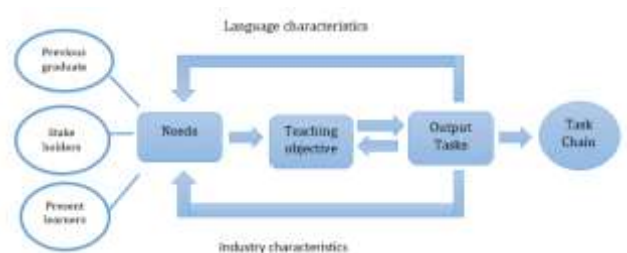


**Figure 1. Designing Process of ESP Course, adapted from Du and Wang, (2019)**

Needs analysis highlighted that all three targeted respondents agreed that ESP course should provide a main focus on the practice on practical English skills and management skills and introduction on required by a professional working atmosphere. In addition, respondents also emphasize the exposure on skills to deal with an IT entrepreurial project. Based on the results of needs analysis and the steps illustrated in Figure 1, the final outcome was disintegrated into a four-module & three-layer task chain. The four modules are 1) IT jobs and duties with a module task of simulation forum on IT industry; 2) IT systems with a module task of making a report on an competitive produce analysis; 3) communication skills in IT industry with a module task of simulating a website development report and ,4) office related workload with a module task of job interview and an entrepreneurial project presentation. The tasks given in this course were arranged with a hierarchical level of competencies and difficulties as referred to as 'task chains' in this study. Progressive and accessible task chains direct students to incorporate existing knowledge and new knowledge into a knowledge network to help students finally accomplish higher communication skills (Hutchinson and Waters, 1987).

Three-layer task chain refers to "unit-driven", "module-driven", and "course-driven", which means content and skills acquired in all situational tasks from each unit are to pave ways for module tasks, and the outputs of the previous module are preparations for the next module, and outputs of the four module tasks are for students to get ready for the final situational task (Du and Wang, 2019). The final situational task in this course is presenting a proposal on a website design competition, thereby forming an overall and progressive task chain. Visualized

driving maps make outcomes "transparent", so the learners can evaluate on their own whether the outcomes are "achievable" and how difficult those tasks are according to their own knowledge level (Du and Wang, 2019).
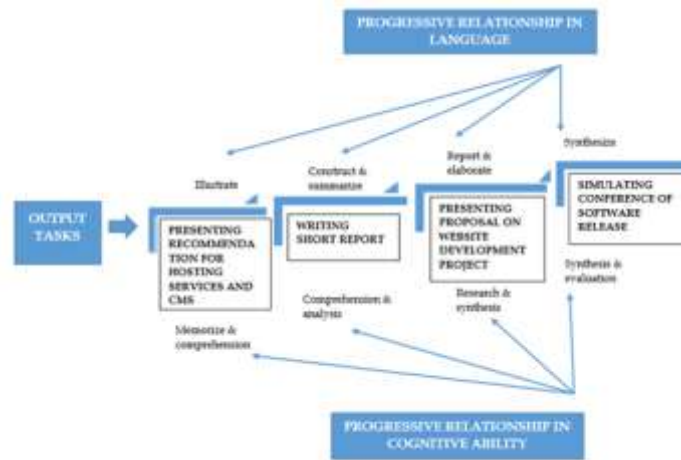


Figure 2. Task Driving Maps of Module Three

Figure 2 showed progressive tasks in module three which was used as a sample to delineate in detail how the handout was implemented in a try out in order to gain responses and feedback from students as well as to observe the learning process. Despite the fact that the handout was designed to be used in a blended learning method, the try out was only conducted in an online learning platform, i.e., google classroom due to Covid-19 pandemic. Tasks are designed and linked to meet the six cognitive levels proposed by Bloom (1956), from the low-level ability of memorizing and understanding of the high-level ability of surveying, analysing, and evaluation. From a linguistic point of view, students also practice different language skills at different stages of learning, starting from illustrating to reporting and elaboration (see Figure 2). The final module task (simulating conference of software release), is actually to synthesize outcomes from the previous three units, including presenting recommendation for hosting service and CMS, writing short report, and presenting proposal on website development project.

