

Experimenting Choices of Video and Text Feedback in Authentic Foreign Language Assignments at Scale

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ABSTRACT

With the development of “flipped classroom” concept and increasing usage of web-based learning platforms in foreign language teaching field, the effectiveness of online instant feedback come into researchers’ focus, and whether or not teachers should provide choices of feedback medium also becomes an issue. The following study assesses the effects of feedback medium as well as the effectiveness of offering students feedback medium choices. This in-progress large-scale randomized controlled trial is conducted using ASSISTments, an adaptive online tutoring platform.

Author Keywords

E-learning, Flipped Classroom, Language Learning, Feedback, ASSISTments, Randomized Controlled Trial

INTRODUCTION

In the E-learning and adaptive tutoring field, many studies have done to compare video based learning and text based learning, mostly in the STEM education field. Kay and Edward [4] and Balslev et al. [1] compared VBL (Video-Based Learning) supported by a cognitive approach with text-based learning. The results showed statistically significant differences in improving learners’ skills. Moreover, the authors reported that learners liked the followed cognitive approach in which knowledge was generated through step-by-step learning in video lectures. Ostrow and Heffernan [8] assessed the effects of feedback medium within a randomized controlled trial conducted using ASSISTments, and results suggest that video feedback enhances learning outcomes and is well perceived by student users. Most findings are focused on the STEM fields, and few randomized controlled trials are done in the field of second language education. Will the results also be proved in the field of second language education field?

Following the trend of “flipped classroom,” more and more videos and web-based homework support systems have

been adapted to foreign language teaching. Many empirical studies have been designed to determine the effect of video-based instruction on foreign language learning. Secules et al. [9] compared teacher-managed videotaped instructional materials featuring native speakers in everyday situations to more traditional pedagogical methods involving a variety of classroom exercises and drills, and found no significant difference between the two conditions in students’ learning of grammatical structures. Herron et al. [2] conducted a longitudinal experiment to compare video based instruction and text supported instruction. Results showed a significant difference on the listening test, in listening comprehension between the experimental and control conditions at the conclusion of one year of French instruction, and no difference was found in grammar comprehension. Lin and Tseng [5] and Hsu et al. [3] conducted two studies to investigate the effect of different video-based learning designs to improve English language skills of K-12 students. The findings indicated that the groups which used VBL outperformed the other groups. However, very little research exists on the effectiveness of video feedback in the foreign language e-learning platform.

The survey results in Ostrow & Heffernan’s study suggest that video feedback is well perceived by students, and 83% of students reported that they would at least somewhat prefer ASSISTments to use video more often. However this study didn’t go deeper and investigate which kind of feedback students prefer during the homework, and how would their choice affect their learning results.

Thus, our research questions are:

- Are second language learning outcomes enhanced when scaffold feedback is delivered using video rather than text?
- Do students have preferences on choosing from video and text feedback?
- Will students with choices learn better than those who are not offered a choice?

METHODS

Participant

Participants are Chinese language learners in colleges and secondary schools in the U.S. We are expecting 600 students to enroll in this experiment.

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Educational Content

Studies have shown that Mandarin is synchronically a typical VO (verb + object) language, in terms of text distribution of VO and OV orders (Sun & Givon, 1985[10]). Most Mandarin language learners also take Mandarin as a typical SVO language. However, there are several structures which do not follow SVO order. Language learners often make mistakes when dealing with a non-SVO structure, and for this reason, non-SVO structures are often key content in Chinese language classes. Normally word order is the same in Chinese for questions and statements. However, a question pronoun can appear in statements other than questions. When a question pronoun is used in a statement with 都(dou) appearing after it, it simply means “all” or “none” in the sense of being all-inclusive or all-exclusive [6]. Commonly used patterns of this structure are as follow:

- a) 我什么中国菜都爱吃。
Wo shenme Zhongguo cai dou ai chi.
I love to eat all Chinese food.
- b) 什么中国菜我都爱吃。
Shenme Zhongguo cai wo dou ai chi.
I love to eat all Chinese food.
- c) 这些菜我哪个都不喜欢。
Zhexie cai won age dou bu xihuan.
I don't like any of these dishes.
- d) 谁都喜欢这个颜色。
Shei dou xihuan zhege yanse.
Everyone likes this color.
- e) 这个颜色谁都喜欢。
Zhege yanse shei dou xihuan.
Everyone likes this color.

The rules can be explained as 1) When Question word is used as a subject, the basic structure is QW + 都(dou) + V + Object; 2) When Question word is used as an object, the basic structure is Subject + QW + 都(dou) + V, and the subject and Question word can switch; 3) If you would like to mention that the statement you make is in a certain domain/range, the domain/range should be mentioned at the beginning of the sentence, no matter the question word is used as a subject or object. Structure: Range/domain + Subject + QW + 都(dou) + V; Range/domain + QW + 都(dou) + V.

