'Weisse Maus in meinem Haus': using poems and learner strategies to help learners decode the sounds of the L2

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'Weisse Maus in meinem Haus': using poems and learner strategies to help learners decode the sounds of the L2

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Learners' pronunciation errors when reading aloud in the L2 often suggest an inability to use the language's sound–symbol relationships, or grapheme–phoneme correspondences (GPCs). UK teaching methodology has failed to provide systematic instruction in L2 phonological decoding, and there is an absence of research on the effectiveness of teaching L2 GPCs. The present study evaluates a GPC training programme delivered to a mixed-ability Year 7 class of 28 beginner learners. The GPC training is based on the use of short poems in conjunction with a sequence of cognitive and metacognitive strategies which I have labelled 'referring back'. Essentially, this encourages learners to derive the pronunciation of unknown words by making analogies with familiar ones. Pre- and post-test scores showed a small but significant improvement in pronunciation accuracy for the experimental group, but not the comparison group, when reading unknown L2 words aloud. Evaluation questionnaires, interviews and field-notes highlighted the popularity of the GPC training materials with pupils. However, there is also evidence that more time was needed in order for training in the 'referring back' strategy to be effective. Overall, the study suggests that the approach to GPC training evaluated here can be effective, but that a longer-term intervention study is desirable. The article includes a brief account of the teaching methods and a copy of the poems used, in the hope that others may wish to try them out in their own classrooms.

Introduction

'I just think it will probably come in time more than anything'. This statement was made by one of my Year 7 pupils (aged 11) about the processes involved in learning to pronounce written words accurately in a second language (L2). Her comment reflects a tacit assumption behind standard teaching practice in many schools' modern foreign language (MFL) classrooms. Learners typically do not receive systematic instruction in how to 'decode' the L2 orthography, i.e. for alphabetic languages how to convert the symbols on the page (graphemes) into the sounds they represent (phonemes) using knowledge of 'sound–symbol relationships' or 'grapheme–phoneme correspondences' (GPCs). Though not explicitly formulated, the assumption behind our teaching seems to be that learners will, over time, learn to

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decode the L2 orthography automatically. However, my experience as a teacher has increasingly convinced me that, for many learners, this is not the case.

This article provides a brief overview of a study which aimed to address this issue. It used a quasi-experimental design to evaluate a particular approach to GPC training in German which had evolved through my classroom practice. This approach involved the deployment of a range of learner strategies in association with a set of purpose-written short poems which were rote-learnt by the learners. The results were, to an extent, encouraging.

As far as is possible within the limited space available, this article aims not only to give a brief account of my research study but also to share some of the teaching methods used, including the poems themselves. Of course, all classrooms are different. I do not wish to imply that my methods could or should be transferred to other settings. However, I do hope that they will be considered by fellow teachers as one option amongst the possibilities open to them.

Why is teaching GPCs important?

L2 learners are typically already literate in their first language (L1). They thus bring to bear on the process of learning to read in the L2 considerable knowledge of the principles involved. They will already possess some degree of top-down processes such as contextual inferencing, and they will also be, to a greater or lesser extent, fluent in the bottom-up processes of L1 word recognition such as graphemic–phonemic decoding. Perhaps this explains why we have typically not provided them with *systematic* instruction in bottom-up word-recognition processes. Another reason may be that L2 phonological decoding is perceived as difficult and demotivating. In my own MFL lessons and those I have observed, therefore, teaching new vocabulary to beginner learners typically involves introducing a word orally first, then later presenting the word's global written form. Learners associate this written form with the sound of the word as a whole. In other words, in order to access the sound of a written word, learners must recognise its global form and use this to retrieve its prestored pronunciation.

Sometimes, however, this mechanism for accessing the sound of a written word is not applicable. This is the case, for example, with (a) new words; (b) words whose sound the learner has forgotten; or (c) words whose sound is known but whose written representation is not recognized, so that the link to its sound is not available. In each of these cases, whereas the meaning may be generated from contextual cues, the sound must be generated by the learner by bottom-up means. However, if learners are not taught systematically how to decode the sounds of the L2 from the written representations of these sounds, what are they to do?

