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研究課題名(和文) Determining the Best Practice to Prepare for Multiple-choice Tests

研究課題名(英文) Determining the Best Practice to Prepare for Multiple-choice Tests

研究代表者

L o w e s J a s o n (Lowe, Jason)

福山大学・大学教育センター・准教授

研究者番号：60758043

交付決定額(研究期間全体)：(直接経費) 1,400,000円

研究成果の概要(和文)：この研究の目的は、学生が英語の多肢選択式テストに備えるための最も効果的な方法を明らかにすることです。

学生は、4つの勉強法のうちの1つを使って勉強するよう指導された。初回トレーニングから最終テスト後まで、8週間にわたる研究である。

COVID-19の大流行時には、研究対象者を確保するのが困難であり、また、8週間という期間を中断することなく継続して参加できることを確認するのも困難であった。残念ながら、このため研究対象者の数は限られていた。そのため、データは十分に収集されていない。

研究成果の学術的意義や社会的意義

This research aims to learn which of 5 study methods is the most effective at training students for multiple-choice tests. The findings of this research could lead to more effective and efficient training/study techniques for those preparing for multiple-choice tests.

研究成果の概要(英文)：The objective with this research is to determine the most effective method for students to prepare for English multiple-choice tests. Findings from cognitive psychology have identified effective learning strategies; however, this research has not been presented in EFL teacher training materials (Lowe, 2023).

In this research project, students were guided in studying using one of four study strategies (Re-reading original input, multiple-choice questions with one answer and three distractors, a retrieval practice format, and multiple-choice with an increasing number of distractors). There was also a control group. The study from initial training to final post-test spans a period of eight weeks.

During the COVID-19 pandemic, it was difficult to recruit research subjects and to be sure that they could participate for a continuous eight-week period without disruption. Unfortunately, this has led to a limited number of research subjects. Therefore, the data have not been fully collected.

研究分野：Effective learning strategies, EFL

キーワード：learning strategies High-stakes testing EFL Retrieval practice Spaced repetition

1. 研究開始当初の背景

Questionnaires examining how students prepare for tests show that the most common practice is reading a text, highlighting key sections, and then reviewing the highlighted parts (Karpicke, Butler, & Roediger, 2009). According to the principle of transfer appropriate processing (Lightbown, 2008), employing a study context that will closely mirror the retrieval context should maximize recall. When this has been attempted with multiple choice tests, the results were mixed (Marsh et al, 2009). Questions that were answered correctly on the initial exposure were answered more fluently on subsequent exposures (a positive testing effect); however, incorrect forms were also learned and were used in follow up tests. This is known as the negative suggestibility effect (Remmers & Remmers, 1926) and it represents a negative testing effect.

This study aims to find a way to gain the positive benefits of the testing effect without having the counterproductive effects of negative suggestibility.

研究成果の学術的意義や社会的意義

2. 研究の目的

The aim of this research is to assess which of 5 study protocols is the most effective at training students for multiple-choice tests. The testing effect has been demonstrated (Agarwal et al, 2012) to improve retention and recall; however, in the context of a multiple-choice test where each question has only one correct answer but several plausible yet incorrect options, what is learned may be misinformation. This learning of incorrect information due to mere exposure is known as the negative suggestibility effect (Remmers & Remmers, 1926) or the negative teaching effect. The findings of this proposed research could lead to more effective and efficient training /study techniques for those preparing for multiple-choice tests.

High stakes English tests such as the Test of English for International Communication (TOEIC), and the Test of English as a Foreign Language (TOEFL) are an important part of the foreign language learning experience. These high stakes tests are used:

1. to help students monitor their language learning progress,
2. for admission to foreign universities,
3. by companies when vetting potential new employees.

In this globally competitive world, access to positions of power and influence is dependent on being able to effectively communicate on the world stage. In this international context, Japanese are competing not only with each other, but also with language learners from other countries as well. Placement in the best corporations and institutions requires many qualities and skills, one of which is effective English ability. For many foreign institutions, a high score on a standardized test such as the TOEFL is required for acceptance.

