

Critical reflection in a TESL course: mapping conceptual change

Thomas S. C. Farrell

How can teacher educators gauge what participants have learnt after taking a course in teaching English as a second language (TESL)? One method that can help both language teacher educators and their students trace conceptual changes as a result of taking a course is the use of concept maps. This paper examines the conceptual changes of a group of MA participants in Canada as a result of taking a TESL course. Pre-course and post-course concept maps were elicited from the participants who were also asked to write short descriptions of changes (and the reasons for these changes) they observed between their pre- and post-course maps. Participants were also interviewed about the contents of their individual concept map and their perceptions of the course. Results indicate that the course had some impact on the participants' prior beliefs and that a concept map may be a useful tool for tracing conceptual change.

Introduction

Participants come to teacher education courses with prior experiences, values, and beliefs and with specific expectations about the subject matter they will learn. These beliefs have been accumulated from a variety of sources including their past experiences as students in the school system and may act as filters to what they have been exposed to in the teacher education programme (Lortie 1975). Hence, differences are likely to exist between what teacher educators may think is important for the participants to learn and what they actually learn as a result of taking a course. Bearing this in mind, it is crucial then for educators to be able to establish a reliable means of gauging the effectiveness of their courses. One method available to language teacher educators interested in tracing participants' conceptual changes, or any changes in participants' preconceptions or initial intuitive ideas as a result of taking a course, is the use of concept mapping. Concept maps are diagrams that show relationships and understandings among concepts within a specific topic (Novak 1990). This paper outlines a small-scale study of how a language teacher educator used concept mapping to trace the conceptual changes of seven participants (the total number of students who took the course) as a result of taking a course in teaching English as a second language (TESL) in a Canadian University.

Preconceptions of teaching and learning

Research has indicated that participants come to any teacher education programme with prior assumptions and beliefs, sometimes called preconceptions, and experiences about teaching and learning (Shulman

1987). In language education, many of these preconceptions about teaching and learning are usually influenced by the participants' previous schooling in that they spend many hours subconsciously observing their teachers while at the same time developing tacitly held images about teaching and learning (Richards 1998). The result of this type of 'apprenticeship of observation' (Lortie *op.cit.*; Borg 2004) and other prior experiences is that participants enter the teacher education programme already possessing a vast array of tacitly held prior beliefs and assumptions about teaching and learning which can, as Richards (1998: 71) has highlighted, 'often serve as a lens through which they view' the content of such programmes. The problem is that if participants find that any of the content they are presented in the language education courses is in conflict with their prior beliefs, then rather than restructure their beliefs, many may only fine-tune them a little (Richards, Ho, and Giblin 1996). In addition, as Burns (1993) has indicated, all this happened at the subconscious level and as such, teacher education programmes must provide opportunities for their students to be able to 'raise to consciousness the nature of the personalized theories which inform their practice' (*ibid.*: 63–4) so that they can become aware of any inconsistencies between their prior beliefs and concepts they are presented with in these courses.

Methodology

Raising awareness of participants' prior beliefs and gauging the impact of a course on these beliefs are as much a methodological issue as a substantive one. From a methodological perspective, one means that can help raise awareness of prior beliefs while at the same time gauge conceptual change as a result of taking a course is the use of concept mapping. Concept maps are 'a visual representation of knowledge' (Antonacci 1991: 174) and show relationships between concepts in a type of network system and are useful visual indications of what people know about a topic.

Participants and course

The seven participants were enrolled in a one-year programme, the MA in Applied Linguistics/TEFL, at a university in Canada. Each participant was assigned the capital letter 'T' and a random number (from 1 to 7) behind the letter 'T' so that identities remain hidden. T1 was a female Canadian with over ten years teaching experience and a certificate in TESL as was T7, a female Canadian with similar teaching experiences; T2 was a female from Korea with five years teaching experience as was T5, a female from Korea who also had about five years teaching experience; T3 was a female from China and had no full-time teaching experience, but had a certificate in TESL as was T4, a female from China, who also had a certificate in TESL; T6 was a male Canadian with about five years teaching experience and a certificate in TESL. So, not only had they all prior student experiences but also many had prior beliefs based on certificate programmes they had taken as well as prior experiences as teachers (five of the seven teachers). The course they were taking emphasized the following curriculum: Current Issues in Applied Linguistics and TESL, Issues in Language Learning (Second Language Acquisition), Issues in Language Teaching (Methodology), Issues in Language Curriculum Development, Issues in Critical Pedagogy, and Issues in Professional Development.

