

# OUT -OF -CLASS COMPUTER - AND NETWORK -ASSISTED AUTONOMOUS ENGLISH LEARNING — A STUDY ON CHINESE NON -ENGLISH MAJOR UNDERGRADUATES ATTITUDE AND BEHAVIOR

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## Abstract

The present study examined the status quo of Chinese non -English major undergraduates out -of -class computer -and network assisted autonomous English learning ( AEL ) and tried to present a clear picture of their autonomous learning situation . 345 non -English major undergraduates were asked to report their computer -and network assisted AEL attitude and behavior via a questionnaire . The findings revealed that non -English major undergraduates generally held very positive attitude but exhibited only moderate frequency of computer -and network assisted AEL behavior outside of class . Their attitude and behavior were significantly and positively correlated , but the correlation was not very high . Suggestions on enhancing students autonomy in college English teaching were subsequently discussed .

## Key words

out -of -class autonomous English learning ( AEL ) ; computer and network ; attitude ; behavior

## 1 . Introduction

In the field of second /foreign language education , learner autonomy , one of the ultimate goals of education , has been greatly promoted ever since the 1980s and a growing literature has been developed on it . One focus of the studies is computer -and network assisted autonomous English learning ( AEL ) . With the development of computer science and the establishment of self -access language learning centers , learners have been exposed to a more facilitative learning environment . It is believed that new technology , in particular computer networks , has the potential to increase learner autonomy when used appropriately . Large amounts of experiments and studies have been carried out to integrate the use of computer and network into the language learning curriculum .

However , most of the studies on computer - and network assisted AEL merely focused on the developing of in -class learner autonomy . As a matter of fact , a large proportion of students language learning goes on outside of the classroom and how students regulate this aspect of learning is crucial to their success as language learners ( Horwitz 1987 ) . In addition , in the context of China , due to the nature of traditional classroom instruction and large class size , regular college English classes still follow the prevailing lecture based teaching style where students do not enjoy much autonomy . The learning in self -access centers is also required , controlled or monitored by the teacher , indicating students low autonomy or only “ reactive autonomy ” ( Littlewood 1999 :76 ) . Contrastively , students out -of -class independent

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learning takes place in a situation where they are totally responsible for all of the learning related decisions as well as the implementation of those decisions ( Dickinson 1993 ). Thus ,the present study aimed to probe into non -English major undergraduates out of class computer -and network assisted AEL , particularly their attitude towards it and actual AEL behavior utilizing computer and network .

## 2 . Literature review

Holec's definition of learner autonomy , "the capability of taking charge of one's own learning " (1981 :4 ) ,provided the theoretical framework for the future research in the field . Although later on Little (1991 ) ,Dickinson (1993 ) ,Benson (1997 ) and Littlewood (1996 ) put forward definitions in their own terms ,the core is still that the learner takes charge of or is responsible for his /her own learning ,a notion based on such theoretical foundations as humanism ( Rogers 1969 ,cited in Williams & Burden 2000 :35 ) , constructivism ( Benson 1997 :21 ) , and positivism ( Benson 1997 :33 ). With the establishment of the concept ,how to increase or foster learner autonomy became the central concern . Under such a concern ,the relationships between learner autonomy and some related factors (e.g. the teacher's role ,beliefs and attitudes ,motivation ,learning environment ,culture ,language proficiency , etc .) have been investigated either through theoretical analysis or using empirical studies .

Attitude towards autonomous learning ,one of the psychological characteristics that predispose learners to undertake responsibility for their own learning ( Long 1994 ;Little 1999 ) ,has been studied to analyze from the affective perspective how learners develop their autonomy . Cotterall (1995 ) suggested a six dimensional construct underlying students attitude towards AEL by means of a questionnaire study . Broady (1996 ) tentatively concluded that different types of individuals might have distinct sets of attitude towards AEL . Gan (2004 ) found that learners attitude to self directed learning might exert an effect on language learning outcomes through the mediation of strategies . Nonetheless ,no empirical studies have been done to verify the relationships between attitude and AEL behavior ,letting alone studies in this aspect with Mainland Chinese English learners as the subjects .

