Metacognition in Teaching of English Language Teachers in Bhutanese Secondary Schools

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Abstract:Despite numerous studies advocating for metacognitive interventions in day-to-day language instruction, little is known about teachers' awareness of their metacognition and how they process their cognition while teaching. This study aimed to examine English language teachers' metacognitive awareness in the Bhutanese context and their use of metacognition by adopting a mixed-method approach. Two phases of data collection were employed. A self-report questionnaire was used to collect quantitative data from 42 English language teachers from ten schools in Thimphu, Bhutan. Subsequently, qualitative data were collected through one classroom observation and two semi-structured interviews with 10 teachers selected purposively. The findings revealed that the teachers were highly aware of their metacognition, and the interplay of their metacognition facets was observed. However, teachers' thought processes and actions exhibited both metacognitive and not metacognitive properties. This suggests room for professional development programs to enhance Bhutanese English language teachers' existing metacognitive knowledge and skills.

Introduction

English as a foreign or second language (EFL/ESL) plays an important role in the Bhutanese education system. Being a medium of instruction and the language of curricula makes it stand out in the region of South and Southeast Asia (LaPrairie, 2014). Teaching and learning of English as a second or foreign language in the Bhutanese education system is closely guided by the English Curriculum Framework (Ministry of Education, 2005) and *The Silken Knot: Standards for English for Schools* (Centre for Education Research and Development, 2002), a guiding framework comprising a set of standards and level of indicators for all schools to follow. Although metacognitive teaching and learning are not explicitly visible in the current curricula, certain aspects of metacognition, such as fostering learners' self-regulation, developing students' repertoires of strategies, and promoting student-centeredness are present as learning objectives in the aforementioned documents. Bhutanese education also recognizes the importance of promoting and enhancing the magnitude of children's metalinguistic awareness (Ministry of Education, 2009).

Examination of the English language goals and their nuances in the Bhutanese education system indicates that English language teachers are required to incorporate various teaching methods and strategies in their repertoire to create a learning environment to foster independent, reflective, and interactive learning (Greenwood & Simpson, 2010; Ministry of Education, 2020). This demand requires teachers to teach content knowledge and promote learners' metacognition, an attribute possessed by successful L2 learners (e.g., Cross, 2010).

However, teachers regularly encounter unpredictable situations and circumstances due to the dynamic variabilities of their teaching environment, including self and students (Borg, 2006; Duffy et al., 2009; Fairbanks et al., 2009). They may find what worked for one situation may not necessarily work in another (Hartman, 2001; Hiver et al., 2019); hence, teaching is both a cognitive process demanding conscious awareness and a social endeavor (Hiver & Whitehead, 2018; Lin et al., 2005). L2 teachers should constantly self-regulate themselves and their instructional practice whenever they are in dilemma-ridden situations (Duffy, 2008), exercising their metacognitive process.

Literature reveals teacher metacognition can lead to successful encouragement of learners to become metacognitive (e.g., Hiver & Whitehead, 2018; Hiver et al., 2021); however, more studies are still necessary to study the extent of teachers' metacognitive awareness and the use of metacognition in their teaching. As more and more studies on classroom teaching and learning have shifted from being based on behavioural psychology to cognitive psychology (Artzt & Armour-Thomas, 2001), studying teachers' thoughts, actions, and beliefs could have tremendous implications for teacher education. Thus, this current study aimed to investigate teachers' awareness of their metacognition and how they processed it in their instructional practice.

Teacher Metacognition

Metacognition (MC) is thinking about thinking, a domain-general construct that transcends a wide range of disciplines (Schraw, 2001). Incepted by Flavell (1979) as awareness of one's knowledge and regulation of cognition, most researchers agree that MC involves some learning form and is mostly associated with students' learning (Yerdelen-Damar et al., 2015). MC is seen as teachable higher-order thinking that allows successful L2 learners to employ metacognitive strategies to monitor and evaluate their learning process, which includes knowing factors influencing their performances, knowing and using cognitive strategies, and monitoring their performances (Boulware-Gooden et al., 2007; Cross, 2010; Goh, 2008; Wilson & Conyers, 2016).

The concept of metacognition benefit both learners in their learning and teachers in their teaching. Nevertheless, its common definition as the awareness and regulation of one's thought process may not apply to teacher metacognition (TMC), often recognized as a much more complex construct to define and study (Zohar, 2006). TMC is a construct fixated in the conscience of researchers, policymakers, and teacher educators; however, more research is still needed (e.g., Hiver & Whitehead, 2018; Wilson & Bai, 2010; Yerdelen-Damar et al., 2015). With the increasing advocacy for integrating MC in day-to-day teaching practice and facilitating L2 learners to be metacognitively involved in their learning process, every L2 teacher must be metacognitive to transfer metacognitive knowledge to their students (Schofield, 2012; Veenman et al., 2006).

Among a limited number of studies on TMC, some studies have yielded promising insights into it. Exploring the extent to which teachers engaged in metacognitive thoughts and actions and the process leading to it, Hiver and Whitehead (2018) found that TMC manifested from teachers' 'self-appraisal and self-referential image', which they termed 'inside-out thinking.' They concurred that teachers' self-evaluation—an automatic and spontaneous process—and their self-image as a teacher were a precondition to TMC. They also found that metacognitive L2 teachers could better verbalize their metacognitive thought processes and demonstrate TMC through actions such as being aware of the success or failure of their lesson and considering their students' understanding. Moreover, L2 teachers with innate metacognitive awareness can better monitor and evaluate themselves and their

teaching progress. They can execute their informed instructional practice and be engaged in a high leverage teaching practices such as rendering personal and curricular support to students while motivating students and fostering a conducive learning environment (Hiver & Whitehead, 2018; Hiver et al., 2021). However, TMC is "a situated adaptivity" (p.254) as it is observable whenever teachers deal with unpredictable variabilities of their dynamic teaching environment (Hiver & Whitehead, 2018). Metacognitive teachers can regulate their thought processes and manage the dynamic variabilities of their teaching environment by self-regulating their instructional process through proper planning, monitoring, and evaluation (Duffy et al., 2009; Fairbanks et al., 2009; Hartman, 2001; Lin et al., 2005).

