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METACOGNITION IN THE 21st CENTURY ESL TEACHER EDUCATION PROGRAMME

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Abstract

This paper presents the discussion on the role of metacognitive strategies in the 21st century ESL teacher education programme. It examines the kinds of teaching and learning experiences that enable the student teachers to develop their metacognitive strategies.. This paper draws relevant examples of a classroom based practice from student teachers' assignments to reflective journal entries, participant observation, field notes, and feedback and evaluation forms. Data analysis was carried out qualitatively. The findings revealed that reflective journal entries, commenting, providing and giving feedback, dialogic interactions as well as whole class discussions through questions and answers are among the activities that could enable student teachers develop their metacognitive strategies. This study implicates the need for ESL teacher education programmes to provide teaching and learning experiences that are transformative in nature in order to develop prospective ESL teachers who are adaptive, self-reliant and independent, resourceful, innovative and reflective.

Keywords: *Metacognitive strategies, ESL student teachers, classroom based practices, critical thinking development.*

INTRODUCTION

For the past decades, theories on how best we learn to acquire knowledge have been the catalyst of research in education. With the advancement in the 21st century learning, more focus have been given on improving the quality of learners' learning which has become central to the teaching and learning process. The 21st century is perceived as volatile, uncertain, complex and ambiguous, therefore, there is a need for our education system throughout the world to be restructured so that it is relevant for today's world and attend to knowledge, skills, attitudes and values that would enable the learners to confront and solve complex problems (Acedo & Hughes, 2014).

Many educationists propose that the 21st century learning should give more focus on active learning that involves construction of meaning, learning declarative knowledge and procedural knowledge, integration between domains, collaborative comparison of reasoning and meaningful learning through articulation (Pelley, 2014). However, the National Research Council revealed that the educational process can be hampered without an understanding of metacognition, as one of the elements to be considered, as it could help students to take control of their learning by defining

goals and monitoring progress. On the other hand, teachers are able to understand the responsibilities of the student in learning more than the content (Pelley, 2014).

There are four vital perspectives of learning that can be integrated by a curriculum (Acedo & Hughes, 2014). Firstly, learning is a model of cognition which organizes schema into a short term and long term memory. Secondly, learning is envisioned as a developmental progression involving threshold concepts and typical misconceptions. Thirdly, learning is a social activity with societal impact. Lastly, learning is perceived as a reflection or metacognition process. It is this concept of learning as a metacognition process that serves as the focus of this paper in relation to ESL teacher education programme.

Learning in the 21st Century

The demands of the 21st century learning requires students not to only know more about content knowledge but also know how to learn. In addition, Acedo and Hughes (2014) discusses that learning entails more than just acquiring knowledge but more importantly it requires a transformation of basic understanding into more complete and concrete comprehension (Pellegrino, Chudowski & Glaser, 2001). This can be envisaged as a sophisticated development of understanding and skills within a domain (Heritage, 2008).

Studies have shown that learners who achieve academically are often better to analyse and adjust their approach to learning tasks than are students who are less successful (Bol & Garner, 2011; Hacker, Bol & Bahbahani, 2008; Nietfeld, Cao & Osborne, 2005, as cited in Spruce & Bol, 2015). On the contrary, there are also many learners who are good achievers and yet do not employ any specific strategies for learning and many weaker student are totally unaware of what learning strategies to use (Spruce & Bole, 2015). Thus, the 21st century learning should promote instructional strategies that could support effective learning among learners.

