# LOVE-BASED TEACHING AND LEARNING METHOD CLASSIFICATION

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## Abstract

In this new era, companies are looking for employees with competence and transversal skills who can apply knowledge gained from their education to their jobs with less training and also be able to communicate and work in team environment. These competence and skills can be obtained from their learning experience. Graduates who have experienced a variety of learning activities are expected to perform much better than those who have gone through the conventional knowledge-based learning. Therefore, curriculum developers should pay attention to what types of learning experience their students will gain. Presented in this paper is the classification of existing teaching and learning methods based on a student learning experience model called 'LOVE' model that classifies learning activities based on the nature of learning and student involvement. They are classified into four categories: L-Learning; O-Observing; V-Visiting; and E-Experimenting. The result shows that many teaching and learning methods—even they have been updated by incorporated with the active learning pedagogy—are still unable to provide immersive learning experience. They are mostly packed in the boundary of O-observing and, especially, L-learning experience.

Keywords: Classification, Teaching and learning method, Experience model, LOVE

## 1 INTRODUCTION

According to the rapid technological development and today's dynamic and complex working place, companies in all industries are looking for employees with competence and transversal skills who can apply knowledge gained from their education to their jobs. Referring to the report from the world economic forum, employees of 2020 is expected to be equipped with these top 10 skills: complex problem solving, critical thinking, creativity, people management, coordinating with others, emotional intelligence, judgment and decision making, service orientation, negotiation and cognitive flexibility [1]. Employees are expected to be ready for their jobs with less training than these days and be able to communicate and work in team environment. These competences and skills should be obtained while they are attending school and shifting an emphasis from teachers to students is indispensable. Students should be put in an active role to improve their learning beyond remember and understand the context of a subject to be able to apply the knowledge and skills gained in other unseen problems. Graduates who have exposure to a variety of learning activities are expected to perform much better than those who have gone through the conventional lecture, homework assignment and conducting laboratory experiment.

Lecture is a one-way effective communication direct teaching methods for transferring knowledge. This traditional form of teaching is still predominant in many higher education programs [2,3]. A survey from 360 students of the University of Pula in 2012 [3], for example, showed that lecture was the most applied teaching method and widely used in various departments—e.g. Department of Educational Sciences, Department for studies in the Italian language, and Department of Economics and Tourism. However, lecture has been critiqued of being insufficient to support the intellectual and emotional involvement of students in the cognitive process because activities for students are listening, watching and reiterating, and is perceived to be inadequate for deeper understanding, problem-solving and creative work [2]. Replacement with more efficient teaching and learning methods has been voiced out.

Throughout the years, not only pedagogy has been shifted the focus towards student-centered learning but also several teaching and learning methods have been introduced and applied to encourage student involvement to improve their learning. Prince (2004) considers that active learning can be achieved by any teaching and learning methods which actively involves students into the process of authentic learning [4]. These include, but are not limited to, role play, guided practical exercises, debate in small groups, and brainstorming [3]. Currently, many modern TLs such as

problem-based learning (PrBL) [5-7] and project-based learning (PjBL) [8-10] have also been promoting and increasingly applied in universities.

However, many of these teaching and learning methods—by their characteristics—may share some similarities resulted in providing the same type of learning experience. Curriculum developers should, in addition, pay attention to what types of learning experience their students will gain that cultivates in building their competence. Therefore, this research proposes to apply a learning experience model—LOVE model [11]—which classifies learning experience into four groups to capture the similarity and difference of learning experience from the existing teaching and learning methods. This experience-based classification is expected to provide support to educators on teaching and learning methods selection for a course as well as a curriculum to better provide a variety of learning experience. The next section—literature review—displays a collection of teaching and learning methods from literature and also explains types of learning experience according to the LOVE model. The classification procedure is exemplified in the third section where the research results are also discussed. The conclusion is presented in the last section.

## 2 LITERATURE REVIEW

This section provides a review on some existing teaching and learning methods (T&Ls) at higher education level based on the studies of Sajjad (2010) [2] and Močinić (2012) [3] and also from our discussion. The explanation of the LOVE model [11] is also provided in this section.