From a teacher's perspective, an intuitive assumption is that they are likely to apply L1 decoding rules and generate incorrect (anglicized) pronunciations. Accordingly, Martin and Cheater (1998, p. 39), in their practical manual on the teaching of French to primary-age learners, warn that, at least 'in the early stages', learners should not encounter unknown words in written form. The phrase 'in the early stages' here implies that learners *will* be able to successfully *name* L2 words as

their learning progresses. In the absence of explicit training in L2 phonological decoding, the tacit assumption is that this ability will—as my pupil put it in the opening quotation—'come in time', i.e. *automatically* develop with experience of the L2. However, my teaching experience has increasingly convinced me that, for many learners, this is not the case. Whilst some may eventually derive GPC rules from their own experience of L2 reading, this process seems to be lengthy, and uneven in its results.

Is a learner's unfamiliarity with L2 GPC rules really so important? I would argue that the ability to read L2 words aloud with (roughly) correct pronunciation is more than simply 'icing on the cake' of L2 acquisition. For one thing, it potentially affects grades in the speaking component of national examinations (for which candidates typically—though less than ideally—learn speeches and answers by rote from written models). More than this, however, learners' unfamiliarity with the L2 GPCs is likely to affect other aspects of their learning, such as vocabulary acquisition, learner autonomy and self-confidence.

First, in terms of vocabulary acquisition, learners' inability to generate correct phonological forms for new words is particularly damaging at higher levels, when reading becomes a principal source of vocabulary expansion (see Paribakht & Wesche, 1996, p. 156). Knowing a word's pronunciation is an important aspect of knowing that word.

Second, learner autonomy is affected. Learners unable to pronounce new words are dependent on the teacher for their correct sounds. I would argue that being able to pronounce unknown L2 words accurately is an important aspect of being able to cope with unfamiliar material.

Third, learners' self-confidence may be affected by their lack of knowledge of L2 GPC rules, because their inability to pronounce words fluently or accurately constantly reinforces their own perception of their 'beginner' status. This may also be linked to the widespread sense of disaffection with language learning in the UK (see Stables & Wikeley, 1999). Certainly, anecdotal evidence suggests that the continuing opacity of the L2 orthography disheartens them: for example, one of my Year 9 learners who had actually performed well on a gist reading exercise nonetheless complained that 'none of it makes any sense'. Paradoxically, the gist reading exercises on which we often focus—serving what Mitchell (2002, p. 110) sees as the 'main aim' of giving learners 'increased confidence when faced with a potentially daunting text'—may actually heighten learners' sense that they do not *really* understand what they are reading, precisely because they are bypassing the basic ability to pronounce many of the words on the page. Such factors may form a disincentive to L2 reading, overriding its potentially motivating aspects (see Swarbrick, 1990, p. 1).

For these reasons, I believe that time spent on GPC training is a worthwhile investment. The recent Key Stage 3 Strategy too—following the lead of the National Literacy Strategy—underlines the need for learners to develop GPC knowledge, i.e. to 'apply knowledge of links between sounds and spelling' (DfES, 2003, p. 45). However, the Key Stage 3 Strategy contains none of the National Literacy Strategy's minute levels of prescriptive detail in terms of implementation. Despite some broad

suggestions in the sample Schemes of Work provided on the DfES Standards web site, it is largely up to teachers to decide which GPCs to teach at which stages of L2 learning. There is therefore a need for teachers to develop coherent methodologies, and my study was intended to make a small contribution to this debate. Ultimately, however, the case for GPC training must be made in the face of competing pressures from other aspects of L2 learning, including other reading skills such as comprehension strategies. Assessing the overall impact of GPC training on L2 learning as a whole is a matter for further research.

