

Research Article

Development and Validation of a Language Teacher Scaffolding Awareness (LTSA) Scale: A Case of Iraqi EFL Teachers

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Abstract: In the study of education, there are still many researchers who use quantitative research methods to design questionnaires for their studies based on a theory. The purpose of this study was to design and validate a scale to measure a Teacher Scaffolding Awareness. To this aim, 50 Iraqi EFL teachers teaching at language institutes were asked to complete a seven- item questionnaire: the newly-designed Teacher Scaffolding Awareness. Exploratory Factor Analysis (EFA) was used to identify the appropriate items components of the questionnaires. Finally, the results manifested two factors namely, teacher awareness about his/her own responsibilities and students' individual role, for describing teachers' awareness about scaffolding. This study has some implications for teachers, educational system, institutes' principals, and EFL students.

Keywords: Exploratory Factor Analysis, Teacher Scaffolding Awareness, Validation.

1. INTRODUCTION

A teacher supporting strategy is named as scaffolding concept. This term first described by Wood, Bruner & Rose (1976) who explained it as “a process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his/her unassisted efforts” (p.90). It is helpful for teachers to become aware of scaffolding and learn how to put scaffolding strategies among their teaching strategies (Masters, 2013).

Despite the abundance of research on scaffolding (e.g. Dabbagh, 2003; Macdonald, & Martinez, 2005), little empirical application of scaffolding strategies has been undertaken especially in Iraqi contexts (Abdul-Majeed & Muhammad, 2015). It seems to be the result of teachers' lack of awareness about scaffolding. Hence, the lack of awareness and knowledge on the part of teachers on such an issue may interrupt their supportiveness at the earlier stages of interaction with their students.

1.1. Literature Review

The concept of scaffolding was first inspired by Vygotsky's Socially Mediated Cognitive Development (1978) through which he assumed that guided communication between an adult or more competent peer can enable children to progress more,

allowing a child to increase his or her perception about the Zone of Proximal Development. As a result, through scaffolding, not only may a child acquire competency in learning but also internalize the thinking, strategy or mechanism to approach similar goals (Rogov, 1990).

Cazden (2001) believed that teacher- student interaction is regarded as one of the most influential criteria in the language learning process and a good interaction between them may create positive attitude for learners toward learning another language and this may lead them to have better thinking capability. Teacher-student interactions can be viewed from psychological perspective. Transactional Analysis (TA) originally introduced by Berne (1958) is a theoretical assumption in the field of psychology and psychotherapy through which aspects of human interactions have been determined. “Transactional analysis is a theory of personality and a systematic psychotherapy for personal growth and personal change” (Stewart & Joines, 1987, p. 3).

The theoretical foundation of this study lies on Vygotsky's sociocultural theory, originated from the work of the Russian psychologist Vygotsky (1978) and his colleagues. Sociocultural theory (SCT) holds that human mentation is essentially mediated by cultural artifacts, activities, and concepts (Ratner, 2002).

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Specifically, SCT aims to describe and explain the psychological processes (language learning being one of them) by drawing upon key constructs including mediation and the zone of proximal development (ZPD) as well as activity theory (Luria, 1973, 1979).

To better explain the mediation process, SCT draws upon another key construct, the ZPD. Vygotsky defines the ZPD as “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (1978, p.86). Briefly, the interaction approach focuses on examining how L2 development happens through interactions while sociocultural theory of L2 learning examines how L2 learning happens in interactions. Thus, the interaction approach relies on evidence of instances such as negotiation sequences between teacher and learners that have been shown to be able to create favorable cognitive and social conditions for L2 development.

