Preparing In-Service Teachers for Exploratory Action Research: The Potential of Mentor’s Mediational Discourse in Promoting Conceptual Thinking

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Abstract

Drawing from Vygotsky’s Socio-cultural theory of learning, this article explores the potential of mentor’s mediational discourse in shaping the conceptual thinking and learning of teacher researchers. Informal mentoring support was provided over a period of six months to four in-service teachers involved in an exploratory action research project funded by the British Council. Conversations were an important component of the mentoring process in this project as they were purposefully used by the mentor to mediate the mentees’ conceptual thinking and promote their learning. Analysis of conversations revealed three different types of conceptualizations - explicit guidance, rationalizing and visualizing - used by the mentor to prompt reflection and construction of knowledge. The data also suggests that novice teacher researchers need dialogic support which can be provided by a model of conceptual thinking during conversations. The study has implications for teacher educators and teachers who volunteer to mentor their colleagues, especially in an informal context.

Keywords: mentoring, action research, conceptual thinking, mediation, socio-cultural theory, mediational discourse

In teacher education literature, conducting a scientific and systematic inquiry into classroom challenges and problematic situations is considered a necessary skill (Elliott, 1994; Burns, 2010; Smith, Padwad & Bullock, 2017; Smith & Rebolledo, 2018). Teachers are first questioners
and hence they are expected to pose critical questions on the effectiveness of their own teaching practices and find a suitable alternative that would bring a change or improvement in the quality of their students’ learning (Cochran-Smith & Lytle, 1999; Stremmel, 2007). Teacher research is used synonymously with the popular method commonly followed by practitioners for conducting research, i.e. ‘Action research’. In an action research cycle, teachers first identify a problem, collect the data pertaining to the problem and then analyse and interpret the findings to arrive at a suitable solution. Carr & Kemmis (2003) describe action research as a form of self-reflective inquiry that can be used by teachers to improve the rationality and justice of (i) their own practices, (ii) their understanding of these practices and (iii) the situations in which these practices are carried out. Evidence from studies on teacher research suggests that teachers who are involved in research are more critical, more analytical in their teaching and more open and committed to professional development (Maggioli, 2018; Gnawali et al. 2021). In a study on the opinions of teachers on action research in Turkey, Yigit and Bagceci (2017) found that action research improved teachers’ pedagogic knowledge and helped them to have a positive impact upon their students. For these benefits that teacher research can bring to the practitioner, the institution and the whole education system, teacher research is strongly recommended at the policy level. In the Indian teacher education context, the National Curriculum Framework for Teacher Education (2009) suggested that “teachers should be involved in small research projects and case studies through which they can reflect on, share and develop their practice” (p. 68). In order to understand and promote teacher research, there is an immediate need to reorient the focus from teacher training to teacher learning. Especially, since action research involves learning and unlearning of many concepts by teacher-researchers, there is a great need for an in-depth understanding of what teacher-learning entails and for supporting teachers in this challenging journey.

Teacher-Learning

A glimpse into research on teacher education suggests that there have been three major developments in understanding how teacher learning takes place. Half a century ago, influenced by the Behavioural school of thought, teacher education centred on transmitting the content and
teacher learning meant learning of appropriate teaching behaviours. Hence emphasis was laid on enabling teachers to deliver the content through selective methods and techniques (Johnson, 2009). Later, based on the influence of cognitive theories of learning, teacher learning was conceptualized as effective decision-making, and to develop teachers as efficient decision-makers, reflective thinking was strongly promulgated (Crandall, 2000). Recently, a rather lesser explored dimension in teacher education, i.e. teacher cognition began to evolve as a major factor influencing teacher-learning. In an extensive review of research on teacher cognition covering over a period of 25 years, Borg (2003) claimed that teacher cognition, i.e. what teachers know, think, do, and believe, is intertwined with one’s prior experiences in life as a student and as a teacher, and it is this unobservable psychological dimension that informs most of the practices and decisions in their teaching contexts.