An approach to teaching L2 GPCs

At the core of the approach to GPC training I employed was a series of short German poems, written and illustrated by me and designed to appeal to the learners' sense of fun (Figure 1). The poems were chiefly intended (1) to raise learners' awareness of L2 GPCs; and (2) to act as a source of analogy for working out the pronunciation of German words. The second of these two strands involved the application of a sequence of learner strategies (see below). The first strand was supported by the use of explicit 'rules of thumb' and games to reinforce the GPCs encountered in the poems, notwithstanding Brook's (1999, p. 19) criticism of 'focus upon rules, decontextualized exercises' and manipulating 'meaningless letter strings' in L1 phonics teaching. My aim was to provide a range of approaches in acknowledgment of the wide variety of pupils' learning styles.[1]
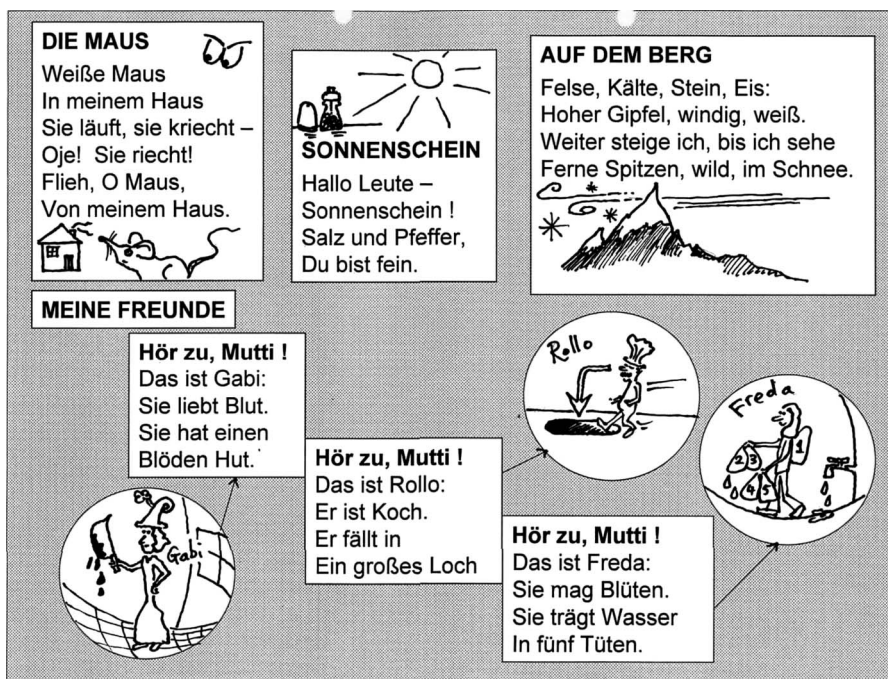

Figure 1. Poems used in the GPC teaching programme

The training thus had several strands:

1. Oral/aural learning of the poems (with accompanying mimes for fun) to build thorough familiarity with the sounds.
2. Exposure to the written form of the poems and continued oral/aural practice, to develop accurate grapheme-phoneme links.
3. The 'noticing' of GPCs in the poems posing particular difficulty for English learners.
4. The use of a small number of simple 'rules of thumb' based on what the learners had noticed, to act as a quick reminder of particular GPCs.
5. The use of games to practise 'problematic' GPCs.
6. The application of a sequence of learner strategies involving using the poems as a source of analogy for working out the pronunciation of unknown graphemes.

The 'referring back' strategy sequence

The use of the poems, as a source of analogy for determining the pronunciation of unknown words, involved the application of a cluster of actions, including cognitive and metacognitive learner strategies (LSs), which I have labelled 'referring back'. In fact, 'referring back' is perhaps better described as a *strategy sequence* than as a *strategy cluster*. One strand of the GPC training in the current study thus involves learner strategy training, 'the process of helping, encouraging and monitoring the application of strategies' in students (Macaro, 2001, p. 26).

'Referring back' involves the following stages:

1. Identifying in the 'target word' a grapheme posing particular problems for pronunciation (the 'target grapheme').
2. Deciding to use the poems as a source of analogy.
3. Searching the poems for an instance of the target grapheme.
4. Recalling the pronunciation of the word containing that grapheme.
5. Segmenting the sound and spelling of the word in order to recall the pronunciation of the specific target grapheme, in other words, becoming consciously aware of the relevant GPC, though not via a pre-learnt rule.
6. Transferring this pronunciation of the target grapheme to the target word.

In some cases, a word may contain several target graphemes, in which case the strategy may be applied cyclically in order to generate the pronunciation of the word as a whole. Ideally, with time and practice, mental references to memorized words in the poems would become increasingly automatic; and ultimately, of course, the ideal end-point is that the GPCs themselves should be internalized, with the strategy use acting as a stepping-stone along the road to this goal.