Therefore, it seems that incorporating sociocultural theory of L2 learning in the examination of the role of teacher in L2 learning and considering their role in finding students’ mistakes and providing assistance for them would offer a complementary at least “thought provoking” (Foster & Ohta, 2005, p. 404) picture of how L2 learning happens as a whole. Scaffolding is a commonly used construct which can be traced back to sociocultural theory. Generally speaking, it refers to various kinds of support learners receive from the teachers, peers, materials and the learning context to acquire and expand their knowledge and abilities. For learning to be most effective, Vygotsky highlights the crucial role of the Zone of Proximal Development (ZPD, that is, “a process of setting up the situation to make the child’s entry easy and successful and then gradually pulling back and handling the role to child as he becomes skilled enough to manage it” (1983, p. 60). This was a definition of scaffolding in first language learning. But in terms of learning a second language, Vygotsky’s original idea was that the experts act as helpful guide to the novice to enhance their progress. However, some recent research studies have suggested that peer-to-peer interaction may also be of advantage for their learning. That is, a novice can also play the role of an expert (Tudge, 1990; Wells, 2000).

1.2. Some Previous Studies on Teachers’ Awareness about Scaffolding

Birjandi and Jazebi (2014) have made a comparative analysis of teachers’ scaffolding practices. To do so, 90 instruction hours of 30 teachers were recorded and transcribed. Short-Focused Conversations (SFCs) formed the basic unit of analysis according to which teachers’ qualification, high-support and low-support scaffolding, and negotiation type were examined. The findings of the study strongly supported

the notion of fading and the timely withdrawing of assistance to enhance learners’ growth of autonomy. They pinpointed the vital role of scaffolding, without which fossilization and the prolonged dependence on other-regulated assistance occur, and thus, learners’ autonomy in self-discovery is hindered.

Zurek, Torquati & Acar (2014) described the process of “scaffolding” as a teaching strategy in early childhood education. They demonstrated how scaffolding can promote children’s learning about the natural environment. Examples of scaffolding were provided from seventy-four running record observations made over a two-year period in a nature-based preschool program. Qualitative analysis examined the extent to which scaffolding was used to support children’s learning about nature; the types of scaffolding strategies used by teachers; whether high- and low support strategies were used in specific types of situations; the effectiveness of scaffolding; and what children learned when teachers engaged them in scaffolding. Examples illustrate specific pedagogical strategies used in scaffolding. Scaffolding was used relatively frequently within the program (21% of events analyzed), and inferential questioning was the most frequently used strategy. The result manifested that teachers flexibly used a variety of scaffolding strategies to support children’s learning about the natural environment.

In Acar’s study (2005), teachers’ awareness about scaffolding was examined through their use of technological tools to support their students and enhance their pedagogical practice. For this aim, a group of primary school teachers were regarded as exemplary in the use of computer in their classroom. Then, in depth investigation about teaching strategy was followed on one teacher through focusing particularly on the use of “scaffolding” as his supporting strategy in working with students by the use of computers. Codifying teacher support strategies emanated eleven constructs which formed four themes: (a) teacher expertise, (b) teacher understanding of supporting strategies, (c) the nature of scaffolding, and (d) the role of the computer.

Briefly speaking, teacher’s awareness and knowledge of the process of scaffolding can alter their diagnostic strategies, fossilization and feedback providing.

1.3. Purpose of the Study

The study intended to design valid and reliable scale to evaluate language teachers’ awareness of scaffolding theory. In this study it is supposed that Iraqi teachers do not know much about scaffolding, therefore the purpose of this study is to analyze the assumed hypothesis. In other words, the main goal of the researchers in guiding the current study was to see whether their speculation about EFL teachers’ awareness about scaffolding is appropriate in Iraqi

context or not. It thus deemed necessary for teachers and researchers to delve into issues which can positively lead to the L2 learners' progress in general and improvement in teachers' teaching strategies in particular. Stemming from these goals, the following research question guided the validation of LTSA:

RQ. Does the newly-designed Language Teachers Scaffolding Awareness (LTSA)

Scale demonstrate psychometric properties (reliability and validity)?

2. METHODOLOGY

2.1. Instrumentation

In order to conduct this research, a questionnaire designed by the present researchers was formed to achieve the required outcome.

2.2. Participants

A number of 50 female Iraqi EFL teachers majoring in English participated in the study. They were between 23 to 45 years old, but the age range was not regarded as the influential variable in this study. All of these teachers graduated from Baghdad university. They were chosen as the participants of this study based on a cluster sampling, as all of them were chosen from 6 institutes located at Baghdad.

