Teacher Beliefs and Their Change Process in ESP University Classes

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Abstract
Changes in instructional approaches play an increasingly significant role in teachers' lives and student learning. Greater demand for providing students with active learning is, therefore, put upon teachers. However, within the context of tertiary education in ESP in Vietnam where traditional beliefs challenge teachers' practice changes, such study has not been investigated so far. As teacher beliefs are intertwined with teacher change, this paper offers insights into how teacher beliefs about the nature of teacher change influence their change process in ESP classes. The data discussed in this paper include interviews, observations, and planning meetings with Science teachers at a Vietnamese university. The findings reveal how teachers had positive beliefs about the change process, understanding more about the roles they played as agents of change and implemented active learning activities relevant to their current practices. The findings also contribute to the knowledge of how lecturer beliefs in this context may be attributed to their change initiatives and potential future actions. Pedagogical implications for teachers to reflect on their own practices and enhance their beliefs about the capacity for change over time are also presented.

Keywords: teacher beliefs, teacher change, ESP, active learning, reflection

Introduction

Several studies have indicated that teacher beliefs are intertwined with their changes in practices, and thus, influencing student learning (e.g., Clarke & Hollingsworth, 2002; Nguyen, Haworth, & Hansen, 2019; Tam, 2015). Thus, greater demand for providing students with active learning are put upon teachers. If students learn better, then an instructional change is more likely evidenced as effective teaching (Nguyen, 2014). The focus of this paper is on belief change that can influence how teachers implement innovative practices in English for Specific Purposes (ESP) classes. ESP is particularly critical in Vietnamese universities since science is taught through English. However, within the teaching context in Vietnam, traditional beliefs challenge teachers' practice changes (Nguyen et al., 2019) and little research has examined how belief change can influence teachers' decision-making in their practices of new approaches that promote student learning in ESP classes.

In Vietnam, the government highlights the importance of quality enhancement of foreign language teaching and learning to meet the learners' needs (Ministry of Education and Training, 2008). Thus, the current paper provides insights into the interplay between teacher beliefs and their change process in the context of ESP at the time of this study.

Objectives

This study is aimed to explore teacher beliefs and their change process in ESP classes at a Vietnamese university.

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Research Question
1. What are teacher beliefs about change in ESP classes?
2. How do teachers change their practices in ESP classes?

Conceptual Framework

The literature relevant to this study include three key concepts: teacher beliefs, teacher change, English for Specific Purposes and teacher agency.

Teacher Beliefs

Teacher beliefs literally refer to the ways that teachers think about their actions in education (Clark & Peterson, 1986; Nespor, 1987; Pajares, 1992). Beliefs and knowledge influence teachers' decision-making in specific classroom practices, which can contribute to understanding of how Science teachers may improve their teaching practice. In particular, beliefs can enable teachers to shift their roles in ESP university settings from traditional lecturing to student-centered practices to promote student learning. In general, there is increasing recognition of the importance of teacher beliefs about change in teaching and learning (Borg & Al-busaidi, 2012; Prawat, 1992; Raths & McAninch, 2003). However, since beliefs are likely to be difficult to change (Pajares, 1992), teachers may need time and support in order to improve their instructional practice. Teacher beliefs in relation to their change process are considered in this study.

Teacher Change

Teacher change is viewed as an essential part of teachers' professional lives (Fullan, 2007; Richards, Gallo, & Renandya, 2001). As change is a process of learning and growth (Flores, 2005), it requires teachers time and efforts to understand what needs to do and how to make changes happen in their actual classroom practices. Thus, once teacher beliefs change, this leads to the meaning of change, as noted by Fullan (2007) that such belief changes and understanding are fundamentals of achieving educational reforms. Teacher change is an experience-based process (Guskey, 2002); therefore, it is a gradual process, not a product.

English for Specific Purposes and Teacher Agency

Since its beginning in the 1960s, English for Specific Purposes (ESP) has exerted its strong influence within the university context of teaching and learning of English as a second or foreign language for particular disciplines (Kirkgoz & Dikilitas, 2018; Paltridge & Starfield, 2013). ESP refers to a research responsive to the needs of learners (Hutchinson & Waters, 1987, 1999; Nguyen et al., 2019), within international contexts for business, trade, communication, technology, and education. In the literature on ESP the process of identifying 'learner needs', is also linked to initiating 'goal oriented' teaching practices and 'process oriented' learning (Nunan, 2015). In addition, ESP courses are designed to meet learners' specific future needs (Dudley-Evans & St John, 1998). ESP within the university teaching therefore is a repertoire of teacher knowledge of the nature of student learning styles, their needs, the content of the specific subject, and English taught in these subject specific contexts.

Specifically, ESP as international phenomenon (Belcher, 2006), requires teachers' changes in their roles and practices to respond to specific occupational goals (Norton, 2000; Wenger, 1998). In line with this view, in Vietnam, ESP has been advocated in specific-subject teaching and curriculum innovation. This change has become more prominent since Vietnam has implemented its open-door policies in 1986, entered WTO in 2007. Thus, greater demand and pressure are put on science teachers and ESP teachers to

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change their roles from that of traditional lecturing to a more active learning, thereby promoting student learning (Nguyen et al., 2019).