To help learners effectively engage in autonomous learning ,learner training has become a prevailing strategy applied in language programs (e.g. Yang 1998 ;Victori & Lockhart 1995 ;Zhang 2004 ). In the meantime ,with the rapid development of computer science and increasing popularization of the Internet , the integration of the use of new technology into language learning curriculums has been explored and studies have reported positive effects both abroad (e.g. Murray & Kouritzin 1997 ;Murray 1999 ;Yumuk 2002 ;Luke 2006 ) and in China (e.g. Liang et al .2005 ,Chen et al .2005 ;Huang 2005 ;Jin et al .2005 ; Yu 2006 ). However ,most of the studies merely focused on how a computer - and network assisted language learning program itself could effectively upgrade students autonomy and language learning outcome . Learners ,who are and should be the main role in learner autonomy studies ,have been largely ignored and few investigations have concentrated on studying such learner variables as students attitude towards AEL and the use of computer and network in AEL ,students actual behavior of AEL or computer -and network assisted AEL ,students AEL competence ,students general language learning strategy preferences in carrying out AEL ,and students motivation in AEL ,etc . Moreover ,most previous studies confined to the limited time and scope of classroom autonomy promotion ,with students out of class AEL either with or without the help of high technology receiving little attention .

Ever since 2004 ,the extensive use of advanced information technology in English teaching and learning has been encouraged and explicitly stated in the College English Curriculum Requirements in China . Under such a circumstance and in light of the limitations in previous studies discussed above ,it is of great importance to have a clear understanding of what attitude non -English major undergraduates hold towards computer -and network assisted AEL and what types of behavior they employ in out of class AEL assisted by computer and network . The research questions of the present study are :

- 1 ) What types of out of class computer - and network assisted AEL attitude and behavior do the sample non -English major undergraduates report to have ?
- 2 ) What relationship ,if any ,exists between the participants out of class computer - and network - assisted AEL attitude and behavior ?

### 3 . Method

#### 3 .1 Participants

345 non-English major undergraduates from Huazhong University of Science and Technology (HUST), a national top university in Wuhan, participated in the study. Among them, 329 completed their questionnaires validly, the response rate resulting in 91.4%. Questionnaires that chose the middle point C all through for the sake of finishing the task of doing the questionnaire were excluded as invalid since they would not be able to reflect the subjects' real thoughts and actions intended to be examined in the study. The sample consisted of 224 males (68.1%) and 105 females (31.9%) in their third semester of formal English study at university. Although they were not randomly selected due to administrative problems, the researchers tried to include students scattered among as many majors as possible, such as Computer Science, Telecommunication and Electronics, Civil Engineering, Architecture, Mathematics, Mechanics, Chinese Language and Literature, Economics, etc.

#### 3 .2 Instruments

Since there was no ready-to-use instrument for the aim of the present study, a questionnaire was designed on the basis of theoretical input suggested in the literature (Cotterall 1995; Warschauer 1996b; Li 2005), first-hand information derived from the researcher's teaching experience and observations, and discussions and interviews with teachers as well as students. To ensure accurate, clear and quick understanding of the specific items, the questionnaire was formatted in Chinese, the subjects' mother tongue. It consisted of three parts. Part 1 aimed to acquire the participants' personal information, including gender, ownership of a computer, accessibility to the Internet and Intranet (e.g. HUST Campus Network) and time devoted to AEL outside the classroom each week. Part 2 centered on their attitude towards out of class AEL aided by computer and network and Part 3 their actual computer- and network-assisted AEL behavior types outside the classroom. Except for Part 1, the participants were required to respond to the items in Part 2 along a five-point Likert scale where A = strongly disagree, B = disagree, C = neither agree nor disagree, D = agree, E = strongly agree and to the items in Part 3 also along a five-point Likert scale where A = I never do this, B = I seldom do this, C = I sometimes do this, D = I often do this, and E = I always do this.