2.3. Procedure

All these teachers participating in this study were teaching the same degree of intermediate level in English language institutes, but they were categorized in terms of their teaching experiences into two groups. The inventory was distributed to 50 teachers in the second half of the academic year, and they were required to answer the items carefully.

3. Results

The data analysis consisted of entering the data into SPSS (version 20). The calculation conducted was Principal Component Analysis (PCA), which allows one to find the factor loading of the estimated components for the questionnaire items of the present study.

3.1. Internal Consistency Reliability

One of the information that should be reported by researchers is the reliability of items that have been built to measure the constructs. Measurement of instrument reliability is estimated through the Cronbach Alpha value. The Cronbach Alpha value of the instrument must exceed a minimum of 0.7 for adoption in this study. Table 1 shows the Cronbach Alpha value for each component of the Teacher awareness of scaffolding construct. This construct has an Alpha Cronbach value exceeding the value of 0.7 and can be applied in this study.

Table 1. Reliability Statistics

| Cronbach's Alpha | Number of Items |
|------------------|-----------------|
| 0.867 | 7 |

3.2. Exploratory Factor Analysis (EFA) for Constructs

Teacher awareness of scaffolding is measured using 7 items labelled as item 1 to item 7. Each item statement is measured using an Interval Scale of 1 to 10. The EFA procedure using Principal Component Analysis (PCA) with Varimax Rotation has been performed on 7 items that measure the construction of Teacher awareness of scaffolding. The findings from Table 1 show that the Bartlett Test score is significant (P value= 0.000 < 0.05). Measure of Sampling Adequacy by Kaiser-Meyer-Olkin (KMO) is 0.828 which is above the minimum value of 0.6. Both achievements (Significant Bartlett Test, and KMO value > 0.6) reflect observed data for subsequent procedures in EFA.

Table 2. KMO and Bartlett's Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | 0.828 |
|--|--------------------|---------|
| Bartlett's Test of Sphericity | Approx. Chi-Square | 407.446 |
| | df | 21 |
| | Sig. | 0.000 |

Table 3. The Estimated Amount of Variance

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 4.015 | 57.358 | 57.358 | 4.015 | 57.358 | 57.358 | 3.738 | 53.398 | 53.398 |
| 2 | 2.378 | 91.336 | 2.378 | 33.978 | 91.336 | 2.656 | 37.939 | 91.336 | |
| 3 | 0.186 | 2.651 | 93.987 | | | | | | |
| 4 | 0.172 | 2.452 | 96.440 | | | | | | |
| 5 | 0.126 | 1.807 | 98.246 | | | | | | |
| 6 | 0.075 | 1.075 | 99.318 | | | | | | |
| 7 | 0.048 | 0.682 | 100.000 | | | | | | |

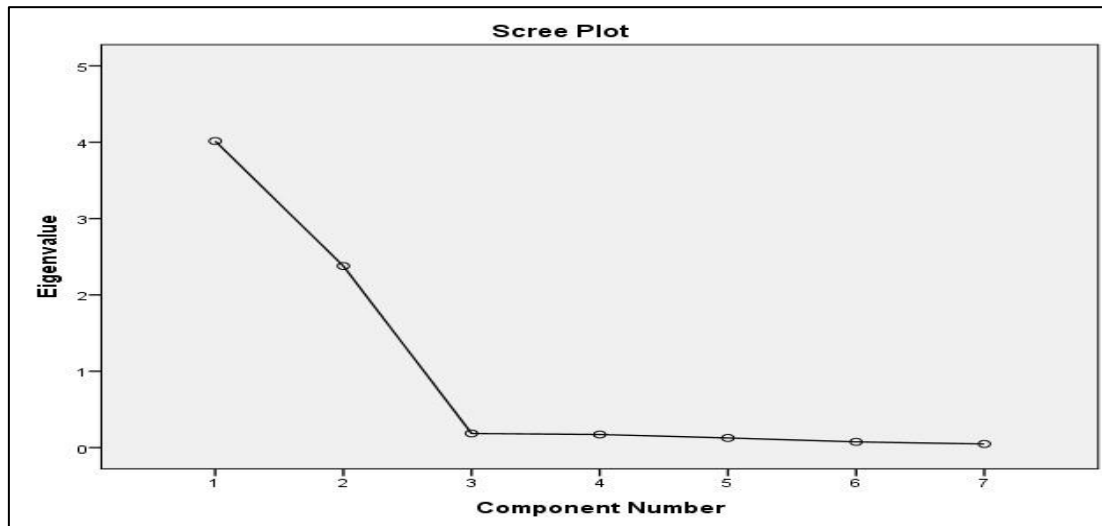
The Eigenvalues before rotation for factor 1 accounted for more variance than the other remaining factors (57.358% compared to 33.978, 2.651, 2.452,

