

Evidence-based data collection in the study of self-efficacy

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Abstract

Self-efficacy of students is an important construct for the examination of achievement motivation pertinent to academic success. Typically, self-efficacy studies have been conducted via surveys, with a questionnaire as the main data collection instrument. Nonetheless, some studies have argued that multiple instruments should be employed as this would provide additional evidence (e.g. video recording) to help students reflect on their self-efficacy in their learning performance. To determine whether or not the use of multiple instruments is better to gauge self-efficacy, our study examined the use of a questionnaire and a video recording as data collection tools. While the former is intuition-based, the latter is evidence-based. These tools were used in an existing oral presentation course at a teacher's college. Students in this course were divided into two groups: one group responding only to a self-efficacy questionnaire while the other completed the questionnaire after viewing their own oral presentation on video. Our study found that the self-efficacy levels reported by the two groups were not different. We conclude with some implications for using research instruments for the examination of self-efficacy.

1. Introduction

Self-efficacy is defined as “people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives” (Bandura, 1994: 71). It could also be considered the most important building block in self-concept (Bong & Skaalvik, 2003). In the learning process, the concept becomes a prominent indicator in predicting learners' learning achievement or disappointment because learners' judgment of their own abilities to complete tasks would inevitably affect the way they plan how to learn, or how they motivate themselves to try and use learning strategies in order to be engaged in their learning (Bandura, 1990). It is believed that students with strong beliefs about their ability could perform better in terms of academics than those holding low levels of self-efficacy (Dodds, 2011). Because of these reasons, several studies have been conducted to investigate self-efficacy as an important affective factor and a predictor that relates to academic success (Komarraju & Nadler, 2013; Putwain, Sander, & Larkin 2013; Zajacova, Lynch, & Espenshade, 2005).

Self-efficacy is also directly associated with the level of English language proficiency (e.g. Naseri & Zaferanieh, 2012; Raoofi, Tan, & Chan, 2012). However, it is generally considered a context-specific construct (Bandura, 1997, 1986). That means this affective factor might also shift and change according to each language skill since some learners may find themselves having different levels of self-efficacy parallel to their proficiency of a particular language skill.

One of the English skills that is of interest to researchers in EFL is speaking. Speaking starts with the capacity to put words together in a meaningful way to reflect ones' ideas, feeling and opinions. It skillfully provides endless opportunities for language learners such as the ability to persuade others or getting a better job position. Therefore, speaking remains the center of attention in the English teaching field. As Richards (2008) pointed out, speaking has

long been promoted by the ebb and flow of teaching methods of a particular period, from repetition-based methods to those that are communicative in nature. Taking into account methodologies for speaking, we can see how they have changed – from responding to drills in the 1970s until the emergence of communicative language teaching in the 1980s, followed by the latest 21st century teaching methodology.

In order to develop students' speaking skills, self-reflection has received great attention from language teachers and researchers because the ability to reflect and evaluate one's oral performance fairly can contribute to his or her own improvement. More importantly, in relation to self-efficacy, speaking is often assumed as "the most anxiety-provoking aspect in a second language learning situation" (Cheng, Horwitz & Schallert, 1999: 420). To reduce anxiety, seeing oneself in a video can be helpful in making them having a more realistic impression of how they appear to others (McManus et al., 2009). For this reason, video recording becomes a helpful tool to allow reflection where one can generate "evidence-based" ideas about their own qualifications (Calandra, Brantley-Dias, Lee & Fox, 2009; Rich & Hannafin, 2009).

