Investigating the Roles of the Four Sources of Self-Efficacy Beliefs in an EFL Listening Context

Abstract

Research in the academic context has revealed the positive roles of self-efficacy in teaching and learning, showing that a thorough understanding of self-efficacy is essential. In this study, the relationships between the four principal sources and the formation of self-efficacy belief proposed by Bandura (1997) are examined in order to further this understanding. Based on this, several empirical studies have attempted to explore these relationships in various fields, but the relevant research appears to have produced insufficient empirical data in the field of language learning to support the theory. Therefore, this study aims to investigate how these sources affect basic self-efficacy (BSSE) and advanced skill self-efficacy (ASSE) classified according to the difficulty of listening tasks in English. As many as 107 Korean university students participated in the study and mediation analysis was employed to examine the relationships. The results show that all four sources act as mediators of BSSE, and all but physiological and emotional states serve as mediators of ASSE. The findings support Bandura’s hypothesis and the pedagogical implications are discussed.

Keywords: four sources of self-efficacy, listening, self-efficacy, university students

Researchers have been interested in finding factors that could explain an individual’s performance or achievements and noted that the self-efficacy beliefs held by an individual play a powerful role. Self-efficacy finds its framework in social cognitive theory and has been systematically described and established by Bandura (1986, 1997). Many subsequent studies in various contexts have examined the roles and effects of self-efficacy in several domains. There has been concerted effort and considerable progress in the explication of a comprehensive view of self-efficacy by incorporating other important domain specific variables, particularly in academic fields; student’s academic interest (Kim, 2022), motivation (Kim, 2019; Prat-Sala & Redford,
management of stress or anxiety (Macinlytre, Noels, & Clement, 1997; Torres & Turner, 2016), self-regulation in learning (Kim, Wang, Bong, & Ahn, 2015; Pajares, 2009; Wang & Bai, 2017), academic achievements (Bai, Chao, & Wang, 2019; Bong & Skaalvik, 2003; Kim & Cha, 2017; Kim et al., 2015; Pajares & Urdan, 2006; Todaka, 2017), etc. Most of the related studies suggest that self-efficacy is a powerful construct in motivational, affective, and behavioristic areas. What has been commonly indicated is that the more self-efficacy individuals have, the more likely they are to be active agents participating in their learning processes, thus those beliefs of self-efficacy that have been reinforced through learning experiences and information tend to produce positive outcomes (e.g., Bai et al., 2019; Kim et al., 2015, etc.). The formation of self-efficacy is, therefore, an urgent and important issue for students.

Given that the positive effects of self-efficacy on academic achievement are documented, it is necessary to enumerate and explore variables that are closely related to the development of self-efficacy beliefs. Bandura (1986, 1997) hypothesized that the four sources—enactive mastery experience (EME), vicarious experience (VE), verbal persuasion (VP), and physiological and emotional states (PES)—influence the level of self-efficacy. Although this hypothesis should be concretely supported by empirical data based on various samples so as to provide the ground for pedagogical implications, many studies still provide superficial information on these relationships, and there are not many subsequent studies (Usher & Pajares, 2008). It seems especially true in the field of language learning. Only a handful of recent studies have focused on the relationship between these four variables and self-efficacy, which is context-specific, and it still seems insufficient to verify the widely accepted assumptions and to elucidate their relationship. For this reason, this study aims to investigate the mediating roles of these four principal sources of information on self-efficacy beliefs in the context of listening and provide pedagogical insight. An important link between these four sources and the learning of English listening would establish a point of interaction that can be acted upon by instructors and learners themselves. This would essentially allow for the fine tuning of the learner’s self-efficacy beliefs and by extension the maximization of academic performance in context-specific tasks.
Literature Review

Self-Efficacy Beliefs

According to social cognitive theory, human beings are not passively responsive beings, but rather active agents capable of affecting and changing their environments through self-organizing, self-regulating, and self-reflecting (Bandura, 2006a), allowing for the foundations of self-efficacy. Perceived self-efficacy in its definition is seen as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). This definition is often taken as the explanation of the individuals’ beliefs playing a pivotal role in their academic endeavors.

Individuals’ efficacy reflects their beliefs regarding what or how well they are capable of doing or performing a specific task, rather than reflecting their actual, objective outcomes or performance (Bong & Skaalvik, 2003). According to Bandura (2006), individuals may have little motivation to take action without the belief that they can achieve the desired effects, or outcome expectations, indicating that self-efficacy is a major construct that underlies behavior. In other words, the self-efficacy an individual exhibits leads to particular patterns of behavior (Bandura 1997, 2006a; Bong & Skaalvik, 2003; Pajares, 2009; Stevens, Olivarez, Lan, & Tallent-Runnels, 2004; Wang & Pape, 2007). For example, those with higher self-efficacy tend to try harder when faced with complex or demanding tasks, whereas those with lower self-efficacy are more likely to quit (Bandura, 2006). This indicates that the level of self-efficacy likely affects the choices they make such as the amount of effort to put in and the length of their persistence in times of trouble (Pajares, 2009). It follows logically that such behavioristic patterns of self-efficacy influence learning outcomes (Graham, 2006; Vuong, Brown-Welty, & Tracz, 2010), making it a powerful predictor of students’ performance.