Metacognition and Learning as a Reflection

The seminal work on metacognition was carried out by Flavell (1976) in which he describes metacognition as thinking about thinking. This requires learners to be involved in an active process. This includes strategies for learning which involve self-regulation, planning, knowing when to apply rules and making decisions. These do not just involved the strategies that the learners' use but more importantly when and how they use them (Wilson & Bai, 2010). This process is seen vital for learners to think of what they have learnt, how they learnt it and what can they draw out of the experiences (Acedo & Hughes, 2014). When learners are metacognitive, they exhibit the ability to be aware and regulated of their mental processes (Griffith & Ruan, 2005 as cited in Wilson & Bai, 2010). Self-regulated learners tend to demonstrate greater academic success and this is the concept proposed by the Growth Mindset in which learners assume responsibility for self-directed knowledge acquisition from their experiences (Pelley, 2014). In extension, the process that has been found to be most effective is known as Deliberate Practice that permits the identification of self-awareness weaknesses among learners (Pelly, *ibid*).

Wilson and Bai (2010) in their studies have found that first, teaching metacognition is an active process of engaging learners in sharing thinking processes through the teaching of declarative, procedural and conditional knowledge while making students responsible for using metacognitive skills. Second, metacognition requires teacher in helping students to share their thinking processes in which interactions become central to learning. The teacher plays the key role in providing space for visible problem solutions. Third, the act for debriefing is vital as metacognition requires an evaluation of the task choosing the correct strategy to complete the task. Fourth, teaching metacognitive strategies should make them aware of what strategies to use and providing them with tasks that would allow for such strategies to be used.

Spruce and Bol (2015) posit the idea that metacognition is closely related to self-regulated learning. Following the Zimmerman's (2008) model of self-regulation (SRL), they discuss how metacognition is present at every stage of SRL. Firstly, the dynamic nature of SRL in which learners cycle through the various phases of learning. Secondly, the active monitoring of learners' own progress and selecting cognitive appropriate strategies and finally the social factors that influence motivation or self-beliefs.

Learners need creativity to rethink situations from new perspectives, to visualize things that are uncertain and to respond to those situations with new ideas and perspectives. This implies careful task designs, rich questions, open mindedness and challenge which can be fostered in classroom practices that can model, nurture and extend learning (Acedo & Hughes, 2014).

ESL Student Teachers and Teacher Education Programme

Teacher learning, may it be pre-service or in-service teachers, is not a straightforward process of acquiring and accumulating knowledge. It is a process of instructional shifts by reconceptualising and re contextualising one's teaching approach with successive series of reflection and application from what one's know to new knowledge as proposed by Vygotsky's (1978); as cited in Mak (2010). In addition, how student teachers' learn how to teach is not an individual process but also can be perceived through their interactions and engagement as part of the student teachers' community of practice (Lave & Wenger, 1991) and through such learning experiences that their teaching skills, value and knowledge can be improved, transformed and deepened (Butler, *et al.*, 2004; Golombek & Johnson, 2004; as cited in Mak, 2010).

The pedagogical understanding of metacognition enables a teacher educator to understand the necessities in using metacognition with her student teachers. Wilson and Bai (2010) exert that successful metacognitive literacy instruction addresses student schema, knowledge of strategies and knowledge of the conditions for implementing strategies (Gourgey, 1999; Griffith & Ruan, 2005). If this were to be applied in teacher education preparation, student teachers need models of strategies in action, guided practice as they implement those practice as well as independent practice with the strategies (Clark & Graves, 2005 as cited in Wilson & Bai, *ibid*). Therefore, a learning environment has to be created to apply metacognitive activities and to enable student teachers to reflect on their thinking processes (Leat & Lin, 2007). As reviewed by William and Bay (2010), the metacognitive appropriation such as thinking aloud (Israel & Masey, 2005), thinking strategies practice opportunities (Schreiber, 2005); active discussions (Zohar, 2006), debriefing techniques, small and whole group discussion and the use of language of thinking (Tishman, Perkins & Jay, 1995) can be used as explicit instructional strategies.

A pedagogical understanding of metacognition requires teacher educators of having declarative knowledge, procedural and conditional knowledge. Declarative knowledge is a teacher educator's knowledge of what they should teach, procedural knowledge how a teacher educator teaches something and conditional knowledge is an understanding on how certain situations would require the use of certain strategies (Wilson & Bai, 2010).

