

## **Scaffolding in PhD Supervisory Talk**

Wenwen Tian

*King Mongkut's University of Technology, Thonburi*

Richard Watson Todd

*King Mongkut's University of Technology, Thonburi*

Pornapit Darasawang

*King Mongkut's University of Technology, Thonburi*

### **Abstract**

Adopting Vygotsky's socio-cultural perspective, this case study aims to explore and describe how a supervisor's scaffolding create learning opportunities for a student to practise critical thinking and responding ability in PhD face-to-face supervisory talk. Data was collected through audio-taping which was then used as the basis for a stimulated recall interview with the supervisor to identify purposes. Types of scaffolding were identified inductively from the supervision transcript through a process of recursive categorisation and were then matched against the stated purposes. The findings suggest that a supervisor plays a focal role in guiding, challenging for clarification, supporting and shaping contributions so that the PhD student receives opportunities to express, reflect on and reason out her research ideas, and to learn from the unfolding interaction through constant meaning negotiation and knowledge construction. Limitations and recommendations are discussed for future research on supervision practice.

**Key words:** socio-cultural theory, scaffolding, PhD supervision, PhD supervisory talk

## **1. Introduction**

Supervision as an essential component of postgraduate study is becoming an important research area (Wisker et al., 2003). Academic research on supervision has attracted considerable interest from various scholars and institutions in western countries like Canada, the US, UK and Australia in the last three decades. The existing research covers a wide range of topics, such as supervisory relationships with regard to personal problems/difficulties, mismatches of expectations concerning cultural differences or academic experience, the effectiveness of supervisory functions (Wisker, 2005; Zhao, 2001, 2003), conceptual models of supervisory roles (Lee, 2007; 2008; Gatfield, 2005; Clarke & Collins, 2004), supervisory styles and their effects on student outcomes, supervisors' management of differing roles during stages of students' candidature, candidates' experiences, supervisors' experiences, evaluation of supervision, epistemologies of supervisory practice, and other issues associated with supervision (Latimer, 2005; Calma, 2007). Most studies have explored supervisors' and students' perceptions of supervision rather than looking at the actual interactions in supervisory talking processes. To date, supervisory talk as negotiation of meaning-making process has received little attention in the supervision research literature. However, Wisker et al. (2003) argue for the value of supervisory talks between supervisors and PhD students as a means of promoting collaboration and interaction with a view to empowering students to be responsible for their own research. In order to investigate the value of supervisory talks, a qualitative naturalistic case study was conducted to investigate how a supervisor's scaffolding strategies can create learning opportunities to facilitate a PhD student's thinking and responding ability during a routine face-to-face supervisory meeting. The theoretical framework is based on Vygotsky's socio-cultural perspective.

## **2. Theoretical Background**

### **2.1 Definition of PhD Supervisory Talk**

Doctoral supervision is a profound and lengthy joint venture involving both the supervisor and student's interactive, complete, personal and professional commitment to nurture the development of a competent, autonomous researcher to make contributions to the academic community (Delany, 2009; Latimer, 2005; Shannon, 1995). Nowadays, with the development of high technology, different types of supervision can be categorized into two modes: written (e.g., hard-copy files; email exchanges; text messages via mobile phone) and spoken (e.g., face-to-face talk, web-based talk, telephone conversations). In this study, *PhD supervisory talk* refers to face-to-face dialogues naturally occurring between a supervisor and a PhD student aiming to question and discuss research ideas, realise problems, achieve shared understanding, and construct knowledge on a certain area of research.

### **2.2 Conceptualisation of 'Scaffolding' in PhD Supervisory Talk**

PhD supervisory talk involves extensive interactions. Therefore, the investigation of such talk should be founded in theories of teaching and learning which prioritise interaction.

