

# Using PICRAT Matric to evaluate the integration of technology in teaching English speaking skills

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**Abstract:** *The purpose of this study is to examine the current state of technology integration in English speaking language classrooms in a university in Hanoi, Vietnam during the academic year of 2022/23. The research was also conducted to raise teachers' awareness about the impact of integrating technology and teaching to shape students' oral competency and to excite students about learning to speak English.*

**Keywords:** *Competency*

## 1. Introduction

That technology has permeated almost every aspect of people's daily lives makes it impossible for traditional teaching to meet new demands. In addition, the use of ICT in education can expedite student learning, reduce educational costs, and attract students from various educational backgrounds. For many years, numerous studies, such as Motiwalla (2007) and Dahlstrom (2012) have demonstrated the benefits of integrating technology into education. Therefore, the question is not whether teachers should incorporate technology into their lessons, but rather how they can transform the learning environment by maximizing the benefits of technology.

Deputy Prime Minister signed Decision 131/QĐ-TTg on January 27, 2022 in Vietnam, approving the project "Strengthening the application of information technology and digital transformation in education" and training for the period of 2022-2025, with a view to 2030. The objective of the Project to 2025 is to radically transform the organization of education, making teaching and learning in the digital environment an essential and daily educational activity for all teachers and students. The principal tasks and solutions of the Project are to strengthen the conditions for application deployment of information technology and digital transformation in education and training; to develop an ecosystem for digital transformation of teaching, learning, testing, assessment, and scientific research activities; to deploy synchronously the education and training management information system, the education sector database; and to promote, disseminate, and raise public awareness.

To achieve the aforementioned objectives, it is imperative that each teacher adapt and improve their technology integration skills immediately. In practice, however, this is still dependent on the knowledge and experience of each teacher. Teachers are in dire need of a scale or model that can easily be used for self-assessment of the level of technology integration in their teaching and the need for corresponding adjustments. The PICRAT model is capable of doing so.

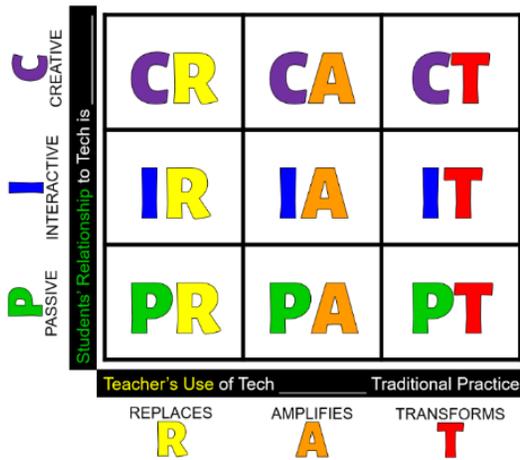
## 2. Theoretical framework

Many models have been considered to assist teachers with technology integration. Currently, various theoretical models.

Although these models are frequently cited in the literature on approaches to education-technology research, few analyses have been conducted to evaluate their efficacy, accuracy, or validity. This model for enhancing educational technology research and technology integration in the classroom (Kimmons, 2015; Kimmons & Hall, 2017). Relatively few researchers have devoted effort to evaluating, classifying, and comparing these models, supporting their continued development, understanding their underlying assumptions and application processes, and determining what form theory in this field takes (Archambault & Barnett, 2010; Archambault & Crippen, 2009; BrantleyDias & Ertmer, 2013; Graham, 2011; Graham, Henrie, & Gibbons, 2014; Kimmons, 2015; Kimmons & Hall, 2016a, 2016b, 2017).

Kimmons (2020) provided a new conceptual framework, including (a) what are model theories and why do we need them to teach technology integration, (b) how they have been accepted and developed over time, (c) what makes them good

or bad, and (d) how existing models of technology integration lead to difficulties in teacher preparation.



Kimmons also proposed a new theoretical model, PICRAT, that can guide both students and teachers in the development of technology-integrated knowledge. PICRAT builds on previous work by Hughes et al. (2006).

Figure 1. PICRAT matrix (Kimmons, 2018)

The RAT model is expanded to create the PICRAT model. According to this model, when teachers integrate technology into their teaching environment, the technology may be used to (a) replace traditional teaching methods, (b) amplify ongoing learning, or (c) transform learning in ways that would be impossible without technology. PICRAT assists educators in comprehending the impact of technology integration on traditional practice. (RAT: Substitute, Amplify, Transform) and the extent to which students incorporate technology into their activities (PIC: Passive, Interactive, Creative.)

### 3. Methodology

This research is to answer two research questions below:

RQ1: What is the teachers' perception and prior knowledge of technology integration models?

RQ2: What types/levels of educational technology integration are occurring in the speaking classroom as categorized by the PICRAT model?

### 3. Research Methods

#### 3.1. Participants

##### 3.1.1. Teachers

Seven female instructors participated in the study. Most of the teachers were between 30 and 40 years old and held Master's degree. Their teaching experience varied, from four years to around ten years. All teachers reported having attended at least

one technology training course.