While science teachers consider ESP as an important part in their practices, students' English language proficiency across the Mekong Delta areas, including those at the university under study, is a major issue for ESP teachers, especially when teaching a specialist subject such as Science. In addition to the varying degree of English language proficiency, challenges such as large class size; unqualified teachers who lack specialised knowledge; students' passive learning styles, and inappropriate instructional resources are other key problems indicated in recent studies on ESP practice in Vietnam (Nguyen et al., 2019; Nguyen & Nguyen, 2017), Therefore, there is pressing demand for more active learning and this has resulted in pressure on ESP teachers to tailor or change their teaching, which to some extent influences their agency. Agency, as its name suggests, involves the power to make decisions that bring change or interaction of beliefs influencing change over time (Nguyen, 2014) or enabling them agents of change (Darling-Hammond & Snyder, 2000) to improve science teaching.

Methodology

This paper draws on a qualitative action research taken place in five different departments within a Vietnamese university, particularly exploring the beliefs and practices of the university teachers as they shifted their roles from traditional lecturing to active learning in ESP classes. The data analyzed in this paper include semi-structured interviews, observations, and planning meetings with Science teachers over three semesters.

Action research is used in this study as it is aimed at bringing about changes and improving practices (Burns, 2010; McNiff & Whitehead, 2010). This study is therefore qualitative recorded with ways that both the researcher and participating lecturers collaboratively planned, acted, observed, reflected, and made action plans for changes, as drawn on Kemmis and Taggart's (1988) model of action research. These opportunities allowed the lecturers in this study to understand the value of change, enhance their ability of change, and enrich their personal learning and professional growth (Nguyen, 2014; Nguyen et al. 2019). The focus of the study was limited to teacher change in science instruction within the semester time points rather than a cyclical and iterative process of planning, acting, observing, and reflecting.

The action research cycle consists of developing an action plan, acting, observing, and reflecting, and then developing new plans. Three action research cycles were conducted over three sequential semesters totaling twenty-four weeks. They include interviews, observations and stimulated recall discussion, planning meetings and follow-up interviews for lecturers to reflect on changes in their practices, respectively.

Semi-structured interviews were conducted with each of the eight science lecturers both at the beginning and at the end of the action research process. These interviews allowed the researcher to gain insights into their beliefs about active learning in ESP classes, and any changes to these over the semester time periods. Each interview took approximately one hour. In the final week near the end of each semester of the study, the follow-up interviews were conducted with the lecturers.

Observations were conducted in each lecturer's class during the study. Each fifty-minute period observation allowed the researcher to further understand the actual happenings in their ESP classes and discuss with lecturers their active learning strategies used or their reflection on the change effects.

After each observation, a planning meeting was undertaken with each of lecturers at their release time to focus on problem solving regarding active learning. Each meeting

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took between a half and an hour. All shared reflections and discussion notes of the lecturers' accounts of practice change were recorded in note forms. These helped the researcher and lecturers to review their in-class practice, reflect on change practice, and ultimately further discuss new action for the subsequent lessons.

Participants were eight science teachers who did not have any ESP training; however, they had taught ESP for different number of years at the time of the study. All teachers voluntarily took part in the study to ensure the university ethical conducts of Massey University. At the time of the study, their teaching experience ranged from 14 to 32 years. They worked in aquaculture, biology, environment and natural science, microbiology, and natural sciences.

Literature Review

This section considers the nature of change as a process of learning and growth. This process is identified in two models of teacher change: Guskey's Model of Teacher Change (1986, 2002) and The Concerns-Based Adoption Model (Hall & Hord, 1987).

Guskey's model describes teacher change in relation to professional development as a temporal sequence of events that progress through three stages of a change process (see Figure 1). Guskey notes that there is a move through the stages of change from classroom practices to student learning outcomes and finally to teacher beliefs and attitudes.
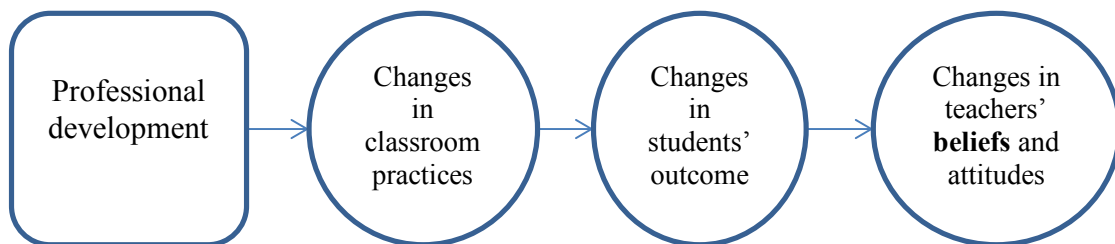

