

Malaysia Technical University Lecturer Preferences Towards Heutagogical Activities

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Abstract: Heutagogy activities in teaching and learning provide full autonomy to the students in designing the teaching and learning activities. With this full autonomy and shifting of the roles, it is important for the lecturers to practiced the heutagogy activities that can enhance and assist the students' role in the classroom. Thus, this paper aims to identify the dominant heutagogical domains practiced among the Malaysia technical university lecturers. A survey method was used as a data collection. Data were obtained from 206 randomly selected Malaysia technical university lecturers through a set of the questionnaire developed by the researcher. The data were analyzed using descriptive statistics. The findings show that the most dominant heutagogy domain practised by the technical university lecturers is Explore and the least practiced is the domain of Reflect. This study has implication on providing insight into the teaching and learning activities that can be design based on the lecturer's heutagogical skills.

Index Terms: Heutagogy activities, Self-Directed Learning, Descriptive analysis, Technical university lecturer.

1 INTRODUCTION

Teaching method refers to the general principles, pedagogy and management strategies used for classroom instruction. The main teaching approach in teaching and learning is teacher-centered approach and student-centered approach. Both approach are important based on what fits the classroom, which is the educational philosophy, classroom demographic, subject areas and the school mission statement. On the other hand, [1] stated that classroom must be the place where thinking occurs. Thus, the lesson designs must allow student to construct meaning and connect with the environment with the integration of technologies and digital. Teaching and learning continuum begin with pedagogy as level one that focus on the engagement of the learner. In pedagogy, learner maturity and autonomy requirement are very low while instructor control and course structuring required at high level. Then, forward in level two, is the andragogy that focus on cultivation. This is where the competency is develop with linear design and learning approach. Students are teach to learn the content while the learning process are more on instructor-learner directed. Then, final level is heutagogy that focus on realization. This level requires high level of learner maturity and autonomy with minimum instructor control and course structure. The heutagogy activities is an opposed to teacher-centered approach and encourage student to design their own course of study whereby the outline is given by the teachers [2]. In this, the capability of students will be developed. The students are teach to understand how they learn with non-linear design and learning approach. They are more responsible in their learning including on what is taught and how it is learned.

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The learning has to be towards self-directed learning that lead to self-determined learning. The teaching style has to shift from teacher centered learning to student centered learning. The role of teachers also shifted towards supporting and guiding the learning process. It is also important for the teachers to realize the changes of their roles since learners and teachers need to work in partnership as the negotiation took place [3]. This is important as teachers should be more concern on developing the learners' capability rather than embedding the discipline based skills and knowledge [4]. In designing heutagogical activities, there are six elements of heutagogy that can be used as guideline. The elements proposed by [3] can be referred in Table 1 below. This elements help lecturer to be aware of the learners. Since this approach provide full autonomy to the students, it could be an overwhelming responsibility to the students to start taking in charge of their learning activities.

TABLE 1
HEUTAGOGY ELEMENTS IN DESIGNING HEUTAGOGY ACTIVITIES

Element	Explanation
Explore	Non-linear searching of new paths of learning creation of a culture of learner discovery and inquiry
Create	Development of new content by building upon what has been learned
Collaboration	Working with others to build and construct new knowledge and content
Connect	Connecting with others both inside and outside of the classroom to create new networks for supporting learning, creating personal learning environments for lifelong learning
Share	Sharing of new content with others in the community, showcasing acquisition of skills and competencies
Reflect	Thinking about what has been learned and how it has been learned, as well as how this process and the new knowledge acquired influences mental models, beliefs and values

The implementation of heutagogical activities in classroom had resulted in producing quality teachers. Blaschke [5] shows that, by implemented a heutagogical activities in teacher education programme, the programme had managed to improve teacher outcome, more capable teachers as well as increase the confidence in perceptions. Not only that, it is also reported that by equipped teachers with heutagogical skills, it

allows them to navigate their teaching to promote the self-learning abilities of different learners [6]. Thus, it is important for the teachers to have heutagogical skills in order to produce students that can fulfil the requirement of the 21st Century workplace. Therefore, the aim of this paper is to identify the dominant heutagogical activities among the technical university lecturers during the teaching and learning session.