Data collection

Following the work of Fischer, Bruhn, Grasel, and Mandl (2002) who maintain that in order to ensure greater ownership of the learning process, students should construct their own concept maps, rather than have a pre-course map prepared by the course instructor, the seven participants were each asked on the first day of class to construct a concept map concerning the topic ('What does teaching English as a second language (TESL) mean to you?') placed inside a circle with several nodes, or spokes, emanating straight from that circle like a bicycle wheel. These pre-course maps would be used for diagnostic purposes by the instructor to gauge the extent of the participants' prior knowledge and beliefs. On completion of the maps, the participants were asked to share their answers during a peer group discussion and reflection session. At the start of the following class, and in order to clarify what they placed in their concept maps, a class group discussion was conducted where the participants were encouraged to further explore their prior experiences and beliefs about TESL.

On the final day of class, the participants were again asked to construct concept maps on the same topic and following the same written and explained directions as on the first day of class. When the participants had completed their post-course maps, they were given their pre-course maps for comparison and asked to write comments about any changes they noticed between the two maps and the reasons for these changes. Each participant was also interviewed in order to discuss and reflect on the changes that had occurred in these maps and any further perceptions they had of the course they had just completed. In addition, I also attempted to contact each participant two years after they had taken the course to assess if they still held the same post-course beliefs about TESL (I was only able to contact two of the original seven).

Data analysis

In order to analyse the data, a keyword method was applied to the database of categories that were developed. For example, as a result of taking the course, one type of category that emerged on the concept maps indicated that many of the participants interpreted course concepts in terms of critical reflection. Keywords from this category included 'beliefs', 'teacher personality', and 'self-awareness' among others. Another interpretation was research and theory and keywords from this category included 'theory acquisition', 'research', 'corrective feedback', and 'link theory to practice', among others. Each participant's map was analysed as follows: each keyword was numbered and a frequency count was noted along with any connections made to other concepts. The number of keywords from the seven individual maps was totalled and a pre-course group concept map was constructed after the first class and a post-course group map was constructed after the last class in order to provide a visual of what the participants as a whole said they believed about TESL. In order to check for reliability of my coding of categories, I trained two other coders and we had an intercoder reliability of about 85 per cent.

Findings

Pre-course group concept map

The pre-course group map is shown in Figure 1. This illustrates the issues (in order of frequency) as follows: *Teaching theory/methods* (6), *Language learning/acquisition* (5), *Culture* (4), *Professional development* (3), *Motivation*