Figure 1 A Model of Teacher Change (Guskey, 2002, p. 383)

Teacher change is experience-based, which leads to belief changes, according to Guskey, when they see successful implementation of change. He further claims that change is a gradual process, not a product. In that process, change takes place through continued support, follow-up, and challenges, and teachers need regular feedback on student progress. For these reasons, teachers are more likely to change their practices and beliefs, such as shift their roles from traditional lecturing to a more active learning approach, if they are given support pertinent to specific aspects of teaching, and at the right time. However, Guskey's model discounts the role of the teacher as being a passive recipient of external support (Tom, 1986). Tom (1986) contends that teachers can play active roles in changing their practices. In the process of change, teaching happenings are not always as smooth as planned and consequently, potential concerns or burning issues are inevitable. Central to the implementation process of change is the discussion of teachers' concerns in the next model.

Like Guskey's model, the Concerns-Based Adoption Model (Hall & Hord, 1987) examines the process of change through different stages of concerns in relation to curriculum, instruction and change facilitators (Hall & Hord, 1987; Hord, Rutherford, Huling-Austin, & Hall, 1987; Loucks-Horsley & Stiegelbauer, 1991).

Hall and Hord (1987) argue that change involves a shift from the *self* level (influence of change on personal level) to the *task* of teaching (practice with change), and finally to the *impact* of change (effect of change on student learning). In the self (or

personal) level, individual teachers may experience uncertainty about change although they are likely to be inclined to an awareness of that change. In the task level, teachers may be more involved in teaching accomplishments in relation to time, lesson preparation or resources. Teachers also tend to think of change and other components that may drive change towards student learning outcomes. At the final stage, teachers are more concerned about the effects of the implementation of change, focusing on collaboration with others. In other words, teachers at this level may respond to change in different ways, from showing little interest in the change to refinement, integration and renewal. Thus, teachers play a vital role in a change process. Also, change is a developmental process of personal learning about new practices (Anderson, 1997). These three stages of teachers' concerns were also highlighted by Haworth (2004) who described teachers' experience and expertise as integral to their level of engagement in a change process and their decisions related to their professional growth.

The key strength of The Concerns-Based Adoption Model is that it allows for an in-depth understanding of teachers' concerns about the change process. Such perception is based on the assumption that if teachers are supported for change, then they will plan and implement changes in practice (Anderson, 1997; Gordon, 2008). However, this model does not take into account how teacher change responds to the initiatives and policies required of the teachers in contemporary educational settings (Anderson, 1997). Moreover, the stages of concerns may progress in a dynamic way, rather than in a linear process (Fullan, 2007; Hoban, 2002).

Change may be more likely to take place if teacher beliefs about the need for change are examined through collaborative action (for example, with an English language teacher) and particularly if their awareness of the need for change is articulated and sustained over time.

Findings

This section presents the findings of the study with regard to teacher beliefs about change and their change process.

Personal Beliefs About Change

All of the participating teachers expressed their personal beliefs about change process related to the need for change, sense of self-efficacy, and external support.

The need for change

Four teachers believed that there was the need for inclusion of curriculum and instruction development for ESP students. The following extracts illustrate their views.

> I think change is needed [but] no curriculum guideline has been available (Binh, initial interview).

> As this paper mainly provides students with vocabulary, I think it is unnecessary to make many changes. But after a couple of years, we will evaluate the lecture notes or syllabi (Hung, initial interview).

At the start of his participation in the study, Tin believed that the need to develop teaching materials for ESP students was crucial. He said:

> I think change is very important. I would like to see my students know how to use English, namely to understand what I present to them and to communicate with foreigners in English at its most basic level of communication (Tin, initial interview).

In Tin's statements, it appears that comprehension of study materials and speaking activities were prioritized in his teaching.

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> I think change is important because I want students to learn and to understand what I present to them. It is also important to engage them with the lesson without boredom (Lan, initial interview).

From a methodological perspective, Lan felt responsible for creating a more dynamic learning environment for her students.

Four teachers stressed that it was necessary to develop professional expertise to facilitate student learning.

> I think change is very important because students have to comprehend and analyze articles that prepare them for the fourth year study (Anh, initial interview).

> I think changes help me improve my practice. It is very important to change the objectives, purposes, assessment, and teaching methods. Change takes place as it responds to the needs of students and of social development (Cuc, initial interview)

At the beginning of the study, Mai believed that it was indispensable for her to learn pedagogical knowledge of English to facilitate student learning. She said,

> Teachers have to keep their knowledge of English for Environmental Sciences updated (or ESP) all the time. This lays the foundations for environment related subjects; hence, students need to know what they want to learn and what is presented to them (Mai, initial interview).

This comment suggests that the need for change not only emanated from the teacher herself but also arose from an emphasis on student awareness of the importance of ESP in their discipline.

Interestingly, one teacher believed that change required collaboration with other ESP teachers. At the start of her participation in the study, Truc said,

> I need to work with other teachers to develop curricular activities (Truc, initial interview).