### 2.1 Teaching and Learning Methods

1) **Discussion-** It is a detailed conversation made by two or more people that do their best, exchanging ideas and expressing personal standpoints, to establish the validity of the topic of interest.

2) **Assignments-** This is a set of tasks assigned to students by their teachers to be completed, most of the time, outside the class and known as homework assignments. The assignments may include required reading, a writing or typing project, mathematical exercises to be completed, information to be reviewed before a test, or other skills to be practiced [12].

3) **Brainstorming-** Finding a solution for a specific problem by gathering a list of ideas [3]. For example, learners may be asked to think of as many they can for eliminating world hunter. Once a large number of ideas have been generated, they are subjected to inspection regarding their feasibility [13].

4) **Case study-** A detailed analysis is made of some specific, usually compelling event or series of related events so that learners will better understand its nature and what might be done about it [13]. It basically used to develop critical thinking and problem-solving skills, as well as to present students with real-life situations. The students are presented with a record set of circumstances based on actual event or an imaginary situation and they are asked to (a.) diagnose problem(s), (b.) diagnose problem(s) and provide solution(s), (c.) give reasons and implications of action after providing both problem and solution [2].

5) **Class debate-** Debate is a form of discussion whereby a few students present and contest varying points of view with regard to an issue [13]. Class debate is the whole class participates in a debate that is argument taking place between two or more people having intention to prove their own statement.

6) **Conference-** An instructor takes students to a conference for the course. An academic conference is a conference for researchers (not necessarily academics) to present and discuss their work. Together with academic or scientific journals, conferences provide an important channel for exchange of information between researchers [14].

7) **Demonstration with exercising-** Displaying everything that can be experienced in a perceptive manner in combination with exercise to achieve skills [3].

8) **Field classes, trips and excursions-** A visit in a natural setting (a factory, farm, or museum) made (as by students and a teacher) for purposes of first-hand observation.

9) **Game-based learning-** This is the use of game elements that explicitly designed with educational purposes to enhance the learning experience.

10) **Guided conversation-** Guided conversation are a series of questions, activities, and structure dialogues and exercises used as a central of learning process. For example, guided conversation are the dialogue and the question and answer exchanges, the students are presented with a model conversation that highlight a specific aspect of grammar to help students improve their accuracy in constructing the sentences [15].

11) **Guided practical exercises-** This method begins with a demonstration and a description of what is to be achieved. The demonstration does not necessarily have to come from the teacher, it may come from another student or even from audio-visual aids. The students then practice the skill, either on their own or with a group, as the teacher observes their performance and offers feedback. For example, a coach shows a team how to forearm pass a volleyball he/she would first explain the forearm pass, telling when and why it is used and describing the critical fundamental points of the forearm pass. This would be followed with one or more demonstrations of the skill being executed, once again emphasizing the key elements of the skill. The players are then given time to practice the skill, either by themselves or with a partner. The coach can then walk around making corrections and providing encouragement [16].

12) **Individual presentation-** It is typically a demonstration, introduction, lecture, or speech meant to deliver a specific information that made by an individual. It needs a proper preparation to perform a good presentation. The student needs to study and understand what sh/e is going to present and prepare their speech as well as presentation material.

13) **Integrated or interdisciplinary teaching-** Interdisciplinary teaching is a method, or set of methods, used to teach a unit across different curricular disciplines. For example, the seventh grade Language Arts, Science and Social Studies teachers might work together to form an interdisciplinary unit on rivers. The local river system would be the unifying idea, but the English teacher would link it to Language Arts by studying river vocabulary and teaching students how to do a research report. The science teacher might teach children about the life systems that exist in the river, while the Social Studies teacher might help students research the local history and peoples who used the river for food and transport. The most common method of implementing integrated, interdisciplinary instruction is the thematic unit, in which a common theme is studied in more than one content area [17]. That means it is a method used to teach common theme across several courses.

14) **Laboratory classes-** Laboratory classes provide students with first-hand experience with course concepts and with the opportunity to explore methods used by scientists in their discipline [18].

