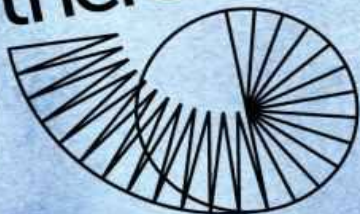


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Scott Thornbury

Big Questions in ELT

By Scott Thornbury

A round publication

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Edited by Alison Silver



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Introduction

For two years now I've been regularly blogging about ELT-related issues that have caught my attention. The topics have been loosely organized around the format of an encyclopaedic dictionary I'd published previously, called *An A-Z of ELT*. I've since clocked up over a hundred posts that in turn have attracted thousands of comments comprising I don't know how many tens of thousands of words.

A couple of things that have emerged from this 'long conversation' are: (1) the same issues come round and round, and (2) they are often framed as questions.

The issues tend to relate to my 'other' life as advocate of a Dogme approach to ELT teaching, i.e. the use of minimal materials so as to free up the classroom space (and the cognitive space) in order to allow student-initiated learning opportunities to arise naturally.

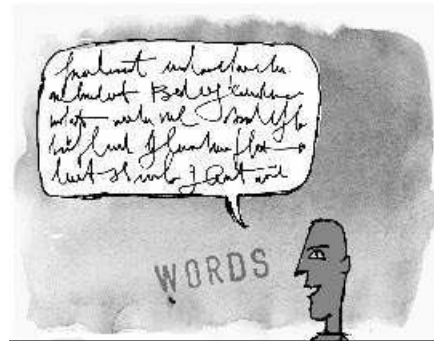
That the issues are framed as questions is partly due to the fact that there are still no answers to many of the concerns that exercise us, and partly because, in my teaching and in my training, I favour dialogue over monologue, and dialogue – almost by definition – entails asking questions.

Like many things online, the blog has started to become a little unwieldy, especially for new visitors, so I figured it was time to condense some of the issues and some of the questions into a friendlier format, taking a handful of the original entries as my starting point, re-working them a little to take into account the conversations that evolved online, and presenting them in the form of Big Questions.

Each Big Question, therefore, has been generated from one of the original blog posts (and I've thrown in a couple of new ones for good measure) and each entry is rounded off by a number of subsidiary questions – the offspring, if you like, of the Big Questions. These questions are designed as an aid to reflection (for the individual reader), or, in a training context, as a way of framing a discussion or workshop. In a sense, they are a means of re-activating, and continuing, the online conversations that the original blog posts triggered.

And, if you want to see how those conversations evolved, I've provided links to the original articles.

1 How many words do learners need to know?



In a recent article in *The Guardian*, Joshua Foer (2012) describes how he learned Lingala (a trade language of sub-Saharan Africa), and discovered the value of having a critical mass of vocabulary:

It goes without saying that memorizing the 1,000 most common words in Lingala, French or Chinese is not going to make anyone a fluent speaker. That would have been an unrealistic goal. But it turns out to be just enough vocabulary to let you hit the ground running once you're authentically immersed in a language.

This reminded me of the anecdote that opens an article I wrote on the lexical approach (Thornbury 1998: 7):

A New Zealand friend of mine who is studying Maori asked me recently what I, as a language teacher, would make of his teacher's method: 'We just do masses of words – around a theme, for example, family, or food, etc. We have to learn these words before the next lesson. Then we come back and have a conversation – about family, food, etc., and we use the words. The teacher feeds in the grammar that we need to stick the words together.' He added that he thought the method worked a treat. This contrasted markedly with my own experience of learning Maori, where the teacher took great pains to lead us, discrete step by discrete step, through the intricacies of Maori grammar. The net result, I suspect, is that my friend's Maori is a lot better than mine ...

Is there any (non-anecdotal) evidence that fast-tracking vocabulary acquisition provides a platform for subsequent language development? And, if so, how many – and which – words constitute a 'critical mass'?

Certainly, it seems that having a large vocabulary is a pre-requisite for proficiency in the receptive skills. As Bhatia Laufer (1997: 31) puts it: 'By far the greatest lexical obstacle to good reading is insufficient number of words in the learner's lexicon. [In research studies] lexis was found to be the best predictor of success in reading, better than syntax or general reading ability.'