Sense of Self-Efficacy

Initially, Anh revealed that lacking support could challenge his self-efficacy:

> If we do not have support from colleagues or the university, it will be very difficult (Anh, initial interview).

However, at the end of the study, Anh believed himself to be an agent of change because he could motivate students to learn (Anh, follow-up interview).

In a planning meeting at the end of the study, Anh shared his passion for making student learning more interesting:

> I really want to learn new things and new experiences. I want my students to learn and challenge them to think about the lesson (Anh, planning meeting).

Nonetheless, Binh demonstrated his strong sense of self-efficacy when asked how he would manage if there was no support from colleagues or school. He said,

> Teachers have to find their own ways to teach their own paper. As a teacher, an academic advisor, or even a supervisor, I know what to do for my students in learning this paper (Binh, initial interview).

Cuc associated change with her sense of self-efficacy by noting the commitment she had to teaching, which reflects the endeavors she made for her professional growth and the role she played in her teaching career:

> I improve myself because I need to understand how to use correct grammar and words in context (Cuc, follow-up interview).

When asked how he would sustain change, Hung noted that change was not only important because it has been part of his teaching process but it also reflected his sense of efficacy as a Science lecturer:

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> I teach this paper because I really enjoy doing it. Change is like 'food for the soul' and provides impetus for me to learn and upgrade my professional knowledge. If the University does not provide any support, I will still make changes (Hung, follow-up interview).

Hung's metaphor indicates a link between self-efficacy and the passion he had in being willing to do something different for students and also the responsibility he felt in teaching. In other words, he viewed himself as an agent of change.

Mai expressed her sense of self-efficacy in the initial interview when she was asked how she would manage if there was no support from colleagues. She confirmed,

> I will change my ways of teaching without any support because I am keen on new ways of teaching in relation to active learning and material development (Mai, interview extract).

> Passion is the first prerequisite for me to make changes whenever I can, followed by the professional standards I set for myself. I am interested in learning about innovative teaching strategies (Mai, planning meeting).

Thus, the beliefs Mai held in the change process were likely to link both personal and professional growth. These connections seem to reflect an internal feeling of confidence in how Mai saw herself as a teacher.

When asked how he would continue changes to his teaching strategies if there was no form of support, Tin responded:

> I am confident about my professional experience and knowledge in teaching this ESP paper as a teacher (Tin, interview extract).

This statement suggests a link between Tin's sense of self-efficacy and the content knowledge, which allows students in his class better opportunities to learn. Reflecting in the follow-up interview, Tin viewed himself as an agent of change (Tin, interview extract).

At the start of her participation in the study, Lan expressed her sense of self-efficacy in relation to the potential for personal and professional shame. Such a feeling perhaps came from Lan's expectations for her student learning. She said,

> I want my students to get what I present to them. It would be my shame if my students did not understand my lesson (Lan, follow-up interview).

It is possible that Lan's professional shame stemmed from the interaction with her students, and this challenged her professional identity.

Truc expressed her sense of self-efficacy in the initial interview. She said,

> I found learning ESP was difficult and expected my lecturer to teach me well. With this in mind, now I strive to engage students in practicing as many exercises as possible so that they acquire sufficient English to learn on their own (Truc, follow-up interview).

Truc's sense of self-efficacy seemed to have driven her choice and planning of new teaching strategies and reflected her dedication to changes as she viewed students as being responsible for their learning.

External Support

Of the eight teachers, while six teachers recognized the value of the support from institution or colleagues, four of them indicated both the support they had received from institution and that from collaboratively working with the English language teacher over time. The following examples illustrate their beliefs about support for making changes in their ESP classroom practices.

> I think the most important thing is the university should provide more time, more budgets for more books or more databases (Anh, follow-up interview).

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> I think the University should provide conditions for lecturers to design the program of study (Binh, follow-up interview).

At the beginning of the study, Cuc considered how change needed support from the institution and mainly from the English language teachers. She said,

> The University annually organized conferences and workshops on teaching methods that benefited me a lot. I also need the support from English language teachers like you to integrate the English skills into lessons (Cuc, follow-up interview).

Initially, Mai indicated her beliefs about the institutional support for change. She said,

> No official curriculum guide is available now. I had to find information on the internet. Books are also needed. I need to discuss, share experiences and expertise with my colleagues (Mai, interview extract).

> I think change should come from institutional support regarding data projectors and other technological devices. There is a need to exchange with colleagues for updated information, new ways of teaching, or internet access for databases from the Learning Resource Centre (Lan, follow-up interview)

> I think the university should recognize the contribution of teachers for their effective teaching. I want to observe classes taught by other academic colleagues to gain more experience (Truc, follow-up interview).

ix teachers believed the value of support from the researcher as English language teacher. The extracts that follow illustrate their beliefs about support for making changes in their ESP classroom practices.

