

CHAPTER TWENTY EIGHT

Researching Teachers' Beliefs

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This chapter focuses on the study of teachers' beliefs, which has been an intense area of research in language teaching in the last fifteen years. Beliefs are often studied under the broader heading of *teacher cognition*, which also includes related constructs such as attitudes and knowledge, but here, I focus exclusively on beliefs. Following a brief discussion of the development of research on teachers' beliefs and a comment on definitional issues, I review the methodological features of research studies on language teachers' beliefs and provide a discussion of common research methods which can be used in such research. I end the chapter with the discussion of a recent sample study.

The study of teachers' beliefs

Figure 28.1 shows the number of social science articles with 'teacher(s)' beliefs' and 'language' in the title, abstract or keywords that were published (and which are cited in Scopus) between 2000 and mid-2014 (a total of 210 papers). The growth of research into language teachers' beliefs is clear from this figure, and the purpose of this chapter is to analyse the research methods which can be used to study the beliefs of second and foreign language (henceforth *L2*) teachers.

As I discuss in the opening chapter of Borg (2006), in the 1970s teaching was conceived of as a largely behavioural activity and little consideration was given to the mental side of teaching. This started to change in the 1980s, motivated in part by developments in cognitive psychology which posited strong links between human behaviour and underlying cognitive processes

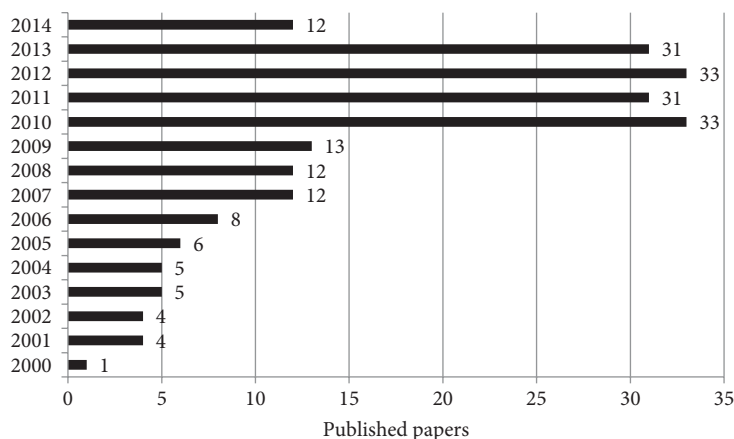


FIGURE 28.1 Articles with 'teacher(s) beliefs' and 'language' in title, abstract or keywords: 2000–2014 (Source: Scopus)

and which, therefore, implied that teaching, too, was shaped by teachers' thoughts, judgements and beliefs.

Beliefs, though, were not a major focus of early research on teacher cognition, which focused largely on understanding teacher planning (see the review in Clark & Peterson 1986), thinking (e.g. Calderhead 1987) and teacher judgement (e.g. Shavelson & Stern 1981). This early work was also heavily influenced by decision-making and information-processing theory (see Clark 1986), although from around the mid-1980s calls were emerging for research to go beyond the description of decision-making processes and to understand the beliefs underpinning such processes. The distinction implied here is what Ernest (1989) later described as that between teachers' thought *processes* (e.g. planning and decision-making) and the thought *structures* of teaching (e.g. knowledge and beliefs), and the latter has in the last twenty-five years become a much more significant focus of research than the former. Several reviews of research on teachers' beliefs have been written during this time (e.g. Calderhead 1996; Eisenhart et al. 1988; Fang 1996; Pajares 1992; Richardson 1996; Thompson 1992; Woolfolk Hoy, Davis & Pape 2006) and these reviews and many individual studies suggest (as summarized in Phipps & Borg 2009) that teachers' beliefs about teaching and learning:

- may be powerfully influenced (positively or negatively) by teachers' own experiences as learners and are well established by the time teachers go to university;
- act as a filter through which teachers interpret new information and experience;

- may outweigh the effects of teacher education in influencing what teachers do in the classroom;
- can exert a persistent long-term influence on teachers' instructional practices;
- are, at the same time, not always reflected in what teachers do in the classroom;
- interact bidirectionally with experience (i.e. beliefs influence practices and practices can also lead to changes in beliefs); and
- influence how teachers react to educational change.