How many words, then, are sufficient to push learners over the threshold, beyond which texts

start to make sense? In the 1990s, the bar was set at around 90 percent, i.e. comfortable reading could be achieved if 90 percent of the words in any given text were familiar to the reader. Ninety percent represents a receptive vocabulary of around 3,000 words. Since then, the figure has crept inexorably upward. But the target still seems achievable.

For example, Eldridge *et al.* (2010: 82) investigated the vocabulary needs of learners who are studying school subjects in a second language, and found that the evidence ‘suggests a distinct lexical threshold of around 1,600–1,700 of the most frequent word families.’ (A word family is a group of words that share the same root but have different affixes, as in *care*, *careful*, *careless*, *carefree*, *uncaring*, *carer*; 1,600 to 1,700 word families represent around 6,000 individual words.) They add that ‘students who fall even 200 or 300 word families below the threshold seem to have a vastly reduced vocabulary in total and consequently find it extremely difficult to cope with content studies in the medium of English.’

Setting the bar at even 2,000 word families means learning 20 word families a week over two years, starting from zero: a daunting task, but not an impossible one.

Nor a thankless one. There are grounds for believing that vocabulary size may be a reliable predictor, not just of reading proficiency, but of linguistic competence overall. Certainly, in first language acquisition, the processes of vocabulary development and grammar emergence are closely intertwined, with the former possibly driving the latter. Tomasello (2003: 93), for example, cites research that shows that ‘only after children have vocabularies of several hundred words [do] they begin to produce in earnest grammatical speech’, which suggests to him ‘that learning words and learning grammatical constructions are both part of the same overall process’.

Joshua Foer’s experience (*ibid.*) would seem to corroborate this view:

[a] basic vocabulary gives you a scaffolding to which you can attach other words as you hear them. It also lays down the raw data from which you can begin to detect the patterns that define a language’s grammar. As I memorized words in Lingala, I started to notice that there were relationships between them. The verb to work is *kosala*. The noun for work is *mosala*. A tool is *esaleli*. A workshop is an *esalelo*. At first, this was all white noise to me. But as I packed my memory with more and more words, these connections started to make sense and I began to notice the same grammatical formulas elsewhere – and could even pick them up in conversation.

All in all, this suggests that the learner needs to assemble as big a lexicon as possible, and as soon as possible – even if this means putting other areas of language learning, such as the learning of grammar, ‘on hold’.

The idea is not new. Over two decades ago, Henry Widdowson (1990: 95) challenged the then current (and still current) pedagogical approach whereby grammatical structures are taught first, and vocabulary is slotted into them: ‘I would suggest that the more natural and more effective approach would be to reverse this traditional pedagogic dependency, begin with lexical items and show how they need to be grammatically modified to be communicatively effective.’

At around the same time, research using language corpora was highlighting the combinatory

power, and ultimate learning potential, of grammar words (or *functors*), such as auxiliaries, determiners, prepositions, pronouns and conjunctions. As Sinclair and Renouf (1988: 155) pointed out, ‘English makes excessive use, e.g. through phrasal verbs, of its most frequent words, and so they are well worth learning.’ And they add, ‘verb tenses, for example, which are often the main organizing feature of a course, are combinations of some of the commonest words in the language.’

This suggests to me that there are two ‘vocabularies’ that the learners need to acquire: the 6,000+ high-frequency lexical words (and chunks) that provide the threshold into fluency, and the 150 or so common functors that cement these lexical words together.

Questions for discussion

1. Have you had a language learning experience that confirms Foer’s intuitions about the value of a core vocabulary?
2. If lack of sufficient vocabulary is the main impediment to reading fluency, what are the implications, for the teacher of reading, on materials choice and task design?
3. What approaches could you use to teach word families (as opposed to individual words)?
4. What are the implications for course design and methodology of reversing the traditional order of grammar first, then vocabulary?
5. Widdowson talks about showing how words ‘need to be grammatically modified to be communicatively effective’. How would you go about doing this?
6. Frequency is commonly mentioned as a criterion for vocabulary selection. What other criteria are there? Is there a case for letting the learners decide which words to learn?
7. If verb tenses are simply combinations of high-frequency words, is there really such a thing as grammar at all (as distinct from vocabulary)? If not, what does this suggest about the way grammar could be taught?
8. In the article it is recommended that learners acquire the 6,000+ high-frequency lexical words (and chunks) that provide the threshold into fluency’. What do you understand by ‘chunks’ and how do these contribute to fluency?