Despite the positive influence of TMC on teacher practice, previous studies have revealed discrepancies between teachers' thoughts and actions or intended actions in class. As noticed by Wilson and Bai (2010), there exists tension between teachers' pedagogical understanding of MC and their suggested ways to develop students' metacognition. Teachers were found to be aware of important methods to foster students' metacognition but they valued irrelevant activities. Similarly, Haukås (2012 cited in Haukås, 2018) found that the majority of L2 teachers in their study acknowledged the importance of reflection in language learning; however, only a few teachers reported creating a conducive environment for their students to practise reflection. Similarly, Spruce and Bol (2015) observed that despite having high SRL, teachers' actual teaching practice lacked SRL application. Such discrepancies hint that teachers with innate metacognition or sound knowledge and appreciation of MC may not act metacognitively in the classroom. Therefore, studying teachers' actions in the classroom is as important as studying their knowledge of MC (Ozturk, 2016). Moreover, studying the connection between the two holds even greater precedence.

Studies on TMC mostly centre on teachers' use of knowledge and strategies in their instructional practice, which can be called teaching metacognitively, the notion embedding teaching *for* metacognition and teaching *with* metacognition (Hartman, 2001). While teaching *for* metacognition refers to teaching to activate and develop learners' MC (Hartman, 2001), teaching *with* metacognition, which is the focus of this study, entails conscious reflection on teachers' cognition, teaching process and other issues related to their instructional practices (Hartman, 2001; Wilson & Conyers, 2016). In L2 instruction, teaching *with* metacognition involves engaging in higher-order thinking by teachers regarding their instructional practices, such as the lesson objectives, instructional strategies, target cognitive strategies, and strategies to monitor and evaluate instructional effectiveness and learners' progress (Hartman, 2001). While teaching metacognitive skills to students is necessary to ensure their academic success, understanding teachers' thought processes governing their actions inside and outside the classroom is equally important.

Theoretical Framework of the Study

Metacognition comprises three main facets, including metacognitive knowledge (MK), metacognitive experience (ME), and metacognitive skills (MS). While MK and ME illustrate a cognitive monitoring function, MS has an executive function to control cognition (Efklides, 2006). According to Flavell (1979), MK and ME are basic facets observable in any cognitive enterprise due to situational cues. MK entails knowledge of person, task, and strategies one can retrieve from their long-term memory. Knowledge of a person is the tacit knowledge or one's belief about self and others as a processor of cognition and the universal knowledge one acquires as they grow (Flavell, 1979; Pintrich, 2002). Knowledge of task is the belief and knowledge about the cognitive enterprise, including the nature (types), purpose (learning aspect), and demand (level of difficulty) of the task (Flavell, 1979). Knowledge of

strategy refers to knowledge and belief about strategies necessary for achieving goals (Haukas, 2018; Pintrich, 2002). MK allows teachers to have declarative, procedural, and conditional knowledge—knowing what and how to conduct teaching to appropriately support student learning (Pintrich, 2002; Schraw, 2001; Schraw & Moshman, 1995).

ME is cognitive or affective experience activated when one is in a cognitively demanding situation requiring conscious pre-planning and post-task evaluation (Flavell, 1979). It is the thought or feeling of confidence, knowing, pleasantness or unpleasantness, and judgment that occurs while teachers are in the teaching process (Elfkides, 2006; Hiver & Whitehead, 2018; Jiang et al., 2016; Vandergrift & Goh, 2012). Flavell (1979) pointed out that ME feeds existing MK either through deletion or addition of information based on the experience and it can activate strategies to fulfill either cognitive or metacognitive goals.

Another key facet of metacognition, MS, entails actual use of strategies (Elfkides, 2006) which is argued as different from one's knowledge of strategies (Pintrich, 2002). MS includes executive management strategies to regulate cognition when planning, monitoring, evaluation, and debugging—a systematic approach for identifying and correcting errors in their performance, comprehension, and instructional practice (Hartman, 2001; Jiang et al., 2016; Schraw, 2001; Schraw & Dennison, 1994; Schraw & Moshman, 1995). It involves setting instructional goals, selecting strategies appropriate to teaching tasks or anticipating and preparing for unpredictable situations, having 'online-awareness' of teaching performance, assessing the teaching products, and reflecting on their teaching process to make changes to or modify their teaching goals and plans (Jiang et al., 2016; Paris & Winograd, 1990; Schraw, 2001; Schraw & Moshman, 1995).

These key facets of metacognition do not work separately; rather, a complex relationship exists among them (see Fig. 1). Using structural equation modelling, Wilson and Bai (2010) confirmed that one facet of TMC significantly influenced the other facets. Their finding confirms that TMC is a dynamic cyclic process, not a linear process (Ben-David & Orion, 2012; Fairbanks et al., 2009; Hartman, 2001; Haukås, 2018; Yerdelen-Damar et al., 2015) whereby modification of one facet can lead to addition or deletion of information in other facets.

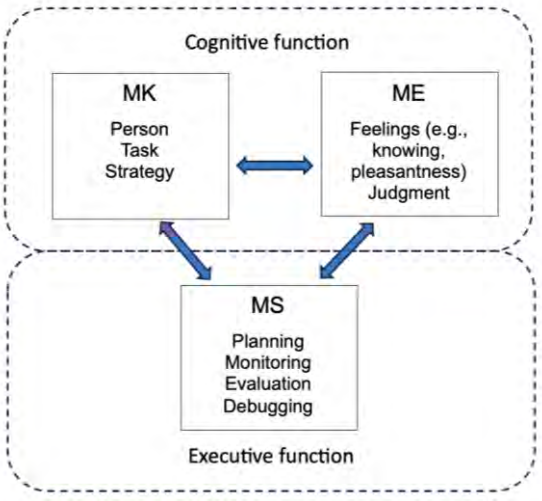

Figure 1: Theoretical framework

Realizing the importance of TMC regarding instructional practices, it is worthwhile investigating how teachers teach *with* metacognition. Therefore, this study focused on the following research questions.

