Computer Assisted Language Learning
2003, Vol. 16, No. 5, pp. 391–411

Taylor & Francis
Taylor & Francis Group

Focus on Form, Tasks, and Technology

Peter Skehan
King's College, London, UK

ABSTRACT

In the main, second language acquisition research and the applications of technology to language learning have remained relatively separate areas, with occasional exceptions in research studies (e.g., Doughty, 1991) and book length treatments (Chapelle, 2001). This article will explore connections between technology, and especially, web-based learning, on the one hand, and current views of second language acquisition, in the shape of what is becoming known as the "focus on form" literature, on the other. After a general introductory section, in which the concept of focus on form is discussed, a review is provided of current work in task-based instruction, as the major current implementation of focus on form concepts. This research is then analysed in terms of how task findings contribute to the two processes, on the part of the language learner, of how change in the underlying interlanguage system occurs, and then how the learner achieves control over what has changed. These findings and analyses are then related to opportunities and dangers in the use of technology for language learning.

1. INTRODUCTION

The field of second language acquisition is remarkably young. The major influence upon its first flourishing was the sudden paradigm shift in the study of *first* language acquisition, when the impact of Chomsky's work in linguistics led developmental psychologists to question the applicability of behaviourist and associationist concepts to children learning their first language (Brown, 1973). The prevailing interpretation switched from one which assumed that the environment was the crucial influence to one which assumed, in contrast, an innatist perspective, in which it is what the child brings to the task of first language acquisition that enables us to account for the speed, creativity, and systematicity of the process of first language acquisition (Pinker, 1994). In other

Address correspondence to: Peter Skehan, Professor of Applied Linguistics, Department of Education and Professional Studies Research, Franklin Wilkins Building, Waterloo Road, London SE1 8WA, England, UK. E-mail: peter.skehan@kcl.uc.uk

0958-8221/03/1605–391$16.00

words, one assumes, in this account, that the child has an inbuilt language learning capacity, "hard-wired" into the genes, and so input (and the environment) are simply the foil to trigger the operation of this capacity.

Second language acquisition researchers were initially strongly influenced by these developments, and explored whether they had relevance for their own context. Early work suggested that the same inexorable processes might be operative (Dulay & Burt, 1974) and suggested the conclusion that duplicating the conditions of first language acquisition would lead to successful second language acquisition. Krashen (1985), for example, proposed the Input Hypothesis to account for this fundamental similarity of the learning that takes place in both contexts, and Long (1983), in early versions of his Interaction Hypothesis, also implied that structured pedagogic intervention is the wrong approach to take (see also Long & Crookes, 1991). Instead, he proposed that interaction itself can provide all the nourishment that development requires.

These initial views of second language acquisition soon encountered difficulties, however. Studies of a critical period for language learning (DeKeyser, 2000; Johnson & Newport, 1991) suggested that first and second language acquisition are not the same, in terms of structure or process, and the hard-wired advantages possessed by the child are no longer available to the second language learner. Even more damaging, the optimistic account of input-driven theories proved to be inconsistent with evidence. Immersion education in Canada, for example, contains large amounts of input for learners, but this input is not associated with native-like capacities to *produce* language (Harley & Swain, 1984). As a result, a significant view currently within second language acquisition research is that providing learners with comprehensible input, or interaction opportunities may not be enough to assure development. What is needed, in addition, is some degree of focus-on-form, that is, within communicative activities, a need to inject, by some means or other, a concern for the structural/syntactic dimensions of language (Doughty & Williams, 1998b; Long & Robinson, 1998). Otherwise, the implication is that learners will engage in communication, but may prioritise getting the communicative activity done, through the use of strategies of comprehension and production, so that form does not come into focus. Worst of all, learners may, in the interests of task fulfilment, proceduralise strategies of communication in such a way that these strategies become inflexible and make continued progress more difficult in developing an interlanguage system (Skehan, 1998).

To restate this necessarily brief account of second language acquisition, it appears that one does need to use communicative activities extensively to

combat the tendency for learners to learn *about* language but not how to use it, but within a communicative approach, methods need to be developed and introduced such that communicativeness is not compromised, while at the same time, form is brought into focus (Doughty, 2001). Many of the current debates within SLA-based accounts of instruction are about how this is accomplished (Ellis, 2003). To restate this in the terms introduced by Wilkins (1976), there is a rejection of synthetic syllabuses, but it is accepted that if one uses an analytic approach to syllabus design, one cannot assume that learners will be capable of analysing sufficiently: they have to be helped to do this through the (teacher-led) strategems which push them to focus on form.

Two additional features of this interpretation of current second language acquisition are worth making before we go on to review task work: the issue of structure pre-selection, and the nature of performance. Regarding the first of these, a strong form of a communicative approach, or more properly, a task-based approach, does not generally lead to pre-selection of forms. Learners are given communicative things to do, and they use whatever language seems appropriate to them to accomplish the tasks they are doing. The key pedagogic issue then becomes how learners are supported, in this context, not to forget form. It is assumed, in other words, that pre-selecting structures, and contriving tasks to ensure their use will be counter-productive, and not engage acquisitional processes. But to simply require meanings to be transacted would run the risk, noted above, that there will not be continued progress. As a result, the task-based approach has to incorporate pedagogic strategies to enable whatever language is needed to transact the task to then be capitalised upon.

