An Exploration of the Impact of Cognitive, Meta-cognitive and Motivational Scaffolding on EFL Students' Oral Production in Asia Context

Qiuyun Wang[1],[a],*

[1]*Haikou Economic University, Haitao Street, Guilinyang, Haikou, China*
a. 854754521@qq.com
*corresponding author

Abstract: This paper examined the efficiency of three types of scaffolding (cognitive, meta-cognitive and motivational scaffolding) in boosting English as Foreign Language (EFL) university students' speaking motivation and proficiency in the context of Asia. To this end, this study is carried out by reviewing and synthesizing previous literature and empiric work. It is found out that each type of scaffolding is effective in improving learners' oral production. However, an ambiguous classification between these three scaffolds, in terms of their operational definitions, would made it hard to measure the extent to which students' speaking performance can be influenced by each type of scaffold alone. Hence, the answer to which type of scaffold is the most effective is inconclusive. In addition, the exploration of the motivational scaffold framework aimed to focus on learners' emotional needs is in progress, yet a much more significant amount of studies and empirical work about this type of scaffold will be needed, in terms of investigating its impact on students' both cognitive and affective aspects. Finally, no current research empirically investigated the impact of these scaffolds on students' speaking motivation; instead only a fragment of descriptive comments can be found in a few studies.

Keywords: cognitive scaffolding, meta-cognitive scaffolding, motivational scaffolding, EFL students, speaking

1. Introduction

English as a global language received a large amount of attention in the educational field of non-English speaking countries. Speaking for the L2 learners would be the most challenging part, compared with other key abilities of language (reading, listening and writing), and it is often linked with learners' low motivation, high anxiety, and less self-confidence [1]. Many instructors also expressed the same concern. In this case, the introduction of scaffolding in the classroom would be seen as a workable solution [2], which stems from Constructivism and Vygotsky's theory of 'Zone of Proximal Development' which refers to the distance between the learner's actual development level and the potential development level he or she could achieve in the next phase after being instructed by someone experienced. Scaffolding is defined as the encouraging support which enables learners to work within the 'Zone of Proximal development' [3]. There's a variety of scaffolding strategies applied in different educational contexts, including EFL teaching environments, and Alias [4]

classified them into three main categories, namely 'cognitive', 'meta-cognitive' and 'motivational-based' scaffold. Compared with 'cognitive' and 'meta-cognitive' scaffolds, 'motivational-based scaffolding' was mainly designed to take care of learners' emotional needs, and stimulate learners' interests during learning [4], as the significance of learners' psychology traits resulting in persistent learning was increasingly recognized in recent years [4,5]. Though an extensive body of research examined and proved the efficiency of different scaffolding strategies, especially cognitive and meta-cognitive scaffolding, in contributing to diverse second language abilities such as writing, writing self-regulation, reading comprehension and listening comprehension [6], much fewer literature and studies investigated and compared the influence of different scaffolds on learners' EFL oral production. To fill this gap, the aim of this research is to assess the role of different scaffolding strategies in EFL speaking proficiency by reviewing and synthesizing previous literature and empirical work. Furthermore, considering the prevalent issue of low student engagement and negative emotions experienced during EFL speaking classes, particularly in the Asian context as identified by Liu and Jackson [7], this study aims to assess the effectiveness of various scaffolding techniques in boosting learners' motivation and competence to communicate in English. In this case, my research questions are:

1.How do different scaffolding strategies(cognitive, meta-cognitive, motivational scaffold) in EFL speaking class contribute to EFL university students' motivation and oral production in Asia?

2.Among these three main scaffolds, which one is the most effective in improving university learners' speaking performance?

2. Literature review

2.1. Cognitive scaffolding and its application in the classroom

Scaffolding has been characterized as 'contingency', 'fading' and 'transfer of ability' according to Van de Pol et al [8], which means that scaffolding should be offered throughout these three phases, with a gradual decreasing amount of it, until when learners can fully achieve their potential development level with the complete removal of scaffold [8]. In the context of second language speaking teaching, the framework of cognitive scaffolding design, which aimed to support students' cognitive activities regarding oral production, can also be found in line with these three phases. For example, in the experiment of Razaghi et al [9], the first phase of the scaffolding provision lasted for 10 sessions and focused on developing students' pronunciation, vocabulary, grammar, interactive communication and discourse management, and there are 6 means in total employed in this phase, including modeling, explaining, feeding back, hints, instructing and questioning. But until the next phase, it was cut down to 5 sessions during which only explanation and feedback were offered. In the last phase, which had three sessions, only the teacher's explanation was found [9]. The same model of cognitive scaffolding, which consists three features ('contingency', 'fading' and 'transfer of ability') and six scaffolding means, can also be adopted in other studies, such as Abdelshaheed [10]. In this study, the author shows more clearly and more specifically about how different six means of scaffolding are implemented in each step according to one lesson, as well as when and how scaffolding is gradually removed. In the first step, the teacher would present the content, explain learning goals and the oral task to students, and instruct them to use visual aids and other scaffolders, then the teacher would introduce and demonstrate the model of Think-Aloud Protocol(TAP) and students would then be guided and supported to complete given tasks by following the previously presented model. Next, students would be encouraged to create their own scaffold when they participate in group work to handle similar tasks with less support from the teacher. Afterwards, the scaffold would be completely withdrawn, and this happens when students are given another similar task and are asked to give an independent oral presentation in this step, and the teacher's feedback