After the try out, students were required to fill in a set of questionnaires on handout practicality as one of important basis to advance the quality of handout in the improvement stage. The results of implementing teaching materials through try out phase revealed that students were able to comprehend the topic and were able to answer exercises. The presentation assignment on simulating conference on software release was recorded in a form of a video uploaded to the course work section in google classroom. As illustrated above, all students were offered enough learning opportunities and could acquire suitable learning results through multiple cycles of motivating, enabling and assessing. Discussions on task progress, review and supporting materials were arranged to be mostly done online while the revision of task and problem solving were designed to be done offline. By having an access to reading materials and activities provided online, students can control their own learning by choosing the texts, adjusting their own reading time, place, media and strategies, as well as monitoring their progress (Pasaribu, 2020). Hence, blended learning also allows the learners to adapt to their own level of learning by choosing their own allocations within the group and settle on choices on their own timetable.

The assignment was done well even though a few students still experienced shortcomings in terms of pronunciation and sentence structure. In general, students' achievement increased progressively based on the task chain used in module 3. As mentioned by Yuzainee Md Yusoff (2014), the findings in their study revealed that the students' achievement on the program outcomes showed large effect sizes based on students' achievement on program outcomes through OBE approaches. By utilizing the driving map as the main guide, the learning process was kept in line with the intended outcomes. Furthermore, students' progress and evaluation were able to be done in systematic stages. This underlines that OBE is not just an educational approach option, but a crucial part of general education particularly in the teaching and learning process. OBE is an approach that focuses on outcomes, where the achievements of students are measurable, proven and can be improved (Karman et al. 2011).

In terms of interaction between teachers and students, the teaching materials that have been compiled can encourage students to respond to a given topic because it is very close to the background of the knowledge they are learning. Most of the interactions go through a question and answer discussion in the comments column

on the google classroom. Interaction in the form of questions and answers and discussion through google classroom helped students to have deep understanding on the topic related to IT industry. In addition, students were also exposed to the progressive cognitive skills which strengthened their competence as professional workers. In other words, ESP handout arranged in OBE framework has given a positive impact not only to enhance learning process with a well-structured topic and task but also highlight a long-term impact on students' readiness to take part in the workplace. This is in line with one of among other virtues of OBE framework reported by (Basri et al. 2004), mentioning that some of the immediate effects and advantages of an OBE are (1) universities are always alert and concerned with the quality of the graduates produced; (2) development of more systematic, innovative and flexible teaching methods, for example, project based learning within an integrated learning environment, etc. will be encouraged; and (3) increase in student exposures to professional practices through industrial training, site visits and industry linked projects or assignments will be encouraged.

## CONCLUSION

OBE highlights the significance of preparing students for their future roles. In order to maintain students' motivation to get ready for the dynamic assignments, all communication scenarios and discussion topics originate from real cases they may encounter in their future study and work particularly on tourism issues. Before the module study, it is the lecturers' job to let students recognize the gap between skills needed for the tasks and their own levels of knowledge. Lecturers likewise need to ensure the assignments are with real communicative value and are progressively located in the framework, and that students will complete the task from simple to difficult, from the periphery to the core. OBE starts with the belief that students can benefit from any educational program only when the instructional outcomes can be measured as a result of any instructions. Higher vocational institutions should be able to monitor the degrees of outcomes expected from any academic courses through the proliferation of quality teaching by qualified lecturers. These will in-turn result in meaningful learning experiences for the students. Instructions ought to be planned as per the ideal intended outcomes. This would be mainly dependent on relevant instructional strategies utilized by the lecturers in order to accomplish significant abilities with exclusive expectations of accomplishment. A critical part of the OBE processes involves determining appropriate and measurable outcomes. Hence, the OBE is said to be the key to guaranteeing student employability in the future.

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