Regarding performance, it is useful to distinguish between three areas: complexity, accuracy, and fluency. Task-based research has shown each of these to be distinct from one another (Skehan & Foster, 1997, 2001), and even to compete with one another for attentional priority. In addition, they have also been theorised to represent different stages of the learning process. This starts with change in the underlying interlanguage system, that is, greater complexity, as learners attempt to use more advanced language and restructure what they know of the target language. This is followed by the reduction of error, as learners try to achieve control over the new language sub-systems, and to use them correctly. Finally there is the stage where not only can error be avoided, but the particular part of the interlanguage system can also be produced in real-time, without undue pausing or interruption, that is, the level of control becomes even more advanced and native-like.

The three areas, complexity, accuracy, and fluency, then, have both performance and developmental facets, and so it is necessary to explore the relationship between these facets. If tasks can lead to higher complexity, accuracy, or fluency in performance, then these performance differences will have implications for development. On some occasions, task characteristics and task conditions can prioritise new language, and risk taking; on other occasions they can predispose conservatism and error avoidance; and on others push learners to gain fluent control over aspects of the target language which are becoming more easily used. The first two of these areas concern form, while the last, fluency, is more concerned with expressing meaning, in real-time. As we will see below, much task research is framed with these three performance areas, and their connections with development, in mind. If effective choices are made to concentrate on the performance area which is appropriate for a learner's current developmental profile, more balanced development will occur, and excessive reliance on one performance area, for example, fluency, avoided.

2. A REVIEW OF RESEARCH INTO TASK-BASED INSTRUCTION

A significant body of research has been published in the last decade which contributes to our understanding of task-based instruction. This has explored how different task features impact upon performance, and how the conditions under which tasks are done influence the language which is produced. Regarding the first of these, task features, the following generalisations have emerged:

Task characteristic	Influence upon performance
• structured tasks	clearly greater fluency, tendency towards greater accuracy
• familiar information	greater fluency and greater accuracy
• outcomes requiring justifications	markedly greater complexity of language
• interactive versus monologic tasks	interactive tasks produce markedly more accuracy and complexity, monologic tasks more fluency

Structured tasks are those which have a clear macrostructure, often involving a clear time sequence, for example, explain to someone how to get to your home to turn off an oven which has been left on (Foster & Skehan, 1996); or retell a Mr. Bean video where Mr. Bean goes to a restaurant (Skehan & Foster, 1999), a situation which has a familiar "script". Familiar tasks are those where the information simply needs to be retrieved by the person doing the task, as opposed to requiring considerable cognitive operations on-line, where simple retrieval is not enough. Outcomes requiring justifications are illustrated by two decision making tasks that have been used (see Foster & Skehan, 1996; Skehan & Foster, 1997). In the first, learners, in pairs, had to agree on judicial sentences appropriate to a series of crimes. In the second, again in pairs, learners had to agree on the advice appropriate to the writers of letters to a magazine Agony Aunt. In the first of these, opinions only had to be justified to agree on a number of years in jail, and learners did this in a rather superficial manner. In the second, a simple numerical outcome was not possible, and learners had to justify their suggestions which provoked much greater language complexity. Finally, a consistent finding in task research has been that when learners work together interactively, other things being equal, they produce more advanced *and* more accurate language, but this language is produced less fluently, with more pausing, and with greater amounts of reformulation, repetition and false starting. Monologic tasks, such as narrative retellings, produce greater fluency, but lower accuracy and complexity. (Interestingly and somewhat ironically, it is narratives that are the staple format of those who design oral assessment procedures!).

These findings suggest that the choice of task that a teacher makes is not a neutral affair at all, and that to choose a particular task type may well mean that learners are being pushed to advantage some areas of language performance and disadvantage others. Some tasks tend to produce more complex language, others greater accuracy, while others favour fluency. Given that complexity represents the "cutting edge" in language, and where development occurs, while accuracy and fluency are more concerned with greater control (see discussion below), a teacher's choice of tasks will not simply influence ongoing performance, but will also have implications for change over the longer term.

There have also been a number of studies into the effects of varying the conditions under which tasks are completed. Two major areas have received attention in this regard: the effects of pre-task planning and of post-task activities. With the first, it has been shown in a number of studies (Crookes, 1989; Foster & Skehan, 1996; Mehnert, 1998; Ortega, 1999; Wigglesworth, 1997) that giving learners the opportunity to plan before a task is done

consistently produces greater complexity of language and greater fluency. These effects are dependable and strong, and imply that if one wants learners to draw upon more advanced language, and if one wants them to use this language with less hesitation and pausing, giving planning time is essential. Interestingly, it appears that giving learners time to plan by themselves is more effective than having them plan in groups of learners, but that each of these is less effective than the teacher being involved in the planning process (Foster & Skehan, 1999).

