



## **An Evaluation of Technology-Inspired Changes of Learners in Online English Classroom Changes in Students' Characteristics in an Online Course in China**

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### ABSTRACT :

The present study focuses on the evaluation of technology-inspired changes after learners participated in online English classroom. It consists of the change of English learning mode, the change of self-confidence, productive change, subtractive change and additive change, based on anonymous learner responses to a questionnaire for evaluation submitted by 981 learners. Findings suggest that online English interactive teaching and learning affects the English learning mode of learners most significantly. Meanwhile, there is considerable influence on learners' change of self-confidence, productive change, additive change, and little effect on subtractive change to different degree.

Keywords: Evaluation; Online English, Change; Classroom

### 1. INTRODUCTION

The following study was designed to investigate technology-inspired changes of learners after their participating in an online English classroom. The data came from a pilot research project of Online English Interactive Teaching and Learning Classroom in Yunnan University of Finance and Economics. The project initiated in 2006, funded by the Ministry of Education of China.

The survey was undertaken by a stratified sampling. Subjects are freshman, sophomore, junior, and senior. The evaluation focused on five sorts of changes: the change of English learning mode, the change of self-confidence, productive change, subtractive change and additive change.

Results of the research indicate online English interactive teaching and learning affects the English learning mode of students most significantly. Meanwhile, there is considerable influence on students'

change of self-confidence, productive change, and additive change. little subtractive change happened to learners.

Many researchers (e.g., Berge & Mrozowski, 2001; Rovai et al, 2006; Keer et al, 2006; Young et al, 2006) in Web-based education have focused on the perspective of course design, learner characteristics for online learning success, quality of online courses, student views of effective online teaching, and student evaluation of teaching. The present research is a new endeavor to broaden the range of language study to relevant technology-inspired changes of learners, specifically, non-language learning outcomes (Garden, 1985).

### 2. BACKGROUND

Entering into the Information Age, the online English classroom takes on a role in educating students. By the use of Internet

as a medium of transmitting knowledge and skills, the real limited and cramped teaching building can be enlarged into an unlimited virtual teaching building. Learners who study in a new online instruction setting experience various changes in respect of their learning mode, ways of communication and interaction, perceptions on values, and learning competence etc.

The mode of learning is the cognitive frame of a learner. It develops and changes in the process of the advancement of society, science, and culture. The learning mode plays a positive role in terms of fostering a learner's cognition, which is helpful in getting rid of the original pattern of thinking of a learner, and developing the act of language behavior of a learner. Consequently, the learner may understand, analyze, synthesize and assess things from a new angle. Furthermore, a learner may increase his/her cognition, and self-confidence, accordingly, various technology-inspired changes may happen to the learner.

Lamber (1975) put forward two kinds of different bilingualism, i.e., 'subtractive bilingualism' and 'additive bilingualism.' For a subtractive learner, his/her mother tongue and culture features are replaced by the target language and culture features. As to an additive learner, he/she maintains his/her attribution to his /her mother tongue and culture features in acquiring the target language and culture. In other words, the acquiring of target language and culture doesn't happen at the cost of sacrificing his/her mother tongue and culture. This means the command of mother tongue and the target language, the understanding of mother culture and target culture interact and benefit each other in a positive way. The competence of a learner's cognition, emotion, and behavior increases as a whole. Gao (2002) proposed 'productive bilingualism.' It means a learner's command of the target language and mother tongue promotes each other, a learner's understanding of the target culture and the mother culture bring out the best in each other. Cui (2006) claimed a language is 'a living entity or organism, evolving within a nexus of time, space, and social