Vygotskian sociocultural theory attaches great importance to social interaction in learning (Vygotsky, 1978, cited in Lantolf, 2000; Kinginger, 2002). Under sociocultural theory, the process of teaching and learning is described as "much more than the simple transmission of prescribed knowledge and skills" (Daniels, 2001, p.2) but rather emphasizes dialogue and co-construction of knowledge (Wells, 1999) through teacher-learner interaction and communication. One crucial notion in the Vygotskian framework concerning learning is known as scaffolding, namely the guided support provided to the less knowledgeable partner (the novice) as s/he collaborates with a more knowledgeable partner (the expert) (Nassaji & Swain, 2000). The origin of scaffolding as a teaching strategy can be traced from Lev Vygotsky's sociocultural theory and the goal of using the scaffolding teaching strategy is to help students to become independent and self-regulating learners and problem solvers (Van Der Stuyf, 2002). Scaffolding possesses three important characteristics. The first is the dialogic nature of joint problem solving (Wells, 1999). The second characteristic is the notion of intersubjectivity (Newson & Newson, 1975, cited in Tan et al., 2004), which is to say that when individuals collaborate with one another, they undertake a process of seeing each other's differences and achieving shared understanding with respect to the common task. The third characteristic is self-regulated learning orientation. Through collaboration with more knowledgeable experts, students receive guidance which fosters their ability to learn and extends their self-regulation in learning activity (Tan, et. al., 2004).

Since PhD supervisory talk aims to inquire about ideas and solve problems in order to achieve a shared understanding on a certain research topic, it manifests the characteristics of scaffolding mentioned above for three reasons: 1) It is a dialogue between supervisors (experts) and students (novices) to solve problems at a particular stage of thesis research; 2) Supervisors and students work collaboratively to negotiate meanings and achieve shared understanding of the discussed issues; 3) The purpose of supervisory talk is to guide students to be self-regulated in thinking and reasoning about the problems. At this point, *Scaffolding in PhD supervisory talk* in this study can be conceptualized as the supervisor's discourse strategies like questions, prompts, and comments which help the PhD student to think critically and thereby figure out reasons to solve problems.

### **2.3 Contextualisation of 'Learning Opportunity' in PhD Supervisory Talk**

Research supervision as a form of training and learning occurs not only in relation to knowledge of the research topic but also of interpersonal skills. In Australia and the UK, this is often termed as 'generic' or 'employable' skills (Pearson & Brew, 2002). For example, among a list of thirteen postgraduate generic skills from an Australian industry view, the top two are 'good communication/presentation skills' and 'good work practices and collaborative skills (Mullins & Kiley, 1998:4). PhD research supervision is acknowledged as "the crucial element of learning – a fascination with questioning the world, ways of enquiring, solving problems, creating and innovating and developing discourse, strategies and interpretations" (Wisker, 2005, p.1). Among these, critically using reflection strategies such as scrutinizing and questioning prevailing ideas requires higher order of thinking and deep approaches to learning. Meanwhile, research supervision as language-mediated interaction among supervisors and research students is perceived as a process intended to advance

learning and communication at the highest level (Laske & Zuber-Skerritt, 1996). According to Starr (2000), Vygotsky's concept of scaffolding is based on 'Socially Mediated Dialogical Learning'. Under this concept, dialogue is crucial to encourage learners to organize their thinking while talking (Bruner, 1990, cited in Walsh, 2006) and thereby acquire new knowledge (Ahmed, 1994). Since PhD research supervision is by nature intended to be different from that at Master's level with its goal being to foster students' capacity to be critical, innovative, and collaborative in academic and social contexts. Since PhD students have already gained academic experience through studying for their previous degrees, it would tend to be more facilitative than directive. In this sense, PhD supervision can be viewed as a process of empowerment of generic skills and research knowledge at both professional and interpersonal levels. At this point, scaffolding can be either produced by the expert or negotiated in bi-directional interaction (Bernstone, 2009; Panselinas & Komis, 2009). The idea that scaffolding can be a negotiated process indicates a level of contribution of the less expert in this scaffolding relationship.