The educational literature has also highlighted the definitional challenges that confront teacher cognition research more generally, and two particular questions that recur are (a) what is the definition of 'belief'? and (b) how is 'belief' distinct from 'knowledge'? Thirty years of intellectual consideration of these issues have not generated any consensus, so I will not attempt to resolve such matters here. Pajares (1992) provides perhaps the most detailed analysis of teachers' beliefs to date, suggesting that beliefs be defined as 'an individual's judgment of the truth or falsity of a proposition' (p. 316). Richardson (1996, p. 103) defines beliefs as 'psychologically held understandings, premises, or propositions about the world that are felt to be true', while, more recently, Murphy and Mason (2006, pp. 306–307) define beliefs as 'all that one accepts or wants to be true. Beliefs do not require verification and often cannot be verified'. In terms of the distinction between beliefs and knowledge, several discussions are available (e.g. Nespor 1987; Smith & Siegel 2004; Southerland, Sinatra & Matthews 2001), though the general view in the literature is summed up by Woolfolk Hoy, Davids & Pape (2006, p. 716), who state that 'in keeping with precedents set by other researchers... we discuss beliefs and knowledge as generally overlapping constructs'.

It is within this broader context of educational research on teachers' beliefs that the study of L2 teachers' beliefs has emerged since the mid-1990s, and I will now proceed to discuss the research methods used in this work.

Research on L2 teachers' beliefs

Recent studies

Table 28.1 summarizes the focus, context and sample of twenty recent studies of L2 teachers' beliefs. Apart from one study that looks at change in beliefs (Yuan & Lee 2014), this body of work focuses on identifying

the beliefs teachers hold about a wide range of issues (in fact, grammar is the only issue that occurs more than once here). Eleven of the studies examined teachers' classroom practices (the comparison of teachers' stated beliefs and reported or actual practices is a recurrent theme in these papers). Context-wise, all except one of the studies (Alexander 2012, which used an online survey open to teachers in different countries) involved teachers working in one of nine different countries, with China being that most represented (seven studies) followed by Turkey (three). The majority of the studies (sixteen) examined the beliefs of practising teachers, with less attention to teacher candidates. In terms of sample sizes, nine of the studies had fewer than 10 participants, three between 11 and 50, four between 51 and 100, and four over 100 (two of which were particularly large with 753 and 1,091 respondents, respectively). Of the twenty studies, ten were qualitative, three quantitative and seven mixed methods.

Table 28.1 Focus, context and sample of twenty studies of L2 teachers' beliefs

| | Focus | Context | Sample |
|---|--|----------------------|--------|
| Alexander (2012) | Teachers' beliefs about teaching EAP to low-level students | UK and international | 126 |
| Allen (2013) | French teachers' beliefs about developing foreign language proficiency | US | 19 |
| Borg and Al-Busaidi (2012) | Beliefs and practices regarding learner autonomy of EFL teachers | Oman | 61 |
| Büyükkarci (2014) | EFL teachers' beliefs and practices regarding formative assessment | Turkey | 69 |
| Chatouphonexay and Intaraprasert (2014) | Pre-service and in-service EFL teachers' beliefs about language learning. | Lao | 1,091 |
| Chimbutane (2013) | Teachers' beliefs and practices regarding code switching in L1 and L2 classroom contexts | Mozambique | 3 |
| Dincer and Yeşilyurt (2013) | Pre-service EFL teachers' beliefs about speaking | Turkey | 7 |
| Farrell and Bennis (2013) | Beliefs and practices of an experienced and a novice ESL teacher | Canada | 2 |

(continued)