relationships.' A language is 'an interactive linguistic phenomenon.' Language learning interacts with e-learning setting. So long as the learning environment changes, dependent variables such as factors of learning mode, self-confidence, productive bilingualism, subtractive bilingualism and additive bilingualism will be in a state of dynamics. Changes may be in the direction of positive or negative. The positive value of these changes may be increased in arithmetic progression. As Gao (2002) stated that  $1+1>2$ , which is an ideal result of changes. Lancashire's theory of cybertextuality (2004) analyzes the mechanics of communication within a context of Norbert Wiener's cybernetics and cognitive psychology. Lancashire maintains (2006) that online reading and writing, besides extending our powers of memory, focus a student's attention on his own developing cognition, language acquisition, and writing skills. Cybernetics, of course, proposes that any communicative act consists of an utterance-message and its feedback-response, but cognition research has more recently shown that part of this feedback-response is not an outsider's reply but the writer's own cognitive modeling of his utterance, created (as it normally is) spontaneously and unselfconsciously. The student as a cybernetic sender first receives and becomes fully aware of his own message, online, through an e-channel affected by noise. A student's mentally unselfconscious utterance and his own spontaneous cognitive modelling of it together constitute a cybertext. In the online English classroom, educators must shape the Internet channel so that both the learner's utterances and his cognitive modelling of these are enhanced (positive changes), and the confusing effects of irrelevant matter (noise) are reduced. Subtractive bilingualism is a kind of noise that hampers a student's communicative powers. The accumulation of the learner's linguistic knowledge and competence is filtered by a dynamic cognitive process when utterance-message and feedback-response are placed online. The five changes of learners in this study are positive effects of a well-honed online cybertextual

environment.

### 3. RESEARCH QUESTIONS

This study is intended to explore the technology-inspired changes of subjects after participating in learning in an online English classroom. The specific questions are as follows:

- 1) To find out whether learners have changed in respect to their English learning mode, self-confidence, productive bilingualism, subtractive bilingualism and additive bilingualism after participating in online English learning.
- 2) To figure out if there is difference in change in regard to their gender, grade, and the age at which a learner first takes up the study of English.
- 3) What impact do factors such as grade, gender, nationality, and home regions have on the results of the survey questionnaire?

### 4. METHOD

#### 4.1 Sampling

This study adopted a stratified sampling. The specialties of subjects cover Computer Science, Statistics and Information, E-business, Accounting, International banking, International Business, Marketing, Finance, Law, and Business Administration.

#### 4.2 Descriptive statistics

For this survey, 1157 questionnaires were collected, of which 981 questionnaires were valid, i.e., had all the items completed as required. The valid response rate was 84.7%. The survey has the following characteristics: 39% males, 61% females, 86% Han nationality, 14% minority nationalities. Beginning age of learning English: age below 8 accounts for 4%, age from 9-12 occupies 36%, age from 13-15 takes up 56%, age above 16 accounts for 4%. Home region: 42% from countryside, 40% small towns and 18% from big cities.

#### 4.3 The design of instrument and measurement

The instrument is a questionnaire grounded on the existing literature of bilingualism, cybertextuality (a theory of communication), and the researcher's insights. A 5-point Likert Scale is used to measure the strength of agreement towards statements ranging from "strongly agree" to "strongly disagree". There are five kinds of questions as follows:

- Questions on the change of learning mode---the change on online English learning mode.

Question 1:

I like to use the teaching content in an online English classroom to study independently.

Question 2:

The online English classroom transmits the digital textbook "New Horizon English" with pictures, texts and sound, which increased my consciousness of learning and my activeness.

Question 3:

When I meet with difficulties in my learning process, I prefer to take advantage of the online English classroom to ask teacher questions, and communicate with teachers online, avoiding the embarrassment of being laughed at by my classmates.

Question 4:

My efficiency of learning increases while I am learning English online autonomously.

Question 5:

Making a comparison between a virtual classroom and a traditional classroom, I am happier to accept traditional classroom instruction.

Question 6:

When I participated in class discussion of a certain task, I can learn more and consolidate what I learned.

Question 7:

In order to keep up with the pace of the Information Age, I hope to learn 50% English teaching content online, and 50% teaching content in traditional classroom.

Question 8:

I like to use online English tests to diagnose my strengths and weaknesses.

Question 9:

I don't like to partake of cooperative group work.

Question 10:

I like to work with three or four people to complete a task or project.

Question 11:

I like the language learning environment provided by an online English classroom.

Question 12:

I hold a welcome attitude towards good new things, and an English online classroom is no exception.

Question 13:

An online English classroom goes beyond the limitation of time and space, I can learn what I want to learn flexibly depending on my interest, schedule and need.