Johnson (2009) claims that this shift from positivist paradigm to interpretation or situated paradigm in teacher learning did not occur in isolation but was influenced by parallel epistemological shifts in the conceptualization of human learning. While the Behavioural and the Cognitivist schools of thought believed that learning is dependent on the intelligence or capacity of an individual, Vygotsky’s (1980) Socio-cultural theory of mind (SCT) suggests that intelligence is not the only sufficient indicator of learning. Learning happens initially through interactions in the world outside and then the concept is internalized in the individual’s mind. According to SCT, learning takes place through two kinds of concepts, which he calls as 1) Spontaneous or everyday concepts and 2) Scientific concepts or abstractions (Smagorinsky et al. 2003). While spontaneous concepts are formed in the human mind through concrete situations of day-to-day lived experiences, scientific concepts are shaped through formal input in a classroom and through reading of prescribed textbooks. Applying this theory to action research by teachers, for instance, a teacher may have acquired certain spontaneous concepts through research experiences of other teachers, friends or one’s own stint with action research during Bachelors/Masters in Education. On the other hand, certain scientific concepts related to action research may have come from formal input about action research during pre-service teacher education or by reading relevant material on action research or by attending workshops on action research. All these experiences together lead to certain conceptualizations in a teacher’s mind, and it is
from these concepts that a teacher consciously or tacitly draws upon to figure out decisions and actions (Penlington, 2008).

Vygotsky’s SCT also offers a rich insight into the conditions in which teacher learning can best take place. According to Vygotsky (1978), mediation by an expert or peer during a joint activity is essential for a novice’s learning or doing any kind of higher form of mental activity. Mediational support provided by the expert or peer helps the novice to internalize the culturally constructed psychological and semiotic tools (Wertsch, 1985; Poehner, 2005; Johnson, 2009; Harvey & Vásquez, 2015). Applying SCT to teacher education, Johnson (2009) claims that mediation by an expert or a teacher colleague is an important component in teacher learning or teacher development, be it pre-service or in-service.

Using mediational discourse for promoting learning is in fact not a new idea in teacher education. For instance, in pre-service teacher education, supervisors or teachers observe students’ practicum classes and give oral feedback on the strengths and weaknesses of the lesson. In the West, a beginning teacher is supported by an experienced teacher colleague, who acts as a mentor and guides the teacher in getting acclimatized to the new set up (State of Victoria, Department of Education and Training, 2016). This process of support and hand holding provided to a teacher is called ‘mentoring’ and it has found the enthusiastic support of experts, researchers, and teacher educators across the world as a means of promoting English language teacher learning and development (Delaney, 2012). However, mentoring and its usefulness in relation to action research is an area which is still emerging, and teachers/teacher educators are not trained for these purposes in local teacher education contexts.

**Mentoring**

Mentoring is commonly referred to the process of providing affordances to a novice or less experienced teacher by a knowledgeable, experienced, highly proficient teacher (Stremmel, 2007). A mentor’s disposition towards the mentee varies very differently from that of a supervisor. Unlike a supervisor, the mentor views the mentee as a contributor or a collaborator rather than as a novice whose practices and assumptions need to be scrutinized, assessed, and judged. A major component that distinguishes mentoring from supervision is the bi-directional communication that takes place in the conversations of the participants.
(Delaney, 2012). Studies reveal that one of the variables of effective mentoring is the way in which the mentor communicates with the mentee. In conversations, usually, it is observed that mentors spend more time in listening to their mentees’ concerns. In a study by Farr (2003), it was observed that the mentor responded to the mentee by using only minimal response tokens (For example, hmm, yes, uh) and thus facilitated teachers’ self-reflection through uninterrupted talk. In another study based on mentor-mentee conversation during post-observation conferences, Harvey & Vásquez (2015) demonstrated how a mentor can develop conceptual thinking in beginning teachers through questions, comments, observations, feedback, and suggestions. Severino & Serra (2021), in a small-scale study designed for promoting action research skills of secondary school teachers found that interactions made their mentees more curious and excited about the whole experience of action research. These studies reveal the various ways in which mentors facilitate an open discourse rather than indulging in conversations that are simply pedantic and uni-directional in nature.