15) **Lecture-** Lecture-style instruction or teacher-centred instruction commonly refers to lessons where the teaching activities take place from the front of the classroom [19]. A lecture is a talk or verbal presentation given by a lecturer, trainer or speaker to an audience. With all the advancement of training systems and computer technology, lecture method is still a backbone widely used in teaching and training at higher level of education. It is economical method, can be used for a large number of students, material can be covered in a structured manner and the teacher has a great control of time and material [2].

16) **Live lecture from a remote place-** This is a live streaming lecture that is constantly presented to students, who are in different places, while being delivered.

17) **Online interactive learning-** This is an educational platform, that is available through Internet access, where students are invited and encouraged to participate in the conversation and other learning activities on the platform.

18) **Problem-based learning (PrBL)-** This is a student-centered pedagogy in which students learn about a subject through the experience of solving an open-ended problem found in trigger material. The PBL process does not focus on problem solving with a defined solution, but it allows for the development of other desirable skills and attributes. This includes knowledge acquisition, enhanced group collaboration and communication [20].

19) **Programmed teaching-** Programmed instruction, method of presenting new subject matter to students in a graded sequence of controlled steps. Students work through the programmed material by themselves at their own speed and after each step test their comprehension by answering an examination question or filling in a diagram. They are then immediately shown the correct answer or given additional information. Computers and other types of teaching machines are often used to present the material, although books may also be used. Computer-assisted

instruction, which both tests students' abilities and marks their progress, may supplement classroom activity or help students to develop ideas and skills independently [21].

20) **Project-based learning (PjBL)-** This is a student-centered pedagogy that involves a dynamic classroom approach in which it is believed that students acquire a deeper knowledge through active exploration of real-world challenges and problems [22]. Students learn about a subject by working for a certain period of time investigating and responding to complex practical problems. The difference between PrBL and PjBL is PrBL focuses on knowledge acquisition; while, PjBL focuses on the application of knowledge [23].

21) **Role play-** Role play occurs when participants take on differentiated roles in a simulation. These may be highly prescribed, including biographical details, and even personality, attitudes and beliefs; or loosely indicated by an outline of the function or tasks [2]. It is an act to perform thoughts and feeling of each character.

22) **Seminars conducted in class-** It is a format of presentation of research that focus on a specialized subject area in a class.

23) **Showing video material-** Teachers present video clips related to the course content such as tutorials to the class.

24) **Simulation-** A simulation is an approximate imitation over time of the characteristics or behaviours of a process or system that is modelled with a well-defined description.

25) **Small group debate-** A small group of students participates in a debate that is argument taking place between two or more people having intention to prove their own statement.

26) **Virtual laboratory-** "The Virtual Laboratory is an interactive environment for creating and conducting simulated experiments: a playground for experimentation" [24].

27) **Virtual reality-** Virtual reality (VR) refers to computer-generated environments or realities that are designed to simulate a person's physical presence in a specific environment that is designed to feel real. The purpose of VR is to allow a person to experience and manipulate the environment as if it were the real world. The best virtual realities are able to immerse the user completely. Virtual reality should not be confused with simple 3-D environments like those found in computer games, where you get to experience and manipulate the environment through an avatar, rather than personally becoming part of the virtual world [25].

28) **Workshop-** A meeting of students to discuss and all perform practical work in a class.

## 2.2 LOVE Model

The LOVE model—learning experience model—has been developed based on the 4Es model that was introduced by Pine and Gilmore (1998) [26] according to the progression to experience economy era. The 4Es model classifies customer experience based on two dimensions—customer participation and connection with the event—resulted in four different types of customer experiences. They are educational, entertainment, esthetic and escapist. Customers gain the richest and memorable experience when the four types of experience are provided. The contribution of the 4Es model has been highly perceived in the service industry as an assisting tool in line with enhancing customer satisfaction and loyalty [27-29]. In the education context where students are viewing as customers, offering authentic learning experience and encouraging students to be more active in learning activities are now promoting as a must do to improve the quality of learning. According to this, a group of researchers in the engineering field has introduced the 4Es model into education systems and entitled it as LOVE model (Fig 1). The four types of experience have been appropriately redefined to fit with education context as L-learning, O-observing, V-visiting, and E-experimenting. Students gain four kinds of learning experience from two dimensions: student involvement (passive or active involvement), and the nature of learning (absorption to immersion). The students will gain the richest learning experience when the four experiences are offered to them. From being a good observer, learner, visitor, and experimenter, they will become a good researcher, who has in-depth knowledge and understanding in a subject.