The questionnaires were administered to the students in regular class time and they took about 15 minutes to complete. Prior to the administration, students were assured that there were no right or wrong answers and that their responses would not be submitted to their English teachers and therefore would not affect their assessment in the English course. In addition, the researchers especially made it clear that all information about them would be kept strictly confidential and only used for research purposes. Such two measures were taken in order to minimize the possibility for the response bias. After all the questionnaires were completed and collected, the data were keyboarded into the computer and the reliability analysis was first conducted to check the internal consistency. For the Out of class Computer- and Network-assisted AEL Attitude Scale (henceforth the Attitude Scale), the Cronbach's coefficient alpha is 0.809 and for the Out of class Computer- and Network-assisted AEL Behavior Scale (henceforth the Behavior Scale) 0.893. Both are high enough to assure the reliability of the scales.

Because both scales were developed by the researchers for this particular study, factor analysis was employed to measure their construct validity. Through principal component analysis with varimax rotation, 4 factors were extracted for the Attitude Scale, accounting for 53.405% of the variance. The solution appears in Table 1. Factor 1 with 8 items included can be named as "Advantages of computer and network", Factor 2 with 4 items included "Learning difficulties in computer- and network-assisted AEL", Factor 3 with 3 items included "General perception of AEL" and Factor 4 with also 3 items included "Disadvantages of computer and network". (The specific items of the scale are listed in the Appendix.)

Table 1 . Rotated Component Matrix (a) Of the Out of class Computer - and Network assisted AEL Attitude Scale

	Component			
	1	2	3	4
A6	.772	.115	.127	.031
A11	.708	.048	.067	-.076
A5	.670	.003	.160	.273
A4	.609	.199	.334	.205
A9	.582	.261	.112	-.134
A13r	.552	.036	-.050	.417
A10	.539	.108	.215	.151
A15	.441	-.210	-.210	-.023
A18r	.137	.821	-.012	.184
A19r	.115	.805	-.001	.097
A17r	6.94E -005	.731	-.085	.333
A20r	.117	.369	.108	.345
A1	.120	-.088	.830	.027
A2	.130	-.111	.807	.060
A3	.227	.417	.570	-.104
A14r	.128	.130	-.057	.766
A12r	.045	.147	.144	.641
A7r	-.039	.375	-.092	.517

For the Behavior Scale ,again 4 factors were extracted ,which accounted for 56.564 % of the variance . The solution appears in Table 2 . Factor 1 consisting of 9 items can be named as “ AEL via the Internet ” ,Factor 2 consisting of 5 items “ Use of the communicative function of network ” ,Factor 3 consisting of 3 items “ AEL facilitating classroom study ” and Factor 4 with 3 items “ AEL for good grades ” . ( The specific items of the scale are listed in the Appendix . )

Table 2 . Rotated Component Matrix (a) of the Out of class Computer - and Network assisted AEL Behavior Scale

	Component			
	1	2	3	4
B29	.687	.192		.292
B38	.686	.238		.355
B41	.679	.116	.114	
B21	.660		.337	
B28	.615	.159	.408	.161
B30r	.597		.154	
B27	.572	.173		
B37	.560	.454		.294
B26r	.554	-.180	.218	-.133
B34	.110	.759	.141	.153
B33		.694	-.140	.178
B32		.689	.268	.243
B36	.293	.680	.214	.112
B35	.172	.662	.190	-.341
B22	.383		.703	
B23	.307	.176	.649	.419
B40		.445	.547	.126
B24		.109	.164	.806
B25	.348	.285	.349	.478
B39	.429	.329		.465

### 3.3 Analyses

After all the data were rightly coded and processed using the SPSS 13.0, the means and standard deviations of all the factors in both scales were calculated to identify the overall characteristics concerning the participants reported out of class computer -and network assisted AEL attitude and behavior. Then, correlations between the two variables and among the specific factors were computed to examine their relationships.

## 4. Results

Among the 329 participants, 69.0% own a computer and 92.4% have very easy access to the Internet and Intranet. About half of them reported to spend less than 3 hours a week on AEL outside the class while 33.7% devote between 4 and 7 hours a week and 14.3% put aside more than one hour a day. So, by and large, the participants averagely allocate around 4 hours a week for their out of class AEL.