References

- Foer, J. (2012) ‘How I learned a language in 22 hours’, *The Guardian*, http://www.guardian.co.uk/education/2012/nov/09/learn-language-in-three-months?CMP=tw_t_gu.
- Eldridge, J., Neufeld, S. and Hancioğlu, N. (2010) ‘Towards a lexical framework for CLIL’, *International CLIL Research Journal*: <http://www.icrj.eu/13-75>.
- Laufer, B. (1997) ‘The lexical plight in second language reading’, in Coady, J. and Huckin, T.

(eds) *Second Language Vocabulary Acquisition: A Rationale for Pedagogy*, Cambridge: Cambridge University Press.

Sinclair, J. McH. and Renouf, A. (1988) 'A lexical syllabus for language learning', in Carter, R. and McCarthy, M. (eds) *Vocabulary and Language Teaching*, London: Longman.

Thornbury, S. (1998) 'The Lexical Approach: A journey without maps?', *Modern English Teacher*, 7 (4), 7.

Tomasello, M. (2003) *Constructing a Language*, Cambridge, MA: Harvard University Press.

Widdowson, H. G. (1990) *Aspects of Language Teaching*, Oxford: Oxford University Press.

To see how readers responded to this topic online, go to

<http://scottthornbury.wordpress.com/2010/10/03/v-is-for-vocabulary-size/>

2 Why are some learners unwilling to communicate?



A communicative approach, or a task-based one, or a Dogme one, all presuppose a willingness to communicate on the part of the learner. But what if they *don't* communicate? Or *won't*? Not surprisingly, therefore, a question that comes up regularly in discussions about communicative language teaching is: 'What do you do in the event that many of the learners in the classroom refuse to speak?'

But before we can address that question, we need to know *why*: why are some learners unwilling to communicate? There are at least three likely sources of learner reticence: a social-cultural one, a psychological one, and a linguistic one, and I will deal with each in turn.

Accepting the need to speak assumes that the learner has been socialized into a classroom culture that places a premium on active vocal participation. But this may seem strange to some learners who come from educational backgrounds where the teacher does all the talking. If, in their previous learning experience, there is little or no precedent for the kinds of informal discussions that are the stock-in-trade of most coursebooks, they are not likely to take the initiative in pair- or groupwork, or even to respond to the initiatives of others. So there is a fair amount of training and demystification needed, as to the role and purposes of such classroom talk. The teacher needs the learners' consent, and this might have to be negotiated.

Teachers, too, may need to reconsider their own role here. A 'talking culture' assumes that the learners are given the space to talk, which in turn assumes that their teachers might have to relinquish some of their traditional control. In an article in the *ELT Journal* (2010) Xiaoyan Xie uses transcripts of classroom interactions in Chinese contexts to demonstrate how the teachers' interaction style – including their dogged control of the discourse, their inflexible adherence to the lesson plan, and their failure to engage with learners' contributions at any level other than in terms of accuracy – contributes to students' reticence. She concludes:

The findings suggest that the teachers should relax their control and allow the students more freedom to choose their own topics so as to generate more opportunities for them to participate in classroom interaction. Doing so might foster a classroom culture that is more

open to students' desire to explore the language and topics that do not necessarily conform to the rigid bounds of the curriculum and limited personal perspectives of the teachers (2010: 19).

At the same time, this assumes a common denominator of shared community, a community of practice in which the learners all feel themselves to be members, with the rights and duties that such membership entails. This means the teacher needs to work, initially, on creating – and then sustaining – a productive classroom dynamic. Managing groups – including understanding, registering and facilitating their internal workings – is probably one of the teacher's most important functions.

But, whatever the classroom dynamic, there will still be learners who feel an acute threat to 'face' at the thought of speaking in another language. It's not just a question of making mistakes, it's the 'infantilization' associated with speaking in a second language – the sense that one's identity is threatened because of an inability to manage and fine-tune one's communicative intentions. As Harder (1980) argues, 'the learner is not free to define his [*sic*] place in the ongoing [L2] interaction as he would like; he has to accept a role which is less desirable than he could ordinarily achieve'. Or, as he more memorably puts it: 'In order to be a wit in a foreign language you have to go through the stage of being a half-wit – there is no other way.'