Post-task activities have also proved interesting. Examples of such activities are informing learners before they do a task that some of them will be required to re-do the task subsequently in front of the entire class. The rationale here is that the threat of a future public performance will induce learners, while doing the task, to concentrate on error avoidance, since they will more clearly see the connection between the task and how well they will later do, when more pedagogic norms will prevail. In addition, the future task will not compromise the naturalness and communicativeness of the actual task, since the teacher will not be present at that stage. An alternative post-task condition would be to record learner performance during a task (which is done anyway during research studies), and then give the tape to learners so that they have to transcribe some of their own performance. Once again, the intention is to focus learners' attention on form, since they will be drawn in to working in detail with what they themselves have said. Skehan and Foster (1997) made the prediction that accuracy, selectively, would be advantaged in a post-task condition. In two studies, (Skehan & Foster, 1997; Skehan & Foster, ms) this prediction for a post-task effect upon accuracy was confirmed, but only for interactive tasks. There was a higher level of accuracy with personal information exchange and narrative tasks, but this did not reach statistical significance. In addition, there was a significant practice effect: as time went on in the study, over 2–3 weeks, the effect on accuracy grew in strength.

As with the task characteristics research, then, task conditions have an impact upon performance. Once again the research findings are relevant for teacher decision making since they indicate how changes in performance can result from what happens before and after the task itself.

3. RECONCEPTUALISING TASK WORK

We can now attempt to link up the generalisations from the task literature, and the preceding discussion of a Focus on Form. It seems as if different task

choices and different task conditions selectively influence performance in the areas of complexity, accuracy, and fluency. Given that the first two of these, complexity and accuracy, concern form, and the third concerns meaning and real-time communication, one can argue that those effects which increase complexity and accuracy are achieving a focus on form, with the first case emphasising change and development, and the second the issue of control and conservatism. Making the assumption that at an unrestricted diet of meaning focussed activities risks non-engagement of a focus on form, these findings provide indications, for pedagogues, as to how to maximise the chances that, if a communicative or task-based approach is adopted, there will be sufficient concern for language as a system, and away from excessive use of strategies which may themselves be proceduralised and become hard to modify.

We are now in a position to complexify, somewhat, the stages which are followed during acquisition. The following stages are proposed, on the basis of the task research, but also, more significantly, on the basis of current second language acquisition theorising:

Change: Complexifying	• noticing a new form	→	• extending the new form and complexifying it ↓ • integrating the new form into existing interlanguage
Control: Form	• become accurate and avoiding error under unpressured conditions	→	• make a form accessible, salient, and part of an available and active repertoire
Control: Access	• proceduralisation and fluency		• lexicalisation

We will work through the components of the table sequentially. Regarding the first stage, Schmidt (1990, 2001) has argued forcefully for the importance of (preferably conscious) noticing as a vital stage in second language change. He proposes that as a first stage for development, the learner must direct attention to some (selective) aspect of input, and that this input feature, although not necessarily immediately acquired, has to become the focus for

any subsequent learning that occurs. Swain (1995) has extended Schmidt's noticing-in-input claims to incorporate noticing in *output*. In this case, it is the learner's own output which becomes the vehicle for effective noticing, but in the form of noticing a gap, that is, the need to engage in communication may enable the learner to see more clearly that some meaning that s/he wants to express is beyond current interlanguage resources, with the result that the gap which has been made salient in this way becomes a vital stimulus for future learning, *provided that appropriate support is available*, for example, in the form of feedback from the teacher or other learners.

The noticing stage, though, is not enough. A target language will contain many interlocking systems, and to notice one aspect of target language structure is likely to lead to only limited progress. Consider modality, for example. Modality can be expressed by very simple means (lexical items such as 'maybe', or 'perhaps'), and even simple phrases (such as 'it is possible', and 'it is probable'). But there are more complex expressions of modality (in English), such as the modal verbs. Progress comes, therefore, not simply from noticing particular forms in relative isolation, but also integrating such forms into a more complex system, and extending what might be expressible in simple terms into a more complex system (Samuda, 2001).

Each of the preceding stages concerns underlying change in a learner's interlanguage system. But clearly, this is not enough. There also needs to be effective control over this system. It is proposed here that this development of control is also in two stages, with each of the stages being further divisible. First of all, (Control: Form) the learner needs to achieve control by eliminating error and being able to use new language not with huge attention but with the ability to produce it accurately reasonably quickly, that is, without extensive monitoring and correction. But there is more to the first stage of control than this. It is also important that a learner whose interlanguage system contains a particular form should use it effectively, and with facility, when it is appropriate. The learner, in other words, needs to develop a repertoire which is used appropriately when the need arises. To return to the example of modality, the learner needs to develop a system in which simple modality (lexical items, simple phrases) coexists with more complex expressions (modal verbs), and, vitally, the learner needs to use the more complex expressions within this system when they are appropriate and not revert to the simple forms of the modal system.

The final and most ambitious stage in development concerns not simply avoidance of error with a form (and its general availability), but also the

capacity to use this form fluently, in real-time. At one level, this can simply mean the proceduralisation of the form in question, so that it is accessed and used without undue effort or requirement for attention, at the appropriate time, and without error. To achieve this "rapid computation" is difficult enough. But increasingly there is recognition that language is not simply a rule-governed, generative system, but is also organised in terms of dual-coding, that is, a particular form may be generated from an underlying syntactic system, but may also be accessed directly, as a formulaic chunk, in such a way that internal "computation" is not necessary – a stretch of language is retrieved as a whole, and thereby the learner is likely to reap two benefits: processing is less demanding, and, assuming the lexicalised chunk is frequent in the language concerned, the learner will be using language with currency, language which is "done" in Hymes' terms (Skehan, 1998).