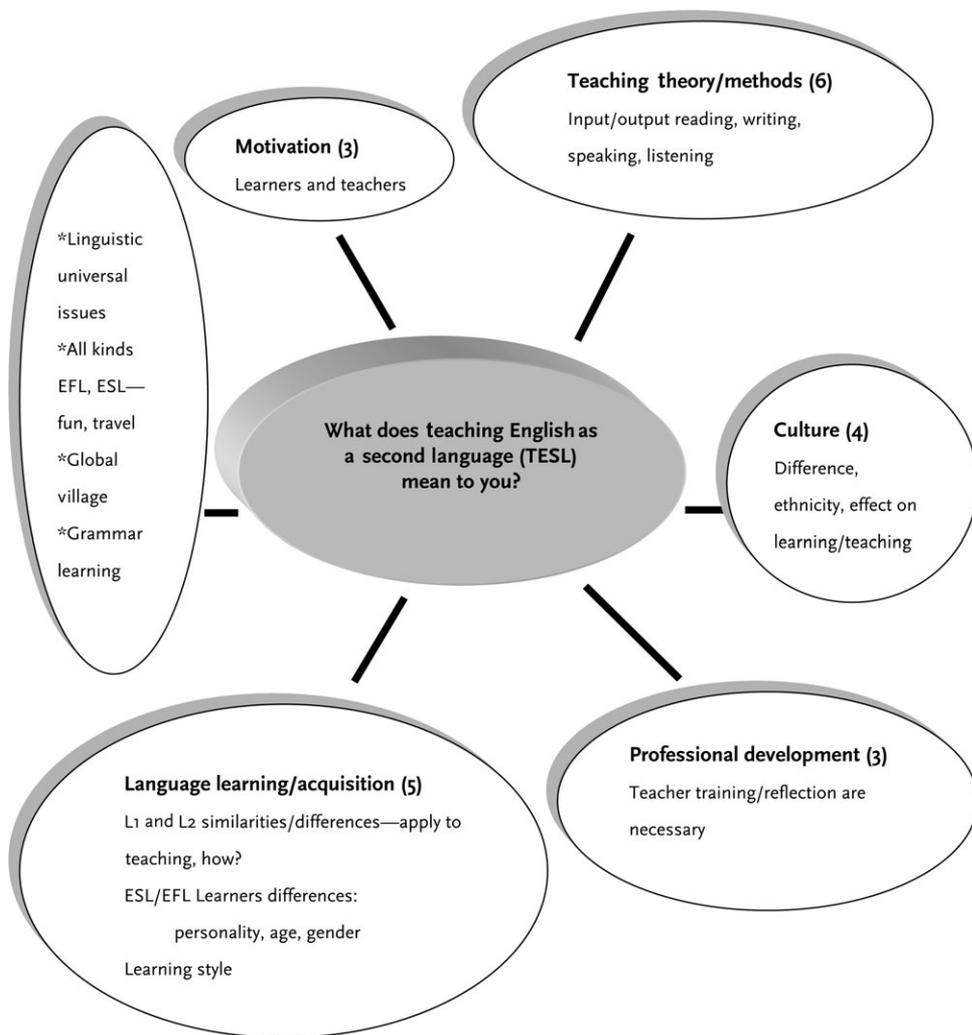


FIGURE 1
Pre-course group
concept map. (Number
in parentheses shows the
number of times
a concept was included
in the individual concept
maps.)

(3), and another category which included many diverse items. *Teaching theory/methods* was present in six maps without any further explanation. In the class discussion that followed the first class, they said that they thought the MA programme would give them many teaching methods and that was what TESL was for them. The next concept, *Language learning/acquisition*, was present in five maps and included learners' differences especially in terms of their personality, age, gender, and learning styles into this category.

Culture was the next concept (present in four maps) and included issues such as culture difference, ethnicity effect on learning and teaching styles, and culture shock. The group discussion that followed indicated that the participants were drawing on not only their prior experiences as students in the school system but also their own language learning experiences (stated by two of the seven) and from their experiences as students in their initial language TESL teacher certificate courses (stated by five of the seven participants); in fact, many of the results of the initial map may be attributed to some of the participants' experiences in previous certificate courses as many of the concepts seem to represent the subject matter of these courses. Thus, the pre-course group concept map gave the instructor some indication of these participants' prior beliefs about, and experiences with, TESL.

Post-course group concept map

The post-course group concept map is shown in Figure 2. Several new concepts appeared in the post-course concept maps that were not on the pre-course maps such as *Critical reflection/Self-awareness* (23), *Research and theory* (9), and *Curriculum design* (8). In addition, it should be noted that some concepts appeared in more than one sphere, indicating possibly that the participants were attempting to make connections between the concepts.

Critical reflection was the most popular concept in the post-course group concept map and was subdivided into teachers' personality, self confidence, self-awareness, self-assessment, knowledge of subject matter, classroom lessons, and evaluation. Next came research and theory, further subdivided into theory acquisition, applied linguistics—especially how, research theory and practice are linked—can anything be proven, corrective feedback, and alternative assessment of students. This concept was followed by another new concept curriculum design with subdivisions of textbooks, ideology, and materials.

All participants wrote that they had noticed a major new concept of critical reflection in the post-course maps. In addition, critical reflection enabled them to note that the post-course maps showed a different understanding of the concept 'method' that allowed for a move away from a focus on looking for the *correct* method when constructing the pre-course concept maps. These two findings are important because both concepts were new and different from what the participants had said they 'believed' to be true for TESL before they had taken the course.