The poems were kept short so that the learners could (a) rote-learn them more easily; and (b) quickly locate target graphemes in them. Each learner kept an A5 copy stuck in their exercise book for reference. The poems were designed to include examples of 45 German GPC rules which had been selected in consultation with

other German-teaching colleagues and covering most of the graphemes encountered in the language. A similar resource is Skarbek's (1998, p. 19) list of 'thirty-two elementary words' designed to illustrate the main sounds of French and German: 'pupils will quickly be able to identify the letters or combinations thereof which cause them the most problems when they are trying to spell words that they hear'. However, the advantage of using poems over a simple list of words lies in their motivational power. Martin and Cheater highlight their motivational aspects, 'especially when ... accompanied by actions or visual stimuli' (1998, p. 63), as well as their ability to help shy learners overcome their inhibitions by joining in with choral recitations. The use of poems and rhymes is also advocated in other practical guides to MFL teaching (see Swarbrick, 1990; Skarbek, 1998).

Practising the 'referring back' strategy cluster

The model of GPC training evaluated in the present study is designed to be used alongside and as part of normal topic-based teaching. This reflects a widespread consensus that short-term learner strategy training (LST) interventions—though more convenient to conduct—are unlikely to succeed (see Cohen *et al.*, 1998, p. 111; Harris 1998, pp. 58f; Skehan, 1989, pp. 89f). It seems that one-off LST interventions will be less effective than integrating LST into the fabric of the teaching, creating what Bartley (2003, p. 10) calls a 'drip feed approach'. Thus, rather than devoting whole lessons to the GPC training, it was built into the lesson structure, sometimes as a 'starter activity', sometimes as a tool for approaching topic work, and sometimes as a short activity or game providing a break from topic work. The 'referring back' strategy was practised using a variety of whole-class, group, pair and individual work, in line with the principles and actions recommended in the Key Stage 3 Strategy (DfES, 2003, p. 12).

I found that learners were most liable to use the 'referring back' strategy when faced with unfamiliar graphemes not used in the L1 orthography (e.g. $<schm->$, $<äu>$, $<öh>$). However, they were also encouraged to use it to check the sounds of graphemes whose pronunciation they thought they already knew. This was to help combat the mispronunciation of graphemes whose English and German realizations differ (e.g. English $<z> = /z/$; German $<z> = /ts/$).

Research questions

I wished to evaluate the approach I had developed more formally than simply on the basis of teacher intuition. I therefore conducted a study with the following research questions:

1. Does a class which has received the explicit GPC training show improved pronunciation when reading aloud from a list of isolated, unknown words in the L2, as compared to a comparison group which has not received the training?
2. Does the experimental class still progress as well as a comparison group in other aspects of L2 learning?
3. Does the experimental class respond positively to the 'poem approach' to L2 GPC training?