Question 14:

I like individualized learning in online English classroom, thus, I can do self-directed learning.

Question 15:

An online English classroom is of advanced technology and strong interactive function, which is an important means of teaching and learning for the present and the future.

Question 16:

I think the display of excellent work of my classmates in online English classroom is a good way to learn from peers.

➤ Questions on self-confidence change--an individual's positive yet realistic views of one's own capability.

Question 1:

By participating in online-classroom English learning, I found my English level has been improved, giving me a nice feeling.

Question 2:

The online English classroom strengthened my confidence to learn English well.

Question 3:

I cast doubt on my learning competence when I meet with difficulties in online English learning.

Question 4:

Whenever I overcame a learning difficulty in online English classroom, I felt I surfed in the ocean of Internet.

➤ Questions on productive change---the level of mother tongue and target language promotes the understanding of mother culture and the target culture, and benefits each other ideally.

Question 1:

At the same time of improving my English, my computer skills are also improved.

Question 2:

By reading news in online English classroom, I become more concerned about the world.

Question 3:

By participating in Flash English online learning, my interest in English increases.

Question 4:

By learning online English, I realize that English is an international language.

➤ Questions on subtractive change---the mother tongue and the target language, mother culture and target culture fight one another and split.

Question 1:

When I speak Chinese, I speak with English, giving me the feeling of being westernized.

Question 2:

When meeting foreign friends and saying goodbye, I hesitate on whether I should shake hands or embrace.

Question 3:

I feel uncomfortable when I switch between the behaviors of English and Chinese.

Question 4:

After learning English, I sometimes fall into the contradiction of Chinese and western perceptions on values.

➤ Questions on Additive change---two languages, behavior models and concepts co-exist, which are used in different context.

Question 1:

I can adjust between English and Chinese based on situation, just like a car's gear.

Question 2:

I feel easy when I communicate in Chinese. I feel proud when I use English to communicate.

Question 3:

When seeing an English film, I like to

listen to the original lines of English (without translation) just as I like to see domestically produced Chinese film.

Question 4:

Aside from my Chinese name, I also have an English name: both have their own use in different settings.

The data collected from the questionnaire survey was processed by the use of SPSS 11.0 and MATLAB 6.5. It includes descriptive statistical analysis, ONE-WAY ANOVA, and MULTI-WAY ANOVA to test the difference of the technology-inspired changes depending on learners' different personal backgrounds.

## 5. RESULTS AND DISCUSSION

### 5.1 Statistical analysis of the change of English learning mode

Each item is rated by a 5-point Likert Scale; three points is the threshold, representing uncertainty, a rule of distinguishing 'changed' and 'unchanged'.

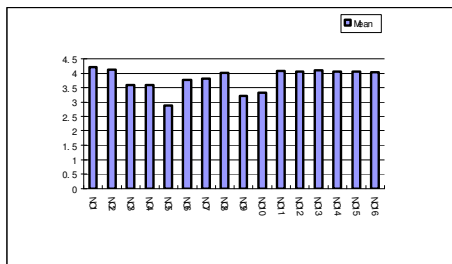


Figure 1: Mean for the change of English learning mode

The statistical descriptions in figure 1 indicate: Question No. 1 is the very question which changes most significantly: "I frequently like to use the teaching content in the online English classroom to study independently (mean=4.2)." Question No.13 also changes significantly: "An online English classroom goes beyond the limitation of time and spaces, I can learn what I want to learn flexibly based on my interest, schedule and need (m=4.16)." By contrast, Question No. 5 changes the least: "making a comparison between a virtual classroom and a traditional classroom,

I am happier to accept the traditional classroom instruction (mean=2.9)." The rest of the questions invite comparable responses. The results indicate that these young university students are prone to accept new things, holding a welcome attitude towards online English classroom.

#### 5.1.1 Statistical analysis of the change of English learning mode by grade

By grade, one-year-students to four-year students respond to the change of English learning mode differently. Looking from the mean value of each question, the mean of the senior varies least. For instance, Question No. 7, "in order to keep up with the pace of the Information Age, I hope to learn 50% English teaching content online, and 50% of teaching content in traditional classroom": The mean for the senior is 3.65, the mean for the junior is 3.75, the mean for the sophomore is 3.8, and the mean for the freshman is 3.9. The results show that students after puberty, who are about to graduate from university, have formed their relatively stable learning frame.

