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Research paper

Developing an Integrated Diversity Management Navigation System

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Abstract

The initiatives of constructive alignment to overcome the TRIPLE CHALLENGES; to embed, engage and entice the technical and engineering students in University Malaysia Pahang (UMP) to learn the university core courses of Ethnic Relations have brought both technical and operational challenges. The innovative solution is applying i-E.R.A.T as a 3-in-1 diversity management approach. Despite enticing students' learning interest through the adaptation of Edmodo as one of the e-learning tools, it also supports the university's educational outcomes on team working, leadership and problem solving; which reflect the National Education Policy on social cohesion. The methodology used to measure the effectiveness of i-E.R.A.T is by performing data analysis via mandatory on-line survey questionnaire called E-Pat that required students' opinion on the criterion that is related to e-learning. The focus group (FG) as respondents were collected from the four sections registered in the researcher's class of UHM 2022 Ethnic Relations course in Semester 1, session 2015/2016 from a population of approximately two thousand (N=2000) students from 30 sections. The results of the studies showed that majority of the students comprise of more than 90% satisfied (is that, strongly agree and agree) with the implementation of i-E.R.A.T in the teaching and learning processes.

Keywords: *Constructive Alignment; Engineering Students; Diversity Management; E-Learning; Social Cohesion*

1. Introduction

The constructive alignment Pathak (1) of the 3 in 1 package of Integrated Ethnic Relation Altruistic Team (***i-E.R.A.T)*** in which to entice, embed and engage is a comprehensive integrated e-learning modular approach in teaching Ethnic Relations to the University Malaysia Pahang (UMP) technical and engineering students. This is because teaching a non-engineering course to the engineering and technical students requires interactive e-learning tools and technology oriented interaction rather than traditional learning approach. Interactive learning is one in which active learning, group learning and classroom assessment strategies are embed at frequent intervals in order to foster deeper processing of the course content (2). These ideas lead to the innovation of *i-E.R.A.T* which improvise the traditional teaching and learning experience by introducing the application of Edmodo as one of the e-learning tools (3). On top of that, *i-E.R.A.T* aims to inculcate social cohesion and complies with the university educational outcome (UEO) of UMP, Engineering Accreditation Council (EAC) and supports Integrated Cumulative Grade Point Average (iCGPA) simultaneously. Therefore, *i-E.R.A.T* is design by observing input, process and output format (I.P.O.) (4) of the service, quality and performance model. It focuses on how the input which is university, EAC and the Ministry of Higher Education policy can be delivered (known as process) through teaching and learning with integrated and intended outcomes (known as output) concurrently. Furthermore, *i-E.R.A.T* is an innovative initiative of the existing model of constructive alignment by Biggs (5). The constructive alignment theory is an effective and efficient method in enticing the interest of the students in teaching and learning process by incorporating the concepts of constructive and alignment. The constructive concept is based on the belief that students' construct, meaning and learn by actively participating in learning activities (Shuell, 1986; Biggs, 2003). For instance, the students are given chances to engage with their instructors in expressing their views and ideas in the matter of discussion during the teaching and learning process. This will create a conducive learning environment which will assist both the students and instructors in achieving the teaching, learning and program outcomes of the courses. Whereby, the alignment concept refers to the educator's responsibilities in creating a learning environment where the learning outcomes are specified and dictate the type of teaching methods and activities needed to ensure the outcomes are achieved by the end of the module (6). In addition, this paper covers the instructor's experiences and challenges in enticing, embedding and engaging teaching and learning activities via ***i-E.R.A.T*** with impact on teaching performance and development of integrated diversity management navigation system.

2. Literature Review

The background of *i-E.R.A.T* is an effort to response to the challenge of teaching non-engineering core courses such as Ethnic Relations to technical and engineering students of UMP (7). The instructor exerts to meet all the requirements of the teaching and learning processes but at the same time to create a conducive learning ambiance which suits the learning interest of these students. The innovation fundamental principle is based on how to optimize the students' retention of the Learning Pyramid (8). The

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highest score of 90% is by teaching others. Thus, *i-E.R.A.T* is designed based on this principle.