Regarding critical reflection, T₃, a participant from China, said that she noticed in her post-course map that she had 'a new bubble called critical thinking' which she explained in the post-course interview as follows:

You need your own thinking, not follow others . . . like teaching is their own voice in their teaching process. Not just follows the administrators thinking. I think I need to raise my voice; to express my opinion of what teaching is and how I should teach in my class including the kind of material to use in my class, not just the textbook.

Later in the same interview she said that she would try to instil this kind of critical thinking in her students when she returned to China; she said:

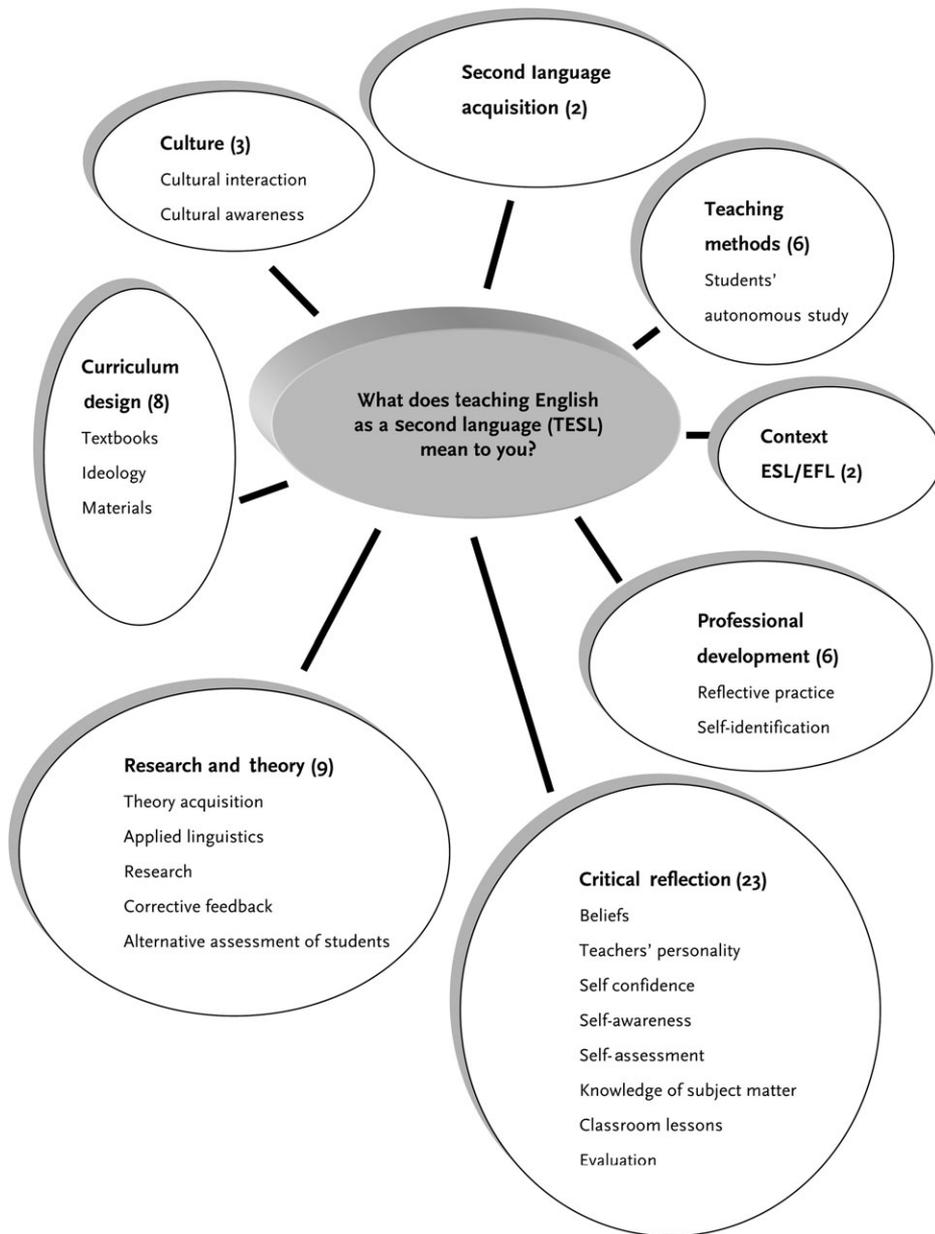


FIGURE 2
 Post-course group
 concept map. (Number
 in parentheses shows the
 number of times
 a concept was included
 in the individual concept
 maps.)