We can now try to relate the earlier discussion of task-based research with this reanalysis of what is involved when language is used. The following table is organised on the basis of what is known about task effects, displayed in terms of the stages for task conditions and characteristics that have been researched, and then this is linked to language acquisition stages.

Reinterpreting Pre-task Work	
Reinterpreting the task	Change
Repertoire salience	Control
Repertoire control	Control
Fluency and lexicalisation	Control
Reinterpreting Task Work	
Level of difficulty	Control
Channelling	
complexity	Change: extension
accuracy of fluency	Control
Reinterpreting Post-task Work	
Exploiting the salience of gaps which have just been noticed	Noticing Extending Integrating
Machiavellian influences on attention allocation	Control: error avoidance

At the pre-task stage, most effects of pre-task planning concern control. The generalisation from the planning studies is that it is fluency and

complexity that are advantaged by the opportunity to plan, pre-task. Interestingly, therefore, the fluency effect, which also incorporates the capacity to achieve salience, and mobilise a repertoire, seems to link with the preparation, rehearsal effects of planning, where the time available seems to be channelled towards assembling relevant language for the task. The complexity effect seems to come from learners using the planning time to reinterpret the *content* of the task, in such a way that they make the task more complex to do, and as a result, this pushes them to need more advanced language. This, in turn, may lead them to come up against gaps in their interlanguage, so that noticing and the potential for change are facilitated. Interestingly, the task research is not strongly supportive of an effect of pre-task planning on accuracy (i.e., control in terms of error avoidance). So the evidence at present suggests that the effects of pre-task activity are a mixture of promoting meaning expression and real-time processing, and pushing learners to use more advanced language.

Task research at the "during task" stage concerns the effects of task choice and characteristics. In theory, there might be research here which addresses issues such as variations in processing conditions (Skehan, 1996, 1998), or manipulations of task content mid-task, but such research is in short supply. We have to base our claims, therefore, on task characteristic research only. Two general types of effect are relevant here. First, much task research (e.g., Brown, Anderson, Shilcock, & Yule, 1984; Skehan, 1998) is concerned to identify what features make tasks more or less difficult, and range of features have been identified. Tasks have been shown to be easier when they are based on a smaller number of elements or participants (Brown et al., 1984), when they draw upon concrete information and task demands rather than abstract (Brown et al., 1984; Skehan & Foster, 1997); when they are based on immediate, here and now information, rather than remote information (Foster & Skehan, 1996; Robinson, 1996), when the information they are based on simply needs to be retrieved, rather than manipulated (Skehan & Foster, 1997), and when the information is familiar rather than unfamiliar (Foster & Skehan, 1996).

In general, it is assumed that if tasks are easier, the consequence will be that learners will have more attention available to focus on form, and the evidence is that if such attention is available, their priority will be towards on-line planning and accuracy (Yuan & Ellis, 2003). So easy tasks are associated with greater control. The second aspect of relevant task research is that as we have seen earlier, some task characteristics are

associated with particular performance effects. The table below makes this clear.

Change: Complexity	• dialogic tasks • tasks requiring more subtle justified outcomes
Control: Accuracy	• structured tasks • familiar information tasks
Control: Fluency	• structured tasks • familiar information tasks • monologic tasks

The table suggests something of a contrast between task characteristics which lead to greater complexity (dialogic tasks and tasks requiring justification (or both)) and those which seem to lead to both greater accuracy and fluency (structured and familiar tasks). Change and Control, in other words seem subject to different groups of influences.

The post-task phase is particularly interesting in the effects on acquisition stages because two somewhat different emphases are relevant. First, and very much following the reports on research provided earlier from the effects of post-task activities, the post-task phases can be used to manipulate how learners allocate attention while they are doing a task. In other words, this can be contrived, with dialogic tasks, to promote a selective (and somewhat Machiavellian) influence on accuracy, that is, to push learners to devoting greater attention to avoiding error while doing the task, and thereby achieving greater control over language elements.

The second post-task influence is less derived from empirical work, and more derived from theoretical and practical proposals. It is essentially that post-task *teacher-led* activities might be crucial for learner's to capitalise upon what has been noticed and made salient by the earlier task transaction. In other words, following Swain's (1995) proposal for "noticing the gap", and Willis' (1996) proposals for a task-based methodology which *ends* with language focus, the post-task phase can also contain activities which exploit the language which has been made salient only because learners have done a task. They may have noticed the need for new forms, or may have realised the relevance of forms that they knew about but didn't integrate properly, or they may have noticed relevant forms in the language of interlocutors. In all these case, the teacher can use the seed that has been planted, and focus on it in such

a way to convert the rather "unsteady" language into something that is well understood, integrated with wider aspects of the language system, and generally consolidated. This interpretation of a post-task phase is centrally concerned with Change, in other words, since it is the task itself which will have driven forward language development, but it is the purpose of the post-task phase to "fix" what may have been only fleetingly attended to, and work upon it with more sustained focus.