1. To what extent are Bhutanese secondary school English language teachers metacognitively aware of their teaching practices?
2. How do Bhutanese secondary school English language teachers teach *with* metacognition?

Research Methodology

An explanatory sequential mixed-method design was adopted to investigate TMC both quantitatively and qualitatively. To fortify the robustness of the study, quantitative results were further explained through qualitative data (Creswell, 2022). The initial quantitative phase unveiled empirical insight into the Bhutanese language teachers' metacognitive awareness levels before following up with the qualitative phase to investigate how teachers possessing such awareness conducted their classroom teaching.

Participants

In the quantitative phase, the participants included 42 Bhutanese English language teachers from all secondary schools in Thimphu, Bhutan, including five public and five private schools. These teachers taught English as a foreign language from grades eight to twelve with the class size of 30-35 students. Their demographic information is shown below.

	Gender	Highest degree attended
Male	4 (9.5%)	
Female	38(90.5%)	
Master's degree		13(31%)
Bachelor's degree		12(28.6%)
Bachelor's degree with PGDE*		17(40.5%)

**Post Graduate Diploma in Education*

Table 1: Demographic information of the participants (n = 42)

In the qualitative phase, a purposive sampling strategy was employed to select the top five and bottom five participants, as determined by their self-report questionnaire scores. Nine of the selected participants were female and one was male. To ensure the confidentiality of data presentation, all the participants were anonymised and assigned a label as T(x), whereby T signifies teacher, and x denotes the respective order of observation. In the results section, pseudonyms are used when referring to students' names to safeguard their identities.

Instruments

Teachers' Metacognitive Awareness Scale (T-MAS)

In the quantitative phase, the Teachers' Metacognitive Awareness Scale (T-MAS) was employed to investigate the extent of English language teachers' metacognitive awareness. T-MAS was a 6-rating-scale self-report inventory adapted from Balcikanli's (2011) Metacognitive Awareness Inventory for Teachers (MIAT) and Jiang et al.'s (2016) Teachers Metacognition Inventory (TMI), the two inventories developed to specifically measure teacher metacognition (Balcikanli, 2016). T-MAS consisted of two parts highlighting demographic-related questions and items measuring teachers' metacognitive awareness, respectively. The second part comprised three major components: 1) teachers' metacognitive

knowledge, including knowledge of person (KP), task (KT), and strategy (ST), 2) teachers' awareness of metacognitive experience, and 3) teachers' awareness of strategy use in four aspects: planning, monitoring, evaluation, and debugging strategies.

To ensure the validity of the questionnaire, two experts were asked to review the items in the initial version of T-MAS with 44 items. Content validity was sought through the item-objective incongruence (IOC) index, which was achieved at .65 or 65%, suggesting more than 50% of the rating agreement between the two experts. Although the minimum desired cut-off index is .75 (Turner & Carlson, 2003), this IOC index is considered acceptable according to Rovinelli and Hambleton (1977), who suggested the choice of the cut-off index varies depending upon some absolute standards, such as the number of items or the number of content experts. Some T-MAS items were revised or rephrased according to the content experts' suggestions before actual use. The revised T-MAS comprised 43 items.

For the reliability of the T-MAS, Cronbach's alpha was computed. Although the overall reliability based on the final data was very high (.968), the internal reliability of items measuring ME was low (.691). The analysis showed that one item measuring ME was problematic. After deleting it, the final Cronbach's alpha was .970; subsequently, that item was not included in the final analysis. The internal consistency of each facet is shown in Tab. 2.

Facets of TMC	Cronbach's Alpha
Knowledge of person	.768
Knowledge of task	.798
Knowledge of strategy	.752
Metacognitive Experience	.723
Planning	.854
Monitoring	.832
Evaluation	.790
Debugging	.738

Table 2: Internal consistency of the facets of TMC

Observation

One classroom observation was conducted for each teacher to identify how they actually taught *with* metacognition in their usual teaching context. The observation data were collected by video-recording one complete lesson, irrespective of skills being taught and without the authors' intrusion over topics taught or teaching methods employed. The goal of the observation was to capture observable teaching behaviours resembling metacognitive strategy use of planning, monitoring, evaluation, and debugging.

Semi-structured Interview

Two semi-structured interviews were conducted: a pre-observation interview and a post-observation interview to investigate the teachers' thought processes about the strategy use in their teaching practices. Interview questions were developed by building on Hartman's (2001) and Richards and Lockhart's (1996) work. The questions were formulated to delve into teachers' reflection regarding their planning, monitoring, evaluation, and debugging strategies. The pre-observation interview included 10 questions to capture teachers' views about lesson planning. The post-observation semi-structured interview included 11 questions

asking teachers to reflect on their thought processes concerning monitoring, evaluation and debugging strategies employed in their actual teaching as it appeared in the observed class. Before the actual use, two experts examined content validity of the interview questions using the IOC index, with the resulting index of .88 or 88%.

Data Collection Procedure

The data were collected during the fall semester of the academic year 2019. The study began with quantitative data collection. After getting written authorization for the data collection process from the Ministry of Education, Bhutan, and the school principals, 57 questionnaires were distributed to all English language teachers in all selected schools through the school principals or the English department head. Forty-four questionnaires were returned, but only 43 could be considered as one participant was an expatriate teacher, thus making the response rate of 75%.