This technique has facilitated both teachers and learners in giving feedback for further development since it allows viewings as many times as necessary to accurately evaluate a speaker's strengths and weaknesses (Christianson, Hoskins & Watanabe, 2009). Some studies have used video recording as one of the instruments when promoting self-analysis in educational contexts such as recording pre-service teachers' classroom performance, which seems to be helpful for developing their persona as a teacher, as well as maintaining the motivation to do their jobs (Bailey, Curtis & Nunan, 2001; Maclean & White, 2007; Wallace, 1981). Additionally, video recording has special value for non-native English speaking trainees because it enables them to focus not only on the nonverbal aspects of their teaching but also on their communicative competence, language proficiency, knowledge of essential language functions, and their style of teacher-student interaction (Orlova, 2009). Video can also be beneficial for learners. Since it is considered as a powerful tool for scrutinizing and evaluating authentic samples of learners' own performances, a number of researchers has used video in research conducted to investigate oral performance.

Yamkate and Intratat (2012) conducted a study of how video recordings facilitate the students' evaluation of their oral presentation skills and use of their evaluations to improve their performance in a Thai university. The results revealed that the students had positive attitudes towards video recording of their presentations because they could see their weakness in non-verbal language. Overall, the process studied was found to facilitate the students' self-evaluation skills, resulting in the improvement of their presentation skills. Using video recording as evidence has continued to be the topic of Wattananan and Tepsuriwong's (2015) study which particularly focused on comparing intuition-based with evidence-based self-efficacy on Thai learners' oral performances. This study argued that evidence-based should somehow affect the students' self-efficacy because they can actually observe their own performance before making any judgment.

However, some drawbacks of having video recording were also pointed out. First, a video might make students feel overwhelmed which might affect their performances (Cheng & Chau, 2009). More specifically to the context of this study, using video in a large class context could be considered problematic because of the density of data that a visual recording provides (DuFon, 2002). Time can also be a constraint since a teacher has to spare time to train students about how to evaluate their own performance by focusing on particular language components rather than commenting on everything shown by the recording.

Since self-efficacy has been mentioned as being the perception towards one's ability, it has compelled the researchers to investigate whether the evidence of students' performances could change the way they view themselves. For this reason, the aim of this

study is to investigate whether using video recordings in addition to a questionnaire will be useful in researching self-efficacy on oral presentation.

2. Methodology

2.1 The context

The study took place in the Faculty of Education in a teacher training institution in the North-Eastern part of Thailand. The faculty has been responsible for producing teachers for different disciplines since 2000 with the aim of promoting regional quality of education. It offers eleven majors in the teaching profession where the students are required to complete courses, as well as a one-year practicum. For English majors, there are three classes, with 30-35 students in each, and sometimes they are all placed together in one class due to the limited number of lecturers. Therefore, the class size, which is large (90-120 students), is one of the major factors affecting the quality of instruction.

The context of this present study is the speaking class where the students were required to participate in oral presentations on different topics in both informative and persuasive manners. The presentation task from which the data for analysis was collected was "The use of English in ASEAN" presentation. One week before the actual presentation, the students were given a 1000-word material on this topic. They could select some important parts to present in the 5-minute presentation task. The task was performed as a group work, but feedback was given individually after the presentation for further improvement.

2.2 Participants and subject selection

The subjects in this study were 92 junior students studying in the Faculty of Education. They were all enrolled in a compulsory subject called Oral Presentation which was set to prepare them for public speaking. Their level of proficiency was at lower intermediate level since they had passed all basic English classes. They were familiar with the use of English as the medium of instruction and they could deal with the English lecture, so their receptive skills were at a moderate level. However, their productive skills were not as good. They were quite reluctant to respond in English as they were afraid of making mistakes in front of their friends.

Due to the aim of comparing the use of instruments in two conditions, i.e. questionnaire only (QN) and questionnaire with video recording (VDO+QN), we decided to place the 92 students into groups to participate in one of the two conditions rather than having them all in both conditions because giving response to one questionnaire in condition 1 would possibly have an effect on the other in condition 2. Prior to the actual presentation, to ensure that we would have participants who have a roughly equal level of self-efficacy to participate in the two different conditions, we used the self-efficacy scores which were rated by the students after the teacher (one of the authors) gave instructions for the presentation task as the stimuli for them to think about their performance. Sixty of those who rated themselves as having moderate level of self-efficacy were selected as the participants for this study and they were divided into two groups of thirty to participate in either condition 1 or 2. The responses of students which showed high and low levels of self-efficacy were disregarded.