4. TASK THEORISING, TASK RESEARCH, AND TECHNOLOGY

The preceding discussion of tasks may have been interesting, but it may not be at all obvious how it is relevant to technology! It is the purpose of the current section to explore how the insights and findings from the task literature may indeed have considerable relevance to applications of technology in language learning. I will first characterise the nature and strengths of technology and language learning, as I see them, and then draw attention to potential weaknesses in how web-based materials might be used, given what we have learned about tasks.

Nature and Strengths: Most analyses of the use of computers in language learning and teaching make recourse to different metaphors as to what contribution the computer may make. Typical in these are the computer as orchestrator, the computer as tool, and the computer as source. I will not emphasise here the role of the computer as orchestrator (or magister). This implies a view of language learning which is antithetical to the use of tasks, and is little more than an implementation of Wilkins' synthetic syllabus: itemised and largely decontextualised presentation of materials leaving the learner the forbidding task of synthesising and applying what has been "learned". This is a view of language learning which is deservedly out of favour (Long & Crookes, 1991). Worse, a computer-based implementation of this approach would be particularly inept, since the computer would lack the intelligence of the classroom teacher to make adaptations and appropriate pedagogic decisions. Nor will I emphasise the computer as tool, interesting though this interpretation may be. Writing software (Yu, 2001), for example, may help learners to write better, and provide specific tools (e.g., for outlining, drafting) which serve as a useful scaffold for the developing writer, helping her extend her own resources and write at more advanced levels in a more

appropriate manner. But these two metaphors do not connect easily with tasks, and I will not develop this application further.

What is really exciting about the use of technology is its potential as a *source* of language learning materials and input. And in that respect, the major change in the last 5–10 years has been the emergence of the web as a colossal language-materials resource. On occasions, this may consist of resources which have been put together specifically for language learners. But the vast majority of the materials exist for other purposes, and are simply there with potential to be exploited. Almost at random, one could mention a whole series of such sources. Major newspapers have extensive websites which are updated many times a day, and the better examples of these have many specific categories. Specialist publications abound, so that reading in science is very well catered for, with magazines such as Scientific American or New Scientist, or digest sites, such as the Science and Technology Daily site containing rich material, as well as links to many more related sites. The arts and humanities, too, have numerous regularly updated sites, ranging from museums through specialist groups to other digest sites, such as Arts and Humanities Daily.

We are also in a situation now where audio and visual material is no longer any sort of technological challenge. Indeed sound, and audio material, have now become routinely accessible, whether in the form of foreign language radio stations, or broadcasts, or music or whatever. Some broadcasters, such as the BBC, even have specialist sections of their website devoted to language learning material, including audio sources. The next challenge is clearly going to be the incorporation of visual material, in the form of streaming video, so that face-to-face communication will be widely available, and hopefully, affordable. In addition to these opportunities to receive input, there are many opportunities to engage in interaction. A few years ago, this was restricted to typed communication, whether synchronous or asynchronous. Now it is likely that groups of learners can engage in real-time communication, so that the feasibility of exchange arrangements will grow exponentially, and "twinning" of learners and native speakers will become commonplace.

To take just one example of how these changes can impact upon language teaching methodology, one can consider project work. Essentially, in this approach, a group of learners will select a topic, and then decide how they can function as a group to carry out a project related to this topic. In the past key issues were (a) where source material (and people) could be located, and (b) the challenges faced by learners doing projects when they were not based in the country where the target language was spoken. These issues may not have

disappeared, but they have changed dramatically. Now, a little guidance can direct learners to a wealth of websites in the target language, and even to actual contact with speakers of the language. As a result, not to be located in the target language country has become much less of an obstacle. At the same time, the richness and breadth of the material involved, as well as its motivating qualities, has expanded enormously.

Weaknesses: Clearly, if availability of input and also interaction opportunities were sufficient to drive forward language development, the world would increasingly contain dramatically more successful language learners. Although it is perhaps a little early to tell, I am not convinced that this is the case. And it is here that the analyses of second language acquisition and task-based learning and instruction may be relevant (and hopefully justify the length of the preceding section!). For one can view the availability of web-based resources as potential task-based work writ large. In other words, the web contains virtually limitless input, and considerable opportunities for interaction.

For example one could take one of Fried-Booth's (1986) suggested projects, writing a "Good Wheelchair Guide" for Bath, and switch it to a French town, such as Tours or Compiegne, requiring that the Guide be written in French. This would entail significant planning and delegation of work, as well as extensive email contact and website searching of many of the town's tourist attractions and facilities. This would generate no small quantity of input, and some (written) interaction, too.

Yet we have seen that the Focus-on-form generalisation suggests that exposure to language, post critical period, is not enough. Learners devise methods of working with input, and communicating meanings, but in so doing they do not necessarily engage the interlanguage system, and change and development are not guaranteed. Simply exposure, in other words, is not going to provide a solution. The material obtained and collected for the wheelchair guide, for example, would need to be worked upon to avoid minimalist use which went no further than extracting meaning.