1.8, 0.7, 1.072, and 0.682) and after rotation it accounts for 53.398% variance.

The Total Variance Explained is important for the researcher to know what percentage of items used can measure the study construction. Table 3 shows the total value of variance estimated by the items used to measure the construction of teacher awareness about scaffolding. The reading from Table 3 shows that the construction of measured using 7 items in 2 components can measure the construction of the teacher awareness

of 91.336%. This value is sufficient because it exceeds the minimum requirements of 60%.

The findings from Table 3 show the construction of teacher awareness about scaffolding measured by two components only. Thus, the researchers want to know the item chosen to measure the component.



The scree plot above indicated the point of inflexion on the curve. This curve is interpreted as begins to tail off after two factors and then stable plateau was reached.

Table 4. Communalities (Extraction Method)

| | Initial | Extraction |
|--|---------|------------|
| I try to pay attention to my students learning needs. | 1.000 | 0.930 |
| I let my students to correct their mistakes. | 1.000 | 0.887 |
| I allow my students to raise their problems with me. | 1.000 | 0.923 |
| I solve their learning problems. | 1.000 | 0.933 |
| Helping students to solve their problems is not needed only by teachers. | 1.000 | 0.884 |
| I know when my students face a learning problem. | 1.000 | 0.955 |
| I let other students to solve their classmates' learning problems. | 1.000 | 0.881 |

Table 4 presents the communalities before and after extraction. Principal component analysis works on the assumption that all variance is common; therefore, before extraction the communalities are all 1. The communalities in the column labelled Extraction

reflected the common variance in the data structure. For example, 0.93% of the variance associated with question 1 is shared. The lowest shared variance belonged to the item 7 which was reported to be 0.881.

Table 5. Rotated Component Matrix

| | | Factor 1: Teacher Awareness about his/her Own Responsibilities | Factor 2: Teacher Awareness about Students' Individual role |
|--------|--|--|--|
| Item 1 | I try to pay attention to my students learning needs. | 0.959 | |
| Item 2 | I let my students to correct their mistakes. | | 0.942 |
| Item 3 | I allow my students to raise their problems with me. | 0.956 | |
| Item 4 | I solve their learning problems. | 0.959 | |
| Item 5 | Helping students to solve their problems is not needed only by teachers. | | 0.931 |
| Item 6 | I know when my students face a learning problem. | | 0.975 |
| Item 7 | I let other students to solve their classmates' learning problems. | | 0.931 |
| | Eigenvalue | 3.738 | 2.656 |
| | % of Total Variance | 53.398 | 37.939 |
| | Cumulative | 53.398 | 91.336 |

Table 5 shows the distribution of items received to measure the constructs of teacher awareness about scaffolding. All items have a factor loading exceeding the minimum limit of 0.6. In addition to the factor loadings, eigenvalues, and % of variance explained are presented in this table. From the table above, it can be concluded that no item needed to be excluded and they can all be used for the teacher awareness about scaffolding questionnaire in further studies.