2.3 Questionnaire

To investigate whether using multiple instruments, questionnaire and video recording, would be useful in researching self-efficacy on an oral presentation task, we used the questionnaire from Wattananan and Tepsuriwong's (2015) study. The questionnaire is divided into two parts. The first part includes a five-point rating scale of 20 items asking the participants to rate their self-efficacy on the oral presentation in three main aspects, namely, language, delivery and organization. In the second part, the participants were asked to give themselves a score of 1 to 10 to rate their overall performance on the oral presentation. This

questionnaire was used in both conditions: QN and VDO+QN for investigating intuition-based and evidence-based self-efficacy.

2.4 Procedure

1. All ninety-two students were briefed about the oral presentation topic and presenting procedure before rating the questionnaire aiming at investigating their level of self-efficacy. This first rating process was for subject selection purposes.
2. Sixty students who had a moderate level of self-efficacy were separated into two groups, thirty each to participate in either condition 1 or 2. In condition 1 (QN), the participants would rate their self-efficacy based on their intuition after the actual presentation. The second group would rate the same questionnaire after watching video as evidence-based (VDO+QN).
3. The whole class did their 5-minute presentation before receiving teacher’s feedback individually on their performance.
4. The first group (QN) rated their self-efficacy in the questionnaire, the same one as step 1, based on their intuition. The second group (VDO+QN) watched their video records of their performance before rating their self-efficacy in the questionnaire.
5. Responses to the questionnaire from the two groups of the subjects were counted and calculated into percentage. These responses were also compared using the chi-square test.

3. Results

Self-efficacy levels rated by the participants of the two conditions were analysed. The first condition refers to the intuition-based viewing where the students rated self-efficacy in the questionnaire without watching the video of their oral presentation performance. The second condition was that the subjects rated the same questionnaire after watching the video recording of the presentation task as the evidence. The questionnaire responses rated as strongly agree (SA), agree (A), neutral (N), disagree (D), and strongly disagree (SD) were counted and calculated into percentages (see Table 1).

Table 1. Proportions of the participants who rated their self-efficacy at different levels

No	Statements	GR1 (QN)					GR2 (VDO+QN)				
		SA	A	N	D	SD	SA	A	N	D	SD
Language											
1	Use English fluently	3.3	33.3	13.3	43.3	6.7	3.3	26.7	36.7	33.3	0.0
2	Use English accurately	3.3	33.3	16.7	33.3	13.3	0.0	26.7	33.3	40.0	0.0
3	Use English effectively	6.7	20.0	10.0	50.0	13.3	3.3	26.7	30.0	40.0	0.0
4	Use of transition signals/expressions	6.7	16.7	20.0	43.3	13.3	0.0	46.7	20.0	33.3	0.0
Delivery											
5	Make a presentation within time limit	30.0	43.3	16.7	10.0	0.0	33.3	46.7	10.0	6.7	3.3
6	Prepare effective visual aids	10.0	33.3	10.0	43.3	3.3	3.3	46.7	13.3	33.3	3.3
7	Use visual aids effectively	10.0	13.3	20.0	50.0	6.7	3.3	40.0	20.0	30.0	6.7
8	Control over-excitement	6.7	23.3	16.7	36.7	16.7	0.0	33.3	13.3	50.0	3.3
9	Use various presentation techniques	6.7	23.3	10.0	43.3	16.7	3.3	23.3	13.3	53.3	6.7
10	Grab audience’s attention	6.7	20.0	16.7	46.7	10.0	3.3	33.3	30.0	33.3	0.0
11	Use effective body language	6.7	23.3	23.3	40.0	6.7	10.0	36.7	16.7	30.0	6.7
12	Make eye-contact effectively	23.3	13.3	30.0	23.3	10.0	6.7	36.7	20.0	36.7	0.0
13	Raise or lower voice to make effective presentation	13.3	26.7	6.7	36.7	16.7	3.3	33.3	16.7	46.7	0.0
14	Deliver message without reading from notes	13.3	36.7	23.3	23.3	3.3	3.3	36.7	20.0	30.0	10.0
15	Deal with questions effectively	6.7	13.3	16.7	56.7	6.7	3.3	16.7	30.0	46.7	3.3
Organization											
16	Organize contents logically	0.0	30.0	10.0	50.0	10.0	6.7	16.7	30.0	40.0	6.7