Nussbaum *et al.* (2009) report that being engaged in a reciprocal talk helps to foster learners' metacognitive awareness, which refers to one's understanding of and control over one's own cognitive processes. This reciprocal process requires supervisees to propose their own ideas, and to defend their ideas through clarifying and justifying them. This kind of reciprocal talk where ideas are compared with those of another person in order to co-construct understanding is more complex than simply reaching consensus on an agreed answer and thus may contribute to learner's thinking and communicative ability. Lee (2007:689) recognizes that being critical in thinking is similar to the Socratic Method, which 'is a methodical questioning and cross-examining, peeling away layers of half-truths, exposing hidden assumptions...assumes a position of co-operative inquiry and accepts that there is no right answer'. Among the many identified scaffolds in literature, the significance of questioning, coaching and modelling in learning contexts is commonly acknowledged (Duangkaew, 2007; Ho, 2005; Lee, 2007, 2008; Watson Todd, 1997). Walsh and Sattes (2005) identify the following as some characteristics of quality questions that could result in transformational thinking:

...words and phrases that cue students to respond at the intended cognitive level, prompt students to see relationships and patterns, demonstrate understandings and make connections, engage student thinking, ask students to process knowledge and prompt students to see connections. (p.24)

In this study, we investigated the notion of scaffolding as a means to provide *learning opportunities* in PhD supervisory talks in order that PhD students might develop their ability to think critically and to respond appropriately while doing research. To the best of our knowledge, no research has been done on the actual face-to-face PhD supervisory meeting by conceptualizing "scaffolding" based on a negotiation of meaning inquiry process from a socio-cultural perspective. This case study hopes to address this gap.

### **3. Research Focus and Questions**

This study focused on exploring how a supervisor's scaffolding create learning opportunities for a PhD student to think, to formulate relevant questions about emerging problems, and to apply appropriate information in face-to-face PhD supervisory talk. Two research questions are addressed: 1) What types of scaffolding were used by the supervisor? 2) In what aspects did those scaffolds create learning opportunities for the PhD student in the supervisory talk?

### **4. Research Methodology**

#### **4.1 Research Design, Setting and Participants**

A qualitative naturalistic case study research paradigm was adopted. The study was conducted in an Applied Linguistics international programme in Thailand. There were two participants in this study: one is a Thai supervisor who had four and a half years of experience of studying abroad and the other was a Chinese PhD student (the first researcher) who had three-year experience of studying in Thailand. The PhD student was in the first academic semester and she was required to take three courses and develop a clear focus for her thesis research.

#### **4.2 Description of PhD Supervisory Talk**

At the beginning stage of the PhD student's studies, the supervisor, as a more knowledgeable expert, was responsible for helping the PhD student to develop the focus of her thesis research and in each face-to-face meeting to check whether or not her proposed research ideas were justifiable. Since the PhD student was also doing course work, the supervisory talks also involved issues concerning course assignments but only if these were relevant to her thesis research. The supervisory session studied was the third meeting between the supervisor and the PhD student. In the previous two sessions, they had mainly discussed what aspects of the PhD student's proposed area of research regarding 'intercultural miscommunications between international supervisors and their students' could be explored. In this selected segment, the supervisor was trying to help the PhD student to explore what factors may lead to miscommunications and why it is significant to explore intercultural miscommunications.

#### **4.3 Data Collection and Data Selection**

Data were collected by audio taping a naturally occurring supervision session. An MP3 was centered optimally to capture the supervisor and the student's verbal utterances as comprehensively as possible. The whole supervision session lasted 34 minutes in total. Prior to audio taping, permission was obtained for the recording to take place during the routine supervision session and the stimulated recall interview which followed it. The supervisor was informed that the session would be recorded for research purposes; she was not informed that the focus of the research was on her scaffolding. The purpose of this was to ensure that the supervisor's scaffolding would be completely natural.

Data selection was employed to limit the volume of data analysed in view of the limited scope of the present preliminary study. Immediately after collecting data consisting of the whole supervision session, the researcher listened to the recording in order to thoroughly understand the supervisory talk and designed a form for the supervisor to keep running notes in the follow-up stimulated recall interview. The 34-minute recording was sifted through for a segment rich in the supervisor's scaffolding. The data selected for analysis satisfy the following criteria: a) clear in terms of voice quality; b) rich in the supervisor's scaffolding; and c) a discussion of a PhD research issue which involved the student frequently responding to the supervisor's scaffolding. Based on these criteria, a 7-minute 49-second segment was selected from the 34-minute data.

The stimulated recall interview was conducted on the same day as the data collection and selection in order that the participants' opinions and the explanations of the supervisor's scaffolding could be collected while their memories of what had been said were fresh. The interval between the audio-taped supervision session and the stimulated recall interview session was 3 hours. Conducting the stimulated recall interview allowed the participants to think, speak and be heard and have an in-depth discussion on identified scaffolding. During the stimulated recall interview, once the supervisor identified her scaffolding, the recording was paused for cross-checking about the scaffolding from the two parties. The mutually-recognized scaffolding was noted down and commentaries about the student's responses were added by the researcher.