### 4.1 Out of class computer -and network assisted AEL attitude

Table 3 gives an overall picture of students' attitude towards out of class computer -and network -assisted AEL. Along the five point Likert scale, averages of 3.5 or higher are generally considered high use or positive attitude, averages of 2.5-3.4 medium use or medium degree of support, and averages of 2.4 or lower low use or low degree of support (Oxford & Burry Stock 1995). As displayed in Table 3, the respondents reported reasonably strong support (3.4210, close to 3.5) for out of class AEL assisted by computer and network. Particularly, in respect of their general perception of AEL (Factor 3), a quite high degree of agreement and complete agreement ( $M = 4.2097$ ) was yielded. For instance, they tended to assume the responsibility of learning English on their own no matter what environment they are in, recognize the importance of doing so, and build confidence in their ability to carry out effective AEL. Likewise, they identified strongly with the advantages of computer and network (Factor 1) in out of class AEL, holding that authentic English materials intrigue their interest in learning English, that videos, pictures, games, and flashes contained in computer and network attract them to English learning, and that no anxiety would be aroused when studying before a computer and in the network compared with classroom learning.

In contrast with the favorable general perception of AEL and the positive attitude towards the advantages of computer and network, the respondents exhibited relatively less positive attitude towards overcoming the learning difficulties in computer -and network assisted AEL as well as the disadvantages of computer and network. This may indicate that when students' effort must be involved in suiting the use of computer and network to their needs and in overcoming possible learning difficulties and disadvantages, their worries, inabilities and reluctance would all come out as hindrance to their psychological preparation and readiness for the application of the new technology. In addition, it was found that for them the disadvantages regarding external facilities like breakdowns of computer, huge quantities of learning materials and time-consuming process of searching work were not so irritating as their concern for such learning difficulties in computer -and network assisted AEL as the mixture of both good and bad learning materials, harsh difference between textbook English learned in class and authentic English encountered on the Internet, lack of systematic structure for English study, and large quantities of distracting materials.

Table 3. Attitude Towards Out of class Computer -and Network assisted AEL

Factors	N	Minimum	Maximum	Mean	Std. Deviation
ATotal	329	2.35	5.00	3.4210	.40828
AFactor1	329	2.13	5.00	3.6957	.53225
AFactor2	329	1.25	5.00	2.6413	.67242
AFactor3	329	1.33	5.00	4.2097	.62218
AFactor4	329	1.00	5.00	3.2128	.69550

### 4.2 Out of class computer -and network assisted AEL behavior

In regard to the Behavior Scale, Table 4 shows that the mean for the total AEL behavior is merely a

little higher than the score designated for medium use ( $M = 2.5302$ ) and is far lower than the score obtained in the Attitude Scale, indicating a trend of "positive attitude but moderate actions and behaviors" among the students. To be more specific, among the four behavioral factors, only AEL via the Internet (Factor 1), achieved higher in the range of medium use ( $M = 2.9645$ ), which suggests in turn that the Internet does play a part in the students out of class AEL. On the other hand, the students use of the communicative function of network (Factor 2) received the lowest score ( $M = 1.9781$ ), implying that this power of network has been largely neglected in their AEL outside the classroom. For instance, consulting the English teacher via e-mail either in English or Chinese, exchanging e-mails in English with e-pals on the Internet for communication and writing practice, chatting on the Internet and other network with either native English speakers or other learners of English, all these functions are seldom made use of by the students to facilitate their English learning for the improving of productive skills.

Relatively speaking, the respondents have shown more behaviors in AEL facilitating classroom study (Factor 3) and AEL for good grades (Factor 4). Much new or unknown information was reported to be collected and downloaded via computer and network to complete assignments. Understanding of class topics was reported to be enriched with the help of computer and network for fruitful and active classroom study. After class homework was reported to be submitted via e-mail and CD-ROMs provided in compliance with College English textbooks were reported to be accessed for preview, review or self-study. Authentic as well as simulated test papers of various English tests on the Internet were reported to be utilized in daily practice for good grades. However, although the respondents AEL facilitating classroom study and for good grades were reported to be of relatively higher use, they still fall within the category of low use, the mean score being only 2.4 and 2.2 respectively.