2 METHODOLOGY

Data in this paper is drawn from a larger descriptive study involving 206 Malaysia technical university lecturers randomly selected from a local technical university. A set of questionnaire was developed and used to collect the data. The questionnaire is divided into two parts, Part A and Part B. Part A consists of demographic data of the respondents related to gender, faculty, and teaching experience. Part B consists of items related to the practice of the heutagogical domain in the lecturers' learning activities. The domains are explore, create, collaborate, connect, share and reflect [3]. The questionnaire was tested beforehand for reliability. It indicates a high reliability coefficient, $\alpha = 0.947$. Data were analysed using descriptive analysis involving frequencies and percentage for demographic data, and mean scores and standard deviation based on five categories of Likert Scale: Never, Rare, Sometimes, often and Always for the practice of heutagogical domains. All data were analysed using SPSS software.

3 FINDING AND DISCUSSION

The demographic data of the respondents are presented in Table 2 involving gender, faculty and teaching experience. The finding indicates that 51.9% of the respondents are of male lecturers and 48.1% are female lecturers. Most of the respondents come from the Faculty of Civil and Environmental Engineering ($f=45$, 21.8%) and majority of them have experience of teaching between 3-8 years ($f=84$, 40.8%).

TABLE 2
DEMOGRAPHIC DATA OF THE RESPONDENTS

Item	f	Percentages (%)
Gender		
Male	107	51.9
Female	99	48.1
Faculty		
Faculty of Civil and Environmental Engineering	45	21.8
Faculty of Electrical and Electronic Engineering	33	16.0
Faculty of Mechanical and Manufacturing Engineering	38	18.4
Faculty of Technology Management and Business	40	19.4
Faculty of Computer Science and Information Technology	19	9.2
Faculty of Applied Sciences and Technology	14	6.8
Faculty of Engineering Technology	10	4.9
Teaching Experience		
Less than 3 years	34	16.5
3-8 years	84	40.8
9-15 years	72	35.0
More than 15 years	16	7.8

3.1 Practice of Heutagogical activities for domain of explore.

On the explore domain, the most practiced activities done by

Malaysia technical university lecturers is giving students the freedom to seek more information on the topic taught ($M=4.04$; $SD=0.570$). This indicates the flexibility of the lecturers in the teaching and learning process. By allowing students to explore the information on their own, at the same time teaching the students on how to navigate the information they get. Khambayat and Majumdar [7] stated that navigationism is important for future learners that lies beyond constructivism and lead students to find, identify, manipulate and evaluate information and knowledge and integrate with real life for problem solving. Thus, by giving freedom to students in seeking information will help them to have better navigation skills. Meanwhile, the least practiced explore activity is encouraging students to plan their learning strategies to understand a topic with mean score 3.80 ($SD=0.703$). This is the least practiced activity among the lecturers since planning learning strategies requires knowledge and understanding of the curriculum. Therefore, lecturers are required to involve in this planning rather than leave it to the students. The practice of heutagogical activities for domain of explore can be referred in Table 3.

TABLE 3
HEUTAGOGICAL ACTIVITIES PRACTICED AMONG MALAYSIA TECHNICAL UNIVERSITY LECTURER FOR THE DOMAIN OF EXPLORE

Item	Statement	Mean score	SD
EX01	I give students the freedom to seek more information on the topic I taught	4.04	0.570
EX02	I give freedom to students to search additional learning materials	3.99	0.632
EX04	I encourage students to ask questions throughout the learning process	3.97	0.691
EX03	I discuss with students through various mediums to help them improve their learning	3.84	0.666
EX05	I guide students the steps to solve problems in assignments	3.82	0.674
EX06	I encourage students to plan their learning strategies to understand a topic	3.80	0.703

3.2 Practice of Heutagogical activities for domain of create.

On the domain of create, the most practiced activities is giving assignments that require students to generate solutions to problems with mean score 3.94 ($SD=0.685$). Problem solving has been identified as one of the 21st Century Skills by many scholars [7], [8], [9], [10], [11], [12], [13], [14], [15], [16]. It is important for the students to master this skill so that they can become quality workers. Thus, the practice of this activity in classroom by the lecturers are deemed to be appropriate and practical with the current educational needs. In the meantime, the least practiced create activities is motivating students to write in social media to share their acquired learning outcomes ($M=3.41$; $SD=0.931$). As mentioned by [17], the uses of social media such as Facebook risk the students to engage in casual social conversation that can become a distraction for the students. It will affect the student's engagement on the lesson. Table 4 shows the heutagogical activities practiced among students for the domain of create.