| | Focus | Context | Sample |
|--|--|---------|--------|
| Graham, Santos and Francis-Brophy (2014) | Beliefs and practices of MFL teachers regarding the teaching of listening | UK | 115 |
| Hos and Kecec (2014) | Beliefs and practices of EFL teachers regarding grammar teaching | Turkey | 60 |
| Hu and Tian (2012) | Beliefs about learning strategies among teachers and students of Chinese as a foreign language | UK | 75 |
| Kissau and Algozzine (2013) | Beliefs about effective L2 teaching among university supervisors and teacher candidates | USA | 41 |
| Li (2013) | The beliefs and practices of an EFL teacher | China | 1 |
| Underwood (2012) | Beliefs of EFL teachers about the teaching of grammar | Japan | 16 |
| Yang and Gao (2013) | Beliefs and practices of EFL teachers concerning L2 writing | China | 4 |
| Yuan and Lee (2014) | Change in the beliefs of pre-service EFL teachers during the practicum | China | 3 |
| Zeng (2012) | Beliefs and practices of EFL teachers regarding postmethod | China | 2 |
| Zhang and Liu (2014) | EFL teachers' beliefs about teaching and learning English | China | 753 |
| Zheng (2013) | Beliefs and practices of EFL teachers | China | 6 |
| Zheng and Borg (2014) | Beliefs and practices of EFL teachers regarding task-based learning | China | 3 |

In terms of research methods, most of these studies (sixteen) were multi-method in nature. This is a positive feature of this body of work given that it is generally acknowledged that multiple sources of data contribute to more trustworthy findings. In terms of the data-collection methods used, as in my earlier analysis of twenty-five teacher cognition studies (Borg 2012), interviews (see Wagner this volume) are here the most common strategy (occurring in fifteen studies). Observations (Harbon & Shen this volume) were utilized in twelve studies and questionnaires (Wagner this volume) in nine. These three research methods account for 80 per cent of the total number of individual methods in the studies listed above.

Research methods

Before proceeding to discuss different ways of researching L2 teachers' beliefs, it is appropriate to remind readers of the analysis of research methods in the study of L2 teacher cognition provided in Chapters 6–9 of Borg (2006). Other sources I draw on here and which provide reviews of research methods in the study of teachers' beliefs are Langan-Fox, Code and Langfield-Smith (2000), Calderhead (1996), Kagan (1990), Shavelson and Stern (1981), Kane, Sandretto and Heath (2002), Speer (2005), Clark and Peterson (1986), Jones and Carter (2007), Kalaja and Barcelos (2003) and Fang (1996).

Given the long list of individual research methods available for the study of teachers' beliefs, it is necessary to organize the discussion of these methods under broader headings. Various classifications are used in the reviews noted above, and here, I use the following:

- oral accounts,
- self-report instruments,
- observation,
- written accounts and
- visual methods.

Oral accounts

I used the label *oral accounts* here to include research methods which elicit teachers' beliefs through spoken accounts produced by respondents. The most obvious form of oral account is the interview, which, as noted above, is the most widely used research method in the study of L2 teachers' beliefs. In its most basic form, an interview involves oral interaction between two individuals who assume distinct roles – one, the researcher, asks questions, while the other, the participant, responds. Many variations on this simple definition are of course possible, and readers are referred to standard research methods texts for further discussions of these options.

Interviews seek to elicit beliefs by getting teachers to talk; one important methodological point, though, is that explicitly asking teachers to articulate their beliefs (i.e. by asking questions such as 'what are your beliefs about ...?') is not considered to be a productive strategy; as Munby (1982, p. 217) noted over thirty years ago, 'it is necessary to recognize that individually we may not be the best people to clearly enunciate our beliefs and perspectives since some of these may lurk beyond ready articulation'. It is thus necessary (and this applies more generally to the methods discussed below) to elicit beliefs

indirectly. Another methodological problem that arises when teachers are asked directly about their beliefs in an interview is that of context; I have made the distinction (Borg 2006) between beliefs that reflect ideals and those that reflect reality; when teachers' beliefs are elicited in an abstract context, they are more likely to reflect ideals (i.e. professed beliefs). For this reason, it is valuable to create interview contexts (such as stimulated recall and photo-based interviews – see below) where the discussion of beliefs is related to concrete experiences or objects.

Stimulated recall (for examples in L2 teaching, see Kim 2011; Kuzborska 2011) is a form of interview where oral accounts are elicited with the help of a stimulus – typically a video of the respondent's teaching (this form of stimulated recall is called video-stimulated recall, or VSR). This strategy provides a concrete context for the elicitation of teacher beliefs and ensures that these are grounded in actual observed events rather than abstractions. While it is sometimes assumed that VSR can retrospectively capture the thinking that teachers were engaged in during the videotaped events, this is debateable; stimulated recall is best conceived of as an elicitational strategy for enabling teachers to talk, in concrete and situated ways, about the beliefs (and other factors) that underpin their teaching.