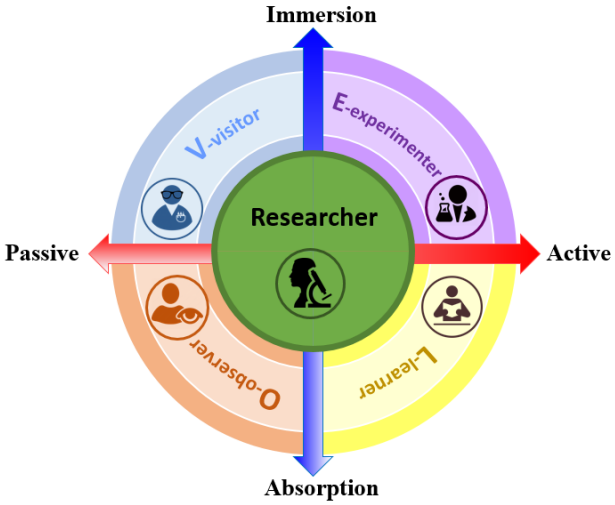


*Figure 1. LOVE model* [11].

The definitions of the four types of learning experiences are as follows.

Learning: As a learner, a student actively absorbs knowledge and information provided by an instructor by taking some actions affected final outcomes. Examples are a class presentation and class discussion.

Observing: As an observer, a student passively absorbs knowledge and information provided by an instructor. The presence of the student does not affect final outcomes. Attending lecture and seminar as an audience is an example of this experience type.

Visiting: As a visitor, a student passively immerses into a situation to obtain knowledge and information. The presence of the student does not affect final outcomes. An example is a field trip to an automobile production company which gives a real atmosphere of immersion in a production system to a student.

Experimenting: As an experimenter, a student actively immerses into a situation to take action to gain knowledge and information. The action of the student influences final outcomes. An example is a student performs line balancing analysis at a company.

# 3 LOVE-BASED TEACHING AND LEARNING METHOD CLASSIFICATION

## 3.1 Methodology

Teaching and learning methods (TLs) from the review section are viewed as key learning activities in classes that provide different types of learning experience. They are going to be classified based on two dimensions according to the LOVE model (Fig 2). The first dimension is the nature of learning which describes how students connect to the learning activity. At one end, knowledge is brought to students and their learning is by absorption. Students learn a particular subject from a distance, and they can only absorb the delivered knowledge. At the other end, it is immersive learning experience. Students are brought to a practical/authentic/real learning environment where they will be able to acquire and build knowledge and skills by themselves. The second dimension is student involvement in the learning activity. At one end, students passively involve in the activity and they are observers who do not directly affect the outcome of the activity. At the other end, students actively involve in the learning activity. They personally affect the activity that yields their learning experience. From the proposed classification, TLs are categorized into four groups of learning experience: L-learning (active absorption), O-observer (passive absorption), V-visiting (passive immersion) and E-experimenting (active immersion). The results of the classification are going to be presented on the LOVE grid (Fig 3).