Four Sources of Self-Efficacy and Related Studies

Bandura (1997) hypothesized that self-efficacy beliefs are constructed from four main sources of information—that is, EME, VE, VP, and PES. Each of these conveys information about an individual’s capabilities and has their own set of efficacy indicators. He details the four sources as follows:

EME is considered the most powerful source of information because success is the most direct and convincing evidence of an individuals’ beliefs. Individuals can more strongly enhance self-efficacy beliefs gained through
experiencing achievements compared to those from cognitive self-knowledge structures that already exist. It should be noted that some difficulties in a task cause individuals to exert constant and sustained effort which, if successful, leads to a stronger EME. Individuals can learn how to deal with various tasks despite difficulties and gain the opportunities to learn from potential failures to achieve success.

An individual’s sense of efficacy is partly affected by observing achievements made by others around them (e.g., teachers, classmates, or friends, etc.), which is called VE. It affects efficacy beliefs by allowing one to assess their own ability in relation to modeled attainments. It is seen as particularly persuasive, when the models’ competence is similar to their own. In other words, by viewing and visualizing the attainments of others with similar abilities as their own, the observers are likely to perceive themselves as being able to do it too.

VP is another source that further reinforces self-efficacy beliefs. Positive feedback of their performances or encouragement issued by their significant others has an impact on them maintaining and sustaining their efficacy beliefs. More specifically, positive verbal comments or evaluations can increase the mobilization of the individuals’ effort and the duration that effort is sustained. If realistic and persuasive encouragement leads people to sustain their effort and strive for success, then self-affirming beliefs boost self-efficacy and skill development.

The somatic information produced by PES influences the self-judgment of one’s capabilities. Often individuals perceive physiological activations or responses resulting from stress or difficult situations “as signs of vulnerability to dysfunction” (p. 106). Notably, the stress responses coming from unsuccessful control may generate additional stress through predictive self-arousal. Because a strong stimuli response can undermine performance, people tend to expect success more when feeling unaffected by a stimulus such as tension and visceral agitation. It should be noted that the effect of this on efficacy beliefs lies in how individuals interpret this arousal. For example, it has markedly different effects depending on whether the individual interprets the situation and their response as a challenge or a threat.

Individuals develop beliefs in personal efficacy which they constitute by weighing and integrating information obtained from these sources. The weights and integration assigned to these modes of efficacy information appear differently depending on their functional areas (Bandura, 1997), which is why self-efficacy beliefs are considered task-, domain- or context-specific (Bong & Skaavlik, 2003; Wang, Kim, Bai, & Hu, 2014).
Except for a few recent studies (e.g., Shehzad, Lashari, Lashari, & Hasan, 2020; Wang & Pape, 2007; Zhang & Ardasheva, 2019; Zuo & Wang, 2016, etc.), little research in language learning has an interest in the relationships between these four sources of information and self-efficacy beliefs, and the properties that come from such relationships. In a qualitative approach, Zuo and Wang (2016) explored the properties of the English self-efficacy beliefs of five Chinese doctoral students in the United States. They found several emerging factors that influence these participants’ self-efficacy, which mostly correspond to the four main sources described by Bandura. For example, the main themes they found are the participants’ past experience, social influence and persuasions from their peers and teachers, and PES. In addition, they also found other factors—such as self-awareness of English competence, task difficulty, and interest in English learning—as strong indicators of self-efficacy. Similar emerging themes were found in a study by Wang and Pape (2007) which examined self-efficacy and its factors—that is, English proficiency and task difficulty as perceived by the participants, VP, interest, and attitude toward English learning, the English speaking community, and social and cultural context—in three Chinese secondary students studying English in the same context. These two studies reveal some characteristics of these factors and suggest that there can be differences in the formation of self-efficacy depending on the individual’s cultural background.

In the Hong Kong context, which can be seen as a collective and interdependent society, Bai et al. (2019) examined the relationship between self-efficacy, achievements in English, and VP—one of the four major sources—in 1,092 secondary school students learning English. They hypothesized that relatedness to important others such as parents, peers, and teachers may have a strong influence on their self-efficacy and English achievements. This study confirmed that VP gained from those kinds of people is a factor that influences the formation of self-efficacy despite its weak strength, indicating that having positive feedback and encouragement around assists them in becoming confident in English learning. Based on multiple regression analysis, Bai and his colleagues suggested that social support such as VP may work better as a facilitator which promotes students’ self-efficacy beliefs, rather than working as a factor that directly affects English learning achievements.

In addition, Zhang and Ardasheva’s (2019) study reveals how the relationship between these four sources and self-efficacy is dependent on domain and context, adding further support to Bandura’s theory. They collected data from 263 students studying in six universities in China. The participants were required to make an English public speech at least once in the course. Their background can be characterized by three aspects; the existence of English public speech course experience (223 students were identified to
have taken the related course at least once, but the rest have never done so), gender (203 females vs. 60 males), and academic majors (173 students belonged to liberal arts vs. 90 belonged to sciences). According to the results, three major sources, except PES, were identified to have predictor values for overall self-efficacy beliefs in English public speaking. The most powerful source was EME, which is in keeping with other studies (e.g., Britner & Pajares, 2006; Shehzad et al., 2020, etc.) followed by VP, and VE. This study reveals that these four sources exhibited predictor values with different magnitudes according to the three different aspects, namely, course experience, gender, and majors. This implies that instructors need to have a better understanding of how these variables work in students’ self-efficacy formation in their teaching context. Their study sheds some light on the nature of the theoretically established relationship, although more information is still required.