There are some studies which have been carried out focusing on learners' performance due to explicit instruction in self-regulated learning (Leou, *et al.*, 2006; Liyanage & Bartlett, 2010) which is the foundation of metacognition. A study by Gillies and Khan (2009) has shown the importance of explicit guidance on SRL in which the group of teachers which have used certain metacognitive strategies tend to exhibit better use of scaffolding in their instructions. In addition, Perry, *et al.* (2007) have found that their student teachers are designing tasks and engaging in practices that support the development of engagement in self-regulated learning (as cited in Spruce & Bol, 2015).

However, there are limited research that have been carried out to delve with teachers' explicit awareness of their metacognition and their ability to think, talk and write on how they think about their teaching practices (Zohar, 1999; as cited in Wilson & Bai, 2010). In addition, previous studies have shown that it is easier to transform teachers' knowledge about the subject than their knowledge about the nature of teaching and learning (Borko & Putnam, 1996). Similarly, there is also very limited research that looks into how student teachers' think about learning how to teach or even how teacher educators prepare student teachers thinking in learning how to teach.

Metacognition and Student Teachers' Learning Experiences

Metacognitive awareness enables student teachers to make self-directed learning decisions during group interaction and followed with their own independent individual learning (Pelley, 2014). Similarly, the awareness allows teacher educators to provide learning experiences that would benefit the student teachers in learning how to teach. Scaffolding and guiding student teachers how to demonstrate thinking, knowledge of strategies, knowledge of learners and knowledge of when to implement strategies, would help student teachers in developing their metacognition. Reflection as

part of the metacognitive strategies would enable student teachers to grow their understanding of learning how to teach (Cobb, 2001; Hung, 1999; Lane, *et al.*, 2003; Tsang, 2004 as cited in Mak, 2010).

Kramarski and Kohen (2016) have reviewed some studies which have shown that pre-service teachers reflective activity has remained limited to mostly technical reflection (Davis, 2006; Kauffman, *et al.*, 2008; Kohen & Kramarski, 2012; Michalsky & Kramarski, 2015). In addition, Zimmerman (2000) has found that pre-service teachers show very little ability to implement various metacognitive and motivational self-regulation elements in their judgements and actions. Thus, citing from other researchers, Kramarski and Kohen (*ibid*) have suggested the use of reflective prompts like self-questioning or generic and specific prompts. In similar vein, I agree that the use of prompts and questioning can assist in scaffolding student teachers to be metacognitive while engaging in their activities.

Drawing from the experiences of my own classroom based practices as an ESL teacher educator in a teacher education university in Malaysia, I intend to highlight some of the teaching and learning experiences that could shed some lights on metacognition activities used with ESL student teachers as part of assisting them in learning how to teach. I disagree with the idea that classroom practices of one practitioner have no validity in representing the reality of teaching. Instead, I argue that the complexity of a classroom situation can never be replicated in other situations and that is one of the reasons as to why classroom based practices and evidence based practice (Taber, 2007) has become increasingly popular in illuminating the kinds of teaching and learning experiences that occur in classroom which can never be generalised over other classroom teaching.

Coming from a constructivist point of view, I believe in the subjectivity of the world in which different student teachers would perceive things differently and create their own understanding and meaning to the situational context that they are in. I believe that my teaching and learning should provide opportunities and platforms for my student teachers to make meaning out of the process. Therefore, the activities created should allow some of the flexibility that would enable them in learning how to teach. Coaching is used as an approach. A coach, in the context of teaching and learning, is an instructional model who has strong pedagogical content knowledge which entails knowledge of developing curriculum, planning effective instructions, applying effective learning strategies and assessing learners' potentials and capabilities. A coach could support student teachers in their challenging beliefs, guiding them to explore and working towards discoveries of new practices and understanding on teaching.