Harder goes on to argue that silence is the logical outcome of this role reduction: the alternative to silence, for the second language learner, might often be the socially unacceptable (because painfully disruptive) and potentially humiliating negotiation of meaning involved in using communication strategies to get one's meaning across. If students followed the advice given by those who promote 'good learner strategies', such as that learners should persist in attempting to communicate at all costs, they will likely come across as either 'a pest or a simpleton'. 'Most learners will probably, in deciding what to say (if anything) have a sort of cut-off point for the reduction [of personality] they will tolerate, below which silence is preferable. Instead of seeing silence as the extreme point on the scale of message reduction, it can also be seen as the alternative to it.'

This, to me, raises the (painful) question as to whether it might not be better to have students practise speaking in the context of rather banal, game-type activities, in which they have *no* personal investment so they can at least have the experience of communicating (and perhaps even get better at it), but without the inhibitory threat to self-esteem involved in trying to be 'one's real self'.

On the plus side, there is evidence (as Krashen has always argued) that a silent period needn't necessarily be an indicator of zero learning. Dick Allwright (1988) reports on a student in a class who said little or nothing during the course of a semester, but who scored highest in the end-of-course speaking test, leading Allwright to conclude that, for some learners, at least, language acquisition is 'a spectator sport'.

With regard to the linguistic constraint on classroom speaking, the teacher's role in preparing learners for speaking activities (rather than simply plunging them into them) and of supporting them during speaking activities is obviously extremely important. Allowing learners to script and rehearse their own dialogues in pairs or small groups before publicly performing them is one

way of reducing some of the anxiety associated with speaking the L2 in public. Another is providing the words and phrases they might need in advance, and having these available on the board during the activity. You can always erase these progressively as the learners become more proficient at using them.

Finally, (and controversially) there might be a case – in monolingual classes – for allowing the learners to conduct some speaking activities, initially at least, in their mother tongue. Allowing learners to use their L1 in the interests of promoting talk and a sense of community may well be a necessary stage in the transition from a monolingual (L1) through a bilingual (L1 and L2) to finally a monolingual (L2) culture again. Certainly, if students are not used to having conversations in the classroom (in whatever language), they may become more disposed to the idea if there is an initial transition period of ‘L1 permissiveness’, or if tasks are first performed in the L1 (as a kind of rehearsal) before moving into the L2.

Questions for discussion

1. Of the three factors – the social-cultural, psychological, and linguistic – which impact most on students’ unwillingness to communicate, in your experience?
2. How can teachers counteract the problem of learners feeling self-conscious about appearing stupid?
3. Does active vocal participation really matter, and do you think learners can learn by being spectators?
4. How can teachers balance the need to manage groups of learners, and the recommendation that they should relax control?
5. Do you agree that there might be a case for doing speaking activities where there is *no* personal investment? Why/Why not?
6. Is forcing learners to speak counterproductive?
7. Do you think that allowing learners to do speaking tasks – initially – in their L1, might reduce their L2 reticence?
8. What other techniques do you know that help learners with the linguistic means to perform speaking tasks?

References

Allwright, R. (1988) *Observation in the Language Classroom*, London: Longman.

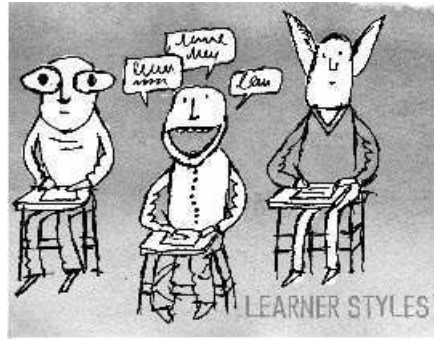
Harder, P. (1980) ‘Discourse as self-expression – on the reduced personality of the second language learner’, *Applied Linguistics*, **1**, 3.

Xie, X. (2010) ‘Why are students quiet? Looking at the Chinese context and beyond’, *ELT Journal*, **64**, 1.

To see how readers responded to this topic online, go to

<http://scottthornbury.wordpress.com/2010/01/30/r-is-for-reticence/>

3 Are there different learning styles?



If you attend ELT conferences you may have come across something like this (invented) talk synopsis:

Vive la différence! Learn to love their learning styles.