Reflecting on these findings, the four principal sources may have relationships that are similar but uniquely different depending on the task or domain. Grounded in Bandura’s theory, the current study aims to further expand the scope of knowledge by exploring how self-efficacy, depending on task difficulty, is differently shaped by these four sources of information in Korean university students participating in an English listening course. More specifically, this study is interested in examining the individual mediating effect of each source on listening self-efficacy. The research questions are as follows;

RQ 1: Do the four sources play mediating roles in the development of BSSE (basic skill self-efficacy)?
RQ 2: Do the four sources play mediating roles in the development of ASSE (advanced skill self-efficacy)?

Methods

Participants

The participants in this study are Korean university students who were learning English as a foreign language (EFL), and the majority of them were first-year students studying at a local university, an approximate two-hour drive from Seoul. At the time of data collection, they were taking a 15-week course aimed at developing skills for TOEIC listening comprehension (LC), one of the compulsory modules in liberal arts. The participants were aged
18 to 24 (M = 19.2, S.D. = 1.6) and had various majors. The purpose of this study was stated to the three classes taught by the author of this study, and many of the students voluntarily participated in the study. The information about the factors that would be mainly examined in this study was not specifically mentioned on purpose so as not to unduly influence the data. For the study, the data from 107 students who participated in both data collections were used.¹

**Instruments**

**Four sources of self-efficacy beliefs.** A few tools exist to measure the amount of information from the four sources in other areas—the mathematics self-efficacy index (e.g., Lent, Lopez, & Bieschke, 1991; Matsui, Matsui, & Ohnishi, 1990, etc.) or the academic self-efficacy scale (Hampton & Mason, 2003), etc. Due to the context-specific nature of self-efficacy, it may be inadequate to employ these tools in the field of language learning as such scales may have little relevance in this area. This is supported by Bandura (2006b), claiming that the scale needs to be adjusted according to the area of interest for accurate measurement. Considering that language learning has little to do with mathematics or science education, 21 items for the four sources of self-efficacy beliefs in English listening were constructed based on the literature (e.g., Bandura, 1994, 1997; Bong & Skaalvik, 2003; Usher & Pajares, 2008; Wang & Pape, 2007; Wang et al., 2014, etc.). As shown in Table 1, the category of EME has seven items, followed by five each items under VE and VP, and four for PES.

To ensure validity or whether these items were properly structured in terms of relevance, phrasing, and classification, a fellow researcher in the related field was consulted and the items were modified based on consensus. The reliability of each source was calculated using Cronbach’s α which shows internal consistencies of the items of each category. The resulting coefficients are as follows; the seven items under EME (α = .87), the five each items under VE (α = .91) and under VP (α = .84), and the four items under PES (α = .81). They are high and all exceed an acceptance level, indicating that each set of items can be used as a tool to examine the respective sources.

¹ This study used part of a larger data set, some of which had been analyzed in another article (Kim, 2022).
Table 1

*The items that belong to the four sources of information*

<table>
<thead>
<tr>
<th>Enactive Mastery Experience (EME)</th>
<th>1</th>
<th>I have been doing well with the listening tasks given to me in the listening class.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>I understand the listening text better now compared to at the beginning.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>I worked hard to get good results in vocabulary quizzes for listening.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>I am satisfied with the results of my vocabulary quizzes.</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>After overcoming difficulties and setbacks, I feel more confident in my listening ability.</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Although there were times that I did not understand much, with perseverance I was eventually able to understand it.</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>I had difficulty listening to English, but I like the sense of accomplishment that comes from facing challenges and understanding.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vicarious experience (VE)</th>
<th>1</th>
<th>I feel that my classmates are like me. If they can do the listening tasks, I think I can do it, too.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>I feel that I could concentrate more when I see my classmates focusing on the listening activities.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>When I see my classmates able to correctly repeat whole sentences in class, I feel more confident to do it, too.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>When I see my classmates find it easy to get a lot of information from the listening texts after going over them a few times, I feel I can do this, too.</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>When my classmates get good scores in vocabulary quizzes for listening by trying hard, I also tried hard to do so.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Verbal persuasion (VP)</th>
<th>1</th>
<th>I work harder when my classmates tell me that I am good at listening.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>I feel encouraged and work harder when the teacher tells our class that we are doing well.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>I take it personally when the teacher tells us that our listening is improving.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>I think the teacher is sincere when the teacher tells our class that we are working hard and improving.</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>My close friends (my significant others) praise my effort to improve my listening ability.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physiological and emotional states (PES)</th>
<th>1</th>
<th>I am upset if I don’t understand the content, but I try to listen harder each time.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>I feel nervous because the teacher might call my name in class, but this tension makes me more focused on listening activities.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>The listening activity is fun, so I work harder.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>If I can’t hear what I’m listening to, I get nervous and listen harder.</td>
</tr>
</tbody>
</table>
Self-efficacy beliefs in listening. This study employed a ten-item questionnaire (α = .89) to measure self-efficacy beliefs in listening which was also used in a study by Kim (2022) since it is part of a larger project. Originally, the seven listening self-efficacy items were from an English Self-Efficacy Questionnaire constructed by Wang et al. (2014) and were adapted with three items added to gauge self-efficacy that can possibly be improved through listening activities during class.