Through coaching, student teachers' metacognition skills are being probed as they need to be actively engaged and provide deep understanding of the content, pedagogy as well as the pedagogical content knowledge through critical discussions with group members. They are required to think aloud in order to explain, justify, comment and provide rationale plus solutions to their planning, instructions as well as assessments. The student teachers engaged themselves in the reflective practices that enable them to modify, adapt and reconstruct their beliefs and understanding on how they see themselves as teachers, what constitutes of language teaching and how language teaching should be. Their construction of meaning and their metacognitive abilities need to be shared with other student teachers. Through the concept of community of practice (Wenger, 1998), the classroom itself is seen as a learning community consisting of student teachers with various social and cultural backgrounds, beliefs, knowledge and ideas, and yet sharing the same goals of learning how to teach. With this understanding, they need to share and learn from one and another, giving ideas and suggestions as well as commenting and reflecting on other people's work.

Over the past six years of working with ESL student teachers on three interrelated pedagogical courses, Instruction, Technology and Assessment 1, Instruction, Technology and Assessment 2 and Reflective Seminar, the metacognitive activities used have evolved and transcend from independent to dependent and guided to free depending on the student teachers' ability to demonstrate their thinking on learning how to teach. Some of the activities integrating the use of metacognitive strategies are as follows:

Constructing understanding through interpretation of the National Education Philosophy and producing a group video of their interpretation of the philosophy. The metacognitive strategies involved them in explaining the concept of the video and the rationale for using certain concepts.

Other group members made inquiries, identify strengths and weaknesses as well as gave suggestions and recommendations.

Workshops for Group Integrated Portfolio on scheme of work, lesson plans, materials development, and constructing assessments. A series of workshops was carried out with the concept of "Hands on and Minds on" and "Tell Me What You Think". The student teachers have regulated themselves in many metacognitive activities that require them to provide their thinking behind certain pedagogical actions such as when designing lesson plans. Not only that they have to justify their actions and thinking, they also need to think aloud when commenting and giving recommendations to other groups. The teacher educator scaffolding techniques is vital in the group or whole class discussions. Debriefing sessions in each of the workshop plays a significant role in shaping collective and further understanding for future actions.

Debriefing Sessions after Micro and Macro Teaching as a Whole Class Discussions. With the concept of learning as a community of practice, a healthy and safe learning environment is created for student teachers to provide and receive feedback not only from their teacher educator but also from other student teachers observing their teaching.

The Use of E-portfolio as a platform for student teachers to reflect on their micro and macro teaching learning experiences. They do not just reflect on their own teaching but they also reflected on other student teachers' teaching by choosing a critical element that they wanted to reflect based on their observations. In addition, they also reflected on their identity as prospective ESL teachers in their semester 6 before their practicum placement and revisited their reflective entry after coming back from their practicum in semester 8. All these activities require student teachers to be metacognitive in writing their reflection. They are required to engage themselves in deep thinking and to explain their thoughts, actions and problem solutions in words.

The Action Research Workshop and The 5 Minute Talk

After collecting data for action research during student teachers' placement in schools, they are required to write a report on their action research. A series of workshop was carried out to assist student teachers in making sense of data that they have collected. These activities involve many dialogic interactions not only between student teachers and the teacher educator but also through group discussions and whole class discussions. They have got to use their metacognitive strategies to explain the rationale and choices of instruments as well discuss their interpretations of data by thinking aloud and providing evidences to support their interpretations. At the end of the reflective seminar course, the student teachers are required to do a 5 minute poster presentation on their action research to disseminate and share their findings with fellow student teachers. A question and answer session is held after each presentation for other student teachers to clarify their understanding on the topic presented.

The Reflective Seminar is a course that requires student teachers to reflect on their practicum experiences according to the themes which are generated from the highest frequency of occurrences during practicum. The student teachers had to do reflection in groups and present their reflections with evidences collected during practicum and suggest ways for problem solutions. Other student teachers can agree or disagree with those suggestions with practical reasoning based on their own teaching experiences.