would be offered after individuals finish their presentation. Finally, at the end of the lesson, showing appreciation and giving positive feedback to all students are also emphasized. There's one thing worthy of mentioning. Before teachers offer scaffolding, they should have a deep understanding of students' current level, which allows scaffolding to be more appropriate, and this can often be done by eliciting [9]. Razaghi et al [9] demonstrated that students' language competence could be accurately assessed by designing and asking questions that elicit long oral responses, which evaluate vocabulary, grammar, structure, and pronunciation.

2.2. Meta-cognitive scaffolding and its application in the classroom

Meta-cognition is defined as 'thinking about thinking' by Flavell [11]. Though meta-cognition and cognition play an interactive role in contributing to one's mastery of certain knowledge, they are quite different in nature [12]. Some theorists have provided explanations about the distinction between these two concepts. According to Schraw [13], while meta-cognition requires understanding how the acquisition of knowledge should be achieved, cognition is more about 'knowledge' and 'information' itself. In this regard, meta-cognition is generally considered a tool to 'plan' 'monitor' and 'evaluate' a learner's cognitive process during learning [12]. Therefore, 'planning'(before cognitive activity) 'monitoring' (during cognitive activity) and 'evaluation' (after cognitive activity) are three main components which construct the framework of 'meta-cognition'. In the foreign language speaking arena, some studies examined the impact of a single component of meta-cognition strategy on L2 learners' speaking performance, such as pre-task planning [14]. However, only a few research were conducted to explore meta-cognitive scaffolding employed in the EFL speaking context, and its efficiency in students' oral production. Among these few studies, one revealed specifically how meta-cognitive scaffolding was employed in the classroom. In the study of Jafarigohar [6], the provision of scaffolding, aiming to encourage meta-cognitive activities, went through three phases, including before, during and after speaking activities, which kept in accordance with the three features of 'meta-cognition'(planning, monitoring and evaluation). In the first phase, the teacher would emphasise the importance of goal setting and guide students to prepare their talk (plan their cognitive activity) by modeling thinking aloud. In addition, prompts were provided in order to deepen their meta-cognitive awareness, such as 'have you planned your talk'; 'how are you going to start your presentation', and etc [6]. While speaking, students would be meta-scaffolded by a checklist with regard to diverse linguistic features such as 'correct grammar tense', 'word choice', and etc. After speaking, students would be guided to self-evaluate their own performance. In terms of how to evaluate, it can be learned in the first phase when students were asked to evaluate the teacher's modeling.

2.3. Motivational scaffolding and its application in the classroom

Many scholars and educationalists stressed the importance of motivation during students' learning process after a significant relationship between motivation and learning productivity has been found [15]. Motivation is rather complicated, in general, and refers to students' willingness to commit consistently to tasks, with three dimensions, 'cognition' ', perception' and 'effectiveness' [16]. Here, we are mainly talking about learners' emotions and their corresponding 'affective scaffolding'. High level of speaking anxiety resulting in a lack of motivation and engagement among EFL learners was significantly identified in an extensive body of researce [7], and multifaceted causes were also greatly analyzed, including both internal factors (personality characteristics such as shyness, low self-esteem and low self-confidence; having a stage fright; fear for peer evaluation; inadequate language knowledge; and etc.) and external factors (learning environment, instructors' explicit feedback or direct controlling behaviors, previous scarce similar personal experience due to exam-oriented education system) [17]. In this regard, an appeal for designing motivational scaffolding that can

contribute to both learners' higher motivation and learning efficiency has been made [15]. Unfortunately, few attempts have been made to design this type of scaffolding, and there is still a void of research on its role in the EFL speaking context as well [4], except a few such as Jafari et al [18], and Pishadast et al [19].

When designing motivational scaffolding, the unique characteristics that distinguish it from cognitive and meta-cognitive scaffolding should be taken into account, which was clearly pointed out by Alias [4]. While cognitive and meta-cognitive scaffolding are mainly related to assisting students to solve problems and self-regulate their learning process, motivational-based scaffolding should be designed to take care of learners' motivational states such as 'attribution' and 'encouragement' [4]. Chen [5] also emphasized the importance of incorporating learners 'psychological traits' into the framework of motivational scaffolding. In order to foster motivation, Belland et al [15] even summarized eight motivational goals that should be used as a guideline when designing this type of scaffolding, which consist of 'establishing task value', 'promoting mastery goals', 'promoting a sense of belonging', 'promoting emotion regulation', 'promoting expectancy for success' and 'promoting autonomy'.