One week after the quantitative data collection, upon an agreement with the 10 selected teachers, the first author contacted each teacher and provided them with informed consent to ensure their voluntary participation. Then, he collected qualitative data through the same order of data collection methods: pre-observation interview, one complete classroom observation, and post-observation interview right after the observation. All interviews were conducted in either English or Dzongkha, the national language of Bhutan, or both according to the participants' convenience and they were audio-recorded. The observation data were videotaped with the duration of 50-60 minutes for one teacher. The recording device was positioned at the back of the classroom, away from the students, to capture the teacher behaviours. During the observation, the first author was quietly present in the room, primarily to take notes.

Data Analysis

The quantitative data collected through T-MAS was analysed using descriptive statistics, such as mean and standard deviation to examine the extent of teachers' metacognitive awareness. The mean scores of each facet of TMC were categorized into a different level of awareness, as shown in Tab. 3.

Number	Range	Level of Awareness
1	.01 - 1	Highly unaware
2	1.01 – 2	Moderately unaware
3	2.10 – 3	Minimally unaware
4	3.01 – 4	Minimally aware
5	4.01 – 5	Moderately aware
6	5.01 – 6	Highly aware

Table 3: Level of awareness identified by mean score

The qualitative data generated through observation was analysed for observable behaviours reflecting teachers' planning, monitoring, evaluation, and debugging strategies. The first author carefully examined each video recording and listed arrays of actions reflecting teachers' strategy use during the instructional practice. Each action was then labelled following classroom behaviours listed in Hartman's (2001) Video Self-Assessment of Instruction. These labelled behaviours were further examined and categorized into

planning, monitoring, evaluation, and debugging strategies following the study's theoretical framework. The second author then checked the validity of the categorised behaviours. When unclear relation between behaviours and categories was detected, the two authors discussed the issue to seek a final agreement.

Data from the two semi-structured interviews were analysed both inductively and deductively. After the interview data was transcribed verbatim, a copy of the transcript was sent to every interview participant for verification; however, only five responded. The data was then analysed using content analysis to see emerging patterns using the study's theoretical framework as an initial blueprint. The process began with the first author familiarizing with the data through repeatedly reading and rereading. The transcript was then broken down into manageable units of analysis based on their content. The units of analysis were then open-coded to describe the meaning of each unit. Next, the coded data was categorised according to the overarching theme and then examined for emerging patterns, and compared with the study's theoretical framework.

Results

The Extent of Teachers' Awareness towards their Metacognition

The data collected through T-MAS showed the teachers were highly aware of their metacognition in most facets, as shown in Appendix 1. It was revealed that overall, teachers were highly aware of their MC (*M*=5.10). Considering different facets of their MC, construct measuring the awareness of teachers' MK of person yielded the highest overall mean score (*M*=5.30), followed by ME (*M*=5.25) and MK of task (*M*=5.24). Although highly aware, the construct measuring teachers' planning had the lowest overall mean score (*M*=5.01). Considering items under each facet, while all items in other facets fell into highly aware, some items in three facets, namely ME (Item ME 4), Planning (Item Planning 13, 29, and 41) and Monitoring (Item Monitoring 14 and 27) fell into moderately aware. The results showed that most of these moderately aware items had very high standard deviation (e.g., Item ME 4, σ =1.045), suggesting some discrepancies in teachers' responses despite the high overall mean score.

Teachers' Teaching with Metacognition

The data gathered from the class observation and interviews revealed emerging themes corresponding to MC and its four domains.

Teachers' Knowledge about MC

Qualitative data from the pre-observation interview revealed that Bhutanese English language teachers were not familiar with the concept of MC. Out of 10 teachers who participated in the qualitative data collection, only one teacher (T1) could explain MC by its classic definition as 'thinking about thinking'. She explained:

> *"Metacognition is [has] more to do about student thinking…thinking about their thinking. Yes. So it actually gives them the drive to learn. Yes. Then autonomy learning and independent learning. So, they have to explore on their own independent learning."*

While her response reflected her comprehension of MC as primarily revolving around learners' MC, other participants exhibited limited knowledge or incomplete understanding of

the construct. However, when asked of their appreciation of MC, after a brief explanation, their responses indicated their awareness of the importance of teachers' thinking process in teaching. For instance, T6, who had reported not being aware of the construct, gave the following response:

> *"…once you're in the class, you should know how you are…I mean like what you're going to talk about, how you're going to put that…so that the students learn it…"*

Planning

The qualitative data from the observation revealed that in actual practice, most teachers typically set goals by introducing the lesson and stating learning objectives at the beginning of the class. For example, while teaching elements of a short story, T4 introduced the lesson objectives by saying:

> *"…and now today's lesson, listen to me [for] how we are going to progress with our today's lesson. First, I will recap elements of short stories with you. Then, I will reiterate on one of the element of [the] short story. Thereafter, I will be giving you a detailed information on that particular element of the short story that I have picked for this particular lesson…then, at the completion of work, presenter from every group will come to the podium and then do the presentation."*

When conveying learning objectives, T4 gave the overview of the lesson to students by stating lesson objectives, lesson content, learning activities, and lesson evaluation. However, most of the other teachers predominantly focused on learning objectives alone. Interestingly, some teachers did not discuss the goals and objectives, but their students seemed to be well aware of what they would do in that class. This might have resulted from the class observation being conducted towards the end of an academic year, and most students were aware of what they were supposed to do. At the beginning of the class, teachers' practice of goal setting indicated their use of a metacognitive strategy of organizational planning involving delineating teaching and learning objectives.