#### **4.4 Data Analysis**

Firstly, the 7-minutes and 49-seconds of data consisting of PhD supervisory dialogue was fully transcribed (see Appendix for transcription conventions) for scrutiny by the first researcher in order for her to gain a comprehensive understanding of the data. Secondly, the transcripts were collated with the notes about the supervisor's purposes obtained from the stimulated recall interview and the PhD student's reactions. Thirdly, the collated transcripts were presented to the supervisor for confirmation of their accuracy. Fourthly, the themes of the supervisor's scaffolding were identified and the PhD student's responses were also analyzed in order to establish how the supervisor's scaffolding had guided the PhD student through the supervisory talk. A thematic framework was developed based on the stimulated recall interview protocols and the researcher's running notes. The whole stage involved frequently analyzing the transcripts, making preliminary interpretations, keeping running notes, and documenting emerging themes.

#### **5. Findings**

To answer the research questions, extracts and interpretations are presented in this section. We investigated the notion of scaffolding as a means of facilitating the negotiation of meaning process and tried to identify the learning opportunities presented by the supervisor's scaffolding, particularly those which fostered the PhD student's ability to constantly inquire, criticize and reframe ideas during the supervisory talk. The italicized remarks are information obtained later from the stimulated recall interview. While these comments are not exhaustive, they do

comprise a distinctively-hued lens through which to bring the supervisor's scaffolding to the student's learning into focus.

Three extracts are presented and examined in the following sections to explore the supervisor's scaffolding and the learning opportunities thus created during the supervisory talk. T stands for the supervisor and S refers to the PhD student.

### Extract 1

- 1 12`55`` → T: ↑Why do you want to (.) er ↑why did you want to  
do this topic in the FIRST place?
- 2  
3 13`02`` S: Er: the first place (.) as I told you it is my personal  
4 interest. As an international student, from very beginning,  
5 anyway not suffered but I experienced a lot of difficulties  
6 [T: Em]. And I was worried if I bring these questions to my  
7 supervisors, I will be stupid. My supervisors will be (\*\*\*)  
Er::  
8 so, whether it is (.) it is kind of cultural shock, we are not (.)  
9 I am not sure (.) but finally (.) I tried to (.) ok (.) make  
10 myself clear first and went to talk to them. Maybe feel more  
11 worried about miscommunication. What I did was to  
12 prepare and along the process I learned a lot.
- 13 13`43`` → T: Em (.) What about HERE? Do you feel the ↑same?  
14 13`50`` S: Em:: I feel better than I did my MA (.) but still have kind of  
15 worry [T: ok] because the academic culture may be different.
- 16 13`55`` → T: And ↑why do you think it is different now?  
17 13`58`` S: Em (.) yeah (.) for the different levels (.) for the PhD  
18 students, we are supposed to do more [↑T: Em.] and I::
- 19 14`06`` → T: ↑Why do you think there is LESS miscommunication  
20 now than before?
- 21 14`11`` S: Em:: I have some experience in doing research (.)  
22 maybe (.) with the knowledge about research (.)  
23 and I am a little bit confident than before (\*\*\*)  
24 14`21`` → T: So (.) ↑ now (.) you think that NOW you have  
25 more confidence in doing research. [S: Yeah. (\*\*\*)]  
26 → Do you think the problem before was because you didn't have  
27 knowledge in doing research? ↑What were the problems on  
28 you?  
29 14`38`` S: ↑Yeah. And (.) for the experience, it is so different (.)  
30 for the MA degree, I didn't have any experience in doing  
31 research at all, everything started from zero. And here,  
32 my worry is, as told you (.) during the interview,  
33 we have (.) we had some kind of MIScommunication  
34 about plan A and plan B [T: ↑Em:], qualitative  
35 and quantitative, should we try both? So this is kind  
36 of academic culture differences. [T: Em. Ok.] So,  
37 at this point, the experience, the previous experience  
38 in doing research will be helpful? Or, is kind of  
39 something we have to readjust?