The scale has a two-factor structure; basic skill self-efficacy (BSSE) and advanced skill self-efficacy (ASSE) in listening. Items one through six belong to BSSE, and the remaining four items belong to ASSE (see Appendix 1), with Cronbach’s alpha coefficients of .88 and .78, respectively; above an appropriate level.

The participants responded to the questionnaires, answering from one (strongly disagree) to six (strongly agree) and the descriptive statistics can be found in Table 2. Out of 495, the total score in TOEIC LC, the average score taken in the first week was 217.34. As this score shows, the English proficiency of the participants in this study is considered from beginner to low-intermediate. The mean score of the second test which was taken in the 12th week, was 259.35, showing their improvement in listening skills. A paired sample t-test revealed a significant difference between the two scores, \( t(1, 106) = –10.03, p < .001 \). The mean value of ASSE (\( Mean = 2.69 \)) was about one point lower than that of BSSE (\( Mean = 3.68 \)). They both showed improvement in the post-test—by approximately .32 and .51 for BSSE and ASSE, respectively.

Table 2
The descriptive statistics of the variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Data collection</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Listening scores</td>
<td>107</td>
<td>217.34</td>
<td>50.96</td>
</tr>
<tr>
<td>BSSE</td>
<td>107</td>
<td>3.68</td>
<td>.75</td>
</tr>
<tr>
<td>ASSE</td>
<td>107</td>
<td>2.69</td>
<td>.78</td>
</tr>
<tr>
<td>EME</td>
<td>107</td>
<td>3.95</td>
<td>.82</td>
</tr>
<tr>
<td>VE</td>
<td>107</td>
<td>4.01</td>
<td>1.01</td>
</tr>
<tr>
<td>VP</td>
<td>107</td>
<td>4.16</td>
<td>.91</td>
</tr>
<tr>
<td>PES</td>
<td>107</td>
<td>3.89</td>
<td>.93</td>
</tr>
</tbody>
</table>

Notes. BSSE = Basic skill self-efficacy, ASSE = Advanced skill self-efficacy, EME = enactive mastery experience, VE = vicarious experience, VP = verbal persuasion, PES = physiological and emotional states.

Originally, there were eight items that belong to Listening self-efficacy in the study by Wang et al. (2014), but one of them—Can you understand English TV programs made in China?—was deliberately eliminated due to redundancy.
Data Analysis

This study examined the mediating effects of the four major sources for self-efficacy formation, using the four-step procedure for testing mediation by Baron and Kenny (1986). First, the effect of the independent variable on the criterion variable is examined ($c$ in Figure 1). Second, the effect of the independent variable on the mediating variable is tested ($a$). Third, the jointed effects of the independent variable and mediating variable on the criterion variable are tested ($b$). Fourth, the beta values for the previous three models ($a$, $b$, $c$) should be significant and the beta value for the first step should be bigger than the one for the third step ($c > c'$). In order to calculate indirect effect coefficient, a Sobel (1982) test was employed.

![Figure 1. A causal chain in a mediation model adapted from Baron and Kenny (1986).](image)

Results

This study aimed to explore the mediation effects of Bandura’s (1997) four major sources of self-efficacy—EME, VE, VP, and PES—on BSSE and ASSE. RQ1 investigates the mediating effects of the principal sources on BSSE development and the results show that all four sources are serving as partial mediators for self-efficacy development in basic listening skills (see Figure 2). First with EME, a simple regression with the pre-BSSE score as an independent variable.

3 According to the usual Cohen (1988) standards, .1 could be regarded to be small, .3 to be medium, .5 to be a large effect size. Kenny (2018), however, maintains that these values need to be squared since an indirect effect comes from two effects; namely, .01 for small, .09 for medium, .25 for a large effect size. This study follows his recommendation for recognizing the size of the effect of indirect effect coefficients.
variable and the post-BSSE score as a dependent variable is revealed to be significant (see Table 3); $F(1, 105) = 55.67, p < .001$, explaining 35% of the total variance ($\beta = .59$). Then, another simple regression is conducted to see if the pre-BSSE score predicts EME, and this model is found to be significant; $F(1, 105) = 23.06, p < .001$, explaining 18% of the total variance ($\beta = .42$). When a multiple regression is computed to see the joint effects of the BSSE pre-score and EME on the post-BSSE score, this model is also shown to be significant (see Table 4); $F(2, 104) = 79.46, p < .001$, explaining 60% of the total variance. Lastly, the condition that the standardized beta value ($\beta = .59$) in the first model is greater than that ($\beta = .35$) of the third model ($c > c'$ in Figure 1)—is satisfied. This indicates that EME works as a partial mediating variable in the development of BSSE. In addition, the Sobel test indicates that the indirect mediating effect coefficient of EME on BSSE development is .24, which can be considered a strong effect size ($z = 4.17, p < .001$). Figure 2 shows the causal chains including EME as a mediator in the development of BSSE.

![Diagram Figure 2](image)

*Note.* The numbers indicate standardized coefficient (beta)
*p < .05; **p < .01; ***p < .001

**Figure 2.** A causal chain including enactive mastery experience (EME) as a mediator on the development of Basic skill self-efficacy (BSSE).