> I think the support from you as an English language teacher is useful. In fact, the experiences we shared and discussed after class, namely at the planning meetings, and designed tasks such as warm-up or brainstorming are good ones (Anh, follow-up interview).

One particular point Binh noted was that creating networks of teachers or establishing rapport with academic colleagues from other disciplines was needed in teaching this ESP paper

> Since the teacher must be knowledgeable about ESP, connections with lecturers of different subjects especially in specific subjects are vital to share experiences or discuss professional matters (Binh, follow–up interview).

This quote suggests that Binh believed change in his classroom practice was related to his perceptions of himself as part of the wider institution in interaction with his academic colleagues. It is likely that change was driven by the institutional rather than personal level.

Hung valued the support that had engaged him in modifying changes in his class. He said,

> While English language teachers are capable of pedagogical principles, subject teachers even trained overseas lack the English skills. If you teach grammar and pronunciation and I present subject knowledge and terminology, this collaboration will work well (Hung, initial interview).

At the end of his participation in the research, Hung further confirmed the role of the collaboration with the researcher in incorporating English skills into the lesson:

> Collaborative work is very useful. I like to learn new methods to upgrade myself and student learning. If not, it is a waste of time. Through sharing ideas and experiences, after individual classes, with you, I learned several useful tips for my future actions and modifications (Hung, follow-up interview).

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Tin considered the role of the English language teacher as crucial in relation to curriculum change. He believed that ESP knowledge was needed to develop lesson plans:

> I need support from English language teachers because I am not trained as a language teacher for methods. As the university encourages students to learn English for their discipline, it is important to help them to learn English in the best way (Tin, initial interview).

> I need to know more about English teaching methods, to learn and to share experiences, and strategies with you with regard to how to teach reading, listening, and translation" (Tin, follow-up interview).

It may indicate that his beliefs about the support for change related to a process of learning how to integrate English skills into his lectures.

Lan identified that change needed support, mainly from the researcher as a language teacher:

> I think you will be supportive to me because I am neither an English teacher nor capable of speaking in English. I like to learn new teaching methods so that I will feel more confident and my lessons will be more interesting (Lan, follow-up interview).

The need to learn from the researcher for pedagogical knowledge seems to play an important role in encouraging Lan in making more changes in relation to her professional growth.

> I think I need to share information and experience, and learn how to teach this paper from an English language teacher (Truc, follow-up interview).

Teacher Change Process

The findings from the observational notes reveal how teachers implemented changes to their practices.

Reading and speaking activities were two integral parts of Anh's teaching approaches. Students were seated randomly in small groups of five and engaged in the reading task for ten minutes. Anh and the researcher encouraged students to interact by giving them prompts and checked if they needed support (Anh, observation notes #1). In a planning meeting, Anh also revealed that he now understood reading for main ideas was essential because students needed an exact content knowledge (Anh, planning meeting #4).

Another strategy that Anh had used to construct knowledge of the lesson was getting students involved in reflective writing. The episode below shows how Anh played the role of a facilitator rather than a lecturer.

> Anh had students write a reflective journal on what they learned. Anh and the researcher moved around the class and checked student work. Students presented ideas to the class and received feedback (Anh, observation notes #3).

Anh utilized three different techniques: panel discussion, brainstorming, and concept mapping.

> Each student in a panel group presented a task on 'Sewage Treatment' while the rest listened and raised questions. Anh had students brainstorm the topic, and then provided them with clues to guess new words and express their ideas. Later, he had students expand that topic by connecting these ideas (Anh, observation notes # 2).

These extracts seem to reflect Anh's role change as a facilitator of a student-centered active learning approach because he involved his students in speaking activities.

Initially, Binh focused on reading and translation to teach his ESP class. However, while participating in the change process, he was observed including interactive activities

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in this. Binh explained that correct English for chemistry must be used, so correct translation allowed students to understand the technical terms (Binh, planning meeting #2). The following observation notes revealed his new instructional practices:

> Binh had students read online the chunks of English text on organic chemistry and required them to translate sentences into Vietnamese spontaneously. In groups, students had to find the key ideas of the reading topics and each group leader summarized the main points. Students took turns to read aloud the text segments (Binh, observation notes #4).

Another strategy Binh used in his class was video clips. For example, students viewed a video clip of Massachusetts Information Technology (MIT) lecture notes (open courseware) about chemistry before interacting:

> Students were asked to watch a video clip for a minute, listen, and tell the key concepts from the clip. Binh encouraged students working in pairs to explain or guess the meanings of the concepts before interpreting and translating the terms into Vietnamese. Students read and verbally translated the segments online. These segments were analytical, inorganic, and agrochemicals (Binh, observation notes #3).

> Class observations identified Binh's implementation of active learning strategies in relation to critical thinking.

> Before participating in the study, Cuc used reading and translation strategies which were the typical modes of current teaching approaches.

> At the beginning of the lesson on 'Biology and classifications of organisms', Cuc had students number off, one to five around the class and required them to sit in groups, discussing what they expected to learn. Students read aloud and translated posters into Vietnamese (Cuc, observation notes # 4).