In Extract 1, T begins by asking two questions about S's reasons for investigating intercultural miscommunications between supervisors and supervisees and her research background (Lines 1-2). *T said she intended to direct S's awareness*

of the focus/ problem of her research because she knew that S wanted to investigate the supervision process, but at that moment she said she was thinking that S was out of focus. Upon the two questions, S justifies her proposed research topic on ‘intercultural miscommunication’ by rationalizing her chosen topic on the basis of her personal experience. In Line 13, by emphasizing and increasing intonation, T elaborates the previous question to ‘What about HERE? Do you feel the ↑same?’ T’s purpose was to guide the S to figure out a clear focus and confirm whether the original ideas are worth doing by setting a link between the prior problems and current situation and see what’s missing and identify why. In line 14, S tried to locate the differences between her previous and current studies. but a noticeable lengthening ‘Em::’ signaling her struggling to think out ideas and a modal verb ‘may’ (Line 15) indicates her lack of confidence about her idea of different academic cultures. Building on S’s idea of ‘different’, T rephrases her previous question (Line 13) to direct S to make a link between S’s past and present learning situations. S attempts to defend her ideas about ‘different’ by predicting that greater efforts are needed at PhD level. However, it is observable that S can’t see and explain clearly what the differences are. As a result, she ends up defending with a rather lengthening ‘I::’ (Line 18). Here, the first instance of S’s *flight* is noted since the PhD student showed that she was struggling and ended up without giving any explanation. Realizing S is experiencing difficulty in seeing the link, T asks ‘↑Why do you think there is LESS miscommunication now than before?’ (Line 19) to recast the point ‘feel better’ mentioned previously. An emphatic stress was used by T to direct S’s awareness to the links/differences between her previous and current learning situations. With a very lengthening hesitation (Line 21), S attempts to justify her points, but she laughed away her reasons in the end with uncertainty (Line 23). This is the second instance of S’s observed *flight*. Noticing that S still cannot see the clear focus of her research, T analyses (Lines 24-25) and provides clues (Lines 26-28) to guide S to think and reflect about the links and differences from her own past. Being guided, S tries to reason out her ideas with examples from her experiences in both learning situations.

### Extract 2

- 40 15`20`` → T: Ok. So, was the miscommunication before MAINLY  
41 about research (.) doing research?
- 42 15`33`` S: Em::: ((noticeable struggle for ideas)) miscommunication  
43 (.) mainly:: anyway (.) I was not clear about many::  
44 [T: Many things] (.) many ideas [T: Em].
- 45 15`42`` → T: I wonder why it was such (.) it was a cause of the  
46 miscommunications with you and your supervisors?
- 47 15`51`` S: Yeah (.) you know (.) for the MA level, mostly (.)  
48 at the very beginning, I was waiting for my supervisors  
49 to give me ideas (\*\*). [T: Em. Ok] Because my  
50 tradition (.) Chinese tradition, we were waiting and  
51 I was waiting for my supervisors to tell me you need  
52 to do this you need to do that.
- 53 16`11`` → T: But ↑why was it miscommunication?
- 54 16`14`` S: Em (.) but for Aj (.) my supervisors (.) they got  
55 rich experience before, they know how to supervise.  
56 They will not give me any ideas directly. And every  
57 time I brought some ideas there, they just said ok,