Likewise, data from the pre-observation semi-structured interview revealed that most teachers considered having clearly defined objectives as the linchpin of their lesson plan, reflecting their need to impart conceptual knowledge of the subject. For instance, T4 reflected on her practice of blending learning objectives with value objectives to achieve the motif:

> *"It [lesson plan] should have an objective, and these days we also have value objectives or life skills added. That means we just do not teach the subject; we also want children to take something from it and apply in their life. And that is an actual education."*

The way T4, an experienced teacher, described her practice of setting objectives reflected how she viewed herself; in this case, she appeared to see herself as a counsellor in addition to being a teacher. Moreover, her description of goal setting indicated her knowledge of the curriculum. A similar sentiment was also apparent in T10's commentary:

> *"…it is not necessary to have achieved whatever components we have as long as we are able take care [of] their [students'] thought process…because directly or indirectly we're trying to impart life education skills."*

T4 and T10's perspectives on setting objectives highlighted that, in some instances, the process was shaped by teachers' self-referential image. Despite their strong belief in the importance of well-defined objectives as guidelines for students, other teachers did not elaborate on the specifics of goal setting or their employed strategies. For instance, T9

reported:

> *"A good plan, first of all, has to have objectives. Without objective(s) we cannot tell the students what are the things that we're going to do. If we have objectives in the beginning the students are aware of…things we're going to learn…"*

Notably, during the pre-observation semi-structured interview, it became evident that teachers' knowledge of students also influenced their lesson planning. Most teachers claimed they would make preliminary assessments of their students' capacity to comprehend the lesson. This prejudgement illustrated teachers' awareness of their students, which helped them adjust their teaching methods. For example, T6 said,

> *"I make sure there's timing and how much students can cope…the way I process and the way I teach in the class, it differs [sic]. When I am teaching in science, they understand the syllabus easily. So, teaching them is very comfortable whereas in commerce and arts it becomes difficult. The way of teaching has to come down. The way I speak has to be slow so that they can learn."*

The data from the pre-observation semi-structured interview and classroom observation revealed that these teachers' planning mainly focused on two aspects: planning for the content and planning for the lesson implementation. Planning for the content was apparent through teachers' perception and actions of goal setting and previewing students' ability to understand the lesson. Likewise, teachers' descriptions and subsequent application of instructional methods indicated their planning for the lesson implementation. T5 reported:

> *"I mostly try to include questions whereby I could really instigate them [students] to think a lot, like critical analysis. So, that there's in my teaching…how to make them think themselves because I think that's what Bhutanese students are lacking."*

Considering Bhutanese English language teachers' planning process, they seemingly dedicated a significant amount of time thinking of the best conducive ways to achieve learning objectives; however, there was little evidence to suggest teachers incorporate mechanisms for monitoring and evaluating lessons within their planning. In addition, none of the teachers encouraged students to set their own learning goals.

Monitoring

Teachers' observable behaviours constituting 'monitoring' included identifying students' misconceptions or failure to comprehend the taught lessons. They executed monitoring by physically going around the class and engaging students directly. In doing so, they identified gaps in students' knowledge by reviewing students' work in progress. Most teachers' preferred monitoring strategy was using learning probes like questioning and problem-solving to check their students' understanding of the lesson. For example, after discussing a short story, T6 checked her students' understanding by asking questions like, *"Who asked the narrator about the bravery or braveness of islanders?"* While FT6 adopted a questioning strategy, T8 chose problem-solving as a strategy to check students' understanding. While revising sentence transformation, T8 gave a list of questions with increasing difficulty levels on the board and called upon volunteers to solve them. Monitoring students' understanding was accompanied mainly by either immediate feedback or expeditious discussion of the merits of students' responses to the learning probes. It was also found that teachers reiterated instructions whenever necessary.

Correspondingly, the post-observation semi-structured interview revealed that most teachers monitored the learning process through their students' engagement in class. Teachers described how they took cues from their students' different participation styles in the class

discussion and how well they responded to the learning probes to ascertain their students' understanding of the lesson. For example, T10 reported she used students' silence and how students answered questions as tell-tale signs to monitor their learning; she said:

> *"...[monitor] by the way they answer...one is their silence, and another one is the inappropriate way of answering and responding. So, there are two things [for monitoring students' learning]."*

T9's response to her monitoring strategy also revealed her knowledge of students:

> *"I know them for a long time so sometimes their facial expression is very important. If they don't know they just sit like this and look with dull eyes. But if they know they try to respond."*

During the post-observation, the participants were asked to explain their thought process behind their observable teaching behaviours reflecting their monitoring strategy. On making students solve questions with increasing level of difficulty, MT8 explained:

> *"In the base level, I give very simple questions so that they can solve it and I try to check how much they know…I give many varieties [of questions] and they solve it. I take them towards the higher level and they will have more thinking by that time and I let them solve very tough questions towards the end."*

Some teachers' responses in the post-observation interview provided insight into their decision-making process. For instance, when T5 was questioned about the teacher-centred nature of her class, she explained:

> *"I don't know what to say about this. Maybe it is because of time restraint and syllabus coverage is one part…if we don't make it too much of student-centred, I don't think we could finish [the] syllabus…but I'm now trying to focus more on making it student-centred. I tried before also but it depends on the student. Sometimes it works so well; sometimes it does not."*

T5's response showed her online awareness of her classroom progress. It also shows what worked in one situation may not always work. Furthermore, her response highlights the fact that language teaching in Bhutanese context, like anywhere else, is affected by the dynamic variabilities of the classroom environment and the external stakeholders.

Interestingly, most teachers' actions in the monitoring stage centred on assessing students' learning process; however, not much of teachers' self-monitoring was seen. Only three teachers applied self-monitoring during the actual teaching. For example, T4 asked if her writing was legible enough to understand while writing on the board. Likewise, T9 monitored her own pace and teaching progress by seeking feedback from her students.

Evaluation

Only a few teachers' observable actions resembled evaluation. Most teachers offered praises and appreciation to students who took part in classroom discussions. For example, when one of the students in T4's class actively participated in a classroom discussion, she said, *"Very good, Tobgay, today you are the star of the class."* Interestingly, during the actual teaching, none of the teachers encouraged their students to reflect on their work or appraise their performances. Although some teachers kept encouraging students to ask questions, they did not allocate time to reflect on their learning progress (e.g., what worked for them and what did not). Furthermore, teachers spent only a little time evaluating the achievement of the learning goals set at the beginning of the class.