> The student seating in her biology class engaged students in practicing not only reading and translation strategies, but she also involved them in interactive group work activities.

> Then, Cuc indicated that brainstorming and concept mapping techniques provoked student thinking, as noted below.

> Students were asked to brainstorm what factors influence the development and growth of trees. Then, they were required to make a concept map on biology and its characteristics. Cuc asked students to spot mistakes from their friends' answers (Cuc, observation notes # 5).

> Over the time of his participation in the study, speaking activities became a major part of Hung's teaching approaches, as shown in the following scenario.

> Students were asked to watch a video clip, observe it, and tell how adenosine triphosphate is produced. Hung prompted student participation with some questions related to the previous lesson on 'The carbon cycle' presented the week before (Hung, observation notes #2).

> The extract above shows the ways in which Hung involved students in his lesson through video clips. This strategy was to draw students' attention to using critical thinking in the lesson tasks. Not only did students have to relate pre-learned ideas to new knowledge, but this way of provoking thought appeared to motivate students to interact with the teacher.

> Hung also recognized the importance of the reflective journal writing from students. As a result, he could make further changes to his classes or justify his instruction. The following extract presents his strategy.

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Hung had students write a short passage regarding what they could learn from the lesson within ten minutes. Both Hung and the researcher moved around the class to check student word choice and language use (Hung, observation notes # 3).

The changes Hung had made motivated students to learn, so he wanted to continue in his future teaching practice.

Two examples of in-class observation are provided as evidence of the changes that Mai implemented in her class. In particular, speaking activities became a major part of Mai's teaching approaches, as observed below.

The five-student group presenting 'Wetland for wastewater treatment' was seated at the front right-hand corner of the class while the rest were arranged in modular seating. Time for this task and questions was 20 minutes. Mai stood on the left corner at the back of the class observing how each student presented and checking on student progress (Mai, observation notes # 4).

Students were randomly asked to translate others' answers. The researcher assisted Mai in teaching pronunciation. In pairs, students discussed two presentations for ten minutes. Mai and the researcher moved around the class to check how students did this task. Two students reported to the class and received feedback on their writing (Mai, observation notes # 5).

These observed changes suggest that Mai had engaged students in speaking activities through group presentations, questioning, translation, pronunciation, and pair work.

In explaining the changes Tin had made during the implementation process, he contended that the precise meaning of the technical vocabulary of marine biology in English is necessary. Therefore, translation of these words into the mother tongue was the most important part of the ESP paper for Tin (Tin, planning meeting #2). Reading comprehension and translation represented Tin's teaching approaches, as illustrated in the following extracts.

Tin posed questions to students 'How many types of marine organism are there? and 'What factors affect the distribution of marine organism? Students had to answer the questions in their own words in English. Tin had students read aloud text chunks and translate them into Vietnamese. Tin and the researcher provided feedback on student work. Pronunciation practice was included (Tin, observation notes #1).

The extract above indicates that Tin not only used translation strategies but he also made use of questioning to get students to think about what they were going to learn.

Brainstorming and student reflective journal strategies discussed with the researcher in the planning meeting were then observed as the changes that Tin implemented to involve students in the lesson. The two identified strategies demonstrated more student involvement and greater interactions between them and the lecturer.

Tin had students brainstorm the lesson 'Abiotic features of marine biology.' Students had five minutes to do this task. Tin provided feedback to students on the task and indicated the link to the new lesson. Students in small groups of four discussed questions regarding chemical factors that influence the quality of water (Tin, observation notes #2).

The notes above indicate the reduced lecturer talking time as Tin repositioned himself in his new role. He encouraged students to spend more time exchanging ideas in English so that he could elicit different responses from students to get the lesson across. Student reflective writing represented another active learning strategy Tin had developed as time progressed. Students were asked to write reflective journal entries to summarize the key ideas of the lesson (Tin, observation notes #5).

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Two observations (one at the start and the other at the end of the research) were provided as evidence of the changes that Lan had employed in her class.

First, Lan employed concept mapping to engage students in speaking English. An extract of observation data below demonstrates the variations in her teaching approach.

> Lan had each four-student group read and then map the first paragraph of the text on viruses using vocabulary in the text. During student practice, she moved around the class to check student progress and gave hints (Lan, observation notes #2).

It seems that Lan first positioned herself more of an evaluator than a facilitator. However, she shifted her role to a facilitator encouraging students to develop and link ideas.

A second speaking activity was the use of video clips when questioning students. Lan was observed asking students to talk about 'bacterial viruses', and requiring them to summarize the main points within ten minutes (Lan, observation notes # 4). The use of matching, cue cards, and the student reflective journals were further changes indicating how Lan changed her teaching strategies. Students were required to brainstorm ideas regarding nucleic acid and functions of proteins (Lan, observation notes #5).

The group work used by Lan supported her beliefs about active learning as being student-cent red. Lan's metaphor, *playground* indicated the learning environment that provided students with more space and autonomy to speak in English (Lan, planning meeting #1).