Methodology

The overall design of the study is represented schematically in Figure 2. At its core is a pre-test, post-test, non-equivalent groups design intended to address the first research question. Two mixed-ability Year 7 classes of beginner learners of L2 German took part in the study. My own class (11 male, 7 female) acted as an experimental group, whilst a colleague's class (15 male, 16 female) formed a comparison group. The quasi-experimental design with the groups being taught by
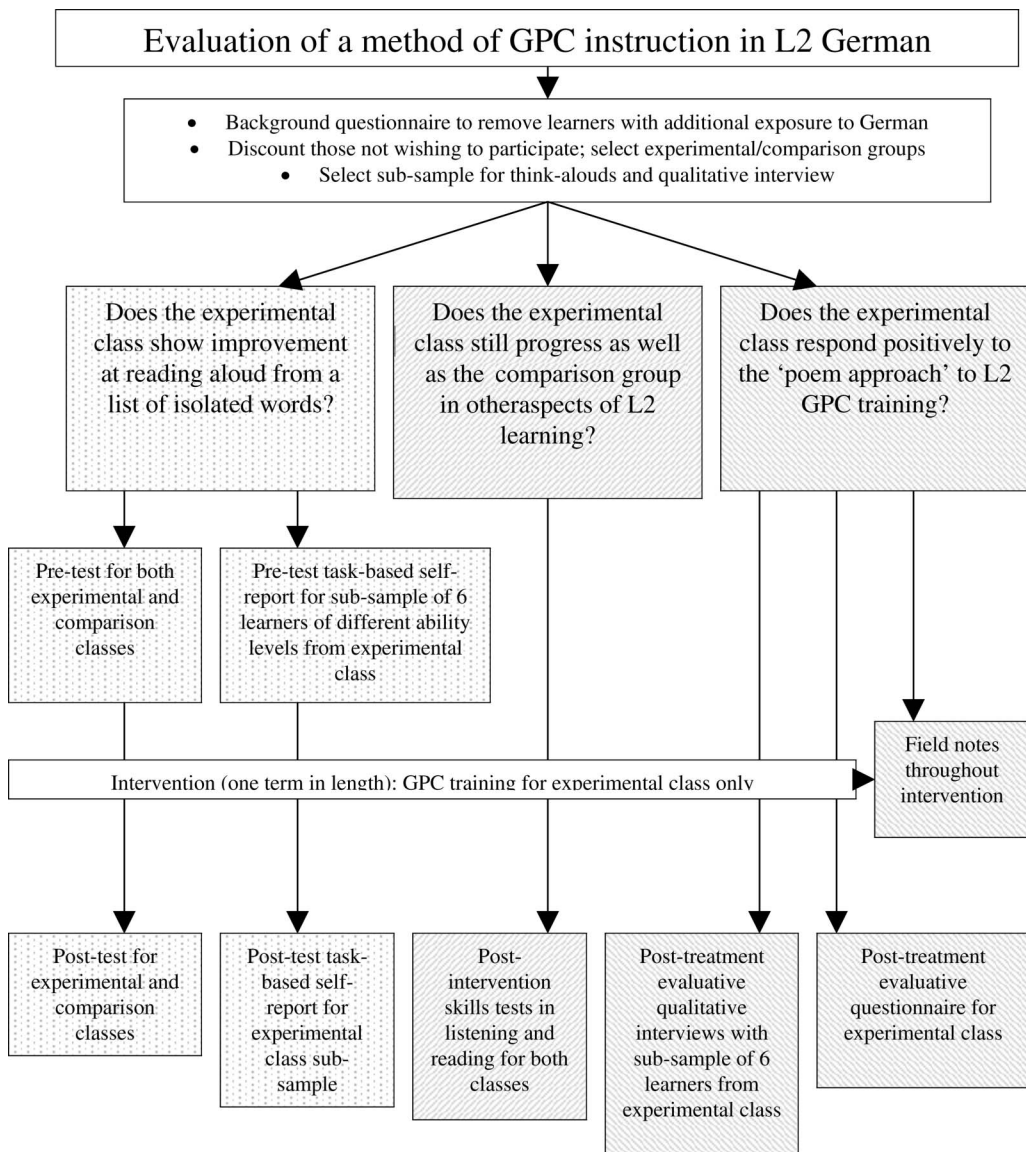

Figure 2. Schematic representation of the structure of the study

different teachers (imposed by constraints of the wider school structure) had both advantages and drawbacks, which there is no space to consider here. Efforts were made to control for non-relevant variables.

The pre-test measured the pronunciation accuracy of both groups when reading aloud a list of thirty-four unknown German words. The treatment, consisting of the explicit GPC training described above, was administered to the experimental group only over a period of eighteen lessons (spanning ten weeks) during the Summer term of Year 7. After the treatment period, a post-test was administered to both groups to measure any changes in pronunciation accuracy.

The tests were designed to isolate subjects' L2 phonological decoding ability. Because the words were decontextualized, there was no possibility of subjects determining them via top-down processes such as contextual inferencing. Further, using *unknown* L2 words meant that the only way for subjects to pronounce them correctly was via phonological decoding. Different word lists were used for the pre- and post-tests in order to avoid a practice effect (Brown, 1998, p. 35). Steps were also taken to equalize the difficulty level of the two lists. Learners used a sheet of paper to reveal the words one at a time and spent as long as they wished on each item. The scoring system for the tests assessed the global accuracy of the participants' pronunciation of each word using a five-point impressionistic mark scheme developed by me.[2] The high test-retest reliability coefficient (0.91) calculated for a random sample of the test recordings indicated that the scoring system was consistent and reliable.

A sub-sample from the experimental group (consisting of one boy and one girl from each of three bands of L1 reading ability: high, medium and low) also took part in retrospective task-based self-reports using some items on the pre- and post-test word lists. The purpose was to triangulate findings and to assess the extent to which any improvement in the experimental group's pronunciation accuracy could be linked to the GPC training. The learners reread particular words aloud, some selected by me (the same for all subjects) and some chosen by them. For each word, they were asked to explain why they had pronounced it in the way they did and how the resulting pronunciation differed from the way the word would be read if it were English. They were also invited to say which words had proved easy and which difficult to pronounce, and why. In the self-report following the post-test, they were additionally given a copy of the poems sheet and asked to demonstrate how they would use it to generate the pronunciations of particular words.