TABLE 4
HEUTAGOGICAL ACTIVITIES PRACTICED AMONG
MALAYSIA TECHNICAL UNIVERSITY LECTURER FOR THE
DOMAIN OF CREATE

Item	Statement	Mean score	SD
CR09	I give assignments that require students to generate solution to problems	3.94	0.685
CR11	I adapt active learning approach during delivering learning content	3.87	0.668
CR10	I develop lessons according to students' learning progress	3.85	0.646
CR08	I provide learning platform for students to have discussion on the learning topic among themselves	3.77	0.727
CR12	I design learning activities to enhance students' learning	3.77	0.699
CR07	I motivate students to write in social media to share their acquired learning outcomes	3.41	0.931

3.3 Practice of Heutagogical activities for domain of collaboration.

As for the domain of collaboration, the lecturers had indicated the activities of encouraging students to engage in small talks with member of other groups to accomplish given task ($M=3.85$, $SD=0.740$) as the most practiced collaboration activity. By engaging in small talk, a collaboration can be created easier. Study by [18] had shown that by involving students with small talk, several benefits has been identified including promote creativity that lead to discovering of new ideas. Meanwhile, the least practiced heutagogical activities is encouraging students to exchange ideas with other institutions ($M=3.51$; $SD=0.865$). This could be due to the fact that this activity requires bigger collaboration of the students. Thus, it limits the possible activity that can be done. Therefore lecturers had practiced this activity less during lesson. Table 5 shows the heutagogical activities practices among students for the domain of collaborate.

TABLE 5
HEUTAGOGICAL ACTIVITIES PRACTICED AMONG
MALAYSIA TECHNICAL UNIVERSITY LECTURER FOR THE
DOMAIN OF COLLABORATE

Item	Statement	Mean score	SD
CL15	I encourage students to engage in small talks with member of other groups to accomplish given task	3.85	0.740
CL14	I remind students to be tolerant of different ideas when doing work with other groups	3.80	0.782
CL16	I let students participate in negotiations to achieve a consensus with members of other groups	3.79	0.735
CL17	I encourage students to discuss between different groups to solve a problem	3.74	0.684
CL18	I remind students to monitor other groups' performance in achieving a common goal	3.60	0.788
CL13	I encourage students to exchange ideas with other institutions	3.51	0.865

3.4 Practice of Heutagogical activities for domain of

connect.

On the domain of connect, the most practiced heutagogical activities by the lecturer is encouraging students to seek feedback from others to enhance their learning with mean score 3.75 ($SD=0.735$). The peer assessment approach had been studied by previous scholars with positive effects reported [19], [20], [21]. The feedback given by their peers will help students in doing self-reflection on their learning process. Meanwhile, the least practiced activities is asking students to link with suitable agencies/organizations/individuals that can support their learning ($M=3.54$; $SD=0.818$). Developing a networking with other agencies provides many benefits especially for technical students, as they have to work closely with the industries. However, this networking requires a lot of efforts and time consuming. Thus, it doesn't requires a high implementation rate during the lesson. Table 6 shows the heutagogical activities practices among students for the domain of connect.

TABLE 6
HEUTAGOGICAL ACTIVITIES PRACTICED AMONG
MALAYSIA TECHNICAL UNIVERSITY LECTURER FOR THE
DOMAIN OF CONNECT

Item	Statement	Mean score	SD
CN19	I encourage students to seek feedback from others to enhance their learning	3.75	0.735
CN23	I guide student to use suitable method to overcome misunderstanding in learning interactions	3.71	0.693
CN24	I encourage students to engage with industries to gain experiences as part of their learning	3.69	0.821
CN20	I instruct students to join online forum for discussion on learning topics	3.56	0.880
CN22	I give criteria for students to select suitable agencies/organizations /individuals to connect with to enhance their learning experience	3.55	0.799
CN21	I ask students to link with suitable agencies /organizations /individuals that can support their learning	3.54	0.818

3.5 Practice of Heutagogical activities for domain of share.

On the domain of share, the most practiced activities is asking students to present their work in front of their peers ($M=3.89$; $SD=0.664$). This sharing activity allows the lecturer to evaluate the communication skills of the students in delivering the information. a good communication skills will help students improve their marketability and build a stronger foundation in the future [9]. Study also indicates that students who involved in talkative classrooms yield a better results [22]. Thus, it is important for the lecturer to increase activities that requires the verbal contribution from the students. On the other hand, the least practiced activities by the lecturers is asking students to use apps such as Slide Share, Research Gate, Twitter and Facebook to share ideas ($M=3.50$; $SD=0.763$). This sharing medium that focus on digital applications could be alien to some lecturers due to the generation gap. Thus, do not seem these sharing apps as suitable medium to share ideas. Majumdar [23] had mention that there is at least one generation gap between teachers and students in the 21st Century Education that differ mostly on the technological aspects. Table 7 shows the heutagogical activities practices among students for the domain of share.