In the post-observation interview, teachers indicated their preferred method of evaluating their lesson's success and failure was mainly through the judgment of their students' performance. For instance, when asked to rate their teaching, T2 rated herself 6 out

of 10 and justified, *"Students were participating, especially those boys."* In addition, teachers could acknowledge what did not work in their lessons. For instance, T10 explained:

> *"…the way I introduced my class is always energizing and motivating and that almost always happens. The way I start the lesson is always like that and it was like that today. And the flow of the lesson was like bit in between…got stuck here and there…the ending part was not according to my expectation."*

Similarly, T5 acknowledged her class was primarily teacher-oriented due to the passivity and minimal student participation in the teaching process. It was clear from the post-observation interview data that teachers, to a certain extent, engaged in thinking about their classroom actions and instructional process.

Debugging Strategy

The most employed debugging strategy was the action of reinforcing the students. Trying to familiarize students with sentence transformation, T8 kept reiterating sentence transformation rules; he said, *"If it is 'did', then the verb has to be in the present tense, and if 'had,' then past tense"*. The post-observation interview data illustrated teachers' choice of debugging was either by changing instructional strategies or re-doing the entire lesson. For example, T9 said:

> *"[The] next day, I repeat the lesson but in a different style. Like today, if they do not understand, tomorrow I would come up with examples like my own examples, related to my life and the story or anything."*

T9's commentary failed to explain how bringing her own examples would foster a better conceptual understanding of the lesson despite her knowledge of strategy. During the post-observation interview, T9 pointed out that she changed her teaching strategies whenever her teaching did not go according to plans. This action is innately metacognitive; however, examples of strategy change was hardly metacognitive in nature. Finally, most teachers suggested adopting different instructional strategies and providing more hands-on practice to improve their lesson.

Collectively, the qualitative findings revealed a complex interplay between the facets of Bhutanese English language TMC as shown in Fig. 2. While reporting on their planning process, Bhutanese English language teachers' reflection indicated that they took cues from their MK of person while considering students' ability to comprehend their lesson and their role as a language teacher. Their reliance on employing learning probes in the monitoring process indicates their use of knowledge of strategy. Furthermore, the influence of the knowledge of strategy was also noted while teachers reflected on their evaluation and debugging process. Interestingly, the teachers' affective experience of engaging in a cognitive enterprise of teaching, such as the judgement of learning clearly played some role in the planning and evaluation stages.

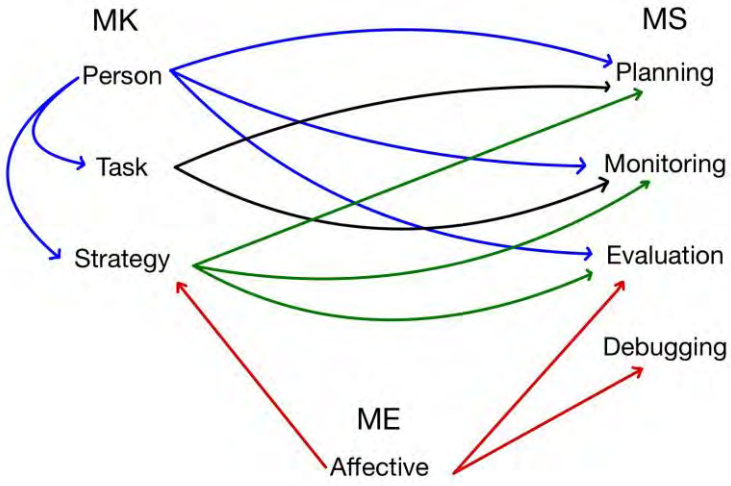

Figure 2: Interplay between the facets of Bhutanese TMC

Discussion

The aim of this study was to examine the extent of the Bhutanese English language teachers' metacognitive awareness and investigate their thinking process while engaging in their instructional practices within the Bhutanese EFL/ESL context.

The quantitative findings revealed a notable high mean score in metacognitive awareness, indicating an elevated awareness among Bhutanese English language teachers concerning knowledge variables, cognitive and affective experiences of engaging in the teaching process, and the regulation of cognition. This high metacognitive awareness among teachers can lead to successful completion of professional tasks as suggested by Nahkralaji (2014), who found a positive relationship between EFL teachers' metacognitive awareness and their professional success. Haukås (2018) suggested metacognitively-aware teachers engage in higher-order thinking about their knowledge, beliefs, and instructional practices, which can allow them to plan, monitor, and evaluate their instructional practices. Consequently, they could possibly guide their students to become metacognitive (Soodla et al., 2016; Veenman et al., 2006). Also, the awareness of affective experiences can be 'quality control' measures that help teachers reflect on their thought processes (Flavell, 1979).

The study revealed a paradoxical situation among Bhutanese English language teachers. Despite their overall high MC awareness, they have limited understanding of MC. While one teacher could clearly define the construct, other teachers did not know what MC entailed or offered an incomplete understanding. However, after a brief explanation, these teachers could express the importance of being consciously aware of their thought processes, aligning with Ben-David and Orion's (2014) and Ozturk's (2016) observations. This finding suggests teachers may become innately metacognitive regardless of their understanding of the construct.

Exploring the planning phase, the qualitative findings indicated that the Bhutanese English language teachers' thought processes centred on planning for lesson content and lesson implementation. Thinking about lesson objectives in the planning phase signals teachers' use of innately metacognitive strategies of organizational planning (Liyanage & Bartlett, 2010). In L2 teaching, well-set learning goals at the beginning of the lesson can enable students to find where they stand in their L2 learning progress (Anderson, 2002).

However, they neither articulated what setting objectives entailed nor did they report spending time thinking about encouraging their students to set their own goals, neglecting Anderson's (2002) suggestion about teaching strategies that can lead students to their learning success. This finding suggests Bhutanese English language teachers' metacognitive action is not necessarily accompanied by a metacognitive thought process (Duffy et al., 2009). However, this finding alone cannot pinpoint that these teachers have limited metacognition as L2 instruction is often influenced by the teaching context (Kubanyiova & Crookes, 2016).