Table 4. Behavior of Out of class Computer- and Network assisted AEL

Factors	N	Minimum	Maximum	Mean	Std. Deviation
BTotol	329	1.00	4.40	2.5302	.58780
BFactor1	329	1.00	5.00	2.9645	.70293
BFactor2	329	1.00	5.00	1.9781	.73948
BFactor3	329	1.00	5.00	2.4326	.77582
BFactor4	329	1.00	4.67	2.2452	.76154

#### 4.3 Relationship between out of class computer- and network assisted AEL attitude and behavior

In order to examine the relationship between out of class computer- and network assisted AEL attitude and behavior, Pearson's product-moment correlation analysis was conducted. As displayed in Table 5, statistically significant relationship was found between the two variables. The positive correlation indicates that the students, who held stronger beliefs about AEL and displayed stronger interest in making use of high technology in AEL, were more likely to report higher frequency of AEL behaviors using computer and network outside the classroom. It is consistent with the findings yielded in previous research studies like Gan (2004). However, the correlation is not very high, suggesting that positive attitude to AEL and the use of computer and network is not sufficient for the actual application of them in day to day AEL practice out of class.

Table 5. Correlations Between the Attitude Total and Behavior Total

		ATotal	BTotol
ATotal	Pearson Correlation	1	.420( ** )
	Sig. (2 tailed)		.000
BTotol	Pearson Correlation	.420( ** )	1
	Sig. (2 tailed)	.000	

\*\* Correlation is significant at the 0.01 level (2 tailed).

Table 6 shows in more detail the relationships among specific attitudinal and behavioral factors. The most outstanding finding is that the respondents' attitude towards the advantages of computer and network and their general perception of AEL in the Attitude Scale exert relatively more effect on their actual

computer -and network assisted AEL , which suggests that the more mentally autonomous and the more positive and favorable attitude they hold towards the advantages of using computer and network for AEL , the more they will engage in actual computer -and network assisted AEL out of class . Another interesting finding is that the respondents AEL via the Internet and their AEL facilitating classroom study in the Behavior Scale are more affected by their attitude than the other two behavioral factors , implying that these two types of AEL behavior are to some extent more determined by their mental identification with the helpfulness of computer and network in English learning .

Table 6 . Correlations Among the factors of the Attitude Scale and Behavior Scale

		ATotal	AFactor1	AFactor2	AFactor3	AFactor4
BTotal	Pearson Correlation	.420( ** )	.348( ** )	.294( ** )	.340( ** )	.113( * )
	Sig .(2 tailed)	.000	.000	.000	.000	.041
BFactor1	Pearson Correlation	.446( ** )	.404( ** )	.281( ** )	.360( ** )	.128( * )
	Sig .(2 tailed)	.000	.000	.000	.000	.020
BFactor2	Pearson Correlation	.260( ** )	.157( ** )	.222( ** )	.153( ** )	.110( * )
	Sig .(2 tailed)	.000	.004	.000	.006	.046
BFactor3	Pearson Correlation	.339( ** )	.311( ** )	.222( ** )	.300( ** )	.025
	Sig .(2 tailed)	.000	.000	.000	.000	.646
BFactor4	Pearson Correlation	.162( ** )	.103	.147( ** )	.201( ** )	.021
	Sig .(2 tailed)	.003	.062	.007	.000	.707

\*\* Correlation is significant at the 0 .01 level (2 tailed) .

\* Correlation is significant at the 0 .05 level (2 tailed) .

## 5 . Discussions and implications for pedagogy

All in all , a gap was found to exist between the participants responses in the Behavior Scale and Attitude Scale . Though they reported to hold strongly favorable attitude towards out of class computer -and network assisted AEL , their behavior did not go in accordance with their positive thinking . Such a gap may indicate that positive AEL attitude does not always guarantee corresponding AEL behavior among the Chinese non -English major undergraduates . Some internal and external factors , such as the lack of persistence , heavy pressure from other work loads , inconvenient access to or unavailability of the facilities required , distractions from multifarious stuff on the Internet and so on , may affect students decision in whether or not to learn English autonomously with computer and network outside the classroom . However , the students attitude does play an important part in their AEL behavior . The correlational study shows that there is statistically significant relationship between their general attitude and behavior , exemplifying that the more positive attitude the students hold towards out of class computer -and network assisted AEL , the more likely they would take actions and apply their thoughts into real practice . In particular , the degree to which they perceive the helpfulness of computer and network in out of class AEL tremendously stimulates them to make use of such high technology while in the meantime their worries and discomfort about certain learning difficulties and inconveniences of using computer and network in AEL greatly hinder their innovative and active experimentations with computer -and network assisted AEL . So the key problem mainly lies with students attitude towards and perception of difficulties and inconveniences existing in the application of computer and network in out of class AEL . How to transform the disadvantageous elements into facilitating ones will play a key role in promoting effective computer -and network assisted AEL and it is just in this respect that teachers can and should contribute much .