##### 3.1.2. Students

145 English students were chosen at random as the study's sample population. Seven responses were eliminated due to their lack of dependability. 138 final responses were collected and utilized for data analysis. Among these 138 students, 85 were from the second year and the other 53 were from the third year.

### 3.2. Research instruments

#### 3.2.1. Questionnaire

The questionnaire for students includes six items with both open-ended and closed-ended design. First, the questionnaire requests background information about the students, such as their age and completed speaking courses. Then, students are asked to describe in detail some technology-based speaking classroom activities.

The questionnaire for teachers consists of ten questions. The first three questions are to find out about the teacher's background. Other seven questions ask about the teachers' knowledge, perception of educational technology integration, and a detailed description of activities in which they utilized technology.

#### 3.2.2. Interview

All seven teachers were offered the chance to participate in semi-structured follow-up interviews, but three of them volunteered to join. Three semi-structured interview designs are employed to gain a more comprehensive understanding of the teachers' use of technology, as well as the factors that influenced their level of use.

### 4. Data collection and analysis

In the survey questionnaire, participants were asked to provide at least one and no more than three examples of technology-using activities. Using the following evaluation strategy, the researchers mapped their responses into the PICRAT matrix. The researcher would evaluate whether the activity is passive, interactive, or creative to determine PIC.

### 5. Findings and Implications

#### 5.1. What is the teachers' perception and prior knowledge of technology integration models?

In the survey questionnaire, all teachers revealed that they have attended at least one training course on the use of technology in the classroom. However, six out of seven teachers were unfamiliar with the technology integration models listed.

The teachers' responses are summarized in the table below

Table 2: Teachers' foci while designing lessons

| No.               | Academic content | Educational technology | Skills for students to learn | Character education values |
|-------------------|------------------|------------------------|------------------------------|----------------------------|
| Strongly agree    | 4                | 1                      | 4                            | 2                          |
| Agree             | 3                | 4                      | 3                            | 5                          |
| Neutral           | 0                | 2                      | 0                            | 0                          |
| Disagree          | 0                | 0                      | 0                            | 0                          |
| Strongly disagree | 0                | 0                      | 0                            | 0                          |

As shown in Table 2, all these contents are focused during the lesson design of the teachers. However, the academic content and the student skills seem to attract more attention from the teachers. Surprisingly, the educational technology is paid the least attention to. In addition, the questionnaire revealed that none of the participants had any prior knowledge about any educational technology framework.

**5.2: What types/levels of educational technology integration are occurring in the speaking classroom as categorized by the PICRAT model?**

All the participants reported 225 activities in their responses. Twelve of them were by the teachers. Both student and teacher responses about the educational technology integration in the speaking classrooms are summarized in Figure 2 below.

As being shown, 136 out of 225 lesson activities (60%) were Interactive/Amplifies and Creative/Amplifies. Only eight examples of Creativity / Transforms integration were found. Although the instructional activities did create interactive experiences for students and largely go beyond replacement use of technology, more creative or transformational educational technology integration is necessary.

Teacher's use of technology: As is shown, around one-third of the activities mentioned are at the Amplification level, which indicates that technology has been utilized to enhance the efficiency of work or to add new functionalities to the original task. Google programs such as Google docs, Google form, and Google classroom have been the most widely used to check student attendance and collect homework. Online games have also been utilized frequently to engage students in vocabulary learning, prior-session reviewing, and comprehension testing.

Eight out of 225 activities, accounting for 4%, are of Transformative type which include learning tasks that are impossible to complete without technology. All of these activities require students to create a product, such as a video clip for public sharing on Flipgrid, Youtube, or Tik Tok. They are

frequently administered in the form of a project or large assignment, or even a midterm exam, because students need time to develop a strategy and select the most appropriate tools for completion.

**Students' relation with technology**

The students' interactions with technology as revealed by the participants are summarized in the following figure. As can be seen in the chart, students have engaged in a variety of activities equally, with the Interactive ones accounting for the highest frequency of engagement (41%). The passive comes in the second place (34%), then Creative (25%). The students were requested to participate with the materials in an engaging manner during these activities, demonstrating that they are active learners.

**6. Conclusion:**

There are certain technology activities that are merely substituted, and students still experienced passive state like in traditional classes. However, there are also numerous activities that assist students become familiar with, actively employ, and create technology for their study. The range of activities is restricted, with a concentration on a handful of well-known applications and no breakthroughs yet. There should be additional activities that fundamentally revolutionize the method in which children learn, allowing them to be more interactive and imaginative.

The research determined that the EFL teachers in the research were keen to utilize technology and efficiently integrate it into their everyday classroom practice, which will result in outcomes that are mutually advantageous for both teachers and students. In order to facilitate the process of technology integration, it is recommended to consider the hurdles teachers experience when employing technology. It is recommended to provide both technical and pedagogical professional development training in the use of technology. To achieve their pedagogical objectives, teachers must be trained in the use of specialized technologies. i

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