

## APPLYING DIGITAL PEDAGOGY AT HCMC INDUSTRY AND TRADE COLLEGE

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### ABSTRACT

*In EMVITET Erasmus+ capacity building project the digital pedagogy has been a very central theme in developing Education 4.0. Digital pedagogy plays an essential role in modern education and its role in ensuring and improving the quality of training is even further emphasised when COVID-19 pandemic is still unpredictable around the world. However, thorough application of digital pedagogy at HCMC Industry and Trade College (HITC) has not received proper attention from the majority of lecturers. The authors have applied digital pedagogy to teach theory with the main goal of assessing student satisfaction and the results show that the digital pedagogy is feasible to ensure and improve the quality of training in present and in the future.*

**Keyword:** Digital Pedagogy, Learning Management System, Student-centred learning, Community based learning

### 1. INTRODUCTION

The application of digital pedagogy in education is an inevitable tendency in Vietnam nowadays. Especially, it promotes a great role in ensuring and improving the quality of training in education when COVID-19 pandemic is still highly complicated around the world (Albrahim, 2020). Nevertheless, an ad hoc application of digital pedagogy at the Ho Chi Minh City Industry and Trade College (HITC) has not been appreciated by faculty members. In this paper, the authors investigate the application of digital pedagogy to teach a theoretical course with the main goal of assessing student satisfaction and give solutions for applying digital pedagogy effectively and widely in HITC. The course of English for Control & Automation Engineering was chosen for applying the digital pedagogy with a total of 50 students. Furthermore, a questionnaire was delivered at the end of the semester to assess students' satisfactions.

### 2. DIGITAL PEDAGOGY

Digital pedagogy is a form of distance learning. So far, digital pedagogy has

changed to adapt to the requirements of the society. The most common features of digital pedagogy (Ruhalahti, 2019) include

- (i) *Authentic* refers to educational and instructional techniques focusing on connecting what students are taught in school to real-world issues, problems, and applications (Ruhalahti, 2019).
- (ii) *Student-centred learning* focuses on the learner and their needs, rather than being centred around the teacher's input (Kaput, 2018).
- (iii) *Ubiquity* involves with learning can be happened everywhere and anytime (Ruhalahti, 2019).
- (iv) *Dialogical, collaborative and community based learning* refer to **learning** that takes place through dialogue; educational approach of using groups to enhance **learning** through working together; and learning through active participation in meaningful and planned service experiences in the **community** that are directly related to course content, respectively. (Rojas-Drummond et al., 2013; Wegerif, 2006)

(v) *Suitability for students' perception* involves the study load fitting students' perception (Davies, 2014; Lee & Tsai, 2011).

### 3. DIGITAL PEDAGOGY DEVELOPMENT AT HITC

HITC will apply digital pedagogy as mentioned in the section 2. However, it will take at least three years to fulfil the common features of digital pedagogy.

An LMS plays an important role in e-learning and digital pedagogy (Georgouli et al., 2008). So the E-Learning powered by VNPT was utilized at the beginning of 2020. Furthermore, some lectures have applied Internet-based learning, traditional learning and blended learning (Lee & Tsai, 2011) applied since 2019 on some limited courses. The main schedule for applying the digital pedagogy can be summarized:

Step 1: Establish an LMS, upgrade internet infrastructure and train digital pedagogy for all lectures.

Step 2: Apply digital pedagogy on some limited courses and get the feedbacks from students.

Step 3: Evaluate and adjust learning methods to fit the current conditions (Khan & Ahmad, 2014; Means et al., 2013; Moore et al., 2011).

In order to initiate digital pedagogy from the beginning of 2020 among faculty, HITC has started using the Learning Management System (LMS) E-Learning provided by VNPT (Fig.1) and applying the Student-centred learning model developed by Kaput (Kaput, 2018) (Fig.2).