58 you should try something else, they would not  
59 give me (.) yeah (.) black-and-white answers (.)  
60 about this is good or this or bad. Yeah, they said something  
61 good, but they said, ok, you should try something differently.  
62 Sometimes I was a little bit disappointed about myself,  
63 not (.) not from the comment from my supervisors. I thought  
64 I did a lot and I tried to make me very clear but when I go to  
65 (.)  
66 went to talk to them (.) I was still not clear.  
66 17^07^^ → **T:** Ok, er not clear in terms of?  
67 17^09^^ **S:** In terms of::  
68 17^11^^ → **T:** Your research? [**S:** My research.] Not the way you were  
trying  
69 to express yourself?  
70 17^14^^ **S:** Also linguistic problems.  
71 17^16^^ **T:** ↑Oh::: ((a prolonged “oh” uttered by the T)).  
72 17^17^^ **S:** Sometimes I have my ideas but the way of explaining is not  
clear.  
73 17^21^^ **T:** Because ((**T** addressed the S’s name)) (.) because ((**T**  
addressed  
74 → the S’s name)), the reason I asked you all these  
75 questions, I still cannot make a link here, you know,  
76 → supervision. Now you are talking about research  
77 methodology problems you had before and now. Now I am  
78 trying to pinpoint what actually the problems. You know (.)  
79 you said, you had problems before but it was (.) you said  
80 it was because of you, which I think is your culture to blame  
81 → yourself first [**S:** Em] But I am trying to figure out  
82 what was actually the problem, you felt frustrated, right?  
83 [**S:** Yeah] You felt frustrated before when you thought  
84 you were in research. But then, you have identified  
85 the problems concerning research method, also the  
86 content of your research, and the linguistic problems  
87 → [**S:** Em], and, yeah, anything else?  
88 18^13^^ **S:** I think for (.) for supervisors, they may also have some  
89 problems. They had their expectations (.) and for me (.)  
90 what I did may be away from their expectations.  
91 Miscommunication may have occurred. The expectations  
92 from the two parties were different or just cannot match.

In Extract 2, a series of questions (Lines 40, 45, 53, 66) are used by T to challenge S to think deeply about and to discover *where the miscommunication/problems came from* and to distinguish between various concepts of miscommunication. In response, S reasons out her concept of miscommunication based on different learning cultures by referring to her Chinese tradition (Lines 47-52). Being challenged for a clear discrimination of concepts, S continues her ‘different learning culture’ concept by reframing her ideas at length but she does not produce a clear justification (Lines 54-65). Being aware that the S still lacks a clear concept, T continues to challenge S in Line 66. Regrettably, S shows her confusion with an apparent lengthening utterance ‘In terms of:::’ (Line 67). In view of S’s unclearness, T gives a clue to provide alternatives for S to search for more problems ‘Not the way you were trying to express yourself?’ (Line 68). Contrary to T’s expectations, S comes up with ‘linguistic problems’. T expresses surprise denoted by a prolonged

‘↑Oh:::’ with a high intonation (Line 71), which *showed T’s surprise because T said she didn’t expect the linguistic problem was a cause of intercultural miscommunication in the S’s MA study*. It is worthy of attention that this is an exceptional instance and can be termed as paralinguistic scaffolding which hasn’t been covered in the literature. The follow-up elaboration from S (Line 72) confirms the identification of T’s paralinguistic scaffolding. Seeing S’s confusion and struggling, T produces a long turn to guide S towards a clear focus and clear concepts by means of conceptualising (Line 74), evaluating and analysing (Lines 76-81), summarising (Line 81-86) and challenging for more possible ideas (Line 87).

### Extract 3

93	18`38`` →	<b>T:</b> Ehn. Because now I think that you actually (.) if we
94		talking about (.) you really want to investigate the
95	→	<u>supervision problems</u> rather than anything else. You will
96		identify the problems during the supervision, or you
97		will identify difficulties or discomforts as a research student
98		[S: Em, em.] Right?
99	19`09``	<b>S:</b> If we see my original ideas (.) and if I can try this at the
100		discourse level. Actually, <u>now</u> I feel a little bit worried and
101		<u>uncomfortable</u> about the miscommunication this word.
102	19`20`` →	<b>T:</b> Em. ↑Yeah, me too.
103	19`22``	<b>S:</b> Actually (.) within this personal contact, I don’t think there
104		will be many miscommunications. This is the point (.)
105		I also (.) I don’t want find out anyone’s problems.
106		Actually (.) you are right, I just do some self-reflection.
107	19`35`` →	<b>T:</b> And the main thing we haven’t talked about is <u>personality</u>
108	19`37``	<u>issue</u> .
109	19`38`` →	<b>S:</b> ↑Em, ↑yeah. Oh::: ((a prolonged ‘oh’ was noticed here)).
110		<b>T:</b> You have a personality to compromise a lot [S: Er (***)].
111		And I think you cannot (.) you know, you can’t do your
112	19`58``	research without mentioning the personality issue.
113		<b>S:</b> Yeah, learner differences, indi- (.) [T: Individual.]
114		individual differences. ↑It is. Because this may be from
115		my personal experience and what I observed from many of
116		Chinese friends at PSU. They got a lot of problems [T: Em,
117		em.]
118		(***)This may be my ideas from (.) from their terrible
119	20`35`` →	experience, I mean terrible because of them not (.) my
120		understanding all the time, not because of the supervisors.
121		<b>T:</b> I think now (.) we just (.) we should focus on the assignment
122	20`44``	for now (.) for the course. But, I think we need to find out
123		what you really want to do.
124		<b>S:</b> <u>Yeah</u> . So, this is the point not only for this assignment but
125		also for this one ((her PhD research topic)). And the reason
126		why I try to link scaffolding and other assignments to my
		research is we will criticize two articles. I think if can do
		something relevant, that will be useful.