Retrospective self-reports were used rather than think-alouds (where learners report strategy use whilst working on a task), since the act of reporting simultaneously on processes and strategies used in the word-reading task could have interfered with the execution of the task itself. Despite the various problems inherent in the self-report procedure, it was considered the best means available of gaining qualitative data on the effects of the training programme.

The second research question ('Does the experimental class still progress as well as a comparison group in other aspects of L2 learning?') was addressed via an end-of-year summative test in the receptive skills of listening and reading. The purpose was to see whether the experimental and comparison groups showed rough parity of

performance, thus indicating that the GPC training had not been detrimental to other aspects of L2 learning.

The third research question ('How does the experimental class respond to the explicit GPC instruction methods?') reflected the important contribution made by learner motivation and engagement to successful classroom teaching. An evaluation questionnaire was therefore administered to the experimental class seeking their opinions on various aspects of the training. The sub-sample of six learners were also asked about their views in a brief in-depth interview conducted immediately after each learner's self-report. They were also invited to suggest ways of improving the GPC training, reflecting the potential value of learners' own expressed views in the ongoing process of method development. As part of a rudimentary process of triangulation, the information from the questionnaires and interviews was cross-referenced with field-notes recording my impressions of the experimental class's reactions to the GPC training.

Results

To answer the first research question ('Does the class which has received the explicit GPC training show improved pronunciation when reading aloud from a list of isolated, unknown words in the L2?'), the overall mean scores of the two groups on the pre- and post-tests were compared. In the pre-test, there was a very small but statistically non-significant variation between the groups (the mean score for the comparison group ('7com') was 0.09 points higher than that for the experimental group ('7exp'); $p > .05$). In the post-test, the difference in mean scores was 0.22 points in favour of 7exp, i.e. the experimental group outperformed the comparison group. This difference between the groups was statistically significant ($p < .05$).

Assuming that the tests provide a valid measure of pronunciation accuracy when pronouncing isolated, unknown L2 words, the answer to the first research question is thus positive, although the difference in mean scores is relatively slight. This should, however, be considered in the light of the fact that the GPC training spanned only 18 lessons. Moreover, it was conducted during these lessons alongside and as part of 'normal' topic-based teaching. Viewed in this context, the significant though small improvement shown by the experimental group is encouraging, because it implies that (a) continuing the training for longer would not be difficult to achieve in the context of ordinary teaching; and (b) doing so could lead to further gains in pronunciation accuracy.

To answer the second research question ('Does the experimental class still progress as well as a comparison group in other aspects of L2 learning?'), the two groups' scores on the summative listening and reading tests were compared and found to be very similar. The answer to the second research question is thus positive, at least to the limited extent to which this is assessed by the skills tests.

It is noteworthy that the experimental group did not outperform the comparison group on the reading test, despite their improvements in pronunciation accuracy as evidenced by the word list tests. This reflects the fact that reading is a complex process, of which phonological decoding ability represents just one strand. It is

arguable that, over time, improved L2 phonological decoding ability may contribute to improved accuracy and fluency in reading, but the ten weeks of the intervention were insufficient for any such improvement to be registered.

An answer to the third research question ('Does the experimental class respond positively to the 'poem approach' to L2 GPC training?') was provided by evidence from the evaluation questionnaire, evaluation interviews and field-notes. There is space here only for a summary of the findings. The evidence showed overwhelmingly that the participants found the poems enjoyable and easy to learn. However, it appeared that 10 weeks was insufficient for the learners not only to learn the sounds of the poems thoroughly, but also to learn their written forms and become fluent in the strategy application.

Task-based self-reports

Perhaps the most interesting insights arising from my study came from the qualitative data provided by the two sets of task-based self-reports, associated with the pre- and post-tests. Space restrictions permit only the briefest summary of the main findings of each set of self-reports. These summaries are followed, however, by a slightly more detailed overview of those findings most relevant to the topic of learner strategies.