The Flipped Classroom is used to get students to make preparation in their groups to be presented and discussed during lectures. Since preparation based on group discussions are carried out outside of lecture time, the face to face interactions focuses more on students' presentation and whole class discussions. Student teachers engage more and gave full participation through question and answers, scaffolding to new understanding based on ideas they have shared with class, constructive alignment between what they have presented and the knowledge which they should acquire, and constructive feedback and comments either from their teacher educator or their friends. All the information and ideas presented are shared through Blendspace which is accessible to everyone in the class.

The Student Teachers Teaching Ideologies are being explored through metacognitive activities that require them to reflect on situations, their personal identities and professional identity that they would think suitable for them. Statements of teaching ideologies that they created are

discussed for relevancy and practicality relating to real situations by thinking aloud and through discussions with the whole class.

The metacognitive activities that are carried out besides other instructional strategies have yielded some positive feedback from the student teachers that I have worked with. My work on the use of e-portfolio as a means of providing learning opportunities has shown high level of learners' participation and learners' engagement through thinking and reflective thinking activities via the use of certain written discourses particularly when reflecting, presenting ideas and solutions, and providing comments and feedback (Raja Nor Safinas & Yoon Sook Jhee, 2012). From the student teachers' perspectives, the ability to reflect on other student teachers' macro and micro teaching has helped them to reflect on their own teaching and helped them not to repeat the same mistakes in their own teaching (Raja Nor Safinas Raja Harun & Amreet Kaur, 2015). Constant feedback and continuous support from the teacher educator and other student teachers have encouraged student teachers to share their thoughts and reflective journal entries to be discussed as a whole class discussion. Furthermore, since they function as a community of learning they are able to read and view each other's journal entries via the e-portfolio to learn from other student teacher's experiences and the way of putting thoughts into words.

The student teachers commented in the course evaluation form that they liked the way the class was conducted particularly on getting them to present their ideas and getting feedback from the teacher educator and other student teachers. This constructive feedback according to them helped in shaping further understanding and correcting their misconceptions. In addition, they also preferred the use of foliofor.me, as a platform for the e-portfolio, for them to upload and publish their journals. They also liked the workshops that are carried out during lectures as a form of getting feedback on their work. The interviews carried out with student teachers have indicated high preference on the use of e-portfolio to upload their micro and macro teaching video as well as a platform to upload their reflective entries. One student teacher indicated that the use of e-portfolio plays its significant role as a community of learning in which "student teachers can get new knowledge, different opinions and good discussion within the community." Another student teacher indicated that by doing reflection, she can monitor her own growth and take control of her own learning based on learning experiences encountered. She further explains that talking about reflection has many facets including reflecting on work that would enhance meaning and reflecting on experiences that could encourage insights and complex learning.

CONCLUSION

Teacher education programmes should implement instructional strategies that would enable student teachers' to become metacognitive. Student teachers should be encouraged to work extensively within their capabilities and learn through others in gaining various learning experiences on how to teach. Teacher educators need to assist student teachers in seeing themselves as agents of change so that they are able to take risks in their evolving beliefs on values, teaching skills and practices, and attitudes. Reflection as a vital component of their teacher education programme will develop their metacognition and self-regulation on learning how to teach and transform them into prospective ESL teachers who are able to face challenges and uncertainties of classroom situations. Such practices would empower student teachers as scholar and thinking teachers and emancipate them from teaching and learning dilemma that has always been the issue with many beginning teachers. On the other hand, it is also important to study how teacher educators' practices can lead to metacognition practices among student teachers. The use of teacher educators classroom based practices can illuminate pedagogical understanding of metacognition, effective instruction, and the challenges they face in assisting student teachers to become metacognitive. The study also implicates the need to construct formative assessment that focuses on student teachers metacognitive competencies during preparation program.

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