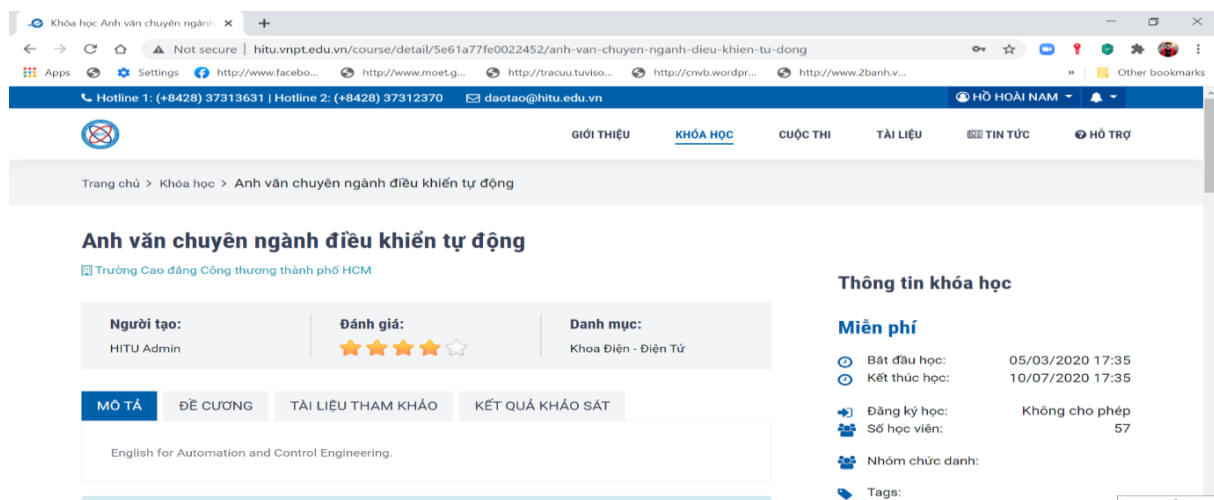


Figure 1. LMS E-Learning system of VNPT

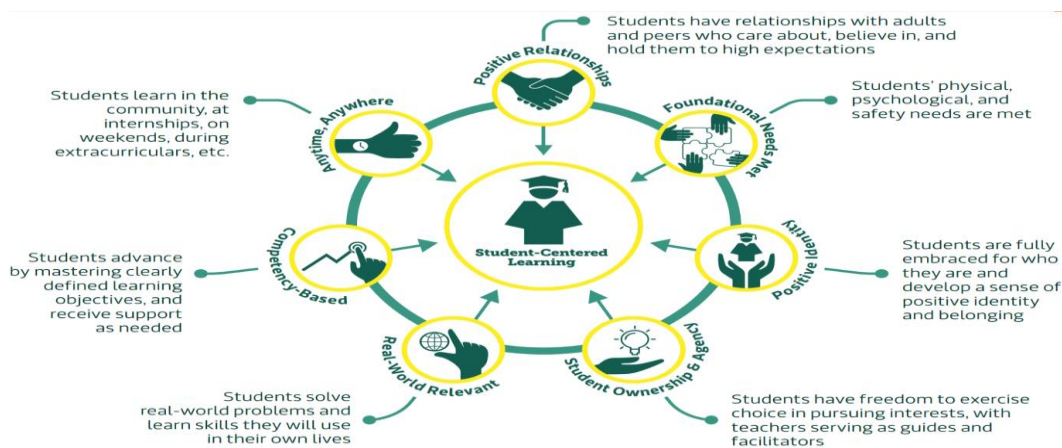


Figure 2. Student-centred learning model by Kaput (Kaput, 2018)

#### 4. EVALUATION OF STUDENTS PERSPECTIVES

The authors have applied digital pedagogy to the subject "English for Automation and Control Engineering" in the 2<sup>nd</sup> semester of SY 2019-2020 (from May 2020 to August 2020) with a total of 50 students. It should be noted that, in this

period, the authors only implemented assessment for student satisfaction for the last 3 features out of the 5 above-mentioned features. A survey questionnaire has been developed to collect feedback from students. Table 1 shows break-down details for each of the 3 investigated features.

*Table 1. Characteristic details*

No	Characteristics	Details
1	Ubiquity	<ul style="list-style-type: none"> <li>✓ Learning materials and video lectures</li> <li>✓ Basic information and tools for self-study</li> <li>✓ Searching skill for reliable information</li> </ul>
2	Communicative, collaborative and community based learning	<ul style="list-style-type: none"> <li>✓ Supportive learning environment for communicative, collaborative and group learning</li> <li>✓ Encouraging supports for students to develop a habit of communicative, collaborative and group learning</li> </ul>
3	Suitability for students' perception	<ul style="list-style-type: none"> <li>✓ Suitable curriculum</li> <li>✓ Suitable learning time arrangement</li> <li>✓ Properly organized class</li> </ul>

For the feature "Ubiquity", the authors digitized the lectures, recorded video of difficult contents, recorded videos of lessons and then uploaded them to the VNPT LMS E-Learning system. Students could access and view information by using a smart device or an internet-connected computer. Additionally, some basic tools are also provided for students such as:

- ✓ Zoom, Cisco Webex Meet, Google Hangouts Meet: for learning, communication and online group discussion
- ✓ Mentimeter, Google Form: for collecting information.
- ✓ Google Drive: for sharing and saving information
- ✓ Asana: for making and tracking work progress
- ✓ MS Office: for entering, editing text, processing and presenting data.

Besides, the authors also give suggestions for students to practice their information searching skills.

