

# A Research Proposal to Address the Learning Strategies Used by Second Language Students in Accessing Online Resources

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## Abstract

*Elsewhere, I discuss the emergence of ubiquitous computing [1]. However, notwithstanding Oxford's pioneering realization of the importance of language learning strategies to language learning [2] - which has been widely recognized - little research attention has been paid to the strategies actually used in accessing online resources. A variety of theoretical publications have suggested that significant qualitative differences exist between traditional and online learners and learning [3]. Following my earlier literature review of such research [4], I now identify the potential for empirical research into online language learning strategies that are used by students to complement traditional L2 learning. I present here a research proposal that subjects the theoretical schema previously discussed to empirical research of the kind performed in the papers previously reviewed. This includes conducting think-aloud protocols together with interviews and subsequent analysis. The research proposed exploits the computer-based Internet environment. I address a variety of specific research questions.*

## 1. Introduction

In a recent paper [4], I review non-empirical theoretical explorations that maintain online Internet-based language learning is qualitatively different from traditional learning, and thus calls for different language learning strategies. I there propose that significant implications for LLS research may be deduced by subjecting the schema of Prensky [5], [6], [7], and of Shetzer and Warschauer [8], [9] (shown here in Table 1, and in Table 2 of my earlier paper), to experimental research similar to that conducted by Feng and Mokhtari [10], Upton [11], Chun [12], and

Gallo-Crail and Zerwekh [13] in the four papers I have previously reviewed. Think-aloud protocols together with retrospective interviews are to be conducted, and analyzed, in combination with other modes of data collection for triangulation. The computer-based Internet environment used by students to access supplemental L2 resources is exploited to present material, and to readily track, capture and analyze data. Although attention is given to patterns of L1:L2 usage, this research proposal does not directly address the variation of relative L1:L2 usage with L2 aptitude.

### 1.1. Research hypotheses/questions

Within those experimental parameters, my earlier paper then proposed some general research questions:

- Are connected/collaborative learning strategies and cognitive styles evident in L2 student online use of resources?
- In light of the Active/Passive and Interactive-Autonomous/Curricula-based learning dichotomies advanced by others, do LLS used in online accessing of resources show more active participation and autonomous interaction than traditional LLS?
- In light of the dichotomies of Parallel processing/Linear processing, Random access/Linear thinking, and Hypertext/Linear text focus approaches also advanced, are new metacognitive LLS being evolved that favor nonlinear cognitive behaviour? If so, are the relationships between the L1 and L2 becoming more complex, allowing more effective L2 learning, but raising the danger of cognitive overload?
- The authors I previously reviewed speculate on the transfer of L1 to L2 learning strategies. What relationships obtain between traditional and online Internet-based learning LLS?

The present paper extends that earlier review by presenting a research proposal that is intended to accommodate the theoretical issues that are addressed, within a realistic framework of research that I can feasibly conduct. Accordingly, the general research questions above are applied to classroom research related to the immediate pedagogical environment. Specifically, I intend to research Korean college freshman students that I teach to determine:

- Are students employing frequently used SMS, email, and the Internet as L2 learning resources, and if so in which language?
- Do they of their own volition discover and employ new L2 learning Internet resources?
- Are they using new nonlinear metacognitive LLS in exploiting online resources?
- Are they showing transference between old and new LLS? Is there simple transference from old to new, or retro-transference, where new learning strategies revitalize the old?

**Table 1: Prensky’s comparison of learning strategies and cognitive styles**

<b>Digital Immigrant</b>	<b>Digital Native</b>
<i>Conventional speed</i>	<i>Twitch speed</i>
<i>Linear processing</i>	<i>Parallel processing</i>
<i>Linear thinking</i>	<i>Random access</i>
<i>Text first</i>	<i>Graphics first</i>
<i>Standalone</i>	<i>Connected</i>
<i>Passive</i>	<i>Active</i>
<i>Work</i>	<i>Play</i>
<i>Patience</i>	<i>Payoff</i>
<i>Reality</i>	<i>Fantasy</i>
<i>Technology as foe</i>	<i>Technology as friend</i>

## 1.2. Significance of the proposed study

This paper therefore presents a proposal to study the use of online resources for SLA that will focus on the LLS used in online learning. It seeks empirical evidence that some LLS qualitatively differ from those used in traditional second language learning, and that they accord with recent theoretical explorations. If this proves so, it will help validate the recent theoretical hypotheses, and will likely have significant implications for online SLA pedagogy.

## 2. Design and methodology

The President of Hyejeon College, Dr Lee, Jae Ho will first be fully informed of the intended research, and his full permission and kind cooperation obtained.