Eigenvalue for component 1 and 2 reported to be 2.656 and 3.738 respectively. Internal consistency

examines the inter-item correlations within an instrument and indicates how well the items fit together conceptually. Cronbach's alpha is equivalent to the average of the all possible split-half estimates and is the most frequently used reliability statistic to establish internal consistency reliability (Trochim, 2001). Cronbach's alpha was computed to examine the internal consistency of the questionnaire items. Therefore, Cronbach's alpha is presented in Table 6.

Table 6. Correlations among the Item Components

| Num. of Items | Components | Questionnaire Items Cronbach | Alpha |
|---------------|------------------------------------|---|--------------|
| 4 | Teacher Awareness | I try to pay attention to my students learning need | |
| | about his/her Own Responsibilities | I allow my students to raise their problems with me. | |
| | about Learning | I solve their learning problems. | 0.977 |
| 3 | Teacher Awareness | I know when my students face a learning problem. | |
| | About Students' Individual Role. | I let my students to correct their mistakes. | |
| | | Helping students to solve their problem is not needed only by teachers. | |
| | | I let other students to solve their classmates' learning problems. | 0.933 |

4. DISCUSSION

This study sought to design and validate a scale to evaluate language teachers' awareness of scaffolding theory based on the definition of the construct which exists in the literature. In order to answer the main research question, Exploratory Factor analysis was run, which revealed that except for one item the LTSA Scale is unidimensional and demonstrates high reliability and validity.

The instrument developed for assessing language teachers' awareness of scaffolding can raise awareness and foreground the role of teacher in classroom management. Moreover, it can be employed along with other instruments that assess language teachers' awareness about how to provide support for their students. It is also possible to adapt the instrument to teachers in general in future research. Some other implications also exist based on the results of the study.

The developed questionnaire can raise Iraqi EFL teachers' awareness and lead them to use different strategies to handle scaffolding procedure, whether from teacher to learners or from students themselves in Iraqi EFL classrooms, the role of teachers and learners in classroom interactions.

Designing the questionnaire on Learner-Teacher Interaction goes back to the past decades, when a group of researchers (Fisher, Fraser, & Cresswell,

1995) presented information about students' awareness about their teachers. In their questionnaire they found five socio-affective components of teaching; the nurturing helper, authority and disciplinarian, shaper of children's lives, presenter of information and facilitator of thinking and learning. Their study conducted on two groups of students with two levels of thinking (deep and Surface thinkers). The researchers found about teachers' scaffolding role, as transmitter of information (from surface learners' perspectives) and shaper of students' academic lives (from the perspectives of deep thinker learners).

More recently, Rodriguez and Solis (2013) in their preliminary study on teachers' awareness of Learner-Teacher Interaction, investigated the cognitive processes employed by master teachers using interview by implementation of micro genetic techniques. Their aim was concentration on the teaching brain processing through emic and etic analyses. So, they extracted three emergent themes including; 1) connection, 2) collaboration, and 3) mutual effects.

The results manifested the importance of the role of interaction for teachers from "Neurolinguistics perspectives".

What motivated the researchers to do this study was the interest on designing a questionnaire on teachers' awareness about scaffolding from socio-

affective perspective, which seems to be missing in the present studies nowadays.

5. CONCLUSION

This study has some pedagogical implications for teachers, university and Institutes' principals and teacher educational system and students as well from socio-affective perspectives. It can be used for experienced and novice teachers. Many experienced teachers can improve the quality of their teaching in any educational settings once they become more aware of scaffolding concept.

Furthermore, many universities and Institutes' principals can make use of such scales in their teacher training courses held for novice teachers in order to train them to beware of scaffolding and know how to employ the best types of strategies in their teaching, and from a wider perspectives teacher educational system should be informed about different ways to make their educational system in the way that teachers become more aware of their main role in students' progress. The role of students themselves should not be neglected, if teachers come to the understanding of how to arouse students' motivation by taking their responsibilities into account and creating self-confidence for students by making them aware about their own responsibilities, this can be helpful for students to build their own way on education and their life as well.

Some limitations to the study warrant a comment. First of all, the number of items were too low. The sample was also restricted to Iraqi EFL teachers; more investigations are needed for other countries as well.

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