'When I go back to China I would be an English teacher. I will let my students have this kind of thinking'. Another participant, T5 from Korea, also said that she would try to incorporate critical thinking into her teaching because she noted that:

Usually the tradition of education in Korea is we just obey. We just follow the rules from the government or from the administrator, or some principal in the school. But now I can think, I can decide, this is good, but this is not, or I need to follow this, but I don't think this is good. I can determine if it's good for my teaching or for my students. This is critical thinking for me.

However, she said that this process would not be easy for her to follow in Korea especially if 'I want to work in the schools, so I must follow basic rules otherwise I can be isolated from the other teachers'. In addition, T5 also mentioned that this process of developing critical reflection was slow for her because of her past experiences and beliefs and that she only realized that she was becoming more critically reflective 'almost at the end of the course'. Another participant, T2 also from Korea, voiced similar ideas about critical reflection when she said: 'In Korea, we cannot say anything to the professor like bad things, I don't think so, I cannot say this, but here I can say, I don't think so, and I can explain why I don't think like this'. Similar to T5 above, it was not until the end of the course that she realized her changed way of thinking; she continued:

I realized this near the end of the course when I started to think about politics. I never thought about it, the relationship between politics and education. And when I saw, like, class ethics, or I thought just racism. I never thought it's because it's politics, but while I am reading the readings, I can say yeah, everything is related to politics.

T6, a male Canadian participant also realized that he may have just accepted all he was presented with before in his TESL certificate programme without question; he said:

There were moments, in my teaching profession, until now, where I've done something 'cause that's the way I've done it. And, if someone asked me, I would say 'well, this is . . . this is, like the way to do it because it's effective.' But without really questioning the context that I was in and not . . . Without really questioning what was going on.

Asked again two years after taking the MA course if he still held the same ideas he had expressed above, he said: 'Yes'. Before taking the MA programme and in particular the course reported on in this paper, T6 said that during his TESL certificate programme 'while teaching ESL to international students at the same university (where I got my certificate), I was nudged (in some cases harder than in others) towards a certain method of teaching. This helped me at first, as I needed some guidance. But, in the long run, it may have hurt me as well, for I allowed myself to be boxed in—to teach a certain way regardless of the teaching context'. Now, two years since taking the Foundations course reported on in this paper, where he said he 'was asked to consider with a more critical eye the teaching concepts I was reading about', he suggests his own learning 'continues today in my own teaching experience'.

T7, a female Canadian participant, noted in the post-course interview that as a result of taking the course she has ‘started to think more critically not just about reading things critically, but about the profession as a whole . . . who drives it and how’. Before the course she said that she ‘believed everything was wonderful and I was just teaching English’, but post-course she said she noted a difference and that ‘we have to be careful’. Two years after taking this course, T7 still maintains that she believes that the course made her ‘more critically reflective’; she continues: ‘Yes, I feel pretty much the same way. The course helped me to think more critically about everything in my profession. I think more about the bigger picture and the overall effect that teaching English has on people’.

Concept mapping

Concept maps can be used as a type of meta-language for learning, not only for communication but also for synthesizing what a course participant is learning and how the participant is thinking about course content (Hyerle 2004). Thus, learners can be evaluated about not only *what* they know but also *how* they know what they know by asking them about the information present in their concept maps. So too was the case for the study reported on in this paper where the individual and group concept maps gave both the instructor and the participants a visual (freeze-frame) of what the participants were thinking at the beginning and the end of the course—the *what* they know. In addition, the concept maps seem to make it easier for the participants to reflect on their beliefs (prior and post) during the interviews that followed because they could retrieve language from the maps to express that knowledge in a more organized manner of how they arrived at these visual representations—the *how* they know what they know. This may be a very important consideration for language educators whose class participants include those whose English is a second or foreign language and thus far may have struggled to find a voice in graduate TESL courses. It may also be possible to use concept mapping to influence the manner of discourse in the class as teacher educators and participants alike begin to use words such as ‘think’, ‘classify’, ‘sequence’, ‘brainstorm’, and ‘reflect’ to represent cognitive processes. In addition, the use and discussion of pre-course concept maps may encourage language teacher educators to refocus course goals and further refine instructional purposes of a course and as such they can determine what kind of thinking will be involved throughout the course.