Bhutanese English language teachers' view on the lesson content corresponded with the time dedicated to teaching and monitoring students' understanding of the content. Although thinking of the lesson content while planning and monitoring students' understanding is innately metacognitive, a lack of learning strategies across the lesson content suggests teachers prioritized teaching content over teaching helpful learning strategies. However, such nuances in the actual teaching practice do not necessarily indicate shortcomings for these teachers. L2 teachers in an educational context controlled and regulated by external stakeholders often resort to routinized teaching practice, leaving them a bare minimum opportunity to engage in metacognitive activities (Hiver & Whitehead, 2018; Wilson & Bai, 2010). In case of the Bhutanese context, a necessary end-of-term exam could be one possible reason that teachers focused quite extensively on planning for lesson content. Such idiosyncrasy of language teaching makes it a social and cognitive activity. Our finding also conforms to the norm that TMC is an adaptive metacognition (Hiver & Whitehead, 2018; Hiver et al., 2019; Lin et al., 2005). In other words, it is L2 teachers' response to knowing *what* to do, *how* to do, and *when* to do regarding their teaching environment. In hindsight, Bhutanese English language teachers' explicit focus on planning for the lesson content could indicate their awareness of the content knowledge of the topics or their metacognitive content knowledge (Yerdelen-Damar et al., 2015).

The findings indicated while planning lessons, the teachers thought about instructional strategies and learning activities to achieve L2 learning objectives. These practices indicate teachers' pedagogical awareness of their task demand or teachers' metacognitive method knowledge (Yerdelen-Damar et al., 2015). Moreover, teachers appeared to underscore a pedagogical understanding of what their teaching task demand entailed.

During the pre-observation interview, teachers indicated that they think about their students' needs, proficiency, and knowledge while planning lessons, revealing their prejudgment of students' ability to comprehend the lesson. Such practice demonstrates that teachers were consciously aware of their knowledge of students which is necessary to understand what students lack in language competency and set learning objectives accordingly (Liyanage & Bartlett, 2010). Although teachers' reflection in the planning process did not reflect significant knowledge of self or self-awareness, experienced teachers were more pronounced. The findings indicated that their planning phase was characterized by how they viewed themselves as a teacher. As language teachers get more experienced in their teaching career, their metacognitive awareness increases accordingly (Nahrkhalaji, 2014). This finding suggests TMC emerges through self-appraisal and self-referential images (Hiver & Whitehead, 2018).

Regarding the monitoring stage, Bhutanese English language teachers were found to think about whether their students could understand their lesson. This conscious thought process displayed their knowledge of strategy and knowledge of students. Teachers' knowledge of strategy, although extensive, was limited to using learning probes such as questioning and problem-solving. The over-reliance on one particular strategy could be the manifestation of their knowledge of a task that was partly nurtured by their personal

experiences or beliefs (Buehl & Fives, 2009 cited in Spruce & Bol, 2015) regarding the effectiveness of those strategies. Also apparent during their monitoring phase was their knowledge of students. Selective monitoring of specific students from the class indicates that the teachers were consciously aware of their students' knowledge and abilities. Teachers' actions and reflection showed their goal of appraising their students' understanding of the lesson taught.

Although the data did not reveal how the majority of these teachers monitored themselves or their instructional effectiveness, some teachers' decision-making process indicated that these teachers, to a certain extent, were consciously aware of their L2 instructional process. Such decision-making can range from completely abandoning initial planns to making 'on-the-spot' modifications to suit instructional progress (Richards, 1998, as cited in Borg, 2006). Rather than viewing such improvisation as shortcomings, it is an ongoing interaction between teachers' pedagogical choices and their understanding of the teaching context (Borg, 2006). Effective teachers are capable of thinking on their feet and making conscious decisions while being constantly aware of themselves, their teaching progress, and environment (Duffy et al., 2009; Hiver & Whitehead, 2018; Hiver et al., 2019; Hiver et al., 2021). Moreover, the very core meaning of teaching *with* metacognition entails that teachers think about their performance as much as they think of their students' performance. However, in the context of this study, it is important to qualify that the decision-making process was observed only in the case of and reported by some teachers. This indicates that Bhutanese English language teachers' view of L2 teaching is primarily on emphasizing the teaching content.

The study's findings indicate that during the evaluation and debugging phase, teachers engaged in 'instructional reflection' (Hiver et al., 2019; Hiver et al., 2021). When asked about the strengths and weaknesses of their lesson and what they could do to improve their instructional practice, these teachers relied on their affective experience to determine the success or failure of their lesson and to reflect on ways to improve their future instruction. This finding shows that the affective characteristic of TMC is a manifestation of monitoring (Ben-David & Orion, 2012).

The findings through the teachers' reflections demonstrate the influence of ME in the teaching process, especially during the evaluation phase. Interestingly, teachers struggled to articulate extensively how they intended to leverage their affective experience to improve their teaching process, although some teachers explained how they might tweak their future lesson implementation. This awareness of affective experiences of engaging in a cognitive enterprise can significantly impact MK and MS, supporting the notion of ME as a significant facet of TMC (Ben-David & Orion, 2012; Flavell, 1979).

Our study affirms the established notion that teachers' metacognition is a continuous interaction of both cognitive and affective facets of MC, which in turn exerts control over regulatory aspects (MS) (e.g., Ben-David & Orion, 2012; Fairbanks et al., 2009; Haukås, 2018). In essence, these findings illustrate that teachers' metacognition conforms to the study's theoretical framework and echo the conclusion drawn by Wilson and Bai's (2010) in that a significant relationship between teachers' declarative, procedural, and conditional knowledge exists. The study's findings allow us to infer that the affective experiences associated with the success or failure of L2 teaching tasks either lead to addition or deletion to teachers' knowledge variables. This, in turn, significantly shapes L2 teachers' inclination to adhere to established teaching practices or undergo a comprehensive overhaul of their instructional strategies and methods (Flavell, 1979), thus highlighting the dynamic nature of TMC.