Pre-test self-reports

The main findings of the pre-test task-based self-reports were: (1) (as expected) learners find the task of reading unknown L2 words aloud very difficult; (2) (as expected) learners frequently seem to rely upon L1 decoding strategies/processes; (3) in the course of 'normal' lessons, *all* subjects had formulated conscious 'rules of thumb' to help them with L2 GPCs, though with mixed success; (4) learners instinctively use a strategy of 'referring back' to known words when justifying their pronunciations of unknown L2 words.

Of particular interest in terms of learner strategies is point (4). This was an unexpected finding. There is evidence that the 'referring back' strategy—a core element of the GPC training—was used by subjects of all ability levels, unprompted and without having been given instruction in it. For example, two participants justify their pronunciation of *Bund* (/bunt/) by reference to *und* or *Hund*. Interestingly, in most cases, the target word and the word used as the source of analogy have several graphemes in common; in the example above, the entire syllabic rime is spelt the same (*Bund—Hund—und*). The two learners with the highest L1 reading ages additionally exploited analogies based on fewer common graphemes, using words which share only the onset of their initial syllable: for example, the familiar word *Schuh(e)* is used to justify the pronunciation of the <sch> in *schmelzen*.

However, the analogy strategy is sometimes also used unsuccessfully. For example, one participant tries to use the familiar word *schwarz* to help him pronounce the <sch> in *schmelzen*. However, he seems unable to separate the initial phoneme /ʃ/ from the rest of the source syllable, and so transfers *too many* phonemes. Initially, this gives /ʃvɑːtsmɛltsən/, a kind of blend of the two words (i.e. something like

'*schwarz-melzen*'). Later, he comes up with /ʃvɑːmɛltsən/ (i.e. something like '*schwa-melzen*').

The learners' instinctive use of the 'referring back' strategy was encouraging in terms of the GPC training programme being evaluated. The fact that the programme builds upon and refines a process which learners are likely to engage in anyway may make it more likely to succeed. The learners' spontaneous use of the strategy also suggests that it can be used with everyday vocabulary encountered in the course of 'normal' topic-based teaching, not just with specific resources like the poems. However, the poems offer certain advantages over topic vocabulary in that (1) they are specifically designed to cover the majority of GPCs likely to be encountered by the learners; and (2) they are learnt and used over a longer period of time, with a copy being kept in the learner's exercise book for easy reference. Topic work, by contrast, constantly moves on to new areas.

However, there seem to be differences in the ability to use this strategy effectively, according to L1 reading ability. Only the two strongest L1 readers successfully make unscaffolded analogies to single graphemes, whilst the weaker readers tend to use analogies based on larger syllabic units. This perhaps reflects a lesser phonemic segmentation ability on the part of the weaker readers, which may pose an obstacle to successful use of the 'referring back' strategy. However, additional training in phonemic awareness and segmentation may help.

Post-test self-reports

The task-based self-reports conducted after the post-tests confirmed some of the findings of the pre-test self-reports. The following points arose from an analysis of the data:

1. Further information is provided on the difficulties encountered when reading unknown L2 words aloud.
2. However, words are read correctly at the first attempt more often than in the pre-test self-reports, especially by one of the subjects.
3. There is further evidence of the formulation of conscious rules for L2 GPCs, again with mixed results.
4. Some information is obtained on the processes involved in decoding unknown L2 words.
5. Less reference is made to the strategy of drawing analogies to words other than those in the poems.
6. The strategy of 'referring back' to words in the poems is frequently applied, sometimes successfully.
7. Several problems encountered by learners when using the strategy mean that unsuccessful applications of it outnumber the successful ones.

Of most interest here in terms of learner strategy usage are points (5), (6) and (7).

(5) Less reference is made to the strategy of drawing analogies to words other than those in the poems. There are only two examples, both from one participant, and both unsuccessful. In one case, the problem lies in the fact that her stored

pronunciation of the source word *Hund* is itself incorrect (/hʌnd/ instead of /hunt/). Perversely, use of the analogy strategy here spreads the mispronunciation from the source word to the new word (/rʌnd/ instead of /runt/). This error strongly underlines the need for accurate phonological learning of words to be used as sources of analogy. Again, the poems offer an advantage here over topic-based vocabulary as a source of analogy in that they are used over a longer period of time. Learners are therefore more likely to develop accurate pronunciations of the words they contain.