17	Support main ideas with adequate evidence	6.7	26.7	13.3	50.0	3.3	3.3	36.7	20.0	36.7	3.3
18	Start with an introductory statement that summarizes the main idea	10.0	40.0	16.7	26.7	6.7	0.0	36.7	26.7	33.3	3.3
19	End with a conclusion that reviews the main ideas	10.0	23.3	33.3	30.0	3.3	6.7	33.3	20.0	36.7	3.3
20	Structure the presentation effectively (having introduction, body and conclusion)	13.3	26.7	16.7	36.7	6.7	10.0	40.0	20.0	26.7	3.3

Table 1 shows the percentage for each of the rating criteria by the subjects in the QN group and the VDO+QN for 20 items to reflect their self-efficacy level. Chi-square was conducted to determine whether there was a significant relationship between intuition-based and evidence-based self-efficacy rated by the groups of the subjects. The results from the questionnaire showed that there was no significant difference in self-efficacy levels between groups 1 and 2 students, except the ratings for statements 4 “I can use transition signals/expressions well.” ($\chi^2 = 10.654$, $p = 0.031$, $\phi = 0.596$) and 12 “I can make eye-contact effectively” ($\chi^2 = 10.533$, $p = 0.032$, $\phi = 0.593$).

Statement 4 dealt with the language component in the questionnaire focusing on how well the subject could use transition signals/expressions. While most subjects in group 1 (QN) disagreed (43.3%) with the statement, many subjects (46.7%) in group 2 (VDO+QN) agreed that they can use transition signals well. Apart from chance or fact that the students in Group 2 used more transitions than their counterparts, as one of the authors was the teacher of this class, we would explain that this difference may be due to the teacher’s explicit feedback on their performance about the use of transitions after the presentation. Since the teacher gave feedback about how to use proper transition signals to the students after the presentation task, students with the video could possibly see their actual performance and were convinced that they used some transitions while ones in the intuition-based condition without the video evidences thought that they did not include any transitions in their presentation. On the other hand, the ratings for other statements related to language (statements 1-3) given by the intuition-based and evidence-based groups did not present any significant difference in their self-efficacy. It might also be possible that the students relied more heavily on teacher’s feedback than their self-evaluation on these language issues.

Statement 12 dealt with eye contact which is one aspect of the delivery component in the questionnaire. Group 1 (QN) seemed not to put their idea to the extreme with the common rating for Neutral (30%). It is possible that they were not certain about their performance because they did not have video as evidence. On the other hand, there was a clear difference in the ratings within group 2 who rated after watching the video. While one-third of the subjects (36.7%) agreed, the other (36.7%) disagreed that they made eye-contact effectively. There is also another noticeable difference in the number of students who strongly agreed that they make eye-contact effectively. While the number of students in group 1 accounted for 23.3 percent, only 6.7 percent of the students in group 2 strongly agreed with the statement. This might be because group 2 subjects could see their actual performance when watching video and they could see the evidence that their eye-contact was not very effective when trying to give their audience a sense of involvement. This finding supports Yamkate and Intrat (2012) that video recording could raise awareness about non-verbal language because students could see their gestures, excitement and their use of voices clearly. Again, teacher’s feedback may influence heavily the way students viewed themselves, making no differences between the two groups in most of the statements in the delivery component.