![Diagram Figure 3](image)

*Note.* The numbers indicate standardized coefficient (beta)
*p < .05; **p < .01; ***p < .001

**Figure 3.** A causal chain including vicarious experience (VE) as a mediator on the development of BSSE.
### Table 3

The simple regressions for the effect of Pre-BSSE, EME, VE, VP, and PES

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Post-BSSE score</th>
<th>EME</th>
<th>VE</th>
<th>VP</th>
<th>PES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized Coefficients</td>
<td>$\beta$</td>
<td>$t$</td>
<td>$p$</td>
<td>$R^2$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>(Constant)</td>
<td>4.90</td>
<td>.00</td>
<td></td>
<td></td>
<td>6.30</td>
</tr>
<tr>
<td>Pre-BSSE score</td>
<td>.59</td>
<td>7.46</td>
<td>.00</td>
<td>.35</td>
<td>.42</td>
</tr>
</tbody>
</table>

Notes. BSSE = Basic skill self-efficacy, ASSE = Advanced skill self-efficacy, EME = enactive mastery experience, VE = vicarious experience, VP = verbal persuasion, PES = physiological and emotional states.

### Table 4

The multiple regressions for the effects of Pre-BSSE and each source on Post-BSSE

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Post-BSSE</th>
<th>Post-BSSE</th>
<th>Post-BSSE</th>
<th>Post-BSSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized Coefficients</td>
<td>$\beta$</td>
<td>$t$</td>
<td>$p$</td>
<td>$R^2$</td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.49</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-BSSE score</td>
<td>.35</td>
<td>5.15</td>
<td>.00</td>
<td>.60</td>
</tr>
<tr>
<td>EME</td>
<td>.56</td>
<td>8.23</td>
<td>.00</td>
<td>VE</td>
</tr>
</tbody>
</table>

Notes. BSSE = Basic skill self-efficacy, ASSE = Advanced skill self-efficacy, EME = enactive mastery experience, VE = vicarious experience, VP = verbal persuasion, PES = physiological and emotional states.
As for VE, it is found to be a partial mediator in the development of BSSE (Figure 3). The result of a simple regression indicates that the predicting power of the pre-BSSE score on VE is significant (see Table 3); $F(1, 105) = 14.19, p < .0001$, explaining 12% of the total variance ($\beta = .35$). When a multiple regression was conducted to examine if the joined independent variables (the pre-BSSE score and VE) predict the post-BSSE score, this model was also found to be significant (see Table 4); $F(2, 104) = 65.16, p < .001$, explaining 56% of the total variance. In addition, the fourth step was satisfied ($\beta = .59 > \beta = .42$). The Sobel test resulted in .17 for the indirect mediating effect coefficient of VE on BSSE development with a much greater than moderate effect size ($z = 3.32, p < .001$).

![Figure 4](image)

**Figure 4.** A causal chain including verbal persuasion (VP) as a mediator on the development of BSSE.

Similarly, VP is found to serve as a partial mediator in the development of BSSE (Figure 4). The result of a simple regression indicates that the predicting effect of the pre-BSSE score on VP is significant (see Table 3); $F(1, 105) = 5.22,$
A multiple regression with the joined independent variables of the pre-BSSE score and VP, and the post-BSSE score as a dependent variable results in having a significant (see Table 4); $F(2, 104) = 46.59, p < .001$, explanatory power of 47% of the total variance. In addition, the fourth step was satisfied ($β = .59 > β = .51$). The Sobel test results in .08 for the indirect mediating effect coefficient of VP on BSSE development with a slightly less than the moderate effect size ($z = 2.07, p < .05$).

PES is shown to have a partial mediating effect in BSSE formation (Figure 5). The result of a simple regression with the pre-BSSE score as a predicting variable and VP as a dependent variable was significant (see Table 3); $F(1, 105) = 7.11, p < .01$, explaining 6% of the total variance ($β = .25$). A multiple regression that examines the effect of the joined independent variables (the pre-BSSE score and PES) on the post-BSSE score as a dependent variable are also significant (see Table 4); $F(2, 104) = 64.86, p < .001$, explaining 56% of the total variance. In addition, the fourth step was satisfied ($β = .59 > β = .47$). The indirect mediating effect coefficient of PES on BSSE development is .12, with a slightly greater than moderate effect size ($z = 2.49, p < .01$).

To sum up, the mediation analyses resulted in revealing that all the principal sources serve as mediators on the formation of the participants’ BSSE with EME having the strongest effect size followed by VE, PES, and VP.

Concerning RQ2, three major sources were found to have mediating effects—EME, VE, and VP, except PES—on ASSE development. First for EME (Figure 6), a simple regression was used to examine if the pre-ASSE score predicts the post-ASSE score (see Table 5); $F(1, 105) = 100.20, p < .001$, explaining 49% of the total variance ($β = .70$). Then, it was tested to see if the pre-ASSE score predicts EME. This model was found to be significant; $F(1, 105) = 12.39, p < .001$, explaining 11% of the total variance ($β = .32$). When a multiple regression was computed to see if the joined independent variables, such as the pre-ASSE score and EME, predict the ASSE post-score. This model was also found to be significant (see Table 6); $F(2, 104) = 78.14, p < .001$, explaining 60% of the total variance. Lastly, the fourth step was satisfied ($β = .70 > β = .58$). This indicates that EME works as a partial mediating variable in the development ASSE. The indirect mediating effect coefficient of EME on ASSE development is .11 ($z = 4.61, p < .001$), which can be considered as a moderate effect size. Its causal chains are shown in Figure 6.