Through receiving student feedback on the lesson, Lan also knew the extent to which students had learned in her class. She noted that she would continue to use reflective journals in her future practice so that students could relate their prior understanding to new knowledge, reflect on, and improve their skills (Lan, planning meeting # 2).

Speaking and reading activities were major parts of Truc's teaching approaches when she gave students an opportunity to present a group task.

> Each student in a group presented a section on plant and animal protein. Other students questioned the presenting group and were encouraged to use the structure 'I think' during discussion (Truc, observation notes #1).

A second example shows the development of Truc's teaching strategies over the semester of her participation. Truc used cue cards and reflective journal entries as further changes to engage students in taking more active roles. The observation notes below illustrate her changes.

> In pairs, 16 students were provided with eight sets of three cue cards to practicee and swap roles. Time for this task was 15 minutes. After the task, students were allowed five more minutes for free practice (Truc, observation notes #3).

> Before ending the lesson, Truc had students write reflective journals on 'fish morphology.' Time for this task was ten minutes (Truc, observation notes #4).

The use of cue cards and reflective journals allowed students opportunities to speak more English with their peers and improve student learning of writing respectively. The observation data as presented above demonstrated how Truc employed new teaching strategies in the change process to promote the interactions between Truc and her students.

Discussion

The findings from this study reflect science teacher beliefs about the need for change and support provided to them in order that they can optimize their pedagogical knowledge in creating more learning opportunities for students in ESP classes by using English teaching skills.

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The answer to the first research question "What are teacher beliefs about changes to their ESP practices?" is that the participating teachers acknowledged the need to make changes in their practices to facilitate student learning of English in ESP classes. In particular, while some believed that changes should be stemmed from top-down policies such as the inclusion of curriculum and instructional materials to teachers' professional expertise themselves together with shared experiences with colleagues, others thought change came from their own efforts and personal professional development to facilitate student learning. One interesting finding is that teachers held strong sense of self-efficacy by showing their roles and responsibilities as agents of change. By understanding such commitment, they also perceived the value of support provided by both institutional or collegial levels and that from the English language teacher in the change process. Their beliefs fit well with the conceptualizations of Guskey's (2002) model, which indicates teacher change as moving from change in teacher practices to change in student learning outcomes to change in teacher beliefs. By identifying students' learning issues in ESP, the eight teachers were willing to involve in the teacher change process.

The second research question asked how teachers changed their ESP teaching practices. The participating teachers were observed to have utilized active learning strategies to promote student learning and participation in their classes, mainly focusing on speaking and writing activities. Specifically, the activities such as critical thinking, warm-up, brainstorming, or questioning techniques were used to encourage students to enhance their learning. They believed that these effects of changes in their practices while working with the English language teacher were likely to be intertwined with their professional growth and learning over time. Concomitantly, their students appeared to be set in an active and dynamic learning environment and then take greater responsibility for their own learning. Throughout the action planning project, teacher beliefs add to the literature that indicates change is not a product by itself; rather, it is a process (Guskey, 2002) and that the changes enacted by the teachers over semester time periods suggest that teacher change is a process of personal learning and professional growth (Flores, 2005; Nguyen, 2014), thereby giving science students learning space and opportunities to construct their own subject-specific learning in a meaningful way.

Conclusions

The findings from the study provides insightful views on the meaning and roles of teacher beliefs that influence their decision-making in classroom practices in the change process. The participating teachers acknowledged the value of support for change through collaboration with other peers and importantly, with English language teacher to enhance student learning in ESP classes.

More research needs to be undertaken in order to have a comprehensive view or understanding of how teachers maintain or sustain change in their practices in the long run. Qualitative action research in this present study involved a sophisticated process of developing, implementing, reflecting, and planning new actions for teacher change over semester time points. Therefore, a longitudinal study is needed to examine the complexities of change effects in line with their beliefs about potential changes. If this is established, individual teachers in different disciplines would further validate the sustainability and transferability of teacher change while providing students in ESP classes with innovative ways of learning, thereby shedding light on how teacher beliefs would influence their instructional strategies in similar or broader contexts.

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References

Anderson, S. E. 1997. Understanding Teacher Change: Revisiting the Concerns Based Adoption Model. Curriculum Inquiry, 27(3), 331-367.

Borg, S. and Al-busaidi, S. 2012. Teachers' Beliefs and Practices Regarding Learner Autonomy. ELT Journal, 66(3), 283-292.

Burns, A. 2010. Doing Action Research in English Language Teaching: A Guide for Practitioners. New York, NY: Routledge.

Clark, C. M. and Peterson, P. L. 1986. Teachers' Thought Processes. In M. C. Wittrock (Ed.), Handbook of research on teaching (3rd Ed.) (pp. 255-296). New York: Macmillan.

Clarke, D. and Hollingsworth, H. 2002. Elaborating a Model of Teacher Professional Growth. Teaching and Teacher Education, 18(8), 947-967.