TABLE 7
HEUTAGOGICAL ACTIVITIES PRACTICED AMONG
MALAYSIA TECHNICAL UNIVERSITY LECTURER FOR THE
DOMAIN OF SHARE

Item	Statement	Mean score	SD
SH29	I ask students to present their work in front of their peers	3.89	0.664
SH30	I encourage students to provide feedback to other groups' performance	3.75	0.768
SH27	I instruct students to talk about their learning experiences	3.69	0.733
SH26	I encourage students to exchange ideas within and outside institution	3.67	0.783
SH28	I encourage students to disseminate their writings to others	3.66	0.773
SH25	I ask students to use apps such as Slide Share, Research Gate, Twitter and Facebook to share ideas	3.50	0.763

3.6 Practice of Heutagogical activities for domain of reflect.

On the domain of reflect, the most practiced heutagogical activities among the lecturers is encouraging students to look back at their learning experiences to increase their self-awareness with the mean score of 3.89 (SD=0.671). It is crucial for the lecturers to have students reflecting their learning experience as this can contribute towards the effective system in teaching especially for TVET [24]. The least practiced activities on the other hand is asking students to identify changes in knowledge that they experience from the learning process (M=3.67; SD=0.732). Since changes could be subjective for the students, it is harder for the lecturers to get the reflection of the students. Thus, it is less practiced compare to other reflect activities. Table 8 shows the heutagogical activities practiced by the students for the domain of reflect.

TABLE 8
HEUTAGOGICAL ACTIVITIES PRACTICED AMONG
MALAYSIA TECHNICAL UNIVERSITY LECTURER FOR THE
DOMAIN OF REFLECT

Item	Statement	Mean score	SD
RF31	I encourage students to look back at their learning experiences to increase their self-awareness	3.86	0.671
RF32	I ask students to explain what they have learnt from previous lesson	3.81	0.623
RF36	I help students to plan future learning activities based on lesson learnt	3.81	0.725
RF34	I encourage students to do self-assessment on their learning progress	3.75	0.700
RF33	I encourage students to express their feeling on the learning experience during class	3.69	0.711
RF35	I ask students to identify changes in knowledge that they experience from the learning process	3.67	0.732

3.7 Practice of Heutagogical activities for all domains.

Overall, the analysis had indicates the most practiced heutagogical activities among the six domains is the domain of collaborate with the mean score of 3.91 (SD=0.462). It is undeniable that collaboration is important for self-directed

learning as its open up mana resources for the students. Reeves, Pun and Chung [25] stated that teacher collaboration produce significant predictor on student achievement. In this collaboration, the role of lecturers focus on becoming the coach, letting the students forge forward and step in only when necessary [3], [9]. The mode of collaboration needs to be design according to the current trend involving technologies thus creating an online collaboration [3]. On contrary, the least practiced domain is the domain of connect (M=3.63, SD=0.608). Even though connect is deem as critical aspect in heutagogical approach [3], the implementation of it among the lecturers are still low. [26] listed connect as one of the characteristic of 21st Century teacher. The use of technologies including social media can help in improving the connection between teachers and students. Thus, lecturers need to have knowledge on the current social media and apps that can facilitate the connect activities during teaching and learning process. Table 9 shows the heutagogical domains practiced by the Malaysia technical university lecturer.

TABLE 9
THE HEUTAGOGICAL DOMAINS PRACTICED BY THE
MALAYSIA TECHNICAL UNIVERSITY LECTURER

Domain	Mean Score	SD
Explore	3.91	0.462
Create	3.77	0.465
Reflect	3.77	0.539
Collaborate	3.71	0.564
Share	3.69	0.529
Connect	3.63	0.608

4 CONCLUSION

The study has shown that the most practiced heutagogical activities among technical university lecturer is from the domain of explore. With rapid development in current technologies, it is important for the lecturers to be able to explore new methods and instrument to make teaching and learning an interactive and interesting process. This can encourage lecturers to be innovative through the exploration. In line with the 21st Century educators [16], [23], the heutagogy skills that induced by the exploration domain will help lecturers to become educators that meets the 21st Century Education requirement. With the finding from this study, it is hope that lecturers are able to design their teaching and learning approach as well as strengthening their heutagogy skills.

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