It applies integrated approach in teaching and learning rather than conventional segregated approach with three main objectives. The first objective of *i-E.R.A.T* is enticing the learning interest of technical and engineering students to learn Ethnic Relations through the optimization of *Edmodo* as an integrated and modular e-learning platform. According to Kenkonen-Moneta & Moneta, in Hong Kong, students who used e-learning tools outperformed those in traditional classes (9). Using Edmodo as e-learning tools can further enhance students understanding and interaction inside and outside class. Edmodo is a free and private on-line social platform for teachers and students to share ideas, files, events and assignments. Edmodo provides classrooms as a safe and easy way to connect and collaborate (3). Both statements are in line with the chronosystem in the Bronfrenbrenner Ecological Theory (10). According to the theory, the teaching and learning process shall accommodate the orientation and learning preferences of the students. For instance, the Z-generation is more oriented towards information and technology. They are self-learning where all information is at the tip of their fingers through browsing and searching process from the internet. They are visual generation and like to invent and innovate new things. Thus, the combination of real and virtual platform as an approach in teaching and learning process will encourage them to socialize and interact both during the face-to-face lectures and virtual classroom in a way that suits their learning interests (11).

Secondly, embedding the academic requirement and policies of the university, EAC and ministry comprehensively. The effort to embed the core courses like Ethnic Relation that comply with all the policies while enticing the learning interest of engineering students will lead to both technical and operational challenges and responses. The technical challenges are to embed the modular approach of course plan integrated with assessments that comply with two credit hours course. In other words, the lecturer must be fair and wise whenever he or she wants to adopt and adapt any e-learning tools to be integrated into their respective course (11). They must be alert with the related academic policies and guidelines. For the university core courses such as the Ethnic Relations, instructors shall design the module so that it can fulfill the objectives of the course which are evaluating the important of national identity and volunteerism towards creating a responsible citizen, discussing the issues and challenges in the context of ethnic relations in Malaysia and building social relations and social interactions. Apparently, a particular point of concern is that all the activities involved must be compatible with the two credit hours and students in class and out of class learning time (or SLT). This practice complies with the Engineering Accreditation Council (EAC) requirements which are mandatory for all courses such as the number of hours that students spend to interact and engage with e-learning platform others which include the types of activities assessed (11). In response to the technical challenges in the e-learning platform such as *Edmodo*, a thorough understanding of the objectives and course outcomes of the related courses and their delivery process as well as the assessment method is vital. Simultaneously, the operational challenges of embedding *Edmodo* application synchronously within the curriculum especially engineering curriculum lies in the execution of the modular oriented course materials integrated into the planned course activities and assessments. Such 3-in-1 approach combination corresponds to operational challenges in both the real and virtual modes. This is an indication that the module is an essential element of the teaching and learning activities.