(6) The strategy of 'referring back' to words in the poems is frequently applied, sometimes successfully. Some participants use the strategy spontaneously. One participant, for example, says that, when faced with the new word *leuchten*, he 'got the /lɔɪ/ out of *Leute*' (from the poem 'Sonnenschein'). On other occasions, successful use of the strategy occurred after prompting by me. For example, when one participant was asked to demonstrate how she would use the poems sheet to derive the pronunciation of *Sperber*, she uses *Spitzen* (from '*Auf dem Berg*') to generate a conscious awareness that the <sp> 'sounds kind of like an *S* and an *H*'. This conscious knowledge is then applied to give the correct pronunciation /ʃp/. These correct usages of the referring back strategy in connection with the poems are encouraging. However, none of the examples come from subjects with the lowest reading ages. This may again suggest that (1) the strategy is inappropriate for them; or (2) they require a longer period of training before being able to use it successfully.

(7) Several problems encountered by learners when using the strategy mean that unsuccessful applications of it outnumber the successful ones. Learners of all L1 reading ability levels sometimes used 'referring back' unsuccessfully. In some cases, the problems concerned learners' perception of the graphemes composing the unknown word. For example, one participant uses the word *weiße* (from 'Die Maus') as a source of analogy for the <ie> in *biegt*, not noticing that the *E* and the *I* are inverted. However, he does get this word right on being made aware of his error, suggesting that some of the learners' problems may be helped by further training (for example, in the careful graphemic analysis of L2 words).

Conclusions

This study evaluated a particular approach to GPC training centred on the use of purpose-written poems to (a) raise learners' awareness of L2 GPCs; and (b) act as a source of analogy for generating the correct pronunciation of other L2 words, through the application of a 'referring back' strategy. Overall, the outcome was positive. The pre- and post-tests revealed a small but significant improvement in pronunciation accuracy for the experimental group but not the comparison group when reading aloud from a list of unknown L2 words. Further evidence of this improvement was provided by the retrospective task-based self-reports, conducted with a sub-sample of the experimental group. Skills tests completed by both groups suggested that the experimental group's gains in pronunciation accuracy had not come at the expense of other aspects of their L2 acquisition. Further, the poems forming the cornerstone of the GPC training were extremely popular with learners, as revealed by the evaluation

questionnaire, evaluation interviews and field-notes. All three research questions therefore received an affirmative response.

One finding which emerges strongly from various strands of the study is that the GPC training period was too short. There are indications that a similar but longer-term programme might yield greater improvements. One problem seems to have been that, though learners knew the sounds of the poems accurately, they did not have time to become fluent in the use of the 'referring back' strategy sequence; they may also have needed more time to become familiar with the poems' written forms.

It must also be remembered that, whilst the GPC training practised use of the 'referring back' strategy *with* the aid of a printed copy of the poems, the post-test required them to pronounce words *without* access to this sheet. The quantitative data therefore do not directly illuminate the question of whether using the strategy as practised in the GPC training successfully improved learners' pronunciation. Rather, improvements in the experimental group's mean post-test scores reflect either: (a) gains in knowledge made as a result of using this strategy; (b) gains in knowledge resulting from other aspects of the GPC training, e.g. through a generally heightened awareness of L2 GPCs engendered by the repeated practising of the sounds and written forms of the poems; or (c) gains resulting from applications of the referring back strategy entirely on the basis of memorized representations of the poems. This reflects the ultimate aim of GPC training, which is to improve accuracy in un-supported pronunciation of unknown German words, not to improve accuracy of pronunciation when using support materials to aid strategy application. However, further research might attempt to isolate the issues surrounding the 'referring back' strategy, as follows.

1. Can the strategy be effectively taught using the methods employed?
2. Does scaffolded usage of the strategy (i.e. with reference to written copies of the poems) lead to improved pronunciation, and what impact does this have on learning?
3. Can learners be trained to use the strategy effectively without written support?

To answer these questions, especially the third, would necessitate a longer-term study.

Proving the effectiveness of the GPC training in improving L2 phonological decoding ability is of course only the first stage in a wider process of evaluation. Future study might investigate the effects of improved L2 phonological decoding ability on other areas of L2 learning, such as vocabulary acquisition, reading comprehension ability, self-confidence, learner autonomy and L2 spelling accuracy.

Notes

1. For further details on the teaching programme and its delivery, see Woore (2004, Appendix 2).
2. Again, readers are referred to the more detailed discussion of the mark scheme in Woore (2004, Appendix 1.4).

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