Conclusion

Although contextual to the Bhutanese English language teaching and learning context, the findings from this study contribute to the existing, small, yet growing pool of studies on language teacher metacognition. Second language teachers' metacognition is often overlooked in the interest of investigating the role of metacognition in language acquisition. Although it has been clearly established that proficient language learners are able to select and evaluate strategies required in learning a language (Wenden, 1987), students' achievement alone is not an indicator of successful metacognitive instruction (Duffy et al, 2009). Therefore, it is equally important to understand the role of language teachers' metacognition in successful L2 teaching and learning enterprise from their knowledge, thought process, experiences, and teaching strategies.

The findings of this study can be a point of reference for teacher educators, stakeholders, and decision-makers in Bhutan and other countries with similar teaching and learning context. Realizing that language teachers have to deal with the unpredictable nature of teaching environment, effective L2 instruction is contextual and responds to the socio-political need of L2 teaching (Kubanyiova & Crookes, 2016). Language teachers need creative freedom and a conducive environment to hone their skills. The findings suggest that language teachers have the potential to fully engage in a metacognitive practice; thus, teacher educators, stakeholders, and decision-makers should provide them with necessary training and tools to teach metacognitively. Time and effort must be consistent over a long time to ensure that teachers develop their metacognition (Hiver et al., 2021). Training programs can help English language teachers realize their ability to engage in MC, becoming thoughtfully adaptive and self-regulated in their practice. Therefore, this study recommends frequent PD programs for English language teachers to develop MC theoretical understanding and gain insight into their knowledge base and thinking process. In addition, PD programs aimed at developing TMC can help teachers channel metacognitive strategies in their instructional practice to foster both conceptual and procedural understanding of content matters to their students. PD programs can provide teachers with opportunities to promote and integrate general metacognitive awareness among their students.

This study has the potential to be replicated. It addressed TMC through a self-report questionnaire with 42 teachers, observation, and interview protocol with only 10 teachers. The number of samples used was relatively small to generalize the findings. Future research can map a generalizable picture of TMC with a larger number of samples. In addition, the participants comprised mainly female participants as compared to the male counterparts, 38 to 4 in the quantitative data collection and 9 to 1 in the qualitative data collection. Future research could explore if teachers' gender plays any role in influencing TMC. Although an interview protocol was used, there are better ways to study teachers' reflections, such as stimulated recall protocol or think-aloud method to model TMC. Due to time constraints, this study conducted only one observation; data collected in the span of one whole semester with an increased frequency of observation, would have likely yielded different results.

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Appendix 1 Descriptive statistics of facets of TMC

	n	Mean	Std. Deviation	Meaning
Knowledge of Person		5.30		Highly Aware
KP 1	42	5.40	0.665	Highly Aware
KP 9	41	5.02	0.821	Highly Aware
KP 17	42	5.57	0.547	Highly Aware
KP 25	42	5.17	0.762	Highly Aware
KP 33	41	5.29	0.814	Highly Aware
KP 39	42	5.36	0.759	Highly Aware
Knowledge of task		5.24		Highly Aware
KT 2	42	5.14	0.718	Highly Aware
KT 10	41	5.24	0.767	Highly Aware
KT 18	41	5.29	0.750	Highly Aware
KT 26	42	5.29	0.742	Highly Aware
Knowledge of Strategy		5.17		Highly Aware
KS 3	42	5.31	0.715	Highly Aware
KS 11	42	5.17	0.794	Highly Aware
KS 19	42	5.07	0.778	Highly Aware
KS 27	42	5.07	0.712	Highly Aware
KS 34	42	5.19	0.804	Highly Aware
KS 40	42	5.24	0.726	Highly Aware
Metacognitive Experience		5.25		Highly Aware
ME 4	42	4.93	1.045	Moderately Aware
ME 12	41	5.49	0.711	Highly Aware
ME 20	42	5.40	0.798	Highly Aware
ME 35	42	5.19	0.773	Highly Aware
Planning		5.01		Highly Aware
Planning 5	42	5.40	0.665	Highly Aware
Planning 13	41	4.71	0.981	Moderately Aware
Planning 21	42	5.17	0.621	Highly Aware
Planning 29	42	4.76	0.906	Moderately Aware
Planning 36	42	5.10	0.821	Highly Aware
Planning 41	42	4.93	0.921	Moderately Aware
Planning 43	42	5.02	0.811	Highly Aware
Monitoring		5.15		Highly Aware
Monitoring 6	41	5.37	0.733	Highly Aware
Monitoring 14	42	4.95	0.795	Moderately Aware
Monitoring 22	42	5.17	0.730	Highly Aware
Monitoring 30	42	5.17	0.824	Highly Aware
Monitoring 37	41	4.95	0.835	Moderately Aware
Monitoring 42	41	5.27	0.807	Highly Aware
Evaluation		5.16		Highly Aware
Evaluation 7	41	5.27	0.742	Highly Aware
Evaluation 15	42	5.14	0.683	Highly Aware
Evaluation 23	41	5.02	0.851	Highly Aware
Evaluation 31	42	5.31	0.780	Highly Aware
Evaluation 38	42	5.05	0.962	Highly Aware
Debugging		5.23		Highly Aware
Debugging 8	39	5.41	0.751	Highly Aware
Debugging 16	42	5.05	0.909	Highly Aware
Debugging 24	42	5.26	0.767	Highly Aware
Debugging 32	42	5.21	0.682	Highly Aware
Mean score of all facets	5.1			Highly Aware

Note: KP= Knowledge of person, KT= Knowledge of Task, KS= Knowledge of Strategy, ME= Metacognitive Experience