So, something additional needs to happen so that within the context of meaning-based explorations and interaction, there is a capability, on the part of learners, to focus on form, to notice features of language, and then develop and consolidate features of language which have been noticed. In text messaging, between native speakers, we already see how what might termed a "terminal pidgin" can easily evolve, terminal in the sense of foreclosing future development, and in the location at a computer screen! We need to be

conscious of such a possible outcome in thinking about the ways that web-based communication, although superficially attractive, may have its limitations. A significant part of developing a methodology appropriate for a web-based world will be to discover techniques of how this can be done effectively.

Opportunities: This is the most important part of this section linking tasks to technology. We will explore three areas where potential developments in the use of technology might be informed, to some degree, by contemporary second language acquisition work: the context for learner-computer use, the role of learner training, and the place of adjunct activities and software.

Regarding the first of these, the context for learner-computer use, if we take the case of learners using the web and its resources for target language material, the relevance of a cognitive approach to second language acquisition mainly concerns findings regarding pre-, during- and post-task activities. We have seen that pre-task planning has predictable and beneficial effects upon performance (i.e., greater complexity and fluency). It would seem logical therefore that learners, before working with web resources, should be encouraged to, or even required to plan, and that this is even more important where interaction with native speakers or with other learners is involved. In this way, it is likely that learners will derive more from the encounters that they engage in.

Recall the earlier sections in which it was argued that pre-task work can function sometimes to change learner's interlanguage systems, when they are led to use new language, or alternatively, it can develop greater control through better access to existing knowledge, or through preparation which leads to error avoidance. Correspondingly, not to exploit the pre-task stage might make learners more likely not to try to improve with new language, and also to use "obvious" language they know rather than mobilise less well learned repertoires.

This suggests that what happens before learners engage directly with a technology-based activity is crucial, and it is here that teachers have a clear role. There are a number of options available, and once again, we will use the Good Wheelchaire Guide as an example intended project. Let's assume that the project itself will require (a) oral and written communication with native speakers, and (b) input material to be located, obtained, and worked upon. There is scope to encourage learners to plan how they are going to approach these tasks. They could do this individually or in groups. They could think through what they are going to do, or they could rehearse and role play,

preferably with some reflection on how their attempts could be improved before the actual performance. Amongst other things, such reflection could encourage learners to notice gaps in their target language skills, and then do something about them. The planning could be general (i.e., provision of time only) or it could be targetted, for example, the teacher could encourage learners to plan ideas rather than language, thus pushing them to greater language complexity (Foster & Skehan, 1996). Alternatively, there may be guidance on noticing particular language forms in the input they will obtain. Above all, though, these "pre-task" activities should create the conditions so that when the actual activity is engaged in, learners will derive some benefit not simply in terms of task transaction and obtaining information (important and satisfying though these are) but also in terms of *language* development, whether this is learning to do something new (Change) or learning to do something better (Control).

The task literature is also relevant to the stage where learners are actually interacting with the computer. Pursuing the project work example, it is likely that there will be many choices regarding how exactly learners will interact at this stage, and it is also likely that there will have been negotiation about who does what, from a range of possible activities. Since we know that task difficulty and selective task influences (e.g., on language complexity) are significant influences, there is considerable potential for the teacher to bring expertise to the learners' decision-making about a task choice. Learners may be motivated by a range of task qualities. Teachers, in contrast, are in a better position to stand back and offer advice. This could concern task difficulty, and there may be scope for different learners to be "nudged" towards tasks of a difficulty appropriate for their proficiency level. Perhaps more interestingly, selective influences such as task structure (accuracy and fluency) or interactivity (complexity and accuracy) could inform decision making. Learners, who would benefit from restructuring their interlanguage, for example, could be encouraged to take on more interactive tasks since such tasks have been shown to support more complex language use.

Most important, perhaps, when languages are learned through web-based tasks, is the post-task stage. Earlier, two important potential uses of a post-task phase were covered: its importance for learners to prioritise accuracy when doing a task, and its scope to help learners, after a task has made language salient, for extension and integration, as well as consolidation. In addition, it is worth emphasising that post-task phases (cf. Samuda, 2001; Willis, 1996) give learners a greater sense of involvement in the task, because they know they

will have to do something afterwards, and this motivates a sense of ownership. The implication this has for learner use with web-based materials is that the teacher needs to focus on meaningful post-task activities so that learners do not simply see computer-based interaction as an end in itself, but instead see how the interaction can link with broader and longer-term language development. In other words, the new language that arises through computer interaction should lead learners to extend and complexify their interlanguage system, or to focus on accuracy, since some sort of report or new activity will bring out the importance of not simply getting a job done anyhow, but also getting in done well. *What counts most, in other words, is what happens after the web has been used.*

Returning to our French wheelchair guide, it is essential that whatever activities are engaged in, by individuals or small groups, they should also have an impact with the entire class. This certainly means that one of the staples of project work, *reporting back*, has considerable significance for acquisition. Learners need to report back not simply to tell others what they have done, for example, about areas within a French town where wheelchair users are well catered for, but also for themselves, since this allows them to rework the material they have discovered [and the reworking may well cause them to attend more to form (Bygate, 1996)] and by so doing they may consolidate and extend their understanding of the target language. But in addition, knowing while engaging with the computer that there will be consequences later may cause them to give more attention to form itself. So it is essential that actual computer interaction is seen by learners as a stage to something else, rather than an end in itself.