#### 5.1.2 Statistical analysis of the change of English learning mode by gender

In comparison with female and male learners, after participating in online English class, the change of English learning mode invites the same response to question No.11 and Question No.16. However, for the rest of questions, the mean of male students is greater than that of female students. For example, in Question No.3, "when I meet with difficulties in my learning process, I prefer to take advantage of the online English classroom to ask teachers questions online, thus, I avoided the embarrassment for being laughed at by my classmates, the mean for the male is 3.15, and the mean for the female is 2.9. This shows male students are more likely to change their ways of communication with instructors.

#### 5.1.3 Statistical analysis of the change of English learning mode by beginning age

As to the personal background of the beginning age of learning English, for those beginning learning English below eight years old, from nine to twelve years old, from thirteen years old to fifteen years old, their change of the English learning mode is greater than those who began learning above the age of sixteen. Take Question No. 5 for example, "making a comparison between a virtual classroom and a traditional classroom, I am happier to accept traditional classroom instruction." The mean for those who began learning English above sixteen years old is 2.51. The mean for starting learning English from thirteen to fifteen year old is 2.8. The mean for those starting learning English from nine to twelve is 2.9. The mean for those who began learning English below the age of eight years old is 2.75. This indicates the younger the subject began learning English, the more likely his/her change of the English learning mode approaching the threshold. We are not certain whether they are happy to accept traditional classroom teaching or not.

## 5.2. Statistical analysis of the change of self-confidence

The greatest mean regarding the change of self-confidence is from Question No.4, "whenever I overcame a learning difficulty of online English class, I felt I surfed in the ocean of the Internet (mean=3.9)." The next comes to Question No.2, "online English class strengthened my confidence to learn English well (mean=3.75)." Then followed by Question No.1, "by participating in online English class, I found my English proficiency has been improved, that is a nice feeling (mean= 3.2)." This indicates self-confidence is strengthened after taking online English course.

### 5.2.1 Statistical analysis of the change of self-confidence by grade

In the aspect of grade, the mean for students from freshman to sophomore is greater than that of junior and senior. There is one exception: Question No.3, "when I meet with difficulties in online English class, I cast doubt on my learning

competence." The means for the junior and senior students are 2.8 and 2.9 respectively, both below the threshold. This indicates junior and senior students have a relatively stable confidence in their learning competence. As to responses to Question No. 1, No.2, and No. 4, the means for the four grades are above the threshold. Therefore, self-confidence of all four-year students increased.

### 5.2.2 Statistical analysis of the change of self-confidence by gender

Taking gender into consideration, there exist differences between males and females. In the response to Question No. 4, both means for males and females are above the threshold. The mean for males is 3.85, and the mean for females is 3.9. However, Question No. 3 is an exception. The mean of females did not reach the threshold. This indicates the difference of the self-confidence for both males and females is not so big. Their self-confidence nonetheless got strengthened.

### 5.2.3 Statistical analysis on the change of self-confidence by beginning age

Considering the age at which students first take up the study of English, response to Question No.3 for freshman and sophomore, "I cast doubt on my learning competence when I meet with difficulties in online classroom." for students who began learning English below eight years old, and those who began learning English from nine to twelve, they do not feel so confident in their learning competence (mean=3.9).

## 5.3 Statistical analysis of productive change

The greatest mean is for Question No.4, "by learning in online English classroom, I realize English is an international language (mean=4.06)." Followed by Question No.4, at the same time of improving my English, my computer skills are also improved. For Question No.2 and No. 3, their means are 3.83 and 3.87, which are greater than the threshold. This indicates after learning in an online English class, students' computer skills are improved, and their

understanding regarding the function of English was also upgraded.

#### 5.3.1 Statistical analysis of productive change by grade

As far as grade is concerned, the change for freshman and sophomore is greater. Take Question No.4 for example, the means for these two grades are 4.11 and 4.1 respectively. The means for the rest of the three questions are all greater than the threshold. This demonstrates that the productive change for students of all four grades changed significantly.