Regarding the feature "Communicative, collaborative and community based learning", the authors tried to create an environment where students can apply the communicative and cooperative methods by questions, mini-exercises, games, etc., encourage and motivate students to form a habit of exchanging and communicating throughout the course.

For the feature " Suitability for students' perception ", the authors have fine-tuned the content, time arrangement and class organization for each lesson so that students with average learning capability could easily perceive but the output standards of the subject were still ensured. Content, time arrangement and class organization were adjusted according to the information obtained from previous lessons through

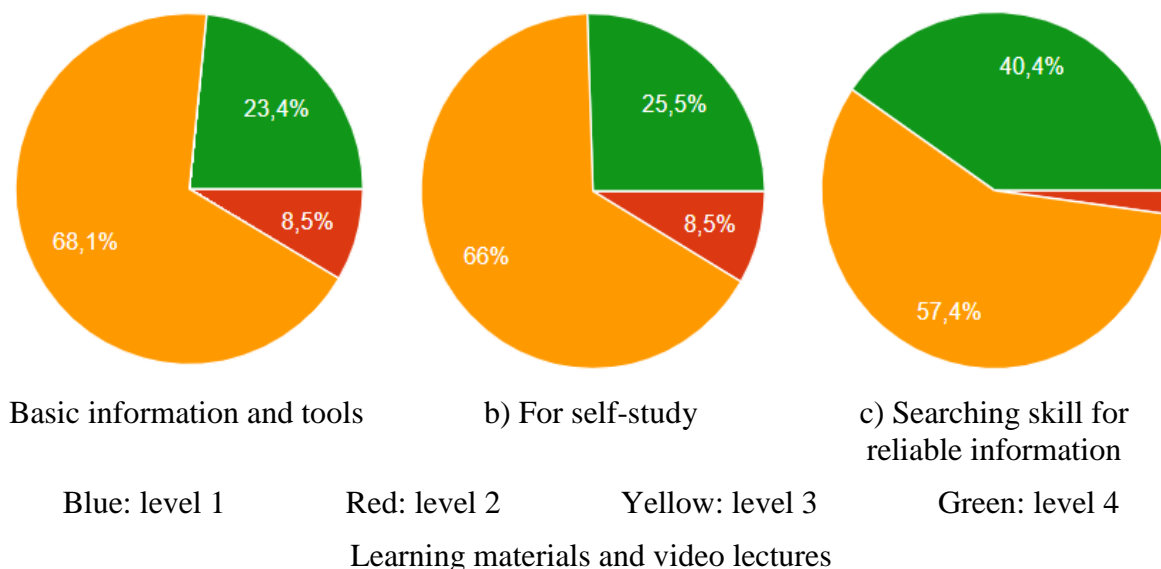
observing the instructors (the authors themselves) and feedback of students after these lessons. For students with below average academic performance, the authors attempted to find out the causes and coordinated with those who have better performance to help them keep up with the content and meet the output standards of this subject.

In order to evaluate the students' satisfaction with the conducted activities, the authors gave a detailed table including the names and specific meanings of the respective satisfaction levels (Table 2). The students' satisfaction is divided into 04 levels (Level 1 to Level 4) with the corresponding meanings from Poor (the lowest) to Excellent (the highest). Google Form was used for online survey and 47/50 responses were received from the students participating in the class, reaching 94%. In the following Figure 3, 4 and 5, color codes representing Level 1, 2, 3 and 4 are Blue, Red, Yellow and Green, respectively.

**Table 2. Meaning of rating levels**

No	Name	Meaning
1	Level 1	Poor
2	Level 2	Average
3	Level 3	Good
4	Level 4	Very good/ Excellent

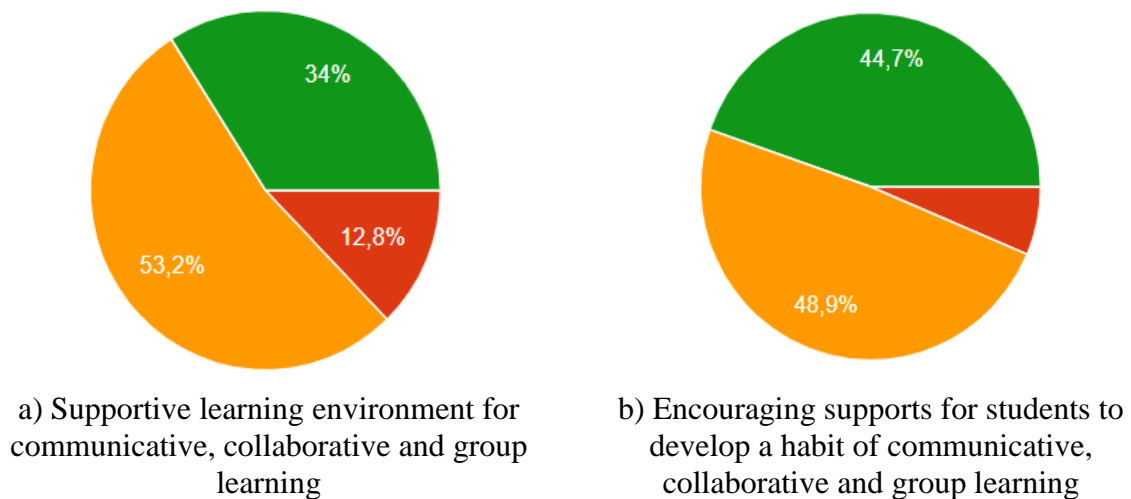
Surveying results for the feature "Ubiquity" are shown in Fig.3. A majority of students rated level 4 (very good) to the learning materials and video lectures done by the author group while only less than 10% rated level 2 (average) and none rated level 1 (poor). Almost the same rate distributions were found for "Basic information and tools for self-study". In particular, the content "Searching skill for reliable information" was rated level 4 (excellent) by about 40%, which showed that students we're excited with and appreciated how to find highly reliable information.