The review suggests that the mentor’s strategic mediational discourse can have a positive impact on teacher learning. However, there is a dearth of studies that demonstrate how mediational discourse can be carried out by mentor teachers to promote conceptual thinking, especially in the context of action research. In order to address this gap, in this article, I present an analysis of excerpts from mediated discourse carried out with mentees while mentoring in an action research project.

**Research Context**

This study is carried out as a British Council-funded A.S. Hornby project for Exploratory Action Research (EAR). This project is awarded to an organization or a teacher networking community which aims at the development of action research skills of school teachers. English Language Teachers’ Association (ELTA), Telangana, a professional community of teachers in Telangana state of India bagged the project for the year 2020-2021. The author of this article, being a member of ELTA, Telangana, volunteered to be a part of the project as a mentor. As this project started at a time when the pandemic was rampant, there was no possibility to meet the teacher researchers (TRs) face-to-face and hence all the meetings were carried out only through virtual platforms (Google Meet and Zoom).
About the TRs

During this project, the author mentored four in-service teachers, all working in different Zilla Parishad schools of Telangana. Out of the four teachers, two worked at high school and two others worked at primary school. Their teaching experience ranged from 4-25 years. All the TRs have been involved as resource persons in various mandal, district or state level programmes at different times during their service. They were all intrinsically motivated and committed towards professional development. The teachers had a preliminary understanding of the purpose and benefits of action research when enrolling for the project, but none of them had any experience of conducting classroom-based action research. So, the TRs needed the mentor’s support at different phases such as selection of topic, data collection, data analysis, documentation of the findings and in making PPTs and presentations at ELTA meetings. Though their needs were mostly similar, owing to the informal context in which the action research project was carried out, not all teachers were alike in seeking the support of the mentor or responding to the support provided by the mentor.

Mentoring TRs

In the process of mentoring the TRs, the mentor tried out using different tools and strategies to promote teacher-learning and thinking. Initially, a WhatsApp group was formed with all the TRs together to share necessary information and material on their respective research topics. One of the TRs who was a primary school teacher needed additional support than the rest of the TRs as action research was completely new for the teacher. The challenges also doubled for this particular teacher as she joined late in the project and missed all the initial orientation sessions and workshops conducted by ELTA. In order to support this TR, other TRs in the group were encouraged to make presentations within the small group. The TRs were encouraged to support one another and learn collaboratively through presentations and discussions. In addition to these, self-assessment questionnaires, prepared by the mentor, were shared with the TRs to enable them to maintain a check on their progress. TRs were also suggested to write reflective diaries of their work. However, nothing was imposed on the teacher, and it was left to the interest and discretion of the TR owing to the informal context.
of the study. The support provided was based on the individual and immediate needs of the TRs.

The TRs needed the support of the mentor especially for a discussion on their doubts, fears, and challenges at different phases of action research such as finalizing the topics, framing of research questions, deciding the data collection tools, etc. These discussions were approached by both the mentor and the TRs as a teaching/learning opportunity. The roles of peer and novice were clear and mutually respected by everyone. Meetings were conducted with a shared understanding of the purpose and as such the discussions were focused and goal-oriented. The meetings were not pre-planned and were carried out as per the convenience of the mentor and the mentee. On an average, a single meeting with each individual teacher took 20-45 minutes. During these conversations, the author, i.e. the mentor of this study mediated the conversations with the objective of promoting the TRs’ conceptual thinking.

The following is an analysis of excerpts drawn from mediational conversations recorded randomly over a period of three months.