Finally, the scores on overall performance suggested that self-efficacy levels rated by the students in the intuition-based (questionnaire only) and evidence-based (video and

questionnaire) groups were not notably different ($M = 6.27$, $SD = 1.617$ for group 1 and $M = 6.37$, $SD = 1.129$ for group 2).

4. Discussion

The results of this study reveal that an overall self-efficacy level of the two groups of students was not different no matter whether they watched or did not watch the video recordings after the presentations. Also, their ratings of self-efficacy level in individual aspects did not show significant difference, except on one aspect of a language component, i.e. the use of transition signals/expressions (statement 4) and another aspect of a delivery component, i.e. the use of eye-contact (statement 12). These findings are generally different from the recent study of Wattananan and Tepsuriwong (2015) suggesting that evidence should affect students' level of self-efficacy to some extent.

While many students who rated the questionnaire only (43.3%) disagreed that they could use transition signals/expressions, those who rated the questionnaire after watching the video (46.7%) responded that they could use transition signals. One of the possible reasons was that the use of these language devices was part of the teacher's feedback on their performance. Watching their own video recording could ensure that they have used proper organization components. This finding reflects an influence of teacher's feedback on students' self-efficacy. Secondly, different ratings on using eye-contact between the two groups suggest that video record affected the way students perceived themselves in terms of non-verbal language aspect. This result also supports the findings from Yamkate and Intratat (2012) that suggests that the students tended to realize their weak points in the video evidence in using non-verbal language.

Even though the results did not show significant differences in self-efficacy on oral presentation between the two conditions, the results can suggest some pedagogical implications for oral presentation classes that use video. These implications depend on two factors: size of the classroom and the emphasis on the skills.

In a large class context where the focus of instruction is about language and organization components, it may not be necessary to use video recordings because the results suggest that the students are likely to rely more on the teacher's feedback. Moreover, using video for self-evaluation in a large class might not be practical due to the number of learners because students who are new to a self-directed learning approach need guidance and support from the teacher to evaluate themselves with sound justification (Yamkate & Intratat, 2012). For this reason, teacher's feedback may be more plausible because teacher-student interaction may influence how students perform future tasks.

In a large class context where non-verbal aspect is the main focus, having video recording might be a useful tool to aid students as this allows them to watch their own performances, as well as body language. The results in this study have shown that the issue of eye-contact was tremendously noticed by learners when they watched their own presentation. However, only one aspect of body language cannot be counted as the reason to implement video recordings for oral presentations in class. On the other hand, in the large class context where an implementation of video is not possible, the findings of this study suggest no real effect of the video records on self-efficacy ratings meaning that using a video is not necessary. However, the findings imply the influence of teacher's feedback on the ratings to some extent. Therefore, we would recommend teachers to help raise students' self-efficacy through feedback. Students' good performance on some non-verbal language and body language should be pointed out since positive feedback could help develop self-efficacy beliefs and encourage students to perform better in future tasks (Raofi, Tan & Chan, 2012).

In a small classroom context, if the focus of the class is on verbal performance, e.g. language and organization, the use of video is optional depending on the teacher's

consideration. It would be helpful in making students notice and identify their own fluency and effective or ineffective use of pronunciation. On the other hand, if the class emphasis is on non-verbal language use, video is recommended. This idea was supported by Yamkate and Intratat's (2012) results where students' awareness of their presentation skills and nonverbal components would not have been possible without video recordings which they could repeatedly watch. Furthermore, the statistical evidence from this previous study also showed that positive attitude towards video recording and their increased satisfaction with their second presentations imply that the students benefited from the recordings.

To enhance students' self-efficacy, as well as their performance, teachers should provide constructive feedback to help learners identify the strengths and weaknesses in their oral performances. It is important to note that students will need some training prior to using video recording because they should be taught how to evaluate and improve their verbal and non-verbal skills. This means teachers should consider having a training session with their students before deciding to incorporate video into an oral presentation classroom.

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