Recent data (ETS, 2013) published by the Educational Testing Service (ETS), which administers the TOEIC and TOEFL tests, show Japanese test takers are scoring lower than their counterparts from other countries. Raising the test scores (and general English level) of Japanese learners of English will facilitate the future success of Japan.

While test scores are influenced by a number of factors (Bolt & Ross, 1998), one area that requires more study is how prospective test takers prepare for the test.

Research questions

1. How can prospective multiple choice test takers prepare most effectively?
2. How can a positive testing effect be realized without negative suggestibility creating false knowledge?
3. Which study protocol results in the best long term retention?
4. How much of an improvement can be achieved over 'standard' approaches to test preparation: (1) repeated reading of correct forms, (2) review of multiple choice questions with three lures (incorrect answers), and (3) no study?

3 . 研究の方法

The subjects of this research will eventually total one hundred (N=100) third year university students at a mid- sized Japanese private university. The research is restricted to students who are currently not enrolled in English classes or are not actively studying English in a private institution. This restriction is in place to reduce the influence of potentially confounding factors such as English learned (or not lost) through practice external to this research. Including this restriction in this study has made subject selection more challenging; however, the hope is that the research results will be more accurate through controlling this variable.

Prior to beginning the training phase of the study, the students are given an English test to ascertain their current English level.

Following an initial common 50 minute study session of fifty target sentences, each student is randomly assigned to one of five groups. Eventually, each group will contain twenty students. Each group undergoes a different practice protocol during the course of the study. The groups are:

- Group 1- four 50 minute study sessions of re-reading the original common session study set,
- Group 2- four 50 minute study sessions of multiple-choice style questions (1 answer 3 lures),
- Group 3- four 50 minute study sessions of retrieval practice in which the student must recall the answer as opposed to recognize a correct answer from a selection of answers,
- Group 4- four 50 minute study sessions of multiple-choice style questions with an increasing number of lures over each trial,
- Group 5- zero study sessions.

One week after the final study session, each participant takes a multiple-choice test based upon the original fifty sentences studied in the initial common training session. One month after the final study session, each participant once again takes a multiple-choice test based upon the original fifty sentences studied in the initial common training session. The results are analyzed to determine which, if any, training protocol results in the best learning outcome. Based upon qualitative data collected in various questionnaires throughout the research, other aspects such as difficulty of the student method or enjoyability of the study method will also be determined.

The multiple-choice questions used in the training and subsequent assessments span the range of difficulty levels (A1 to C2) of the Common European Framework of Reference for Languages (CEFR). The second of the post-training tests includes questions from the training sessions as well as novel questions of the same structure as those previously practiced. These parallel questions are included to assess the degree of transfer of learning that each of the study protocols facilitates.

All data were anonymized to ensure the privacy of all participants. Each participant was compensated for each hour of participation with a ¥1000 Quo Card.

4 . 研究成果

Due to circumstances beyond my control (COVID-19 and administrative confusion), this research has not been concluded by the end of the grant period. I am very sorry about this situation. The collection of data is ongoing, and I am confident that it will be concluded within the year. At present one hundred and ten hours of research has been completed.

I take the usage of public taxpayer funds with the utmost seriousness. I do not want to waste any of the grant money. To that end, during the COVID-19 pandemic, I was nervous to start a training and evaluation session for fear that the group would be interrupted by a new wave of COVID and not be able to complete the eight-week course of training and post-training assessment. Were a group to not be able to complete the post-training phase, then the money spent on the training phase would be wasted. In an abundance of caution, I was not able to complete the entire research project by the end of the 2022 academic year. I am extremely sorry for this situation. I guarantee that the research will be completed, and the results will be both published and presented.

5. 主な発表論文等

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〔図書〕 計0件

〔産業財産権〕

〔その他〕

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6. 研究組織

	氏名 (ローマ字氏名) (研究者番号)	所属研究機関・部局・職 (機関番号)	備考
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7. 科研費を使用して開催した国際研究集会

〔国際研究集会〕 計0件

8. 本研究に関連して実施した国際共同研究の実施状況

共同研究相手国	相手方研究機関
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