But there are additional benefits to such a post-computer interaction stage. Reporting back, and post-task recycling is likely to consolidate the language which has been encountered and semi-learned. Not simply vocabulary, but also particular syntactic forms, (e.g., use of modality) can be re-used and learned more securely during the post-task phase. But even more important, the language input from a number of learners, since it will have salience, by definition, can lead to very motivating extension and integration activities. Learners need to be encouraged to "mine" input they have received for interesting and challenging language which can then be mulled over, in group, so that all learners can enjoy the benefits of the hard work of actual discovery. In this way, too, learners will learn to change while they are interacting with the computer because they will know that language features they notice can later be the motivating force for grammar focus (Willis, 1996).

The above suggestions represent a fairly direct application of contemporary findings from task-based research. Perhaps less directly linked, but equally important, is the need for learner training. In other words, learners may benefit if they are brought in, consciously, to the problems and pitfalls of using web-based material, and are provided with instruction in strategies that may be useful in exploiting this material more effectively. If, following O'Malley and Chamot (1990), one broadly divides strategies into metacognitive, cognitive, and social, then it is metacognitive strategies which provide the guidance for effective work on the part of the learner, and that above all, it is not simply the use of strategies that is important, but the choice of *appropriate* strategies for different problems and situations. It would seem therefore that preparation of learners, with appropriate strategies for use during the pre-, during-, and post-phases of web-based learning would be particularly helpful. And within this strategy training, metacognitive strategies such as goal setting, planning, and attention focussing (O'Malley & Chamot, 1990) should come to the fore. These could then reduce the likelihood that learners will simply involve themselves with foreign language material, however exciting this may be, but not focus on form, and not make progress with the language itself. The web provides incredible potential for autonomy in language learning – what is also required is the opportunity to learn to use that autonomy productively.

The third area worth exploring concerns the nature of the support software available to learners. It is likely that if web-based materials are used effectively to provide input and interaction opportunities, and there is a sensitivity to form, it is likely that learners, post-task, will benefit from the availability of software which accomplishes two things. First, it should provide an accessible reference so that gaps which have been noticed through web use can be related to effective pedagogic materials which allow learners to go beyond the initial noticing and place what has been noticed into a wider, integrated system. Second, it would be advantageous to have software which allows learners to build a personalised record of what they have learned, for example, through programs which record, consolidate, and test vocabulary, or through programs which record where they are in terms of interlanguage development. To the extent that such software can operate "intelligently", that is, by analysing the input from the learner and then making constructive "suggestions" for extensions and for exercises, so much the better.

Threats: The central threat from an approach to exploiting web resources which doesn't take account of developments in SLA has already been mentioned, several times. It is that learners will simply get the job done

(extracting meaning from the limitless input materials; interacting minimally without pressure to change interlanguage systems) so that form is by-passed. Consequently the major danger is that there will be insufficient pressures on learners to inhibit them from taking such an approach. It is important, in other words, that the proposals made in the last section are researched, and their impact assessed. Only in this way can we establish whether web-based learning might have similar pitfalls to those identified in immersion education.

5. CONCLUSIONS

At one time in language teaching pedagogy, a clear distinction was made between SL (Second Language) and FL (Foreign Language) contexts, and different teaching techniques were advocated for each. We are now in a changed situation. Not only is the hegemony of the native speaker being challenged (Jenkins, 2001), but we also live in a world where exposure to target languages in plentiful, pervasive, and authentic. The difficulty is that such exposure is not necessarily linked with instruction. Worse, the findings from second language acquisition suggest that difficulties which first manifested themselves in the comprehension-orientation of immersion education may now reassert themselves in this new area of language exposure. But we have seen that SLA researchers into task-based instruction are looking for ways to ensure that there is, within a task-based approach, sufficient focus on form. I would argue that the lessons emerging from SLA research that are relevant to technology-based language learning are twofold: there needs to be care in ensuring that learners do not simply transact tasks at the expense of their sustained interlanguage development; and there need to be created a range of software materials to support learners in the context of the widespread exposure to unstructured input and interaction that they may receive. Above all, though, the claims emerging from the second language literature need to be matched by research with computer and web based materials to confirm, or not, that similar effects do in fact operate in this changed context.

REFERENCES

Brown, G., Anderson, A., Shilcock, R., & Yule, G. (1984). *Teaching talk: Strategies for production and assessment.* Cambridge: Cambridge University Press.

Brown, R. (1973). *A first language.* Harvard: Harvard University Press.

Bygate, M. (1996). Effects of task repetition: Appraising the developing language of learners. In J. Willis and D. Willis (Eds.), *Challenge and change in language teaching* (pp. 136–146). Oxford: Heinemann.

Bygate, M., Skehan, P., & Swain, M. (Eds.). (2001). *Researching pedagogic tasks: Second language learning, teaching, and testing.* London: Longman.

Chapelle, C. (2001). *Computer applications in second language acquisition.* Cambridge: Cambridge University Press.