#### 5.3.2 Statistical analysis of productive change by gender

In respect to gender, the productive change for males is greater than for females. With respect to males' responses from Question No.1 to Question No.4, their means are 3.92, 3.89, 3.91, and 4.11.

#### 5.3.3 Statistical analysis of productive change by beginning age

Considering the age at which students first take up the study of English, the greatest productive change happens among the students who began learning English early, i.e., below eight years old, from nine to twelve, and from thirteen to fifteen years old. Taken as a whole, the means are all above 3.5 for different ages of beginning learning English. Productive change happened to all of them.

### 5.4 Statistical analysis of subtractive change

The greatest subtractive change is in Question No.1, 'when I speak Chinese, I speak with English, giving me the feeling of being westernized.' The mean for Question No.1 is 3.07(.07>threshold 3). The means for Question No.2, No. 3 and No.4 are all below the threshold. Thus very little subtractive change took place only in Question No.1.

#### 5.4.1 Statistical analysis of subtractive change by grade

In respect of grade, the response to Question No.1, only the means for freshman, sophomore and senior go beyond the threshold. Their means are

3.14, 3.06, and 3.08. In the responses to Question No. 4, only the mean for freshman exceeds the threshold.

#### 5.4.2 Statistical analysis of subtractive change by gender

In terms of gender, the subtractive change for males is greater than males. Question No.1 is an exception, "when I speak Chinese, I speak with English, giving me the feeling of being westernized (mean=3.17)." Females' responses to the rest of the three questions are all below or equal to the threshold. This indicates after learning in an online English class, there is almost no subtractive change among female learners.

#### 5.4.3 Statistical analysis of subtractive change by beginning age

Considering the age at which students first take up the study of English, the greatest subtractive change happens to those who began learning English under the age of eight (mean=3.5), in reference to their response to Question No.1. This is followed by responses to Question No.3 and Question No. 4, those who began learning English above the age of sixteen years old (mean=3.01).

### 5.5 Statistical analysis of additive change

The greatest mean for additive change is Question No.3, "when I see an English film. I prefer to listen to the original English lines (without translation), just as I see domestically produced Chinese film (mean=3.85)." Followed by Question No.2 and Question No.4, both of their means are 3.5. The response to Question No.1, the mean is 3.3. Therefore, we may come to the conclusion: additive changes happened to all four-year students after learning online English class.

#### 5.5.1 Statistical analysis of additive change by grade

Taking grade into consideration, additive changes that happened to freshman and sophomore are greater than those to junior and senior. Judging from the response to Question No.3, we may see, the mean for freshman is 3.59, and

the mean for sophomore is 3.58.

5.5.2 Statistical analysis of additive change by gender

In respect to gender, females' responses to Question No.2, No.3, and No.4 are greater than males, except for Question No.1. Their means are 3.5, 3.55, and 3.53 respectively.

5.5.3 Statistical analysis of additive change by beginning age

In terms of the age at which students first take up the study of English, the additive change that happened to those who began learning English earlier is greater than those who began learning English later. Response to question No.3 is most prominent. For those who began learning English below eight years old, the mean is 4.4. For those who began learning English from thirteen to fifteen, the mean is 3.57. This may indicate the younger that the student began learning English, the greater additive change happens.

ANOVA on the difference between personal background and changes of learners

6.1 Results of ANOVA

By analyzing the data, the researcher found that some personal background factors have an impact on changes of learners. Take gender, nationality, home regions, and the beginning age of learning

english as independent variables, these are five factors of changes of learners as dependent variable. ANOVA shows: as to grade and changes of learners, significant grade influences are embodied in the five sorts of changes of learners. In terms of gender and changes of learners, gender affects the five sorts of changes of learners significantly. In regard to nationality and changes of learners, the kinds of changes of learners were also significantly influenced by nationality. Regarding the beginning age of learning English and changes of learners, the beginning age of learning English has significant impact on changes of learners.

The researcher takes into account five factors: grade, gender, nationality, the beginning age of learning English, and home regions. The purpose is to find out whether they have significant influence on the mode of English learning change, self-confidence change, productive change, subtractive change, and additive change.