## 2.1. Subjects and site selection

Subjects are drawn from a pool of Korean freshman college students at the rural college of Hyejeon, near the small Korean city of HongSeong in Chungnam province. I teach EFL to these students, who can therefore be conveniently accessed. Local students either attend Hyejeon College because of its convenience, or like many students from farther afield, are attracted to the College by a well-deserved reputation in certain majors, notably Food Preparation, Hotel and Tourism Management, Fashion Design, and Dental Technology. Many students commute daily for two hours each way from Incheon and Seoul. Students are required to study Freshman English, but neither their motivation nor level of English ability are high.

All classes have mixed majors, and classes vary by semester. The Fall semester is chosen, when the presence of a visiting native English teacher means I have fewer students to teach, namely seven classes of 30 students conversational English for a 100-minute class each per week. Computers are not available in class, but I require students to use computers outside class to prepare and submit all assignments, and to undertake web-based examinations in computer labs.

## 2.2. Researchers’ roles

Simultaneously teaching students and conducting the research may be considered to compromise my research role. However, by dint of close association with the subjects, I can make a qualitative evaluation of their individual and collective ability in a manner in which an external researcher might find more difficult. I continuously observe classrooms, consciously or not, and evaluate student attitudes towards computer applications. Because of the students’ relatively low level of English, I propose to conduct the research with the assistance of a Korean professor of moderate English language ability, who has previously expressed interest in joint research, and who will where necessary translate. Both researchers will train, observe and interview students, and analyze think-aloud reports for evidence of the LLS students use.

## 2.3. Instrumentation

A survey in English of the student pool, published in this conference [14], provides a preliminary picture of the use of cell-phones, SMS, electronic dictionaries, email, computers and the Internet, together with their use for second language acquisition. The online web-hosted survey is set as a required course assignment to

encourage students to use computers and the Internet, and to do so in English, and generates digital data in downloadable spreadsheets. Students are reminded that grading is solely on their completing the online survey, and not on their particular responses. Following selection of subject and control groups, students of both groups are set a task, which requires research on their part and the preparation and electronic submission of a text. The subject group uses online resources, namely English-language websites; while the control group uses hard copy resource material, namely English-language magazines. Students within a group may collaborate on tasks of their own volition, or SMS or email (subject group only) their friends, but are not specifically instructed or encouraged to do so. Collaborative and individual LLS used by students in performing the task are ascertained through observation, think-alouds, interviews and subsequent analysis.

## **2.4. Sampling strategies**

A major factor of this research is determining control groups. The naturally selected freshman classes that the researcher is assigned are not equivalent to one another. Membership of these classes is not randomly assigned, but for timetable reasons consists of students from different majors. These typically vary in average EFL ability, with certain majors having superior English language skills and motivation. Male:Female proportions vary by major; female Korean tertiary students in the researcher's experience are more motivated and have superior EFL skills, and this is noticeable in this population. If control groups are set up within the same class as subject groups, and the research conducted in class, considerable interference may be expected. Those without Internet access may resent the lack thereof, while those with Internet access may resent being expected to use that access for SLA purposes, rather than for recreation or social contact.

Therefore from student progress in the first half of the semester, a smaller pool will be chosen of the better students that have adequate L2 English ability and motivation. Students are not randomly selected from each class because the general level of English is rather low, and in some cases negligible. (A pilot task this semester has shown that a number of the students taught are unsuitable for this research, as their low level of English means they would be unable to satisfactorily complete the set task.) Selected students are then invited to participate in a set assignment that counts as their final examination. Students are fully

advised of the expected procedure, that their participation is entirely voluntary, that they will be audio-taped, and in the case of the subject group, that their computer usage will be tracked. To encourage students to participate, they gain a 50% grade for their examination for taking part and completing the set task, associated preliminary training and subsequent interviewing. The remaining 50% is allocated according to their performance on the task, which is assessed as if it were a normal classroom assignment.

Four female and four male students are then randomly selected from six class pools and invited to participate, but are only included in either group if they voluntarily provide informed consent. Those that agree are recruited to form small groups of subject students and control students. The limited number of computers available in the college library together with pragmatic limitations of simultaneously managing and observing students partly determines the size of each group (4). To avoid bias from the constituency of the different classes, each group consists of students from four different classes. To avoid sexual bias, each group consists of two boys and two girls. There are therefore six pairs of subject and control groups of four students drawn from six classes, representing the best 20% of the students taught.

## **2.5. Procedures**

Both qualitative and quantitative research is conducted. Deductive research consists in determining whether there is empirical evidence to support or refute the hypothesis that internet-based language learning is qualitatively different from traditional learning, and different LLS are called for. The survey seeks to determine whether students are actually using SMS, email and the Internet as L2 learning resources, how often, and in which language. Evidence of their use of differing types of LLS is sought in the assignments, think-aloud, trackings and interviews.