Although the incorporation of computer and network in English teaching and learning has been carried out for several years , potential obstacles and drawbacks in the application have not received its due attention . Such a phenomenon may in part result from the fact that attention has been focused on only the glowing advantages computer and network may bring about ( e. g. Jin et al . 2005 ; Chen et al . 2005 ; Liu & Dai 2005 ) . To improve the situation , the possible learning difficulties and obstacles must be studied together with the students , then guidance and assistance should be offered right on the spot . Take the selection of appropriate English learning materials and resources as an example . Teachers , the more authoritative , proficient and experienced role in the process of teaching and learning , may assemble their

efforts and wisdom to establish an English learning resource center especially for students out of class AEL. Certain experts on both English and computer can be invited and assigned to work as maintainers of this resource center to update it on a monthly or even weekly basis so that students will be provided with the latest and most comprehensive reservoir of English learning materials. In addition, it will not be confined to any autonomous learning center or self access center, rather, it will be more like a virtual community, to which the students can have access at any time and in any place as long as they have a computer and an access to the Internet or Intranet. By means of this, students worry that out of class computer -and network assisted AEL is not systematic, that they lack the ability to choose appropriate materials and that a lot of distractions come from other resources on the net would be a part of history.

As for the contrastive difference between textbook English and authentic English on the network, to solve this problem, more materials of authentic language use should be incorporated into the classroom teaching. The communicative function of network (e.g. the Internet) should be attached greater importance to. Teachers may demonstrate the use of it for real life communication either with the students or with native speakers of English. In the meantime, they can give some explicit instruction on the differences between classroom English and the real English students may be confronted with when surfing the Internet, chatting with a native or non native English speaker online, writing to a friend in English or applying for a position at a university abroad, listening to English media, watching a Western movie with or without Chinese subtitles, and so on. Such explicit guidance from teachers may make the learning of English more communication -and real life use oriented instead of test -or textbook oriented. Therefore, more students will be intrigued and motivated to learn it both in and outside the classroom, turning themselves to more autonomous English learners and developing the language competence for communication.

Aside from proper support provided on the part of teachers, to bridge the gap between attitude and behavior, the students themselves should raise an awareness of the status quo of their own English learning situation. Without realizing that they are trapped in a situation where they are mentally autonomous but behaviorally not so much and that they approve of the use of computer and network but do not often put it into practice, they would not make an attempt to better it. Signing learning contracts with students (Lee 1998) or implementing collaborative assessment (Dickinson 1993) can help urge them to reflect upon their learning process and situation on a regular basis, building up the foundation for effective AEL. In addition, during the reflecting process, teachers can keep encouraging them to take responsibility for their own learning, helping them gradually step forward from being only psychologically autonomous to the state of conducting appropriate AEL consistent with their attitudes.

## 6. Conclusion

The present research studied the current situation of Chinese non -English major undergraduates out -of class computer -and network assisted AEL, particularly their attitude and behavior. It was found that they held very positive attitude but demonstrated only a moderate level of computer -and network assisted AEL behavior outside the classroom. Statistically significant positive relationship was found between attitude and behavior, indicating that attitude, a psychological attribute, did exert some effect on behavior. Students identification with the advantages of using computer and network in out of class AEL had the most effect in their decision of whether or not to engage in computer -and network assisted AEL out of class.