Another kind of interview where the discussion is mediated via a stimulus is *photo-based interviewing* (Hurworth 2003). As the name implies, this involves an interview situation where the discussion is guided by photographs (typically taken by respondents). I have not come across examples of this strategy used in the study of teachers' beliefs (e.g. based on teachers' photos of their classrooms), but it clearly has potential (see below for a discussion of visual methods).

Oral narratives are extended spoken accounts which can take the form of autobiographies and stories. They represent, in their own words and in substantial detail, teachers' lived experiences and may focus on the past as well as the present. In language teaching, for example, Hayes (2005) conducted oral life histories with teachers of English in Sri Lanka. His focus was not limited to the study of teachers' beliefs, but the accounts that were generated provide much insight into this dimension of teachers' professional lives. Carter and Doyle (1996) and Clandinin and Connelly (2000) provide good starting points for readers who want to explore narrative approaches to research on teaching in more detail (see also Barkhuizen this volume).

Think-aloud protocol is an oral elicitation strategy through which respondents verbalize what they are thinking while they complete a task (Gilhooly & Green 1996; Green & Gilhooly 1996). Some examples are available in the field of language teaching (Lumley 2002; Samuda 2005). During think-aloud protocols, respondents are asked to describe what they are doing, not to explain their behaviour; thus, this strategy, on its own, may not provide much evidence of teachers' beliefs (as opposed to, for example, teacher decision-making), and combining it with other strategies

(e.g. subsequent interviews) may be more productive. One other limitation of think-aloud protocols in the study of teaching is that they often occur in contrived situations (i.e. naturally occurring contexts where teachers verbalize their thoughts are rare). And, of course, this research method cannot be used to study actual classroom teaching given that it is impractical (and perhaps impossible) for teachers to verbalize their thoughts while they teach.

Self-report instruments

Self-report instruments include any form of questionnaire, inventory, checklist and theoretical profiling tool which seeks to measure teacher beliefs (most typically, but not only, using Likert scale items). Such instruments are popular in the study of L2 teachers' beliefs, and it is easy to see why: they provide a relatively economical and very flexible way of collecting large amounts of data quickly and (especially where electronic instruments are used) from respondents in diverse geographical contexts. However, the prima facie simplicity of research designs which use self-report instruments can often blind researchers to methodological problems. The first challenge (and one that is unfortunately often not met in some recent studies I have reviewed) is simply technical incompetence – good-quality research of any kind cannot emanate from poor-quality instruments, and thus, the first requirement for researchers wanting to use questionnaires and similar tools to study teachers' beliefs is to ensure they understand – theoretically and in practice – how to design a robust instrument. A second critique about the use of self-report instruments in studying teachers' beliefs is that their limitations – which are widely discussed in the literature – are very often overlooked. For example, in their review of research methods in studying beliefs, Kane, Sandretto and Heath (2002) note that closed questionnaires can constrain what respondents say, lead respondents to give particular answers and prompt answers that reflect what respondents feel is the right or expected answer rather than what they believe. Kagan (1990, p. 426) thus concludes that 'any researcher who uses a short answer test of teacher belief (i.e. an instrument consisting of prefabricated statements) runs the risk of obtaining bogus data, because standardized statements may mask or misrepresent a particular teacher's highly personalized perceptions and definitions'. Additionally, as discussed in Borg (2006), theoretical measures of teachers' beliefs cannot be used to infer what teachers do in the classroom.

Given these substantial objections to the use of self-report instruments in studying teachers' beliefs, researchers need to take steps to minimize their exposure to criticisms which can seriously undermine their work. For example, instruments must be carefully designed, and researchers must engage critically with the limitations discussed above – ignoring them or adding a token comment in the 'limitations' section at the end of a paper is not adequate. Additionally, claims from self-report instruments should not

extend beyond the limits of what is warranted – for example, if teachers *report* on what they do in the classroom this should not be presented as evidence of what they *actually* do. Another strategy to minimize the limitations of questionnaires in the study of teachers' beliefs is to combine them with other methods, such as interviews and observations.