Finally, the third objective is to engage both students and instructor within the 14 academic weeks via real and virtual platforms. The simplicity in terms of interface and accessibility makes *Edmodo* an effective learning sphere that allows an active participation from students (3). In addition, *Edmodo* is accessible online and from any mobile devices via free smart phone applications. The incorporation of *Edmodo* in the mobile apps application will promote creative and interactive platform for both students' and instructor's feedback and engagement that suits the learning interest of the technical and engineering students. This will allow flexibility of time and space for both instructors and students outside the official lecture hours. *Edmodo* is also built on a microblogging model adapted to be used in education, where it will allow the teachers to post messages and notes, discuss classroom topics, and give assignments and grade classwork, share contents and materials, and network and exchange ideas with their colleagues. In addition, they can maintain a class calendar, store and share files, have a public (RSS) stream, and conduct polls (3). This holistic system will extend the inculcation of social cohesion into the living academic experience in both real and virtual world. In practice, all the activities during lecture hours and the on-line activities are integrated into the *Edmodo* engagement. For instance, three out of four assessments require students to make submissions via *Edmodo.* The three assessments are reflection, team project and mid-semester test with on-line submission mode (11). For engineering students who generally have minimal interest in non-engineering courses like *Ethnic Relations*, this attempt has enabled students to fulfil the course assessment requirements more interactively and efficiently. Hence, learning becomes more student-centered (12). In this example, students are required to read the course module, understand the module and lecture notes, reproduce them and share their understanding through the three assessment conducted in classroom settings as well as in the *Edmodo* on-line e-learning platform. In addition, students can incorporate *Edmodo* into other popular and widely used social networking applications. Lecturers and students can and should be able to utilize the *Edmodo* platform interactively from the course plan settings, lectures and assessments activities. It is possible to maintain interactive communication through announcements, course notes, posts, assignments and projects submissions (3). All activities in *Edmodo* including the progress of the assessments submission are well recorded and tracked which can be monitored by lecturers and followed by students anytime and anywhere (13). This allows students and lecturers to stay not only interactively connected but also updated with the latest development taking place within the course as well as the progress and the performance of students individually or in groups.

3. Methodology

The purposive sampling method had been employed in this quantitative research. The focus group or respondents were collected from the four sections registered for the researcher's class of UHM 2022 Ethnic Relations course in

Semester 1, session 2015/2016 from a population of approximately two thousand (N=2000) students comprise of 30 sections. In addition, the nature of this course is needed to be clarified before stressing on the discussions about the effectiveness and performances of this course. This is vital in order to get the overall situation on how this course been conducted. In this course, a lecture of 20 hours/semester or two hours/week was conducted whereby during the first week of lecture, students were given a briefing regarding the course and its objectives, learning outcomes, course content, and criteria of assessment. There are about 50 to 70 students per section; therefore, it was difficult for lecturers to interact with individual students or even to have a one-to-one interaction with them. Due to that, students were divided into small groups of 5-7 per group, with the criteria that the members comprised of different multi-ethnic groups, different genders and different faculties. A group leader or person-in-charge was selected by the group members. Of the four assessments students were required to do (i.e., final exam (40%), problem-based learning project (30% - video presentation and report) mid semester test (20%) and movie reflection (10%)), the problem based project was a group assignment (11). At the end of the semester, the effectiveness of ***i-E.R.A.T*** is measured by performing data analysis via a mandatory

on-line survey questionnaire called E-Pat that students have to fill in at the end of the semester. E-Pat is an instructional evaluation conducted by the Centre for Academic Innovation & Competitiveness (CAIC) to evaluate the overall effectiveness of teaching and learning practice delivered by academicians at the University Malaysia Pahang (UMP). Students usually complete this on-line survey outside the class time and they would take 20 minutes to complete the survey. During this field study, data were obtained from multiple sections that required students' opinion on the criterion that is related to the e-learning. There were six items in this section, namely:

1. Lecturer knew the course content material well.
2. Lecturer was innovative and creative in conducting the course.
3. Lecturer was responsive to questions asked by students.
4. Lecturer encouraged student to use technology in e-learning (for example, completing assignment, project, and lab work).
5. Lecturer encouraged two way communications in the lesson.
6. Lecturer uploaded resource materials online so that students can get easy access.

All the items listed above were measured based on a 5-point Likert Scale ranging from strongly disagree (1) to strongly agree (5).

4. Results and Findings

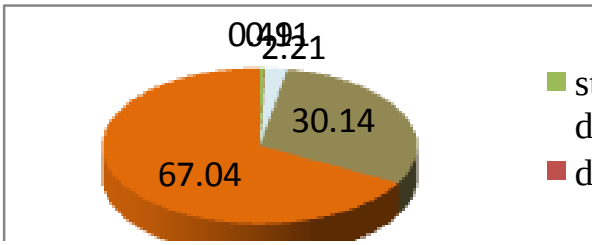


Fig. 1: Teaching Evaluation
Source: UHM2022 Ethnic Relations

The Figure 1 above shows the result from teaching evaluation among the UHM 2022 Ethnic Relations students. Overall, Figure 1 shows that the lecturer's performance was excellent at 67.04% due to majority of students strongly agree with the lecturer's performance. The performance was measured by 6 items, namely: course material, innovation and creativity, assertiveness, IT savvy, interaction and resourceful. Then, about 30.14% of the students agree and followed by neutral at 2.21%, strongly disagree at 0.49% and disagree at 0.11%.