Just as a rainbow is a spectrum of many colours, your classroom is a spectrum of many different learning styles. In this talk I will show you how to identify the different styles (visual, aural, kinaesthetic, etc.) and how to adapt your teaching so as to cater for each one.

While I admire the celebration of diversity implied here, I can't help but wonder if the assumptions that undergird this presentation are verifiable. Specifically:

1. Is there any evidence for the existence of different learning styles? If so, to what extent are they the result of nature (i.e. innate and immutable) or of nurture (and perhaps amenable to change)?
2. Should teaching be individualized to match the learning style of each learner, or should it be generalized so as to accommodate all learning styles (and is either option feasible)?

And, finally:

3. Why is the learning style 'movement' so popular – so popular that its underlying assumptions are seldom challenged?

So, what evidence is there? While it is self-evident that any one class includes a wide range of different abilities, attitudes and behaviours, it is not so easy to attribute these differences to 'style'. For a start, it is difficult to pin down exactly what is meant by the term. The literature on learning styles has generated a plethora of terms and categories, many of which are only vaguely defined and distinguished. Is learning style the same as cognitive style, for example? Does style mean preference? Is a kinaesthetic learning style the same as a tactile one? Does a preference for the written over the spoken word betoken a visual learning style or a verbal one? Or an analytical one versus a communicative one? And so on.

In short, as Ellis (1994: 508) complained 20 years ago: 'One of the major problems is that the

concept of *learning style* is ill-defined, apparently overlapping with other individual differences of both an affective and a cognitive nature. It is unlikely that much progress will be made until researchers know what it is they want to measure.’ In a more recent edition of the same text (2008: 672) he notes that ‘the problem of definition has not been solved’, and he adds that ‘there is very little evidence to show that learning styles (as currently conceptualized) are strongly related to L2 proficiency and ... none to show how they relate to the processes of learning.’

This gloomy assessment seems to be the case, even when teaching is tailored to specific styles. In an article that reviews a host of studies (Pashler *et al.* 2008), the researchers could find no evidence for the ‘meshing hypothesis’, i.e. the idea that learning is optimized when instruction is matched to the individual learner’s learning style. Not a single study proved conclusively that a teaching approach that was effective for one style of learner was not also effective for a different style of learner. They concluded, therefore, that ‘there is no adequate evidence base to justify incorporating learning styles assessments into general educational practice’ (2008: 105).

Given this lack of evidence, why has the meshing hypothesis proved so tenacious? The authors of the paper suspect that learning style theories ‘may reflect the fact that people are concerned that they, and their children, be seen and treated by educators as unique individuals’ (2008: 107). Moreover, learning styles offer unsuccessful learners (and their parents) a stick to beat their teachers with: ‘If a person or a person’s child is not succeeding or excelling in school, it may be more comfortable for the person to think that the educational system ... is responsible [and] that the fault lies with instruction being inadequately tailored to one’s learning style’ (*ibid.*). Learning styles, in other words, are a convenient untruth.

Ironically, the impetus towards creating a more equitable learning environment may have resulted in the needless stereotyping of learners. This is a development that, in turn, echoes the discourse that perpetuates ethnic and cultural ‘essentializing’ of the kind: ‘Asians are collectivist (as opposed to individualist)’ and so on. The well-intentioned wish to respect individual identities in fact results in sweeping generalizations. Moreover, by tailoring instruction to fit such generalizations, there is a danger that they may become self-fulfilling prophecies. It may be that the individualization of learning, whether on the basis of ethnicity, aptitude, learning style or whatever, is a one-way, and possibly dead-end, street.

Rather than pigeon-holing learners into aural, visual, verbal, etc. types, Pashler *et al.* ‘think the primary focus should be on identifying and introducing the experiences, activities, and challenges that enhance everybody’s learning (2008: 117). ‘Given the capacity of humans to learn, it seems especially important to keep all avenues, options, and aspirations open’ (*ibid.*). Besides, an approach that focuses on what learners have in common, rather than on what differentiates them, is ultimately more practicable. The alternative – small groups of like-minded learners getting individualized instruction – is a luxury few educational institutions or systems can afford, even if there were any psychological basis for it.