Due to the fact that there is not much empirical work on investigating the application of motivational scaffolding in the EFL speaking context, a glimpse of the existing research is only allowed. In the research of Jafari et al. [18] and Pishadast et al [19], the employment of motivational scaffolding strategies in the speaking class takes many different forms. For example, the topics and the tasks were carefully selected and well-designed to meet the interests of learners and their current level of language proficiency; the instruction was based on activities; friendly, supportive and secure learning environment was created, such as the seats arrangement in the form of 'U' shape, a more friendly manner was used by the instructor; the feedback was inclined to be encouraging and positive aiming to boost learners' self-confidence; peer-scaffolding was available; songs and rhythms were included; waiting time strategy was employed; and students were allowed to choose the next speaker.

2.4. Instruments and the procedure of experiments

Various research studies used different instruments to measure learners' oral production. Apart from directly adopting the most commonly internationally acknowledged standard English language proficiency test as a tool, such as PET, the IELTs speaking test which can assess students' oral production regarding fluency and coherence, vocabulary range, grammar accuracy, and pronunciation features [18,19], some researchers also chose to design the speaking test by themselves, but its reliability and validity were ensured by a jury of English instructors who has years of speaking teaching experience [10]. Despite different tools, 'fluency' 'accuracy' and 'complexity', as the three main constructs of oral production [20], were all incorporated in the criteria of different speaking tests.

The procedure for researching the effectiveness of different types of scaffolding on EFL speaking performance is the same across all studies and includes pre-and post-tests. Firstly, subjects with the same level of English proficiency were selected based on their speaking test scores before the experiment. Then, the participants are randomly divided into two groups: experimental and control groups. The experimental group receives scaffolded instruction in speaking classes, while the control group does not. After a period of treatment, both groups are tested again using the same English-speaking test, and a quantitative analysis is performed to determine the efficacy of the investigated scaffolding strategy.

3. Results and discussion

In review of all literature and empirical work on the efficacy of different scaffolding

strategies(cognitive, meta-cognitive and motivational scaffolding) on the EFL learners' speaking proficiency, the majority of them concluded their significant role, except one study [21] which demonstrated no significant impact of motivational scaffolding on students' oral production accuracy and fluency.

However, as for which type of scaffolding is the most effective, there is no conclusive answer. For one reason, the study of simultaneously comparing the efficiency of all three scaffolds on EFL students' oral production is very scarce. A few studies merely compared two of them. Among these few existing comparative work, the finding of one study [18] showed that motivational scaffolding is more productive than meta-cognitive scaffolding in improving students' speaking ability, which is consistent with the result of Pishadast et al [19], while Shooshtari et al [21] who investigated the role of feedback, as one single component of cognitive scaffolding based on the framework of Van de Pol et al [8], and the role of motivational scaffolding, found out no significant role of motivational scaffolding in enhancing students' speaking performance. Another possible reason for this mixed result is the complicated situation where no single scaffolding strategy employment can be ensured in different experimental groups in some studies. For example, in the study of Pishadast et al [19], according to the description of the author, the teacher would also provide assistance when students were engaged in cognitive activities, and if so, it can be assumed that the assistance was more of cognitive scaffolding such as vocabulary, grammar, and etc. In this case, the interference of the existence of other types of scaffolds was not taken into account when the researcher drew the conclusion. In addition, 'instructional scaffolding' was investigated in some experiments [3], whose operational definition usually refers to the combination of cognitive and meta-cognitive scaffolding. Generally, it indicates that it was usually an integrated scaffold design instead of any single type of scaffold that was employed in the real classroom, though they had very different conceptual definitions.

Lastly, with regard to the role of these three types of scaffolding in students' motivation in the EFL context, there is no empirical work but only descriptive comments and assumptions, for example; Belland et al [15] claimed that all the cognitive scaffolds could be reasonably assumed to be capable of fostering students' motivation. Wijetunge et al [22] also commented that scaffolding can help ease students' anxiety and frustration when speaking. Furthermore, the purpose of the design of some scaffolding (motivational scaffolding) was to encourage students' motivation. However, no matter how plausible this assumption may sound, no reliable and empirical evidence can be found to prove it. One thing is that studies on investigating motivational scaffolding are still rare, and attention to learners' psychological traits has been paid in recent years [4,5]. Based on this, more experiments in the field of the impact of scaffolding on students' emotions, especially motivation, will need to be carried out in the future.

4. Conclusion

To conclude, by reviewing previous studies and literature on the efficacy of three scaffolds in the EFL learners' oral production and motivation, there is a consensus that they are all effective in improving students' speaking achievement. However, an ambiguous classification between these three scaffolds, in terms of their operational definitions, when they were employed in the real classroom, made it hard to measure the extent to which students' speaking performance can be influenced by each type of scaffold alone. Hence, the answer to which type of scaffold is the most effective is inconclusive. In addition, the exploration of the motivational scaffold framework aimed to focus on learners' emotional needs is in progress, yet a much more significant amount of studies and empiric work about this type of scaffold will be needed, in terms of investigating its impact on students' both cognitive and affective aspects. Finally, no current research empirically investigated the impact of these scaffolds on students' speaking motivation; instead only a fragment of descriptive

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