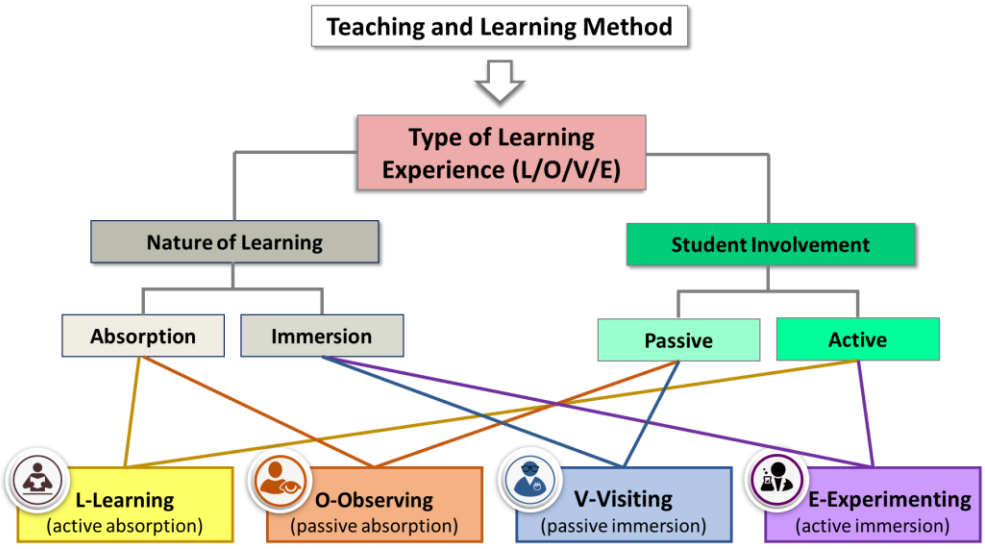


*Figure 2. LOVE-based teaching and learning method classification.*

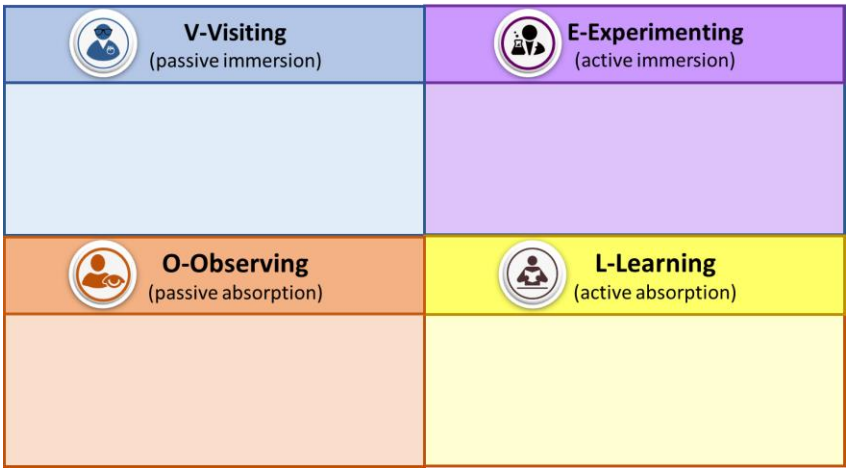


*Figure 3. LOVE grid.*

## 3.2 Classification Result and Discussion

The 28 TLs from the literature are classified into 4 groups (Fig 4). The group of L-learning poses the highest portion comparing to the other groups followed by the group of O-observing. The two groups on the immersive direction (V-visiting and E-experimenting) pose only a few TLs. The L-learning group composes of 16 TLs which are discussion, demonstration with exercising, class debate, small groups debate, simulation, problem-based learning (PrBL), programmed teaching, workshop, brainstorming, case study, online interactive learning, game-based learning, guided practical exercises, role play, assignments and individual presentation. These TLs encourage students to be active learners in the ambiance of knowledge absorption. The level of student involvement is reduced in the format of O-observing experience which composed of lecture, guided conversation, integrated or interdisciplinary teaching, showing video material, seminars conducted in classes, and live lecture from a remote place. Students are limited to only play the role of observers to receive knowledge and information.

Moving to the direction of an immersive learning environment, only 6 TLs fall into this direction. Virtual reality, conference, and field classes, trips and excursions are in the group of V-visiting. These TLs provide the immersive learning environment; however, the effort and ambitious that are required for participating in these TLs are limited. The group of E-experimenting consists of project-based learning

(PjBL), laboratory classes and virtual laboratory. These TLs provide practical and hands-on learning experiences in which students are expected to highly contribute their effort and collaboration.

Overall, the result shows that many TLs—even they have been updated by incorporated with the active learning pedagogy—are still unable to provide the immersive learning experience. They are mostly packed in the boundary of O-observing and, especially, L-learning experience. Students, therefore, have lesser chances to gain all four types of learning experience to strongly cultivate their competence and skills. The results also reveal that, so far, the development of teaching and learning methods has been centered on the dimension of active learning. There have been a few attention in academic researchers on the enhancement of immersive learning experience. However, this type of learning experience has an important role and contribution in academic achievement. Moreno and Mayer (2002) stated that "with a higher sense of being in the environment, students may learn deeper than those who learn by participating in the learning task as observers" [30].