Observation

In Borg (2006), I provided a detailed analysis of different parameters which can define the use of observation in the study of teacher cognition; for example, the researcher can be participant or non-participant, data can be captured using video, audio and fieldnotes, analytical categories can be predetermined or emergent and analysis can be qualitative or quantitative. As with interviews, then, the label 'observation' can mask significant diversity in the manner that teachers' beliefs are studied, and researchers will need to make decisions about the particular parameters to adhere to and, importantly, to justify these choices.

The major strength of observation in the study of teachers is that it allows for the collection of direct evidence about what happens in classrooms. This evidence can then provide the starting point for a grounded analysis of teachers' beliefs. At the same time, observation alters the context under study and causes reactivity – changes in the behaviour of those being observed. For this reason, repeated rather than one-off observations of teaching are recommended, on the assumption that reactivity decreases over time as teachers become accustomed to the presence of the observer.

It is essential that researchers acknowledge that while observation may allow for inferences about teachers' beliefs (such inferences generate *attributed beliefs*), observations alone are insufficiently robust as a source of evidence of what teachers believe; for example, a teacher may consistently correct students' oral errors in a particular way, but unless I ask the teacher why any conclusions I reach about their beliefs would be speculative. Deriving beliefs from behaviours is also problematic because different teachers may behave in similar ways for very different reasons. For these reasons, in studies of teachers' beliefs, observation is often combined (see examples in Table 28.1) with other data-collection strategies, particularly with interviews.

Written accounts

Teachers' beliefs can also be elicited via written accounts produced by teachers themselves and in response to specific questions or prompts. The term *account* implies that an extended volume of text is being produced, and the use of written accounts is thus most appropriate where teachers' beliefs are being studied qualitatively. Written accounts can take many forms such

as open questionnaire responses, diaries, interpretive commentaries and autobiographical narratives (the written equivalent of the oral narratives discussed earlier). I will comment here on the first three of these.

An *open-ended questionnaire item* is one that allows respondents to answer the question in any way they want to and encourages them to do so in a relatively extended manner. One major disadvantage of open-ended questions is that they require more time and effort of the respondent, and for this reason, advice on good questionnaire design generally recommends that such questions be used sparingly. However, it is possible to explore teachers' beliefs through carefully designed prompts of this type. For example, Borg and Burns (2008) generated over just under 6,000 words of text from 136 teachers who wrote about their beliefs about the integration of grammar and skills in teaching English.

Diaries (also called *journals* and *logs*) are another strategy which can be used to elicit extended written accounts from teachers and which provide insight into their beliefs. A recent example is Allen (2013), who asked nineteen teachers of French to keep a diary for three weeks while they were on a course in France and analysed the teachers' accounts for insights into their beliefs about developing language proficiency. Allen discusses both the advantages and disadvantages of diaries; on the positive side, they are flexible and provide detailed information about specific experiences while these are still fresh in the writer's mind; less positively, the volume and quality of the writing that diarists produce can vary (in Allen's study, diary length ranged from two to thirty pages), diary writing requires commitment on the writer's part and the analysis of large volumes of written text can be problematic.

Diary writing in many cases will be a novel activity for teachers and its use to study teachers' beliefs must take this into account. This implies that teachers may benefit from some training in diary writing, from clear guidance on what they are expected to do (see Numrich 1996, for a good example of clear instructions) and from some form of template or guiding prompts to make it more likely that the writing produced will be relevant to the issues the researcher wants to examine.

Finally, *interpretive commentaries* are written texts through which teachers explain the beliefs that underpin some facet of their behaviour or which provide the basis for their evaluation of an object or event. For example, teachers might be given a sample of teaching material and asked to write about what they like or do not like about it, with explanations for their opinions. Or, as in the recent study by Borg et al. (2014) which I discuss further below, student teachers first drew pictures to represent their beliefs about effective EFL lessons and then produced written commentaries in which they explained what their pictures meant. The written accounts made explicit the beliefs about effective EFL teaching that were embedded in the pictures. Such commentaries could in theory be generated via an open-ended questionnaire item, though I would suggest that longer and deeper responses are more likely when an interpretive

commentary is a separate task focused on the analysis of one particular phenomenon rather than being part of a longer instrument.