While the structure “Question Word + 都(dou)” is the one that all students should have learned at the beginning level, the teachers we were working with identified it as a challenging structure for the students, and, in fact, many students were not sure how to correctly use this structure, even in advanced level. So in this study, we take this grammar structure as the target structure.

Design

The ASSISTments platform is used to compare the delivery methods of feedback messages.

Participants are asked to answer a set of 6 questions on ASSISTments which requires reordering given words to form a sentence to properly indicate the English meaning. Each three questions are in a section, and each question reflects one of the three rules. 6 questions are numbered as A1, B2, C3, D1, E2, F3.

All questions and feedback are available at [7]. We listed below one question as an example, which reflects rule 2 (When Question word is used as an object, the basic structure is Subject + QW+都(dou)+V, and the subject and Question word can switch):

English meaning: I like all colors.

Word bank: 什么(shenme), 颜色(yanse), 我(wo), 喜欢(xihuan), 都(dou)

Correct answer:

- 1) 我什么颜色都喜欢。(Wo shenme yanse dou xihuan.)
- 2) 什么颜色我都喜欢。(shenme yanse wo dou xihuan.)

Students will receive feedback when given an incorrect response or if students request to see a hint. At the beginning of the assignment each student is randomly assigned to either the Choice or No Choice condition. Those assigned to No Choice conditions will receive either video feedback (Group 1) or text feedback (Group 2), and those assigned to Choice condition will be asked to choose the feedback medium from video and text (Group 3). See Table 1.

Video content as shown in Figure 1 was designed to mirror textual feedback (Figure 2) in an attempt to provide

Linear Order	1	2	3	4	5	6
Group 1	A1-VF	B2-VF	C3-VF	D1-VF	E2-VF	F3-VF
Group 2	A1-TF	B2-TF	C3-TF	D1-TF	E2-TF	F3-TF
Group 3	A1-VF/ TF	B2-VF/ TF	C3-VF/ TF	D1-VF/ TF	E2-VF/ TF	F3-VF/ TF

Table 1: Group design with question types and feedback types.

identical assistance through both mediums. Each video simply featured the lead researcher reading a feedback message while referring to the grammar structure on a screen.

Reorder given words to form a sentence to properly indicate the English meaning:
English meaning: I like all colors.
Words: 什么, 颜色, 我, 喜欢, 都

QWExplanation

Subject + QW + 都 + V

哪儿我都不想去。
我哪儿都不想去。

Type your answer below: 67%

Reorder given words to form a sentence to properly indicate the English meaning:
English meaning: I like all colors.
Words: 什么, 颜色, 我, 喜欢, 都

When Question word is used as an object, the basic pattern is Subject + QW+都+V, and the subject and Question word can switch. For example, 哪儿我都不想去, or 我哪儿都不想去。

Type your answer below: 67%

Figure 1: video feedback for question 1.

Figure 2. Text feedback for question 1

To make sure students are exposed to both types of feedback before asked to choose from them, an instruction is shown at the beginning of assignment. A video check is followed to remove students who cannot see video. Practices with text feedback is assigned to those who cannot see video.

A post-test is given to all participants' right after the assignment. Post-test contains three questions each reflecting one of the three rules, and it is also assigned to participants through ASSISTments.

Procedure

The problem sets are assigned to students as either classwork or homework. Students are free to work at their own pace. As shown in Fig. 3, when completing the introduction and video check, students are randomly assigned to one of the three groups. Data will be logged by ASSISTments automatically, which includes elements such as correctness, response time, attempts, hints requested, and more.

Hypotheses

Based on former research, our hypotheses are:

- Group 1 which receiving video feedback gets better grades comparing to group 2;
- Participants in group 3 prefer video feedback to text feedback;

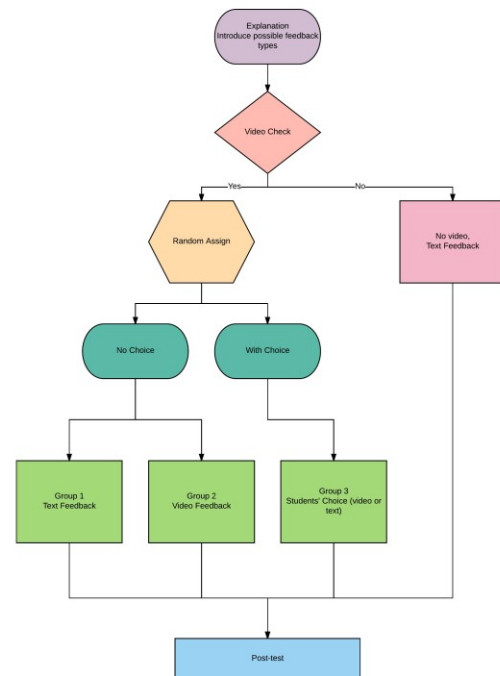


Figure 3. Procedure chart

- Students in Group 3 who are provided choices would excel No Choice groups.

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