VE is also found to be a partial mediator in the development of ASSE (Figure 7). The result of a simple regression indicates that the predicting effect of the pre-ASSE score on VE is significant (see Table 5); $F(1, 105) = 14.81, p < .001$, explaining 12% of the total variance ($β = .35$). When a multiple regression is conducted to examine if the joined independent variables, the pre-ASSE score and VE predict the post-ASSE score, this model was also found
to be significant (see Table 6); \( F(2, 104) = 76.58, p < .001 \), explaining 60% of the total variance. In addition, the fourth step was satisfied (\( \beta = .70 > \beta = .58 \)). The indirect mediating effect coefficient of VE on ASSE development is .12 with a slightly more than moderate effect size (\( z = 3.11, p < .001 \)).

As for VP, it is also found to play a partial mediating role in the development of ASSE (Figure 8). A simple regression to examine the predicting effect of the pre-ASSE score for VE is shown to be significant (see Table 5); \( F(1, 105) = 5.35, p < .05 \), explaining 5% of the total variance (\( \beta = .22 \)). When a multiple regression was conducted to test if the joined independent variables, the pre-ASSE score and VP predict the post-ASSE score, this model is also found to be significant (see Table 5); \( F(2, 104) = 71.50, p < .001 \), explaining 58% of the total variance. In addition, the fourth step was satisfied (\( \beta = .70 > \beta = .63 \)). The indirect mediating effect coefficient of VP on ASSE development is .07 (in Figure 4) with a slightly lower than moderate effect size (\( z = 2.09, p < .05 \)).

**Figure 6.** A causal chain including EME as a mediator on the development of ASSE.

**Figure 7.** A causal chain including VE as a mediator on the development of ASSE.
### Table 5

The simple regressions for the effect of Pre-ASSE, EME, VE, VP, and PES

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Post-ASSE score</th>
<th>EME</th>
<th>VE</th>
<th>VP</th>
<th>PES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized Coefficients</td>
<td>β</td>
<td>t</td>
<td>p</td>
<td>R²</td>
<td>β</td>
</tr>
<tr>
<td>(Constant)</td>
<td>5.15</td>
<td>.00</td>
<td></td>
<td></td>
<td>11.29</td>
</tr>
<tr>
<td>Pre-ASSE score</td>
<td>.70</td>
<td>10.01</td>
<td>.00</td>
<td>.49</td>
<td>.32</td>
</tr>
</tbody>
</table>

Notes. BSSE = Basic skill self-efficacy, ASSE = Advanced skill self-efficacy, EME = enactive mastery experience, VE = vicarious experience, VP = verbal persuasion, PES = physiological and emotional states.

### Table 6

The multiple regressions for the effects of Pre-ASSE and each source on Post-ASSE

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Post-ASSE</th>
<th>Post-ASSE</th>
<th>Post-ASSE</th>
<th>Post-ASSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized Coefficients</td>
<td>β</td>
<td>t</td>
<td>p</td>
<td>R²</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-.10</td>
<td>.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-ASSE score</td>
<td>.58</td>
<td>8.91</td>
<td>.00</td>
<td>.60</td>
</tr>
<tr>
<td>EME</td>
<td>.35</td>
<td>5.40</td>
<td>.00</td>
<td>VE</td>
</tr>
</tbody>
</table>

Notes. BSSE = Basic skill self-efficacy, ASSE = Advanced skill self-efficacy, EME = enactive mastery experience, VE = vicarious experience, VP = verbal persuasion, PES = physiological and emotional states.
Among the four main sources, it was found that only PES did not play a mediating role in this study (Figure 9). A simple regression to test the predicting effect of the pre-ASSE score of PES is shown to remain at a nearly significant level (see Table 5); $F(1, 105) = 4.24$, $p < .05$, explaining 4% of the total variance ($\beta = .20$). A multiple regression conducted to examine the joined independent variables, the pre-ASSE score and PES on the post-ASSE score resulted in being significant (see Table 6); $F(2, 104) = 85.76$, $p = .0001$, explaining 62% of the total variance. In addition, the fourth step was satisfied ($\beta = .70 > \beta = .63$). However, the indirect effect coefficient (.07) of PES on ASSE development was found to be insignificant ($z = 1.95$, $p = .05$).

Unlike the relationships with BSSE, ASSE had significant causal relationships with only three sources—VE, EME, and VP in order of magnitude of indirect mediating effect.
Discussion

The present study aimed to investigate whether there exist mediating effects on the development of English listening self-efficacy beliefs according to the level of difficulty through the four major sources based on Bandura’s (1997) assumptions that are widely accepted in academic fields.

