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Research paper

UCE Program and 3D Students Development

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Abstract

The purpose of this study is to evaluate the impact of the application of University Community Engagement (UCE) on the development of 3D students of Universiti Tun Hussein Onn Malaysia. A total of 10 students from various fields of study who are in the background of engineering flow have joined UCE. This review is more emphasis on the consistency of the elements contained in the UCE curriculum with the holistic development of students from the cognitive, affective and psychomotor perspectives. The impact of this UCE implementation can also be expressed in students. UCE is a program that emphasizes the concept of development and empowerment to produce future generations as true leaders. The program that has been collaborating with UGM has given the students the opportunity to directly participate in the project implementation on selected communities. Because of the observations found, based on the activities performed by the students have gone through each level for each specified domain. This has a positive impact on student development. Hence the concept of UCE can be used as a foundation in the development of the 3D Student Development Model concept framework.

Keywords: *UCE; Development; Empowerment; Cognitive; Affective; Psychomotor*

1. Introduction

University students are the co-leaders of the future. They are not only responsible for determining the direction of the national administration but also to strive for the stability and harmony of the nation to be sustained. For that purpose, the state needs to ensure that the education system adopted today can produce competitive and holistic students. This is because the student is not only responsible for the country, but more important is to take responsibility for oneself before moving on to the broader ecological layer of family, community and nation.

Awareness and willingness of students to change will affect the students' self-esteem. Usually the change takes place over a long period of time and requires influence from the social environment. According to Yusof, Othman et al.(1), learning through experience is more positive in human life. No doubt the students more easily impressed with the values obtained through learning by experience (experiential learning), project-based learning or knowledge concept of hands-on.

2. University Community Engagement (UCE)

University Community Engagement (UCE) is a curriculum course which is mandatory for the implementation of final year student at Gadjah Mada University, Yogyakarta Indonesia. The course which considers the devotion to this society is more towards the concept of volunteerism and the general. The orientation of implementation models forthis course is the triangulation which involves planning dimensions (plan), implementation (action) and evaluation (assessment). While the goal of UCE implementation will affect the overall ecological system of its own students, universities, communities, and governments (states). For that reason, starting in 2006, the UGM UCE Program has been known as the University Community Engagement on Community Empowerment Learning (UCE-CEL).

The impact of global pressure has led UGM to realize the importance of generating generation that capable of self-reliance in meeting various possibilities and challenges in Indonesia. A more integrated and holistic approach has been designed to be applied in the implementation of UCE-CEL. Two paradigms of emphasis are the development paradigm and empowerment. Through the concepts emphasized, UGM is confident that it will produce students capable of becoming a true leader, a leader with empathy, a nationalist spirit and sensitive to the problems surrounding the community. This orientation will clearly show the impact of the university on the academic curriculum on student and its influence on the local community in general. Based on the two paradigms of development and empowerment, there are two principles outlined in the implementation of the UCE-CELwhich is the basic principle and the principle of implementation. The basic principle refers more to the basic principles that guide the implementation of UCE-CEL. While the implementation principle is the principle used in implementing UCE-CEL. Both principles will guide the implementation of UCE-CELto achieve the target group. Not only that, it also can give the impact among students.

The basic principles outlined in the implementation of UCE-CEL more to approach able to stimulate and train students to identify problems or issues in the environmental community. Not only that, students are also required to find solutions for every problem that arises. The identified problems need to be holistically viewed, which involve economic, physical, social and spiritual aspects. These issues are not only referring to the existing problems that must be addressed even how to improve the environment to be born a society capable of governing (self-governance) family life of their own and thus their communities.

This UCE approach also reflects the orientation of university unit socialization with the community. These social interactions are in line with the role of the university as a centre for generating future generations while the community is a unit that needs to be ex-

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posed and guided by the latest knowledge and skills to have the impact of a university's interest on the community. Social interaction will create an element of knowledge transfer and technology transfer from the student to the community. According to Ismail, Mohamed et al.(2) the transfer of knowledge and skills between two units will influence the effect of communication practices between the two units. In addition, the transfer of technology commonly used in the Project-Based Learning Model (PBL) is also seen as one of the best and appropriate methods in direct impact on students .

As for the principle of implementation, there are five dimensions which emphasized the idea together (co-creation), mutual funds (co-financing/co-finding), flexibility, sustainability and research based community. Based on the teaching and learning paradigm of development and empowerment, this implementation principle requires a combination of work together between students and communities. While there are other parties involved, although the percentage of involvement is not so much needed during fieldwork, such as university and governmental superiors.