One proviso that applies to the study of beliefs through written accounts is that expecting teachers to spontaneously produce large volumes of written text about their beliefs is unreasonable. In selecting this methodological option, then, researchers should assess its suitability for the target participants and consider the kinds of support which are likely to enhance the volume and quality of the data that are elicited.

Visual methods

The final option for studying teachers' beliefs I will consider here is visual methods. Although there is a thriving literature on the use of visual methods in social science research more generally (e.g. Margolis & Pauwels 2011; Rose 2012), examples of their use in language teaching and teacher education contexts remain rare. As Spencer (2011, referring to Prosser 1998) explains, visual data take many forms and can occur naturally, be created by researchers or by respondents. My focus here is on the last of these and the examples I discuss below utilize drawings produced by respondents to examine their beliefs. Drawings can be valuable in the study of teachers' beliefs because, as Weber and Mitchell (1996, p. 304) state:

Drawings offer a different kind of glimpse into human sensemaking than written or spoken texts do, because they can express that which is not easily put into words: the ineffable, the elusive, the not-yet-thought-through, the sub-conscious.

Kalaja, Dufva and Alanen (2013) review existing examples of visual narratives in language education contexts and report on their own ongoing work. In one study, they asked prospective language teachers in Finland to draw a picture of themselves giving a foreign language class in the near future. Respondents were also asked to write a brief explanation of the picture. One general finding, for example, was that most teachers depicted themselves as facilitators of learning ('smiling onlookers') rather than controlling the class from a central position. In a second example, Borg et al. (2014) used drawings with pre-service teachers of English in Spain to examine their beliefs about effective EFL teaching and also to monitor changes in these beliefs during their final year at university. The teacher candidates thus produced drawings at two points during the year and also produced written commentaries to explain them. Some of the respondents were also interviewed. Based on the analysis of four case study examples, the study concludes that the teacher candidates' beliefs were confirmed and extended rather than subject to any radical reform.

Visual methods clearly have much potential in the study of teachers' beliefs. Alone, though, drawings provide a limited basis on which inferences

about teachers' beliefs can be made and that is why in both the studies above respondents also provided written and oral commentaries on their pictures. One other challenge that the use of visual methods raises relates to data analysis and researchers will need to familiarize themselves with, or indeed develop, new approaches to analysis through which visual data can be studied. Both the language education studies cited here provide valuable insight into such matters.

A sample study

Graham, Santos and Francis-Brophy (2014) is a recent study of L2 teachers' beliefs that illustrates many facets of good practice. The authors begin by acknowledging, as many such studies do, that the study of beliefs is valuable because they both influence and are influenced by what happens in the classroom. The substantive focus of this study – teachers' beliefs about second language listening – is justified, rightly so, with reference to the lack of research into this issue. The researchers also wanted to assess the extent that teachers' beliefs about second language listening were aligned with formal theory (as found in the literature) on this topic.

The study was conducted in England, where (at the time of the study), foreign language learning was only compulsory between the ages of eleven and fourteen. A mixed methods approach (see Ivankova & Greer this volume) was adopted, with an initial questionnaire followed by classroom observations, interviews and documentary analysis, although the paper focuses only on the questionnaire and addresses these research questions:

- 1 What are teachers' stated listening instructional practices?
- 2 What are teachers' stated beliefs about how listening should be taught and how listening activities should be carried out?
- 3 How do teachers' stated beliefs compare with their stated practice?
- 4 What factors if any are related to teachers' stated beliefs and stated practices?

Importantly, these questions are explicit in acknowledging their focus on stated (i.e. *professed*, rather than actual) beliefs and practices.

Participants were recruited through a mix of random stratified sampling using a national database and convenience sampling using schools associated with the researchers' university. One-hundred-and-fifteen teachers returned the questionnaire; 90 per cent of these taught in state schools with a mixed ability intake and most were non-native speakers of the foreign languages taught.

The design of the questionnaire is described in detail and well-justified with reference to the literature on studying teachers' beliefs. The instrument

is reproduced almost in full in an appendix (this is important both to allow readers to assess the study and for other researchers to build on it). Respondents were asked both about their practices in teaching listening and about their beliefs. Importantly, the limitations of questionnaires for such research are acknowledged and discussed (e.g. the authors recognize that teachers' reported practices may not have always been their actual practices). The questionnaire was piloted with three teachers, though given the national focus of the study a larger pilot sample would have been desirable.