However, complementary inductive research is also evident. The assignments, think-aloud, trackings and interviews are used to elicit instances of LLS that may be unique to online learning, and may suggest LLS schema that are not present in traditional SLA.

Selected students are first trained to perform think-aloud protocols, together with familiarization with wearing dictaphones, and with being interviewed through sample interviews. To enable clear understanding, both researchers provide bilingual instructions and training, in English and in Korean. Over a period of six weeks of the second half of the Spring semester, paired subject and control groups are

given different tasks to perform which count as their examination, and instructed to perform think-alouds while conducting their respective assignment/examination. The resulting protocols are tape-recorded for accurate transcription and data analysis.

Each week, a subject and a control group are separately examined after-hours in the College library, with other students and staff being excluded. The college library, which is familiar to students, contains both internet-enabled computers and English-language magazines. The order in which the two groups are examined each week is randomly selected. Both groups are examined from 8.15pm to 8.45pm, the first group on Tuesday and the second group on Thursday.

Students have access to individual computers, and after being reminded of the think-aloud protocols, are required to perform an assigned task, on which they can collaborate if they so choose, but which they submit individually. They have ample time to complete the assignment. Students use portable hands-free dictaphones that record their verbal commentaries on their assignment as they perform it, as well as conversations with other students (of their group) and with the researcher (e.g. asking for clarification of instructions). An automatic buzzer sounding every two minutes reminds them to verbalize their thoughts while researching and writing. We observe and record student movements, details of hard-copy resources they utilize (L2 or L1/L2 dictionaries, encyclopedias, Dewey filing system, etc.) and collaborative interactions with other students of their group, with outside students (via SMS/email) and with us.

Both groups are asked to research and write a 100-word essay in English using a suitable English-language resource, which they need to locate. (A pilot survey this semester, which set a similar email assignment, has shown a 100-word limit is challenge enough for students of this low level of English ability - refer Appendix 1.) Students are given a topic that differs from group to group. This avoids prior learning of the topic from students of earlier examinations. Topics are allocated randomly within each set of groups, so that *just one subject and just one control group address each topic*. Individual students of both groups submit their essay as an email in identical format. Tasks are similar in nature to Appendix 1, but adapted for non-Internet resources for the control groups. All topics are generally familiar to students, to control for the effects of prior learning, and include food, sports, movies, music, fashion, and animals; e.g. students are instructed to locate an English language resource relevant to their major, describe it, and relate its content to their major (refer Appendix 1).

The computers are Internet-enabled for the subject group, who are asked to locate an English language website relevant to their topic. Tracker software records details of the websites they visit, search engines they employ, online resources they utilize (online dictionaries, translation engines, etc.), and the language used (L1 or target L2) throughout. Emails are forwarded to us both for subsequent analysis.

The Internet connection of the computers is simply unplugged for the control group, who are asked to locate an English language article in a magazine relevant to their topic. The library has an adequate range of English language magazines. Control students submit their essay in an identical email format to that of the subject group, but save their emails as draft messages. On completion, the computers are internet-enabled, and the draft emails forwarded for analysis.

Immediately after examination, and as a necessary condition of gaining a satisfactory mark, individual students from both groups are interviewed for up to five minutes, regarding the LLS they have, or think they have, employed in performing the assignment. A few days later, after the assignments have been analyzed, the audiotapes transcribed, and their recorded observations and the tracking data of the subject group analyzed, the students are, where thought advisable, re-interviewed to clarify the LLS they have used, and to allow them to contribute further insights. Both sets of interviews are bilingual, with the student being encouraged to speak in the language of his or her current thoughts, and are recorded for subsequent analysis.

## **2.6. Data collection, analysis, presentation and storage**

Reliability and validity are strengthened by triangulation using various data collection strategies.

**2.6.1. Survey analysis.** The preliminary survey gives general information about student use of online resources including cell phone and stand-alone electronic dictionaries, SMS/email collaboration, and use of websites such as online dictionaries and translation engines, together with an indication of the relative frequency of use of the L1 and the target L2. Totals are given for the multiple-choice answers of the different questions by class and for the students *in toto*; totals are also expressed as percentages. The reliability of the results is determined, and the limitation of the survey instrument is discussed. (For example, some students in the pilot survey indicated that they do not have a cell phone, but that they use

one in class. Such occasional contradictory results may result from an inadequate L2 understanding on their part; alternatively, it might just be that the cell phone they use belongs to another student.)