The main goal of the UCE-CEL implementation is to enhance empathy and cohesion among students. Some insights are being applied to students through UCE-CEL such as the spirit of nationalism and patriotism, the nature of responsibility, independence and also leadership. The merger of UTHM and UGM students in UCE-CEL in 2014 is seen not only to have the basic effect of UCE-CEL on students but also the sharing elements of knowledge and experience between these two countries will add positive input to the implementation of UCE-CEL, especially to the target community. In this context in addition to the element of sharing knowledge between disciplines (interdisciplinary), the program also covers all levels seen in the measurement of the ability of the conceptual framework to think that Bloom's Taxonomy. Bloom's taxonomy is a hierarchical structure that measures skills ranging from levels or lows to the highest level. There are three domains in this hierarchy of cognitive, affective and psychomotor domains. The three domains have a certain level according to the domain measurement requirements.

Students who are actively involved in such programs will learn something from their experience during the program. At this stage, students will go through the process of assimilating to positive values through the program being run. This positive value change further affects social mobility which will ultimately produce more competitive students and appreciate every opportunity that exists in life. According to Furco and Billig (3), community service is needed to improve student academic curriculum, where the results will be born balanced and holistic students.

In fact, the implementation of UCE-CEL affects both parties, namely students and communities. In the context of students, they will be applied with domains that are important in the measurement of brilliant students. Whereas in the context of community, of significant impact that could be seen was the existence of a competitive society, governing itself (self-governance) and a learning community and society.

3. Conceptual Framework for Building a 3D Student Development Model

The involvement of UTHM students in UCE-CEL in UGM is an approach that enhances 3D student development. 3D refers to the cognitive, affective and psychomotor domains. According to Bloom (4) these three domains are the framework that underlies the ability of students to think and act in a balanced and brilliant manner. The students' excellence and ability to think will be measured when students successfully pass each level at the low level and high level of each domain.

Cognitive domains refer more to mind and intellectual aspects such as knowledge and thinking skills. This domain has six levels starting from the lowest level to the highest level of knowledge, understanding, application, analysis, synthesis and evaluation. Affective domains are more related to emotions such as attitude, values, feelings and motivation. This domain has five levels ranging from modest behaviour or attitudes to the most complex of acceptance, responsiveness, self-worth, organization and characteristic attitude. The last domain is a domain that measures the nerve movement to behave. This domain, known as the psychomotor domain, has seven levels to be passed by students. Starting from the simplest level of perception to the level of originality or originality.

Implementation of UCE-CEL has three stages namely preparatory, implementation and evaluation stage. Each of these stages has a predetermined learning outcome and includes each domain that is cognitive, psychomotor and effective domain. According to Bloom (4) these three domains need to be applied in the development of curriculum structures to produce holistic students.

Ranked preparation refers to the stage of preparation of students before committing corruption to the public. At this stage students are asked to provide a proposal on the program or project that will be done to the community. Proposed proposal papers are in group form. While the proposed project needs to meet the long-term needs of the community. After the proposal paper passes the university's refinement, the student will pay the fee and register for the UCE-CEL in the semester. Of the several processes imposed at this stage, students will go through learning for cognitive, affective and psychomotor domains.

For the cognitive domain, students will go through a phase of (knowledge) to level five (synthesis). The implementation of this domain is clearly seen during the stage of providing paperwork for proposed projects to the community. At this juncture, students need to identify issues or issues that arise at the community level. Before preparing for improvement, students need to determine the appropriate model to be practiced while in the field.

As for the affective domain, the student will go through a phase (reception) and two (responsive). The implementation of this domain can be clearly seen through teamwork elements where students need to remember and hear the opinions of other partners during the process of preparing paperwork or even discussing fieldwork. Solving problems together also indicates that students are already through the affective domain at the responsive level.

For the psychomotor domain, students will go through two stages of perception level (level 1) and set (level 2). At the level of student perceptions will go through the basic level where the ability to use sensory signals for before acting according to the proper need. While the set level refers to the willingness of students to act based on current situation needs. This willingness also considers both mental, physical and emotional readiness. The activity shown at this stage is how students prepare to go to the field and translate project proposals as noted in the proposal paper.

The implementation stage is the actual level of students to translate all the theory learned in the classroom. This level requires students to apply every knowledge, skills and abilities they possess so that the proposed project is successfully implemented. Every action taken must be based on the proposal that has been approved by the university. However, there are also some actions that require action or a spontaneous response. At this stage, the three domains will be involved, namely cognitive, affective and psychomotor.

For the cognitive domain, students will go through the level one to level six (votes). These five levels are translated into project proposal papers. Whereas, the sixth level of cognitive domains refers to students' ability to assess the suitability of project implementation based on community norms as well as the development criteria of the project. Is the project conducted according to the specifications specified in the proposal paper or vice versa?

At this stage, the students will review the implementation of the walks according to the predetermined plan, compare the actual implementation of the project based on the prescribed formula, define the argument or the hypothesis of implementation in the event of unforeseen change and prove the proposed project successfully produced as proposed in the proposal paper. In the event

of a change or adaptation, students need to adjust the argument with the results of the project that has been produced.