It is generally acknowledged that the future English learning will be more autonomy oriented and technology based both in and outside the classroom. Therefore, a clearer understanding of students AEL on the part of teachers will enable them to better guide students and cater to students varying needs in AEL. In the present study, only quantitative data from a questionnaire survey have been utilized. If qualitative ways such as interviews, students journals on out of class AEL, class observations, and so on can be employed to supplement the quantitative analyses, more objective, detailed and first hand information will be obtained for the improving and reform of pedagogy in college English teaching of China.

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## Appendix

## Out of class computer -and network assisted AEL attitudinal variables

## 1 . Advantages of computer and network (8 items )

The authentic English materials provided by computer and network intrigue students interest in learning English .

The videos ,pictures ,games and flashes contained in computer and network attract students to the learning of English outside of class .

Computer and network provide a new means for students to learn English autonomously outside of class .

The use of computer and network helps students to learn English effectively outside of class .

Autonomous English learning outside of class with computer and network brings a sense of achievement .

( -) To learn English autonomously outside of class ,students just need to memorize vocabulary ,do exercises ,and practice listening without computer and network .

Large quantities of English informational materials provided by computer and network serve as useful extensive reading materials .

Students feel little anxiety when learning English with computer and network compared with classroom learning .

## 2 . Learning difficulties in computer -and network assisted AEL (4 items )

( -) There is no systematic structure when learning English autonomously with computer and network outside of class .

( -) Large amounts of distracting materials on the Internet draw students attention and make them unable to focus on study .

( -) A mixture of both good and bad learning materials makes it hard for students to choose .

( -) The harsh difference between textbook English learned in class and authentic English on the Internet makes students unable to understand real life English and reluctant to learn English with computer and network outside of class .

## 3 . General perception of AEL (3 items )

I should assume the responsibility of learning English on my own under no matter what environment .

Out of class autonomous English learning is of great importance to successful English learning .

I believe that I have the ability to learn English autonomously and effectively outside of class .

## 4 . Disadvantages of computer and network (3 items )

( -) Breakdowns of computer and network bring inconvenience to out of class computer -and network -assisted autonomous English learning .

( -) It is time consuming to sort through English learning materials on the Internet .

( -) There are too many learning materials on the net ,which makes me feel anxious .

## Out of class computer -and network assisted AEL behavior variables

## 1 . AEL via the Internet (9 items )

Outside of class ,I log on to English learning websites to learn English autonomously ,for instance ,I listen to VOA online ,read the news online etc .

Outside of class ,I get online to read the news ,information ,short stories ,etc . for practicing extensive reading .

Outside of class ,I download English learning materials from the Internet for later use .

Outside of class ,consciously or unconsciously I use computer and network for autonomous English learning .

Outside of class ,I make use of search engines to look for English learning materials for out of class study .

( -) Outside of class ,I seldom log onto English websites .

Outside of class ,I watch English movies ,listen to conversations and passages ,practice dialogues ,etc . on the Internet or other network .

I plan the time I use for out of class computer -and network assisted autonomous English learning .

( -) I have no interest in English learning websites .

## 2 . Use of the communicative function of network (5 items )

Outside of class ,I make use of computer and network to exchange e -mails in English with e pals for communication and writing practice .

Outside of class ,when confronted with problems ,I consult the English teacher via e -mail in Chinese .

Outside of class ,when confronted with problems ,I consult the English teacher via e -mail in English .

Outside of class ,I chat on the Internet and other network with either native English speakers or other learners of English .

Outside of class ,when using e -mail for practice and communication ,I attach more importance to the expressing of meaning than to grammar .

## 3 . AEL facilitating classroom study (3 items )

Outside of class ,I complete the English assignments by collecting and downloading related resources with computer and network .

Outside of class ,I get myself prepared for classroom study by reading materials concerned with the theme of a certain unit .

Outside of class ,I submit my homework to the English teacher via e -mail .

## 4 . AEL for good grades (3 items )

Outside of class ,I use CD -ROMs provided in compliance with College English textbooks to learn English autonomously by previewing and reviewing the course .

Outside of class ,I formulate plans to learn English autonomously with computer and network so as to improve grades in the English course .

Outside of class ,I make use of authentic as well as simulated test papers provided online of National College English Test Band 4 / 6 ,TOEFL ,IELTS ,etc . to help pass these examinations .