Mergendoller and Sachs (1994: 589) noted that concept maps can be ‘useful for measuring cognitive change resulting from participation in academic courses’. The results of this study have indicated that the technique of concept mapping has resulted in cognitive change especially in their attitudes to teaching TESL and the profession (for example T6 and T7) and in their beliefs about language teaching (for example T2, T3, T5). However, I cannot say if this technique was sufficient to induce experiential change where the participants took any specific actions beyond the mental changes they noted (Keiny 2008). Other limitations that should be noted include the small population of only seven participants which makes generalizability of the results somewhat problematic. Furthermore, this study is based to a great extent on the participants’ narration of the different issues concerning their reflections. However, because four of the participants were

using English as a second language, this may have limited their means of narrative ability in English during the interviews. In addition, the different cultural backgrounds of the Chinese and Korean participants may also have influenced what these cultures consider appropriate to report in such an exercise. A further limitation of this study is recognition of the fact that the researcher was also the instructor of the class and this too may have impacted what all the participants, irrespective of culture or language background, may have considered important to report to the researcher/instructor.

Conclusion

While recognizing some limitations of concept mapping, the results of the study reported on in this paper suggest that concept maps may be a useful teaching aid for the instructor to gauge participants' prior beliefs and experiences about a topic and to find out if they hold similar beliefs after taking the course. Concept mapping also gives course participants a visual representation of their thoughts before and after taking a course, and when discussion is included in the reflection process, they can gain a greater conceptual clarity for themselves as a result of having to explain their conceptions to a partner, a group, or the class.

Final revised version received July 2008

References

- Antonacci, P. A.** 1991. 'Students search for meaning in the text through semantic mapping'. *Social Education* 55: 174–94.
- Borg, M.** 2004. 'The apprenticeship of observation'. *ELT Journal* 58/3: 274–6.
- Burns, A.** 1993. 'Teacher beliefs and their influence on classroom practice'. *Prospect* 7: 56–66.
- Fischer, F., J. Bruhn, C. Grasel, and H. Mandl.** 2002. 'Fostering collaborative knowledge construction with visualization tools'. *Learning and Instruction* 12: 213–32.
- Hyerle, D.** 2004. 'Thinking maps as a transformational language for learning' in D. Hyerle (ed.). *Student Successes with Thinking Maps*. Thousand Oaks, CA: Corwin Press.
- Keiny, S.** 2008. "'Conceptual change" as both revolutionary and evolutionary process'. *Teachers and Teaching* 14: 61–72.
- Lortie, D.** 1975. *Schoolteacher*. Chicago, IL: University of Chicago Press.
- Mergendoller, R. and C. Sachs.** 1994. 'Concerning the relationship between teachers' theoretical orientations toward reading and their concept maps'. *Teaching and Teacher Education* 10: 589–99.
- Novak, J. D.** 1990. 'Concept maps and Vee diagrams: two metacognitive tools to facilitate meaningful learning'. *Instructional Science* 19: 1–25.
- Richards, J. C.** 1998. *Beyond Training*. New York: Cambridge University Press.
- Richards, J. C., B. Ho, and K. Giblin.** 1996. 'Learning how to teach in the RSA Cert.' in D. Freeman and J. C. Richards (eds.). *Teacher Learning in Language Teaching*. New York: Cambridge University Press.
- Shulman, L.** 1987. 'Knowledge and teaching: foundations of the new reform'. *Harvard Educational Review* 57: 1–22.

The author

Thomas S. C. Farrell is a Professor of Applied Linguistics at Brock University, Canada. His professional interests include reflective practice and language teacher education and development. He is a series editor for the Language Teacher Research series for TESOL, USA. His recent book is *Reflective Language Teaching: From Research to Practice* (2008 Continuum Press).

Email: tfarrell@brocku.ca