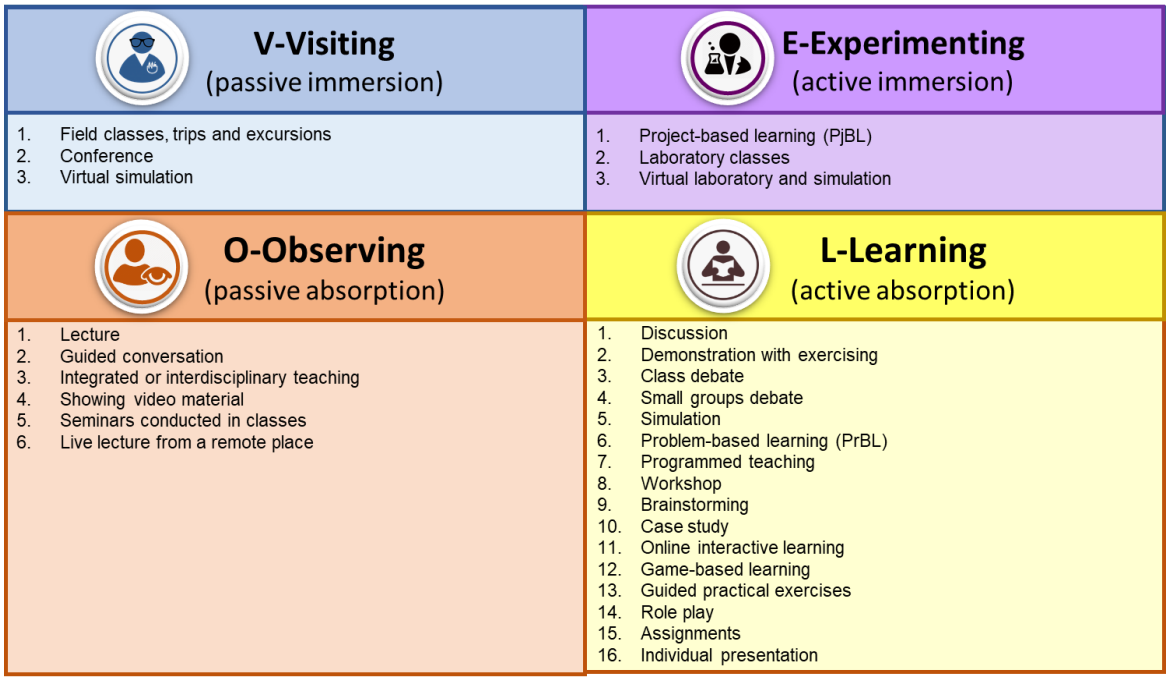


*Figure 4. Teaching and learning methods on LOVE grid.*

## 3.3 Potential Applications

According to the LOVE model, graduate competence and skills are strongly built when students gain four types of learning experience. The research result displays types of learning experience that students are expected to gain according to different TLs. Teachers would be able to balance TLs in a program in order to provide a variety of learning experience that supports academic achievement. They can also apply the proposed classification method to assess their current applied TLs for improvement. Some teachers might have a variety of TLs in their teaching. However, they may or may not be able to provide a variety of learning experience as many TLs fall within the same group in the LOVE grid. This would limit how much students foster their competence and skills during academic journeys. If a program applies only a few TLs, it can be expected that there will be a widening gap between the requirement of the industry and graduate competence. Teachers should have awareness when selecting TLs and must be able to effectively implement various TLs.

# 4 CONCLUSIONS

Twenty-eight teaching and learning methods collected from pieces of literature have been classified into four different categories of the learning experience of the LOVE model based on the nature of learning and student involvement. The classification can be a guideline for assisting curriculum

developers and teachers on selecting teaching and learning methods for a curriculum and course respectively with an aim to provide as rich as possible for their student learning experience.

According to the classification, the majority of the existing teaching and learning methods are under Learning experience group that reflects the emphasis has been put on student-active involvement. Since the nature of learning is also important for competence development, educators are encouraged to consider to develop new teaching and learning methods to immerse students more into their learning.

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