Table 1: Feedback from Students

ITEMS	SD n (%)	D n (%)	N n (%)	A n (%)	SA n (%)
Lecturer knew the course material well	1 (0.69)	0 (0)	3 (2.07)	42 (28.96)	99 (68.27)
Lecturer was innovative and creative in conducting the course	1 (0.69)	0 (0)	4 (2.76)	48 (33.10)	92 (63.45)
Lecturer was responsive to questions asked by students	1 (0.69)	0 (0)	3 (2.07)	47 (32.41)	94 (64.82)
Lecturer encourage student to use technology in e-learning (example completing assignment, project, lab work)	1 (0.69)	0 (0)	3 (2.07)	42 (28.96)	99 (68.27)
Lecturer encouraged two way communications in the lesson	1 (0.69)	0 (0)	2 (1.37)	50 (34.48)	92 (63.44)
Lecturer uploaded resource materials online so that students can get easy access	1 (0.69)	0 (0)	3 (2.07)	47 (32.41)	94 (64.82)

Note: SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree

Table 1 above shows that the majority of the students gave positive feedback towards lecturer's performance. From Table 1, (n=99), 68.27% respondents strongly agree that lecturers knew the course materials well. This is also supported by another 28.96% where (n=42) students agree with this statement. On Item 2, lecturer was innovative and creative in conducting the course, which resulted in 92 respondents or 63.45% strongly agreed with the criterion. 94 respondents which correlate to 64.82% strongly agreed that the lecturer was responsive to questions asked by students via Edmodo. In addition, 47 students or 28.96% agree with this element while the score sum of 93.78% which equates to 141 respondents support the statement. The result of Item 4 is the same as Item 1 where majority of the respondents (n=99) at 68.27% strongly agreed that their lecturer encouraged students to use technology in e-learning for instance, in and for assignment completion, project, and lab work. Moreover, 92 students (63.44%) strongly agreed that lecturer's encourage their students by using Edmodo as a two-way communication in lessons. Finally, about 94 students (64.82%) strongly agreed with the uploaded resource materials so that students can get easy access. Apparently, *i-E.R.A.T* adopted Continuous Quality Improvement (CQI) as a method to ensure the quality assurance of this system. Continuous Quality Improvement (CQI) is a strategy to seek the continuous improvement, gradual quality of the product, services, productivity and competitiveness with the participation of all staff (14). The development of *i-E.R.A.T DIVo*© mobile learning apps, and real and virtual training course through *i-E.R.A.T DIVo*© *HARMONion* have extend the inculcation of social cohesion into the living academic experience in both the real and the virtual world. Through this initiatives, the idea of social cohesion has grown beyond classroom experiences to global community engagements and recognitions. This effort will be a stepping stone to develop an international quality standard in diversity management where the central idea to this theory are engagement and inclusiveness. Subsequently, this idea will provide an alternative approach in honoring the sense of belongings and respects within the society which substantially will create a sustainable ecology of diversity management that will prosper the world.

5. Conclusion

The results from this study signify that i-*E.R.A.T* is able to inculcate social cohesiveness among students towards achieving unity. It also provides a 3 in 1 teaching and learning techniques which are university, government and EAC policies compliant. The major contribution of *i-E.R.A.T* is converting subjective and intangible concepts and theories in social sciences into objective and tangible output. Finally, *i-E.R.A.T* also allows team-working and problem-solving to be translated into learning by doing mode.

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