With the first question, the relationship between the four sources and BSSE was explored. As the results show, all four sources were found to play a role in the mediation of the formation of BSSE. In particular, students’ EME had the strongest mediating role in students’ BSSE—with a strong effect size (the indirect effect size coefficient = .24), followed by VE, PES, and VP. These results are generally in line with several studies (e.g., Zuo & Wang, 2016; Wang & Pape, 2007). The most influential mediating role in the development of individuals’ self-efficacy lies in the success and EME of the tasks they performed. This finding supports the findings of many previous studies (Bandura, 1994, 1997; Shehzad et al., 2020; Usher & Pajares, 2008; Zhang & Ardasheva, 2019). Although not as strong as the first source, VE was also shown to have more than a medium effect size (the indirect effect size coefficient = .17). It can be interpreted that the participants in this study thought that they could do the same by observing that other classmates are actively engaged in and performing given tasks successfully. This eventually appeared to have influenced the formation of their BSSE. Notably, PES were found to be the third-largest mediating variable in the formation of BSSE, with a larger effect size (.12) than VP (.08). In other words, in relation to BSSE, it is plausible that the positive messages delivered by one’s own somatic information, or positively translated somatic information, are more effective than the encouragement received through feedback and comments from teachers or peers.

Concerning the second question, the relationship between ASSE and the four sources was examined. The results suggest that three sources except PES plays a mediating role in the development of self-efficacy in advanced listening skills through learning and in class practice, which is consistent with the findings by Zhang and Ardasheva (2019). Comparing with their relationships with BSSE, the three sources served as mediators in the development of self-efficacy with an effect size that exceeds or is close to medium, which is smaller than those of BSSE.

The findings of the current study further support the importance of students’ EME for self-efficacy building. Its mediating effect on ASSE is smaller than in that of BSSE, which can be categorized as medium-sized (.11) and large-sized (.24) respectively. Such differences in the effect size can be attributed to the participants’ proficiency in English. The participants may have gained more EME by performing relatively easy and basic tasks than by advanced and challenging
investigating the roles of the four sources of self-efficacy beliefs... 19

tasks. According to Bandura (1997), a sense of control over given activities is a crucial element that EME offers. For example, after completing a series of academic tasks given to individuals, they evaluate and interpret the results by themselves, and judge their capabilities according to the interpretation. If they believe that they have been successful or gained more control compared to their own pre-existing knowledge structures, they are likely to bolster their confidence in their capability of doing the related tasks well in the future. In the opposite case, confidence decreases. Such confidence gained from this experience of mastery leads individuals to make choices to have higher levels of persistence and willingness to move on even when faced with challenges and adversities (Bandura, 1997; Mills, Pajares, & Herron, 2006; Usher & Pajares, 2008). Importantly, a strong EME that serves as concrete evidence of one’s capacity provides the energy needed to restructure one’s own efficacy beliefs and affects the changes in efficacy beliefs in the functioning area (Bandura, 2006). EME of the participants with low proficiency in English in the current study appeared to become a strong vehicle for changing their efficacy beliefs by showing a relatively large mediating effect on the students’ listening self-efficacy which supports the findings of the related empirical studies (e.g., Shehzad et al., 2020; Zhang & Ardasheva, 2019, etc.) although some difference in effect sizes is found in the development of self-efficacy according to task difficulty. It is interesting to note that VE is found to have the strongest mediating effect on the development of ASSE, despite an effect size almost equal to EME (.12 and .11, respectively). It seems that social modeling plays a crucial role in improving students’ self-efficacy, especially when students perform difficult listening tasks. Usher and Pajares (2008) claim that social models have a great influence on self-efficacy particularly when students are not well aware of their capabilities because their experience with new or challenging tasks is limited. When students judge their capacities, they often compare them with the people they know, that is, peers. When they see their peers succeed in new tasks, they tend to form the belief that they are also capable of dealing with those challenges well. In other words, when faced with a demanding task and feeling uncertain about their own capabilities to perform it, individuals may have the idea that they can also achieve similar success to the related tasks by observing peers’ success, which likely works as an influential mediator in the formation of their efficacy beliefs. It is worth noting that the effect of VE becomes greater if it comes from people with similar abilities to themselves (Usher & Pajares, 2008). Given that the participants of the current study are those with similar abilities—low proficiency in English, VE may have had more influence on self-efficacy beliefs.

The crucial role of VP has also been reported to be significant in several studies (e.g., Bai et al., 2019; Lam & Chan, 2017, etc.). Through positive feedback and encouragement, students can recognize their strengths and build confidence
in their competence (Bandura, 1997). This study also found that VP retained the almost similar medium-sized mediating effects in both relationships with BSSE and ASSE (.08 and .07, respectively). In other words, comments or positive feedback from teachers or peers constantly and indirectly influences the development of self-efficacy beliefs in listening to English regardless of a task level. Particularly, from the view that VP is most closely related to social and cultural contexts, Bai et al. (2019) hypothesized that VP would affect students’ self-efficacy and English achievements because their participants, Hong Kong secondary students, are nurtured and educated in a collective and interdependent social environment. They found that VP, which is one of the socio-cultural factors, is positively related to self-efficacy although the relationship is weaker than that with academic English performances. It was interpreted that VP may play a role in facilitating self-efficacy development, rather than being a factor that directly affects students’ English learning achievement. Similarly, Lam and Chan (2017) found a positive relationship between VP from parents and teachers and self-efficacy beliefs in Chinese students in Hong Kong. However, considering that these results were obtained from secondary students who are relatively more socially supported by parents and teachers than university students, the results of the current study allow for a deeper understanding of the functions of VP on self-efficacy in university students in a similar cultural context.