In Extract 3, it seems that T still doesn’t see the clear focus of S’s research, therefore she continues to elicit a fuller and more accurate response by using

conceptualising (Line 93) and cluing (Lines 95-98) in order to *shape a clear focus and concepts of S's research*. It is interesting that, S tends to surrender to T's allusion and agrees that miscommunication may not be worth researching saying that there will be less miscommunication in S's new learning situation (Line 99, Lines 103-106). S's surrender is confirmed by T's evaluating remark 'Em. ↑Yeah, me too' (Line 102). So far, it seems that T has successfully scaffolded S to scrutinize her research focus critically and reason out her positions logically. S's response (Line 106) can be viewed as a *flight* because she doesn't continue to defend/fight for her initial ideas. In Line 107, T suggests S consider an important factor for her research focus —the 'personality issue'. It is obvious that this is out of S's expectation since her prolonged '↑Em, ↑yeah. Oh:::' with a strikingly high intonation here. *S showed her awareness and interest for details upon the supervisor's suggestion*. T identified her scaffolding here as conceptualising and directing/ rationalising progression of the supervisory talk. S's paralinguistic response can be counter- scaffolding to the supervisor's scaffolding. As T elaborates (Lines 109-111) her point, S extends T's 'personality issue' to 'individual differences' (Lines 112-118). In the end, T direct S's awareness to the assignment which is going to be a pilot study for S to shape her PhD research topic by directing/rationalising progression of the supervisory talk (Lines 119-121). S's appears to immediately accept this by her 'Yeah' but finally produces resistance (Lines 122-126). This is confirmed by S's reaction as *S continues to justify why she chose to do this topic by linking it to her course assignment*, which indicates S's willingness to keep on talking about her research ideas. The following talk between S and T which was not selected for analysis in the current study was in fact about why and how to make linkages between course assignments and the PhD student's future research.

## 5. Discussion and Conclusion

The findings reveal that ten types of scaffolding strategies were employed by the supervisor, namely directing student's awareness, elaborating, rephrasing, analysing, providing clues, paralinguistic scaffold, conceptualising, evaluating, challenging, summarising and directing/rationalising progression of the supervisory talk.

First, the two most common forms of scaffolding used by the supervisor are 40 conceptualizing (Line 74, Line 93, Line 107) and providing clues (Lines 26-28, Line 68, Lines 95-98) which were both used three times and therefore top the list of the identified forms of scaffolding. Paralinguistic scaffold (Line 71) appeared only once. The most salient issue concerning the forms of scaffolding used, therefore, is their variety. Rather than relying on one or two types of scaffolding frequently, the supervisor appears to choose scaffolds to suit immediate purposes. Thus the variety of scaffolds used may be indicative of the supervisor's attempts to reach a range of goals through means appropriate to the immediate context of the interaction.

To better understand learning opportunities in supervisory talk, the PhD student's responses to the supervisor's scaffolds are worth exploring. Instances of defending were identified as a dominant pattern of the PhD student's responses. This indicates that the PhD student made constant efforts to defend her positions and negotiate meanings with her supervisor. However, three occurrences of flight (Line 18, Lines 21-23, Line 106) were striking responses from the PhD student. The PhD student's flight responses can be attributed to two factors: her cultural background and

research stage. For one thing, as a Chinese, the PhD student was respectful of the knowledge authority of the supervisor. For another, as the PhD student was at the beginning stage of her PhD thesis research, she was compromising and agreeing because of her lack of expertise and confidence in her underdeveloped research topic.

