

## The Effects of Cognitive Demands of Lessons in Language Learning

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### 1. Introduction:

Most English study materials used by institutions of education within Korea, developed both internationally and locally, follow two basic systems designed for children or university students. They are also developed assuming that language ability and cognitive ability are connected [1]. Materials are often demanding both cognitively and linguistically, or not demanding in either category.

Because materials' cognitive and linguistic demands are often connected it is important to determine if cognitive demands can influence learners and the effectiveness of lessons.

Resultative Motivation [2] shows that learners' motivation increases with the successful application of language. Nokolov [3] also demonstrated that students will learn language better when they can concretely see the purpose of learning the language. This would hint that cognitively demanding materials could be more effective on motivation in classrooms, which would result in better skills after lessons. Motivation is very important in Korea as English acquisition is not a necessity to life. Motivation is one of the most important variables to the successful acquisition of language [4, 5].

The researcher proposes to test whether the learner's the cognitive demands of different lessons can influence the effectiveness of the lessons.

### 2. Background

Previous research has already established the importance in motivation in language acquisition. The researcher, in other research [1] has shown that most materials are both highly demanding cognitively and linguistically, or both demands are quite low.

### 3. Method

The 203 participants were students from the Catholic University of Korea enrolled in English conversation. Most learners had majors of business, law, computer engineering, East Asian language and culture, biology, social studies, natural science, life science, and religious studies. 96 were males and 107 females. 188 participants were freshmen, eight sophomores, one junior, and six seniors.

31 questions of the MSLQ [6] were used. All six scales for motivation were used: Intrinsic Goal Orientation, Extrinsic Goal Orientation, Task Value, Control of Learning Beliefs, Self-Efficacy for Learning & Performance, and Test Anxiety. 17 more items were given to determine learner demographics and English ability. Lastly, 18 more items were given to determine the learners' view of English.

A pre-test and post-test were given to the students to assess their ability and knowledge in the target language. The pre-test had 22 questions asking learners to state the use of tag questions, correctly demonstrate its form, and state other knowledge about the function of tag questions.

Eight classes were divided into two groups of four classes. One group received an instruction style that used the target language and discussed the target language in a simple manner which had lesser cognitive demands. The other group's activities were cognitively challenging. Both groups had an equal amount of exercises and time used in learning the target language.

### 4. Results

An independent-samples *t* test was conducted and it showed no significance between the cognitive level of the materials and the improvement of the scores in the language. Although it did show a higher correlation between reading ability  $r(195) = .31, p < .001$ , over grammar  $r(194) = .30, p < .001$  in the students' ability to correctly create tag questions.

Student ability often had a strong correlation to Intrinsic Goal Orientation, Extrinsic Goal Orientation, Self-Efficacy for Learning Performance, and a negative correlation to Test Anxiety. For example Self-Efficacy for Learning Performance correlated with reading ability  $r(204) = .48, p < .001$  but to Test Anxiety  $r(204) = -.14, p < .005$ .

For Task Value there was a significant gender difference,  $t(202) = -1.99, p = .05$ . There was also a gender difference for how students feel their abilities affect their grades,  $t(202) = -.42, p = .66$ . Also, females showed a significant difference in their reporting that language studied in class affects their motivation  $t(199) = -2.14, p = .033$  meaning they are more likely to be affected by their language learned in class. Female, over male students also felt more strongly that their grades are based on their abilities  $t(202) = -.42, p = .68$ .

Correlation coefficients were computed for English ability and the MSLQ topics with the ability to answer the correct information about the target language. The results show Self-Efficacy for Learning & Performance  $r(201) = .17, p < .005$ ; listening  $r(201) = .25, p < .001$ ; reading  $r(201) = .32, p < .001$ ; writing skill  $r(201) = .21, p < .001$ ; grammar  $r(201) = .29, p < .001$ ; and vocabulary  $r(201) = .2, p < .001$ , were correlated to creating tag questions accurately. Age  $r(201) = -.24, p < .005$  was negatively correlated with the desire to learn grammar from a Korean teacher and positively correlated  $r(201) = .22, p < .001$  with the desire to learn grammar from a native speaker.

## 5. Discussion

The researcher failed to achieve the main goal of connecting cognitive challenge of materials and activities with success in language but other important information was discovered. Basic English skills correlated with four main motivational categories.

The implications show so far that previous ability affects students' scores on their target language, as this would be expected. For females, external factors such as the materials, tasks, and topics in the class, can influence their motivation. Materials developers need to consider the influence of these factors on material development. Even in classes with both genders, since these factors do not influence males, female orientated tasks, topics, and materials should be used more frequently.

This study is important for English materials developers. As four motivation categories have been connected to English ability, developers need to consider how to increase both goal orientations, perhaps through including a unit on goal development for learners. Also, tests which reduce anxiety should be considered.

## 6. Implications/Directions for Future Studies

Since there was such a high correlation between the students' speaking, reading, writing, listening, grammar, and vocabulary abilities to Intrinsic Goal Orientation, Extrinsic Goal Orientation, Self-Efficacy for Learning Performance, and a negative correlation to Test Anxiety it is suggested to do further studies to determine how accurately the students reported their own abilities and to determine in an English classroom in Korea whether success develops motivation or motivation develops success. Ability did not correlate with Control of Learning Beliefs. A future study to determine why this single motivation category did not correlate to ability is encouraged.

## 7. References

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