While the other three sources served as mediators for ASSE, the fourth, PES, did not play a mediating role. This indicates the last source failed to contribute to the development of self-efficacy due to uncontrollable somatic or emotional responses that they should handle. It is worth noting that this source of PES actually functioned as a mediator of the relationship with BSSE—the third largest in terms of the effect size, even larger than VP. When performing relatively easy tasks, negative arousals are likely to be managed, showing that they influenced the formation of self-efficacy. In other words, when students interpret that they are capable of controlling such somatic information that comes from tension, agitation, or stress, this source may have a mediating effect in forming self-efficacy beliefs. What matters is not the degree of emotional and physical reactions, but how individuals perceive and interpret these reactions (Bandura, 1997). On the other hand, when negative thoughts or responses arise, probably caused by incompetence, efforts to overcome such aversive arousals likely fail to mediate self-efficacy as shown in the relationship with ASSE. By evoking appalling and uncontrollable thoughts that individuals encounter with stress reactions, they are likely to experience high mental hardship that causes the very dysfunction they dread (Bandura, 1997). In addition, “stress reactions to inefficacious control generate further stress through anticipatory self-arousal” (p. 106). This denotes that when students encounter tasks that they feel they cannot handle successfully with their current English proficiency, they reflect on their past experiences, predictable negative emotions or somatic reactions
resulting from unsatisfactory outcomes which may lead to more stress and tension, hindering students from building further self-efficacy beliefs. Importantly, however, Bandura (1997) argues that such an impasse can be overcome by EME. Treatments through EME eliminate the emotional reactions arising from the subjective threats individuals feel, and promote a sense of efficacy as well as performance improvements in the corresponding area.

**Conclusion**

This study examined whether four sources influence the development of English listening self-efficacy of students taking a 15-week English mandatory course in a university, and the results indicate that the four sources actually play mediating roles, which supports the self-efficacy theory (Bandura, 1997). It also uncovered the potentially vulnerable link to self-efficacy development among them—PES, particularly, when students deal with advanced tasks that can be found too arduous for students at their level.

This indicates a need for teachers to look more carefully at students’ PES, particularly when students engage in tasks considered challenging for their current capabilities. As mentioned above, the treatment that removes or controls aversive arousals from physical and emotional responses can be obtained from an individual’s EME, while at the same time improving their self-efficacy beliefs. For a more effective English listening class, it is a teacher’s responsibility to prepare for stepwise tasks in advance so that students can experience gradual success which offers authentic evidence that can persuade and convince them of progressive improvement in their listening skills.

According to Graham (2011), skills in listening are not easily acquired and low self-efficacy can be aggravated depending on the way listening is taught. With this in mind, she emphasizes the importance and effectiveness of listening strategy instruction. For example, teachers can (1) inform students of useful effective listening strategies and how to use them, (2) guide them explicitly through modeling—between a teacher and students or between students and students, and (3) provide positive and constructive feedback that encourages and persuades students as well as the practical use of the strategies. This can possibly lead students to the development of both efficacy and listening skills.

This study has a few limitations to report. In order to measure the four sources of self-efficacy, a scale suitable for the specific domain and function is required (Bandura, 2006b; Usher & Pajares, 2008). The questionnaire constructed for the purposes of this study still needs to go through a more rigorous examination of construct validity in future studies despite having
thoroughly reviewed the literature related to the four sources of self-efficacy and reported the relatively high level of reliability of the scale. In addition, it is of note that these findings are obtained from a sample population with low proficiency in English. Thus, in order to have a comprehensive view and to understand the dynamics of the relationships, it requires follow-up research with other sample groups with different proficiency levels. Similarly, the self-efficacy beliefs that an individual holds are task-specific and may appear differently in different contexts. Since the relationships uncovered in this study belong to the listening context in second language learning, further steps are needed to explore the effects of the four major sources on self-efficacy development in other language learning domains in subsequent studies to fill the existing gaps in the literature. The current study reveals and supports the crucial roles of the four sources of self-efficacy. It is desirable to use self-efficacy as an educational tool to improve students’ academic performances (Zhang & Ardasheva, 2019). Undoubtedly, teachers entering listening classes will need to have a sufficient understanding of the four sources and influential variables that affect the formation of self-efficacy. Taking it a little further, they need to consider how to apply these variables effectively for the benefit of their students.

References


Hyang-Il Kim

**Zur Rolle von vier Quellen der Selbstwirksamkeit beim Hörverstehen im EFL-Unterricht**

**Zusammenfassung**


**Schlüsselwörter:** vier Quellen der Selbstwirksamkeit, Hörverstehen, Selbstwirksamkeit, Studierend
Self-efficacy in Listening (Adopted from the study by Kim, 2022)

Factor 1: Advanced Skill Self-Efficacy (ASSE)

2. Can you understand English TV programs (e.g., dramas which were produced in the U.S.A, the U.K. or Korea, etc.)?

5. Can you understand English movies without subtitles?

4. If your English instructor gives you an English dialogue between two or three people, can you understand it?

3. Can you understand radio programs in English speaking countries?

6. Can you understand English songs?

1. Can you understand stories told in English?

Factor 2: Basic Skill Self-Efficacy (BSSE)

8. Can you concentrate on the content to which you listen?

10. Can you do well the tasks and assignments you have to do to improve your listening skills?

7. Can you understand numbers spoken in English?

9. Can you get the important information of conversations told in the class?