It is worth noting that the main focus of the supervisor's scaffolding in PhD supervisory talks is to develop the PhD student's generalisable research skills (e.g., critical thinking, reasoning, self-criticizing) rather than specific research knowledge. Scaffolding helps this happen by allowing the student to interact with the supervisor through constant questions, extension and reformulation in order to shape a clear research focus. The identified supervisor's scaffolding was primarily to facilitate the PhD student to think critically and reflect on her ideas, see the problems, and locate a clear topic for her thesis research. The findings are in agreement with Sharpe's (2006:222) results showing that the teachers' feedback moves act as pivots 'inviting students to explain, justify and amplify their responses rather than merely (being) evaluated by the teachers'. These moves constitute a genuine dialogic meaning negotiation and mutual knowledge construction processes. Thus, this type of talk provides opportunities for supervisors and students to critique, justify, and more importantly, to build knowledge by a process of collaborative inquiry. In this sense, it might be reasonable to say that the supervisory talk provided the PhD student with a good opportunity to practice her thinking ability by forcing her to defend and justify her ideas. However, occurrences of flight should also be perceived as learning opportunities since flight does not necessarily mean there is no room for learning. On the contrary, it shows that there are knowledge gaps between the more capable supervisor and the novice PhD student or, alternatively, there is a distance between the PhD student's current knowledge and her potential development. At these points, the PhD student's responses indicate her reflecting and thinking critically about the knowledge gaps she noticed during the course of the discussion. The three instances of flight identified in the data also provide learning opportunities for the PhD student to fill gaps in her knowledge of conducting academic research.

As a result, a conclusion can be drawn from this study that the supervisor's scaffolding during the supervisory talk created learning opportunities for the PhD student to develop both her critical thinking and her ability to reason logically while doing academic research, through constructing knowledge collaboratively and negotiating meaning with the supervisee. This implies that the supervisory talk provides support for formulating problems, for thinking through ideas and making them approachable as objects of scrutiny, for dialogue that is democratic and includes a diversity of ideas, for constructive criticism and analysis, for extending ideas into larger wholes, and for filling gaps noticed. Throughout the supervisory talking process, the PhD student was given opportunities to express herself, reflect on and reason out her research ideas and learn from the unfolding interaction through constant meaning negotiation and knowledge building.

## **6. Recommendations**

Video-taping may help to capture a more comprehensive picture of behavior through both verbal and non-verbal channels during the supervisor's scaffolding and the student's response and therefore, a deeper insight of the learning situation in supervision talks might be presented. Additionally, due to the short-term nature of the

case study, the data of the current supervisory talk does not allow the findings concerning scaffolding to be generalised. Thus, longitudinal studies would provide an insightful view of supervisory talks since various types of scaffolding strategies might be observed in different sessions and may spiral at different research stages in different contexts and domains. Although this study is a small-scale qualitative case study, the findings are interesting and beneficial. We have identified ten types of scaffolding employed during the negotiation of meaning during a supervisory dialogue and provided empirical data to conceptualise scaffolding in PhD supervisory talks. Hopefully, this study may help to raise awareness of academic research supervision as a teaching and learning process, encourage the sharing of practices amongst supervisors and enable students to reflect and learn from research and scholarship.

### **Acknowledgements**

We are grateful for the reviewers' insightful comments on our manuscript. The first author also wishes to acknowledge Dr. Pattamawan Jimarkon, Dr. Richard Watson Todd, and Dr. Pornapit Darasawang for their guidance throughout the process of making this paper for publication.

### **Appendix: Transcription convention**

T	Supervisor
S	Student
(.)	Untimed perceptible pause within a turn
<u>Underline</u>	Stress
CAPS	Very emphatic stress
↑	High pitch on word
.	Sentence-final falling intonation
?	Yes/no question rising intonation
-	A glottal stop or abrupt cutting off of sound
:	Lengthened vowel sound (extra colons indicate greater lengthening)
→	Highlights point of analysis
[ ]	Overlapped talk
(( ))	Additional information (e.g. non-verbal action)
(xxx)	Inaudible utterance (e.g. background noise caused by air conditioner or drowned out by turn competing if it appears at the end of a turn)
(***)	Laughter of a speaker

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