A more generous assessment of the learning styles movement is that, in attempting to address the inherent diversity of classrooms, it has broadened the range of pedagogical options available. As Jim Scrivener (2012: 106) argues, even if learning styles are simply unfounded hunches, ‘perhaps their main value is in offering us thought experiments along the lines of “what if this were true?” – making us think about the ideas and, in doing so, reflecting on our own default

teaching styles and our own current understanding of learner differences and responses to them.’

Questions for discussion

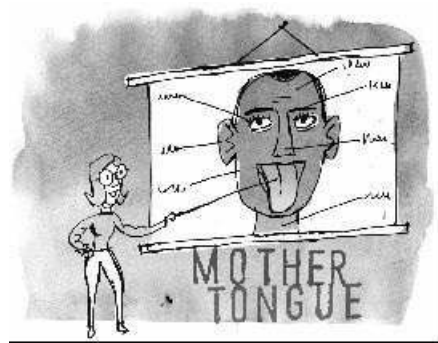
1. Do you consider yourself to have an identifiable learning style? On what grounds? How does it manifest itself?
2. What different ways of classifying learning styles are you aware of? To what extent do you think these categories are clear cut?
3. What other kinds of differences between learners might explain the variable outcomes of language learning? Which do you think have the most impact on success?
4. The Pashler *et al.* (2008) study found no grounds for tailoring teaching to learners’ individual styles. But the studies it reviewed were in general education. Do you think the conclusions might have been different if they had focused only on language learners?
5. Do you agree that the popularity of learning style theory stems, at least in part, from the fact that it blames failure – not on the learner – but on *teaching*: specifically the lack of fit between learning and teaching styles?
6. Do you agree that categorizing learners according to distinct learning styles is a form of stereotyping that may have negative consequences? Is it really on the same par as racial stereotyping?
7. In what way has the learning style movement ‘broadened the range of pedagogical options available’? Can you think of examples?
8. Is the individualization of learning really such an impracticable goal? For example, how might technology be enlisted to make it possible?

References

- Ellis, R. (1994) *The Study of Second Language Acquisition*, Oxford: Oxford University Press.
- Ellis, R. (2008) *The Study of Second Language Acquisition* (2nd ed.), Oxford: Oxford University Press.
- Pashler, H., McDaniel, M., Rohrer, D. and Bjork, R. (2008) ‘Learning styles: Concepts and evidence’, in *Psychological Science in the Public Interest*, **9**, 3, 105.
- Scrivener, J. (2012) *Classroom Management Techniques*, Cambridge: Cambridge University Press.

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<http://scottthornbury.wordpress.com/2010/03/21/i-is-for-learning-styles/>

4 Is the use of the learners' mother tongue a good idea?



I was seated next to a young Catalan woman at lunch the other day, and we got to talking about language learning. She's been learning English at a private 'academy' in a small town on the outskirts of Barcelona. I asked her how it was going. She confessed that she was not as happy this year as last year. 'Why?' 'Last year I had a teacher who was American and he only ever used English. Sometimes it was hard for us, but we really had to make an effort. We never once used Catalan in class. This year the teacher is Catalan – she lived in California and speaks excellent English – but she speaks Catalan to us and allows us to do so too. It's just not the same – there's no real push. I must admit that, although I know she's a good teacher, I'm not enjoying my classes as much.'

This raises the perennial question as to the usefulness or not (or the wisdom or not) of using the learners' mother tongue (or L1) in the language classroom.

As usual, there are a number of dimensions to the argument. There's the psycholinguistic dimension: how, and to what extent, is the L1 implicated in the learning of a second language (L2)? And the sociolinguistic dimension: what social and cultural factors argue for – or against – the use of the L1? And the pedagogical dimension: is the use of translation, for example, a viable educational option?

With regard to the psycholinguistic argument, we have come a long way since the days when it was claimed that L1 'habits' interfered in the formation of habits in the L2, and that, therefore, the L1 should be banished from the classroom. Analysis of learners' errors has suggested that any interference is less than might be expected, given the differences between languages. This is not to say that the L1 does not impact on the L2. In fact, proponents of sociocultural learning theory argue that the first language supplies the conceptual template for all subsequent language acquisition, but that this is all the more reason to take it into account when teaching. As Song and Kellogg (2011: 602) point out:

For Vygotsky ... the foreign language learner superimposes the meanings of foreign language words on the most thoroughly analyzed, abstract, and universal symbolic