1) ANOVA of grade factor

In the study, there are four levels of grade, i.e., from the first year to the fourth year. The researcher focused on the grade factor's influence on learners under these four levels. Based on the 5-point Likert Scale, sixteen questions are processed as to the mode of learning; four questions are processed regarding self-confidence change, productive change, subtractive change and additive change respectively. The following are the ANOVA results:

Table 1: Grade Factor's Influence on the Five Sorts of Change

Change Items	F	P
Mode of English learning change	79.23	.00
Self-confidence change	16.96	.00
Productive change	104.17	.00
Subtractive change	72.13	.00
Additive change	38.16	.00

\* P<.05

The ANOVA shows the factor of grade has significant influence on the mode of English learning change, self-confidence

change, productive change, subtractive change, and additive change.



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2) ANOVA of gender factor

In the study, two levels of gender are considered, i.e., male and female. Under these two levels, gender factor influences learners regarding the five changes based

on four questions. Sixteen questions are processed as to the mode of learning; four questions are processed regarding self-confidence change, productive change, subtractive change and additive change respectively.

Table 2: Gender Factor's Influence on the Five Sorts of Change

Change Items	F	P
Mode of English learning change	96.81	.00
Self-confidence change	20.02	.004
Productive change	585.05	.00
Subtractive change	88.91	.00
Additive change.	55.39	.00

\* P<.05

The results show gender factor has significant influence on the mode of English learning change, self-confidence change, productive change, subtractive change, and additive change.

minority nationalities. Under these two levels, the researcher focused on the factor of nationality's influence on learners. Sixteen questions are processed as to the mode of learning; four questions are processed regarding self-confidence change, productive change, subtractive change and additive change respectively.

3) ANOVA for nationality factor

In the study, there are two levels of nationality, i.e., Han nationality and

Table 3: Nationality Factor's Influence on the Five Sorts of Change

Change Items	F	P
Mode of English learning change	1101.84	.00
Self-confidence change	202.58	.00
Productive change	5365.85	.00
Subtractive change	1237.24	.00
Additive change.	619.75	.00

\* P<.05

The results show nationality factor has significant influence on the mode of English learning change, self-confidence change, productive change, subtractive change, and additive change.

recognized: the countryside, small towns, and big cities. The researcher focused on these three levels and tried to figure out the factor's influence on learners. Sixteen questions are processed as to the mode of learning; four questions are processed regarding self-confidence change, productive change, subtractive change and additive change respectively.

4) ANOVA for the factor of home regions

In the study, three home regions are

Table 4: The Factor of Home Regions' Influence on the Five Sorts of Change

Change Items	F	P
Mode of English learning change	227.90	.00
Self-confidence change	45.56	.00
Productive change	1126.94	.00
Subtractive change	251.79	.00
Additive change.	98.64	.00

\* P<.05

The research results indicate the factor of home regions has significant influence on the mode of English learning change, self-confidence change, productive change, subtractive change, and additive change.

5) ANOVA for the beginning age of learning English

In the study, there are four ages, at which students first take up the study of English, i.e., below eight years old, from

nine years old to twelve years old, from thirteen to fifteen years old, and above sixteen years old. The researcher focused on the beginning age of learning under four levels. Sixteen questions are processed as to the mode of learning; four questions are processed regarding self-confidence change, productive change, subtractive change and additive change respectively.

Table 5: The Factor of Beginning Age of Learning English's Influence on the Five Sorts of Change

Change Items	F	P
Mode of English learning change	852.09	.00
Self-confidence change	168.79	.00
Productive change	4380.78	.00
Subtractive change	885.56	.00
Additive change.	462.31	.00

\* P<.05

Table 5: The Factor of Beginning Age of Learning English's Influence on the Five Sorts of Change

Change Items	F	P
Mode of English learning change	852.09	.00
Self-confidence change	168.79	.00
Productive change	4380.78	.00
Subtractive change	885.56	.00
Additive change.	462.31	.00

\* P<.05

Table 5: The Factor of Beginning Age of Learning English's Influence on the Five Sorts of Change

Change Items	F	P
Mode of English learning change	852.09	.00
Self-confidence change	168.79	.00
Productive change	4380.78	.00
Subtractive change	885.56	.00
Additive change.	462.31	.00

\* P&lt;.05

The research results indicate the factor of the beginning age of learning English has significant influence on the mode of English learning change, self-confidence change, productive change, subtractive change, and additive change.