Questionnaires were sent out by hard copy to schools, though the manner in which they were returned to the researchers was not specified. The analysis of the data is described in detail and in particular clear information is supplied about the coding of the open-ended responses, including inter-rater comparisons. The amount of methodological detail provided adds transparency and rigour to the study and increases the reader's confidence in the results.

The results are organized around the research questions listed above and the key findings are that:

- 1 In line with the literature on second language listening, teachers agreed that effective listening is teachable, but their reported practices did not refer frequently to activities that develop effective listening skills.
- 2 Pre-listening activities were reported as being used quite frequently, though they seemed to focus on words rather than content.
- 3 There was little evidence that teachers' rationales for their approach to teaching second language listening were underpinned by formal theory.
- 4 Many teachers seemed uncertain about the most effective ways to help learners become better listeners.
- 5 Reported practices and beliefs were quite consistent across the sample, irrespective of length of teaching experience and how much focus of listening teachers had in their initial teacher education.
- 6 Assessment framework targets (i.e. the listening competences learners are expected to meet) and textbook activities were seen to be potential significant influences on how teachers taught L2 listening.

Overall, the approach to second language listening revealed by this study is one which emphasizes comprehension but 'which also involves institutional and contextual control, the following of almost ritualised procedures to ensure predictability, maximum correct answers and to shield learners from any challenge or uncertainty' (p. 54).

I would recommend this paper to readers looking for a good example of how questionnaire-based research into teachers' beliefs can be designed, conducted and reported. It is based on a sound understanding of key issues in the study of teachers' beliefs and, contrary to many current studies which use questionnaires, achieves a good level of theoretical, methodological and substantive rigour. One reason it does so is because it acknowledges and discusses the limitations of the methods used to study teachers' beliefs.

Conclusion

The major justification for studying L2 teachers' beliefs is that they provide insight into the psychological context for teaching and teacher learning which can inform the design of initiatives which encourage teachers to learn, change or behave in particular ways. Ultimately, research on L2 teachers' beliefs has a practical purpose. In several contemporary studies (see Table 28.1), though, the rationale for studying teachers' beliefs is very often unclear, and one is left with a sense that teachers' beliefs are being studied for their own sake. This phenomenon is a real threat to the continuing development of research on L2 teachers' beliefs; this is particularly true in questionnaire-based research, where it is very often convenience (e.g. the availability of ready-made instruments) that drives inquiry rather than any deeper consideration of the value of the work. Researchers investigating L2 teachers' beliefs, then, need to ensure that they provide a sound justification for their work and a persuasive answer to the question 'so what?' A disregard for such matters will turn research on L2 teachers' beliefs into a fashionable (and potential unethically exploitative) enterprise which has lost sense of the deeper professional and practical motivations which drove its growth.

Resources for further reading

Borg, M 2001, 'Teacher belief', *ELT Journal*, vol. 55, no. 2, pp. 186–188.

This is a short article which considers some key elements of beliefs and works towards a definition of the term.

Borg, S 2006, *Teacher Cognition and Language Education: Research and Practice*, Continuum, London.

This book provides an overview of the study of language teacher cognition and discusses in detail specific research methods which can be used in understanding what teachers know, think and believe.

Borg, S 2012, 'Current approaches to language teacher cognition research: A methodological analysis', in R Barnard & A Burns (eds), *Researching Language Teacher Cognition and Practice: International Case Studies*, Multilingual Matters, Bristol, pp. 11–29.

This chapter provides a methodological review of studies of language teacher cognition published in 2011. The book it is part of presents case studies from around the world which examine teacher cognition (including beliefs) from different angles.

Pajares, MF 1992, 'Teachers' beliefs and educational research: Cleaning up a messy construct', *Review of Educational Research*, vol. 62, no. 3, pp. 307–332.

A very detailed and widely quoted review of teachers' beliefs in the context of educational research generally.

Speer, NM 2005, 'Issues of methods and theory in the study of mathematics teachers' professed and attributed beliefs', *Educational Studies in Mathematics*, vol. 58, no. 3, pp. 361–391.

Much interesting research on teachers' beliefs has been conducted in the field of mathematics education. This paper provides an interesting review of literature in that field.

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