**2.6.2. Assignment, think-aloud and interview analysis.** The assignments, Internet trackings, taped think-aloud, recorded observations, taped interviews and their various transcriptions are all analyzed to ascertain the collaborative and individual LLS used by students from both subject and control groups. These are compared for evidence of commonality and difference between the two sets of groups, with particular attention being paid to the theoretical differentiations discussed above. (Having this comparison made between six subject and six control groups considerably strengthens reliability and validity. The pairs of subject and control groups that are given equivalent topics are directly compared; but the pairs of subject and control group researched in the same week (with different topics) are also compared, as are the other permutations of subject and control group, as the groups are very similar, and the topics are also similar, while the procedure is identical. Thirty-six comparisons are therefore made between the six individual subject and six individual control groups. If the research proves too onerous, the number of subject and control groups will be lessened.) Consideration is paid to whether online SLA shows evidence of qualitative different LLS, whether common LLS are used with significantly different frequency, and whether there are differences in the relative use of the L1 versus the target L2 in accessing and exploiting online versus hard copy resources.

**2.6.3. Presentation.** The research will be written up as a joint paper, for submission for publication to refereed journals, and for presentation to conferences. Depending on the results, the material is also likely to result in the design of teaching materials and procedures that will be integrated into the online component of the researcher's classes. The various commonalities and differences between the LLS of subject and control groups are to be tabulated, their significance determined, and patterns of strategy use discussed in relation to observations and comprehensively illustrated with excerpts from assignments, think-aloud, and interviews.

**2.6.4. Data storage:** All assignments, observations, digital Internet trackings, and audio-recordings of the think-aloud and subsequent interviews together with transcriptions and analyses of the material are to be

stored for at least seven years in electronic and hard copy format in a fireproof cabinet in the College library, with all digital files also stored online.

## 2.7. Limitations of the design

The research addresses relatively low-level L2-ability students. They may prove incapable of performing satisfactory think-aloud protocols, and in any event such low-level research cannot be generalized to higher-level students. Unlike the papers considered in the earlier literature review, the variation of L1:L2 usage with L2 ability is not directly addressed. The language of the pilot survey that has already been conducted needs simplification to minimize misunderstanding, and to avoid double-barreled questions. The research would gain in reliability and validity by being repeated over several semesters and/or tertiary institutions and/or L1's and/or L2's. However, allowance needs to be made for the likely rapid uptake of online LLS by students, who are adept at absorbing new technology, which suggests that timing is critical. The observer effect is present: merely having the researcher raise the possibility of using online resources to assist L2 acquisition is likely to have some effect on student attitudes towards this technology and perhaps on their online LLS. To gain adequate experience in analyzing traditional and online LLS, pilot examinations will first be conducted.

## 3. Conclusion

This research proposal develops the ideas discussed in my earlier companion literature review. It proposes subjecting a significant body of theoretical research to the kinds of empirical research conducted in the papers that have previously been reviewed. Little research has been conducted into the role of LLS used in accessing online resources. Experimental research has assumed traditional forms of LLS, which are then projected onto online use. This contrasts with theoretical explorations that identify the qualitative difference between traditional and online learning.

I have identified the potential for empirical research into the LLS students might employ in accessing supplemental online resources in the course of traditional classroom-based L2 learning. Online LLS will likely prove qualitatively different from traditional LLS, and research attention should be paid to these new strategies and to their relationship to those traditionally employed. I plan to conduct this research in the Fall semester of 2007, and present the results shortly thereafter.

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#### 5. Appendix 1: Sample task

##### HYEJEON COLLEGE FRESHMAN ENGLISH FALL 2006

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##### ASSIGNMENT 2

You have two weeks to complete it.

Directions:

- 1 On the Internet find a site IN ENGLISH that is related to your major. Use [www.google.com](http://www.google.com) in English to find a suitable site.
- 2 Write an email of no more than 100 words IN ENGLISH about the site in relation to your major.  
**Please don't copy anyone else's site or you will both get zero marks.**
- 3 TO: **hyejeon@mac.com**
- 4 SUBJECT: STUDENT ID (e.g. 0613726), NAME in English, and CLASS.
- 5 ALSO: sign it with your ID, Name and Class as well (**see sample below**)\*.
- 6 Please do not include ANY Korean text. This course is to encourage you to learn English!
- 7 Print out your email just to be safe, and save a copy, but you need to email it to me at [hyejeon@mac.com](mailto:hyejeon@mac.com)

THIS ASSIGNMENT WILL BE SCORED

You must COMPLETE and PASS this assignment to pass this course.

\*: Note that the instructions originally included a screenshot of a sample email, including address, subject and task.