Crookes, G. (1989). Planning and interlanguage variation. *Studies in Second Language Acquisition, 11*, 367–383.

DeKeyser, R. (2000). The robustness of critical period effects in second language acquisition. *Studies in Second Language Acquisition, 22*, 499–533.

Doughty, C. (1991). Second language instruction does make a difference: Evidence from an empirical study on SL relativization. *Studies in Second Language Acquisition, 13*, 431–469.

Doughty, C. (2001). Psychological underpinnings of a focus on form. In P. Robinson (Ed.), pp. 206–257.

Doughty, C., & Williams, J. (Eds.). (1998a). *Focus on form in classroom second language acquisition.* Cambridge: Cambridge University Press.

Doughty, C., & Williams, J. (1998b). Pedagogic choices in focus on form. In C. Doughty & J. Williams (Eds.).

Dulay, H., & Burt, M. (1974). Natural sequences in child second language acquisition. *Language Learning, 24*, 37–53.

Ellis, R. (2003). *Oral communication tasks: Research and pedagogy.* Oxford: Oxford University Press.

Foster, P., & Skehan, P. (1996). The influence of planning on performance in task-based learning. *Studies in Second Language Acquisition, 18*(3), 299–324.

Foster, P., & Skehan, P. (1999). The effect of source of planning and focus of planning on task-based performance. *Language Teaching Research, 3*(3), 185–214.

Harley, B., & Swain, M. (1984). The interlanguage of immersion students and its implications for second language teaching. In A. Davies, C. Criper, & A. Howatt (Eds.), *Interlanguage* (pp. 291–311). Edinburgh: Edinburgh University Press.

Jenkins, J. (2001). *The phonology of english as an international language.* Oxford: Oxford University Press.

Johnson, J.S., & Newport, E. (1991). Critical period effects on universal properties of language: The status of subjacency in the acquisition of a second language. *Cognition, 39*, 215–258.

Krashen, S. (1985). *The input hypothesis.* London: Longman.

Long, M. (1983). Native speaker/non-native speaker conversation and the negotiation of comprehensible input. *Applied Linguistics, 4*(2), 126–141.

Long, M., & Crookes, G. (1991). Three approaches to task-based syllabus design. *TESOL Quarterly, 26*(1), 27–55.

Long, M., & Robinson, P. (1998). Focus on form: Theory, research, and practice. In C. Doughty & J. Williams (Eds.), *Focus on form in classroom SLA.* Cambridge: CUP.

Mehnert, U. (1998). The effects of different lengths of time for planning on second language performance. *Studies in Second Language Acquisition, 20*, 83–108.

O'Malley, J.M., & Chamot, A.U. (1990). *Learning strategies and second language acquisition.* Cambridge: Cambridge University Press.

Ortega, L. (1999). Planning and focus on form in L2 oral performance. *Studies in Second Language Acquisition, 21*, 109–148.

Pinker, S. (1994). *The language instinct.* London: Penguin.

Robinson, P. (Ed.). (1996). *Task complexity and second language syllabus design: Data based studies and speculations.* Special Issue of University of Queensland Working Papers in Language and Linguistics.

Robinson, P. (Ed.). (2001). *Cognition and second language instruction.* New York: Cambridge University Press.

Samuda, V. (2001). Guiding relationships between form and meaning during task performance: The role of the teacher. In Bygate, Skehan, & Swain (Eds.), pp. 119–140.

Schmidt, R. (1990). The role of consciousness in second language learning. *Applied Linguistics, 11*, 17–46.

Schmidt, R. (2001). Attention. In P. Robinson (Ed.), pp. 3–32.

Skehan, P. (1996). A framework for the implementation of task based instruction. *Applied Linguistics, 17*(1), 38–62.

Skehan, P. (1998). *A cognitive approach to language learning.* Oxford: Oxford University Press.

Skehan, P., & Foster, P. (1997). The influence of planning and post-task activities on accuracy and complexity in task based learning. *Language Teaching Research, 1*(3), 183–205.

Skehan, P., & Foster, P. (1999). The influence of task structure and processing conditions on narrative retellings. *Language Learning, 49*(1), 93–120.

Skehan, P., & Foster, P. (2001). Cognition and tasks. In P. Robinson (Ed.).

Skehan, P., & Foster, P. (ms). The effects of post-task activities on the accuracy of language during task performance. King's College, London.

Swain, M. (1995). Three functions of output in second language learning. In G. Cook & Seidlehofer (Eds.), *Principle and practice in applied linguistics* (pp. 245–256). Oxford: Oxford University Press.

Wigglesworth, J. (1997). An investigation of planning time and proficiency level on oral test discourse. *Language Testing, 14*(1), 85–106.

Wilkins, D. (1976). *Notional Syllabuses.* Oxford: Oxford University Press.

Willis, J. (1996). *A framework for task-based learning.* London: Longman.

Yu, H.-W. (2001). *An investigation into the effectiveness of computer support in academic writing.* Unpublished Ph.D. dissertation, King's College, London.

Yuan, F., & Ellis, R. (2003). The effects of pre-task planning and on-line planning on fluency, complexity and accuracy in L2 monologic oral production. *Applied Linguistics, 24*(1), 1–27.