Darling-Hammond, L. and Snyder, J. 2000. Authentic Assessment of Teaching in Context. Teaching and Teacher Education, 16(5-6), 523-545.

Dudley-Evans, T. and St John, M. J. 1998. Developments in English for Specific Purposes: A Multi-Disciplinary Approach. Cambridge: Cambridge University Press.

Flores, M. A. 2005. Mapping New Teacher Change: Findings from a Two-Year Study. Teacher Development, 9(3), 389-412.

Fullan, M. 2007. The New Meaning of Educational Change (4th Ed.): Teachers College Press.

Gordon, S. P. 2008. Collaborative Action Research: Developing Professional Learning Communities: Teachers College Press.

Guskey, T. 1986. Staff Development and the Process of Teacher Change. Educational Researcher, 15(5), 5-12.

Guskey, T. 2002. Professional Development and Teacher Change. Teachers and Teaching: theory and practice, 8(3), 381-391.

Hall, G. E. and Hord, S. M. 1987. Change in Schools: Facilitating the Process. Albany, New York: State University of New York Press.

Haworth, P. 2004. Developing Praxis for a Few Non-English Speaking Background Students in the Class. Massey University, New Zealand.

Hoban, G. F. 2002. Teacher Learning for Educational Change: A Systematic Thinking Approach. Buckingham [England]; Philadelphia: Open University Press.

Hord, S. M., Rutherford, W. I., Huling-Austin, L. and Hall, G. E. 1987. Taking Charge of Change. Alexandria, VA: Association for Supervision and Curriculum Development.

Hutchinson, T. and Waters, A. 1987. English for Specific Purposes: A Learner-Centred Approach. Cambridge: Cambridge University Press.

Hutchinson, T. and Waters, A. 1999. English for Specific Purposes. Cambridge: Cambridge University Press.

Kirkgoz, Y. and Dikilitas, K. 2018. Key Issues in English for Specific Purposes in Higher Education: Springer.

Loucks-Horsley, S. and Stiegelbauer, S. 1991. Using Knowledge of Change to Guide Staff Development. In A. Lieberman & L. Miller (Eds.), Staff development for education in the '90s (2nd Ed.) (pp. 15-36). New York: Teachers College Press.

McNiff, J., & Whitehead, J. 2010. You and Your Action Research Project (3rd Ed.). Routledge.

Ministry of Education and Training. 2008. Teaching and Learning Foreign Languages in the National Education System from 2008 to 2020. Hanoi: Vietnam. Retrieved on July 22, 2019 from http://tailieu.vn/doc/de-an-day-va-hoc-ngoai-ngu-trong-he-thong-giao-duc-quoc-dan-1331102.html.

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Nespor, J. 1987. The Role of Beliefs in the Practice of Teaching. Journal of Curriculum Studies, 19(4), 317-328.

Nguyen, H. B. 2014. Teacher Change in Science Education in a Vietnamese University. (PhD), Massey University, Palmerson North, New Zealand.

Nguyen, H. B., Haworth, P. and Hansen, S. 2019. Challenging ESP Teacher Beliefs about Active Learning in a Vietnamese University. Teacher Development, 23(3), 345-365.

Nguyen, H. B. and Nguyen, T. A. 2017. English for Specific Purposes (ESP): Perceptions of Students and Teachers of Learning Needs at a Vietnamese School. International Journal of Advanced Research, 5(4), 793-803. doi: 10.1474/IJAR01/3877

Norton, B. 2000. Identity and Language Learning: Gender, Ethnicity and Educational Change: Pearson Education Limited.

Nunan, D. 2015. Teaching English to Speakers of Other Languages: An Introduction. New York, London: Routledge.

Pajares, M. F. 1992. Teachers' Beliefs and Educational Research: Cleaning up a Messy Construct. Review of Educational Research, 62(3), 307-332.

Paltridge, B. and Starfield, S. 2013. The Handbook of English for Specific Purposes. Oxford: Wiley & Sons, Inc.

Prawat, R. 1992. Teachers' Beliefs about Teaching and Learning: A Constructivist Approach. American Journal of Education, 100(3), 354-395.

Raths, J. and McAninch, A. C. 2003. Teacher Beliefs and Classroom Performance: The Impact of Teacher Education (Vol. 6). Greenwich, Connecticut: Information Age Publishing, Inc.

Richards, J. C., Gallo, P. B. and Renandya, W. A. 2001. Exploring Teachers' Beliefs and the Processes of Change. PAC Journal.

Tam, A. C. F. 2015. The Role of a Professional Learning Community in Teacher Change: A Perspective from Beliefs and Practices. Teachers and Teaching: theory and practice, 21(1), 22-43. doi: 10.1080/13540602.2014.928122

Tom, A. R. 1986. Response to Guskey. Educational Researcher, 15(10), 12-15.

Wenger, E. 1998. Communities of Practice: Learning, Meaning and Identity. Cambridge:

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