**Data Analysis**

Excerpts from the conversations that revolved around TRs’ doubts and dilemmas have been identified and examined to categorize the mentor’s mediation. Three representative samples of the categories in the mentor’s conceptualizations, i.e. explicit teaching, hypothesizing and visualizing are presented here.

**Excerpt 1: Explicit Guidance**

Explicit guidance refers to direct explanation by the mentor for bringing in conceptual clarity in the teacher’s thinking. In Excerpt 1, the mentor and a TR met to discuss the EAR questions written by the latter. This particular TR had joined very late in the project. The TR learnt about the process of EAR by attending the mid-project presentations made by other team members. On the basis of her understanding, the TR wrote a few questions and wanted to know the feedback of the mentor. As the questions were general and totally irrelevant to her research topic, the mentor explicitly conceptualized the purpose of writing EAR questions.
As can be seen in Figure 1, TR4 lacked clarity on the purpose of writing exploratory research questions because her understanding was rooted in her experience of watching mid-project presentations. However, this learning from lived experiences have not formed in TR4 the kind of conceptual thinking essential for framing exploratory research questions relevant to her topic. In Line 6, the mentor’s question about the students’ writing skill, served as an implicit prompt to elicit students’ understanding of the exploration phase. However, the TR’s reply was centred on her everyday experiences of joyful learning in her context and the immediate need for her to concentrate on developing students’ writing skill (Lines 9-12). At this point, the mentor modelled the conceptual thinking needed for carrying out the exploratory phase of action research by explicitly teaching about the purpose of writing...
exploratory research questions (Lines 14-18 & 20-25). This kind of mediation falls under explicit guidance as the mentor directly explained the need for writing exploratory research questions.

Through this kind of modelling the teacher was prompted to see the need for writing research questions that are relevant to the topic. After listening to the mentor, TR4 responded by paraphrasing her understanding and by acknowledging that she understood it better (Lines 26-29).

**Excerpt 2: Rationalizing**

Rationalizing refers to the mentor’s modelling of conceptual thinking about an issue with logical and plausible reasons. The following excerpt (Figure 2) shows how the mentor demonstrated conceptual thinking while editing one of the TR’s misrepresentation of participants’ responses. During the conversation with TR1 on reviewing a PPT prepared by him, it was observed that the TR1 presented ‘Unable to

**Figure 2 Excerpt from conversation on data representation**

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1. M: (Reading from the PPT) ...factors hindering them from reading. Did the
2. students give these responses? Did the students say that it is difficult for them
3. to guess the pronunciation of multi-syllabic words?
4. TR1: Inability to guess the pronunciation ... it is their response. They mentioned it...
5. but multi-syllabic words ... actually, they are unable to use the word complex. I
6. have made it into multi-syllabic. I changed their words into multi-syllabic
7. because ... they can’t read complex words.
8. M: It need not be multi-syllabic words only. Any new word is difficult for them.
9. TR1: Even in new words, what they said is ... the pronunciation ... um ... breaking is
10. what is very difficult. For that, I told them to ... break into small chunks ...
11. even the word should be ... broken into small, small syllables.
12. M: Ok. That’s a good technique. So, you taught them how to break multi
13. -syllabic words into small chunks. The students found that technique
14. also difficult in pronouncing new words because first, they have to
15. break a big word into small chunks of syllables. Then, they have to
16. guess the pronunciation of each syllable and then after this they have
17. to guess the combination of all the syllables. That’s a difficult process
18. while reading a text.
19. TR1: Yes. That is not easy for them. But they can’t express that.
20. M: You observed that the technique of breaking multi-syllabic words into
21. chunks was also not helpful to develop their reading. That’s a good
22. observation.
23. TR1: Okay.
24. M: But while presenting students’ responses in research, it may not
25. sound genuine if I say my students can’t guess the pronunciation of
26. multi-syllabic words because ... you know my students are from
27. regional medium and everyone knows that regional medium students
28. cannot use such subject-specific technical terminology. So, I would
29. just stick to words expressed by students ... or if the interview is in L1,
30. I will translate to the nearest ... but if we project our ideas as the ones
31. expressed by students, then it may not be helpful in identifying the
32. exact needs of the students. One main issue in this is, it will not help
33. me in selecting the right activities later during the action research.
34. TR1: Ok... What should I do now? Shall I delete it?
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pronounce multi-syllabic words’ as one of the problems expressed by students themselves. This aspect of the data appeared to be manipulated as the students belonged to regional medium and rural background. In the discussion that ensued, the TR acknowledged that he used the term ‘multi-syllabic’ himself because he had taught them in the class how to chunk multi-syllabic words and he knew that it is difficult for them to break complex words into chunks. While discussing this issue, the mentor mediated in the mentee’s conceptual thinking regarding data interpretation.