For affective domain, students will go through a phase of (revenue) to the extent of five (formation characteristics). At this stage, students will receive many values that can help shape the character of a student - how the student's ability to operate or socialize with the community and other friends based on the value they have learned. In this level assimilation process, students will learn and improve acceptable values in society as a whole. Among the values that can be applied at this stage is the sense of responsibility, respect for others, cooperation, ethics and professionalism values.

The implementation stage requires students through high level of psychomotor of three levels (response control) up to level seven (authenticity / originality). At this stage students will go through the process of ability to behave based on what has been set. It also refers more as an act of imitation of what has been demonstrated. In the context of this UCE, students need to behave or act according to the predetermined formula and in the event of a mistake in the formula, students should imitate demonstrations demonstrated by UCEcounsellors. In the seventh stage, students will go through the process to demonstrate the ability to create or build new patterns or methods, approaches and formulas that are appropriate for successful projects. Psychomotor levels of this degree of origin stimulate students to be more creative in producing new products whether the product is based on preliminary planning as noted in the paperwork, or the resulting product as a result of any change. If a product is produced based on adaptation of current situation needs, it shows that the student has reached the sixth level in the psychomotor domain.

The final stage in the UCE-CEL implementation is the assessment. At this stage, the students will be assessed based on several predetermined components. The five components measured are general material measurements (general materials), project implementation reports, student work (performance) (implementation, discipline, co-operation and appreciation) and responsiveness referring to the successful implementation of student activities at the site. These components can be classified according to the relevant domain. For example, general material components and project implementation reports refer to cognitive domain measurement (K), implementation and responsive components refer to psychomotor domain (P) while disciplinary and appreciation components are classified under affective domain (A). Table 1 shows a summary of the implementation of elements through the three stages of UCE-CEL implementation towards the development of 3D students.

Table 1: Implementation of elements in the three stages of UCE-CEL implementation against 3D Students

Stage Action	Domain	Stage	Category
	Cognitive	1-5	Knowledge-understanding-application-analysis-synthesis
Preparation Preparation of Proposal Paper	Affective	1-2	Response
	Psychomotor	1-2	Perceptions-set
	Cognitive	1-6	Knowledge-understanding-application-analysis-synthesis-evaluation
Implementation Project implementation activities	Affective	1-5	Acceptance-responsiveness-values-organization-characteristic
	Psychomotor	3-7	Response to natural reactions-complex reactions-adaptation-originality
Assessment General materials & project implementation reports	Cognitive	1-6	Knowledge-understanding-application-analysis-synthesis-evaluation
Discipline & appreciation	Affective	1-5	Acceptance-responsiveness-values-organization-characteristic
Implementation &response	Psychomotor	1-7	Perceptions-sets- Response-reaction-natural reactions-complex re-adaptation-authenticity

4. Project Based Learning Model (PBL)

Project Based Learning (PBL) is an educational model that emphasizes projects in teaching and learning (5). While Kaldi, Filippatou et al.(6) refers PBL as an instructional method that allows students to develop skills and acquire knowledge through projects, cooperative learning and hands-on techniques. UCE-CELis a curriculum structure based on the PBL Model because the characteristics of the PBL model are learning based on meaningful questions (issues), encouraging students to think deeply and curse curiosity (preparation of proposal papers together with issue resolution issues) And close to the world of issues studied (project implementation) (6-8). In addition, the concept of UCE which emphasizes the transfer of knowledge and technology to the community is also seen in parallel with the concept of PBL is to integrate technology, information and communication into target groups.

The PBL model has adopted the 'social constructivism' theory (9). This theory considers the transfer of knowledge within the student to occur in a social environment. As a result, active students in a social environment will have a positive impact on cognitive, affective and psychomotor focus. Implementation of UCE-CEL in the environment and contains these social interactions that are said to stimulate the cognitive, affective and psychomotor development of students as they are faced with the real world.

5. Conclusions (UCE and PPMPT)

The effort to produce brilliant and holistic students is not an easy effort. Various steps and approaches need to be made so that future students are more skilled in academic and personality. Implementation of UCE-CELis a Project-Based Learning (PBL) approach where students should deal with issues and solutions in real situations. Based on UCE-CEL approach, students are believed to be more mature as each component in the implementation stage of UCE-CEL is through the low level to the highest level for each domain.

Teaching and learning system for hands-on in an open social environment that will stimulate students to conduct exploration on the issue in a community. In this context, students will seek to use their full potential to knowledge, affective and psychomotor so that the goals set can be achieved. In line with one of the surges in Malaysia's Higher Education Development Plan (PPPMPT), to produce holistic students, entrepreneurial and balanced students, active participation and involvement of students in courses such as UCE-CELcan respond to the surge.

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