In the study, the researcher did not take the interaction effect into account. There are four levels of grade factor and two levels of gender. The researcher took grade and gender into consideration to find out their influence on learners.

## 6.1 Results of MANOVA

### 6.1.1 MANOVA for the mode of English learning by taking grade and gender into consideration

Table 1: The Factor of Grade and Gender's Influence on the Five Sorts of Change

Change Items	F1	P1	F2	P2
Mode of English learning change	24.08	.00	410.65	.000
Self-confidence change	42.08	4.639e-009	140.49	3.3307e-016
Productive change	8.46	.00070411	749.19	.000
Subtractive change	12.82	5.5747e-005	11.06	8.779e-006
Additive change	83.98	7.3562e-012	11.06	8.2779e-006

\* P&lt;.0001

The results indicate both factors of grade and gender are influential to the five sorts of changes to different degree.

There are four levels of age factor and three levels of home regions. The researcher took beginning age and home regions into consideration to find out their influence on learners.

### 6.1.2 MANOVA for factors of students' beginning age and home regions

In the study, the researcher did not take the interaction effect into account.

Table 2: The Factors of beginning age and home regions' influence on the five sorts of change

Change Items	F1	P1	F2	P2
Mode of English learning change	7.82	4.3077e-013	1262.16	.000
Self-confidence change	8.16	.000332332	256.52	.000
Productive change	7.60	.00053606	5767.41	.000
Subtractive change	6.58	.0013095	1111.92	.000
Additive change	9.08	.00015788	722.29	.000

\* P<.0001

The research results indicate the factors of beginning age and home regions are influential on the five sorts of changes to different degree.

## 7. CONCLUSION

The researcher of the project attempted to investigate technology-inspired changes of learners after participating in an online English learning classroom. There are three major findings. First of all, the mode of learning is the most significantly influenced aspect in online learning setting. This feature most differs from a traditional English learning environment. Furthermore, this indicates young university students who tend to accept new things, have a welcome attitude toward online English classroom. Secondly, the productive change is very significant. This demonstrates that learners' interest in English increased; learners' computer skills were improved; learners' understanding of English as an international language is upgraded. An online English classroom is like an innovated product with additional value. The online English classroom has achieved beneficial effect in the process of students' learning. Finally, self-confidence is also an aspect of significant influence. By participating in online English learning, the self-confidence of students is strengthened.

This may indicate the positive aggressive attitude of university students, and their traits of self-esteem personality. Apart from these three findings, the researcher also found some influence on

personal background. The change of self-confidence for freshman and sophomore is greater than that for junior and senior. The productive change for male learners is greater than that for female learners. Additive change for freshman and sophomore is greater than that for junior and senior. Little subtractive change happened to these university students after taking online English class.

The practical use of this project research is in affirming that: English instruction is not limited to the single model of classroom teaching by instructors. Instructors can use network technology as academic support and adopt new models of English instruction, giving more options for learners. In this way, instructors may provide more learning opportunities and environment for learners' active individualized learning.

In addition, the research implies that an English instructor may not only attend to English language teaching, but also must pay attention to the psychological change of learners' learning, i.e., the learners' preference for mode of learning, frustration or strengthening of self-confidence, the expansion or reduction of cognition, the development and loss of interest, and the change and strengthening of value orientation. When instructors treat the psychological factors and language-learning factor equally, they make good use of language learning environment, facilitate students in learning more efficiently. In this way, English instructors may achieve higher goals.

In the study, the researcher explored the technology-inspired changes of

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learners in the online English classroom. While enthusiastic about the findings, she recognizes the limits of the pilot research project. Larger populations across the country should be investigated in further research. The findings of this study do provide an understanding of changes of learners in an online instruction setting, changes which can be used to guide the design, organization, and practice of future online teaching. Yet, the research results also set the platform for more ambitious study of online teaching and learning in higher education.

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