Though the TR acknowledged in Lines 5 & 6 that it was his decision to replace the students’ statements with his own understanding of the classroom experience, the mentor felt the need to discuss it further as the issue at hand comes in the ethical domain and such practices can also have an impact on the quality of the teacher’s future research. As such, the mentor at first appreciated the TR for teaching his students the technique of breaking a multi-syllabic word into chunks (Lines 12-17). This served as a means to draw the teacher’s attention towards the complex meta-cognitive terminology involved in the process of chunking words into syllables. However, the TR’s attention was glued to students’ inability to use the words ‘multi-syllabic’ and ‘chunks’ (Line 18) rather than thinking how beginner students can use such meta-cognitive language. At this point, the mentor mediated by presenting an example of how she would think if she were in the TR’s place (Line 22-29). The mentor explained that students’ responses may not sound genuine by reasoning why she would avoid such misrepresentation of data if she were the TR. The mentor also decontextualized the issue and connected this particular concrete situation to the larger purpose of research, i.e. finding the actual needs of the students and identifying a suitable action research plan. The mentor’s mediated discourse was however followed by a response which did not demonstrate any learning from the TR. The TR at this instance seemed to be more concerned about the PPT rather than learning.

Excerpt 3: Visualizing

Visualizing was used for the category in which the mentor modelled conceptual thinking through visualization of the future course of action in different situations. The following excerpt (Figure 3) was from a conversation with TR3 that took place at the time of selection of a research topic. During the meeting, the TR expressed her intention to do
action research on developing speaking skills. Later, the TR expressed improving student participation in class as what she meant by speaking skills. It was understood that the TR has been using speaking skills and student participation interchangeably and lacked the clarity to see the difference between the two concepts. In order to reduce this fuzziness in the TR’s thinking, the mentor mediated the discourse by visualizing the future course of action in both the situations.