**Figure 3. Results of Ubiquity**

With the feature "Communicative, collaborative and community based learning", data from Figure 4 show that the students were mainly satisfied at high levels (level 3 and 4, totally over 80%). The authors

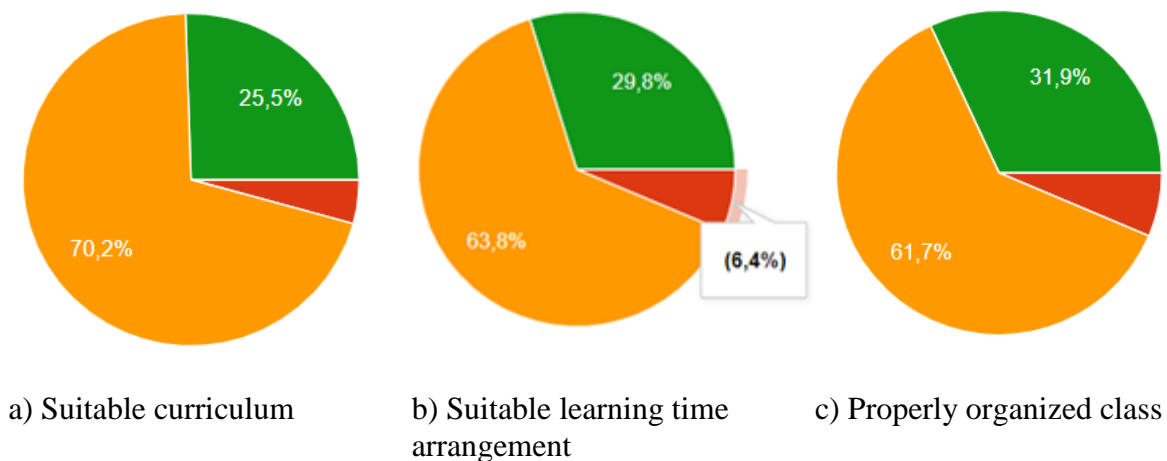
have encouraged students to form a habit for communication, cooperation and group study [3, 4]. However, further improvement is needed to create a more conducive environment for learners to develop dialogue, collaboration and teamwork skills.



**Figure 4.** Results of Communicative, collaborative and community based learning

Regarding the results with the feature "Suitability for students' perception", students highly appreciated the authors' efforts in compiling teaching contents, distributing study time and organizing each lesson. This was in accordance with the

efforts of the instructors who directly taught because they tried to modify and give feedback to adjust the next lessons to suit students, ensuring the lesson not overload for students but still meet the required learning outcomes of the subject.



**Figure 5.** Results of Suitability for students' perception

#### 4. CONCLUSIONS

This initial research on applying digital pedagogy in teaching at the HITC have shown greatly positive results. Students' satisfaction (level 3 and above) is up to more than 80% for all features and thus, stimulates strongly lecturers to enhance the quality of their lectures, taking into account learners' feedback to quickly update and adjust teaching contents quickly and effectively.

Yet, these are still beginning steps in the process of applying digital pedagogy. Although the authors have not had much experience in implementing and setting out the requirements to fully meet the basic characteristics of digital pedagogy, these actions show good consistency with the real situation at HITC. Further tasks need to be implemented in the coming time should include applying digital pedagogy for practical and integrated classes then

evaluating effectiveness in comparison with the required course learning outcomes; promoting the experience sharing among lecturers of the same subject to enhance applying digital pedagogy ; disseminating the applied digital pedagogy model to other subjects; and proposing fundamental schedule to apply digital pedagogy appropriately with the current situation.

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