Figure 3 Excerpt from conversation on finalizing the research topic

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<td>1. TR3: Mam, I want to do on speaking skills of my students. They have fear of English language … hm … especially now class IX…they are adolescents. They feel shy.</td>
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<td>2.</td>
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<td>3. They have fear … for these reasons they don’t respond.</td>
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<td>4. M: Hm … (writing down in a notes)</td>
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<td>5. TR3: They also need to speak in English … because they have been studying in English medium since VI standard and now, they are in IX. By now they have to speak in English. If they can’t speak, I will get a bad name. People will ask ‘Who is your English teacher?’ (laughing). That’s why I want to do on speaking skill, ma’am.</td>
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<td>7. M: (Smiling) Ok ma’am. Actually, speaking skill is a very large area. Have you thought of any sub-skill?</td>
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<td>9. TR3: Hm … mainly, when I ask questions in the class, they don’t speak ma’am. One or two students will be there … they only will be answering. Others are quiet.</td>
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<td>11. TR3: Uh…yes ma’am. They are passive. I want all of my students to participate actively in the class.</td>
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<td>13. M: Improving students’ participation… means, may be we have to understand it differently. Improving students’ participation is different … why because participation of students may be related to the kind of opportunities that you give them in the class. If you ask more questions, or give them more options, students will participate actively. If you want to improve participation, you may have to first look into your questioning and feedback practices in the classroom. Then on that basis you will get an idea why students are not participating actively. Students’ participation… it comes under classroom interaction. I think it is more dependent on teacher’s questioning rather than speaking skill of students. On the other hand, if you want to improve the speaking skill of students, you may have to do it by using interesting activities or tasks. Did you get my point, mam? There is slight difference between increasing participation and increasing speaking skill.</td>
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<td>14. TR3: Yes mam. Ok. I understood it. But if we do activities and focus more on speaking skill of students, their participation in class also will increase no ma’am?</td>
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<td>15.</td>
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<tr>
<td>16. M: That we cannot say now ma’am. You are assuming that if speaking activities are done, their participation in class will increase. We have to do action research to find evidence for that (smiling).</td>
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The mentor demarcated the difference between ‘developing speaking skill’ and ‘improving participation’ by visualizing what would be the course of action in future in these two different situations. The mediator talked about what the TR may have to do if improving student participation was her topic (Lines 20-22) and what she may
have to do if developing speaking was her topic (Lines 25-26). This type of conceptualization was done to enable the TR to see what is more important for her in her context. In response to this conceptualization, the TR responded by asking a very apt question about the relation between speaking activities and participation in the class (Lines 27-28).

**Discussion**

The findings of this study demonstrate the importance of mentoring in promoting the conceptual thinking of novice teacher researchers. The study also highlights the key role of a mentor in construction of knowledge and scaffolding learning. The conceptual thinking modelled by the mentor in this study prompted certain responses which encouraged the articulation of the TRs’ thought processes. For instance, the paraphrasing of understanding by TR4 (Fig. 1, Lines 26-29) and questioning by TR3 (Fig. 3, Lines 27-28) indicated that the TRs were able to think at an abstract level about the concepts/ideas under discussion in contrast to their earlier talk rooted in everyday lived experiences. The mediation provided by the mentor involved three different types of conceptualizations, namely: explicit teaching, rationalizing, and visualizing. Explicit teaching was used when the TR was not fully confident with her concepts. Rationalizing was done when the mentor had to provide a logical reasoning for some action, and visualizing was done to enable the mentee to foresee the possibilities of a future course of action in a confounding situation. However, as it is common in any qualitative research, these conceptualizations were based on the mentor’s subjective opinions about what is important for the TR as was understood through the conversations.

It is beyond the scope of this article to explicate how far the teachers developed their ability to think conceptually about EAR as a result of the conversations with the mentor. It is also not the intention of the author to claim complete change in the TRs’ conceptual thinking as it was seen in the example of TR1 (Fig. 2) that the teacher was more interested in completing the PPT rather than understanding the usefulness of genuine data in action research. The limitations coming from the mentor’s background in terms of experience and training could have also had an impact on the mediational discourse.

In spite of all its limitations, the TRs’ responses to the mentor’s mediation in this study point towards the potential of conversations in bringing
out the expected change in the conceptual thinking of teachers. This study would help teacher educators and teachers acting as mentors to be more aware of their language and their linguistic choices during conversations and especially during mediational discourse. As such, the study has implications for teacher educators in general and mentors in particular. It underscores the value of informal conversations in enabling the TRs to emerge from their routine contextualized lived experiences and develop an abstract level of thinking which is essential for informed planning and decision-making. The mentor’s mediation could be in the form of questioning or prompting a teacher to justify or explain the reason behind a particular choice or it could be in the form of mediation, as illustrated in this study. The TRs’ responses would give a lead to the mentor into the conceptual thinking of the TR and the need for change in it. Helping novice TRs develop the ability to think conceptually about research is an important step towards helping them move from dependence on mentors to being experts working on their own and solving their own classroom problems. Encouraging such mentoring programmes that are oriented towards teacher learning is the need of the hour as they would not only contribute to the development of teacher competencies but also to the qualitative development of the entire education system.

References


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