

# Language learning strategies of EFL learners and their effects on learning outcomes

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## Summary

### Introduction

The aim of the current research was to validate the classification of language learning strategies (LLS) that suits best the empirical data collected within the study, and to investigate the relations of LLS and their effects on learning outcomes.

Learning strategies are activities taken by the learner to aid the acquisition, storage, retrieval, and use of information (Oxford, 1990). The correlation between learning strategies and learning outcomes enables them the assessment of the efficiency of strategy use (Hsiao & Oxford, 2002; O'Malley & Chamot, 1990; Rubin, 1975). Language learning strategies have been classified in different ways. Oxford divided them into six categories: memory, cognition, compensation, metacognitive, affective and social strategies. Although she distinguished cognitive, memory and compensation strategies, they overlap in their content. Other researchers have observed memory strategies as cognitive ones (e.g. O'Malley & Chamot, 2002; Phakiti, 2003; Purpura, 1997). Even though Oxford's taxonomy is most widely accepted, and SILL is the most widely used instrument to assess LLS, many researchers have questioned its reliability as there is no solid evidence of its six-factor structure (Park, 2011; Rose, 2012; Saks et al., 2015; Woodrow, 2005).

Other scholars have suggested different classifications of LLS. Cohen (1996) distinguished two subdivisions: language *learning* strategies and language *use* strategies. Another way of classifying LLS is according to function. O'Malley and Chamot (2002, pp. 44–46) presented three main strategy groups – cognitive, metacognitive and socio-affective strategies. Based on cognitive theory, the content of their subdivisions is quite similar to the ones of SILL. However, in their division O'Malley and Chamot go deeper and distinguish the strategies in a more detailed manner.

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Although LLS has been extensively investigated, there is no solid understanding as to whether and how the learner's LLS are connected with his proficiency and whether and how the test results reflect his strategy use. The efficiency of language studies is predominantly assessed with language tests. The English state exam that Estonian school-leavers have to write is a standardised test. It consists of four parts and measures students' listening, writing, speaking and reading competencies.

The aim of the present study was to create a model that described the taxonomy of LLS (Est-SILL). To investigate the relations between strategies and outcomes, three structural equation models were created and their effects on outcomes were assessed. Proceeding from the aim of the study the following research questions were posed:

1. Which is the factor structure of the questionnaire of LLS translated and adapted for Estonian EFL learners?
2. How are the LLS connected with the learning outcomes in four competencies?

## Methodology

The sample for the study consisted of 383 final-grade students from all gymnasiums in Pärnu. 269 of them (71%) were present at school on the day the questionnaire was answered. The average age of the respondents was 18.4 ( $SD=5$ ), 55% were girls and 45% were boys. By the time of the study they had been studying English for approximately 10 years ( $M=10.22$ ;  $SD=1.3$ ).

During the data collection, respondents were asked to assess the statements of SILL on a scale from 1–5. It was explained to the students that with their written consent, the data collected with the questionnaire would be analysed along with the results of their English state examination that they would have had to take 2 months later.

In order to answer the first research question the exploratory factor analysis was conducted. The solution was tested with confirmatory factor analysis (CMIN/DF, CFI, RMSEA).

To answer the second research question on the relations of learner's LLS and learning outcomes three different structural equation models were created and tested. The analyses were performed with the software programs SPSS 20 and AMOS.

## Results and conclusions

The aim of the current study was to check the validity of different taxonomies of LLS, and analyse the relations between the use of LLS and learning outcomes.

The solution of the EFA was a six factor structure. Factor loadings greater than, or equal to, 0.5 accounted for over 68% of the variance. The new scale of Est-SILL had 17 statements instead of 50 original ones. The factors were active language use, metacognition, social, compensation, memory and connecting strategies. The validity of the model of Est-SILL was tested with a CFA. The model fit indices were good:  $\chi^2=201,405$ ;  $df=103$ ;  $CMIN/DF=1.96$ ;  $CFI=0.92$ ;  $RMSEA=0.06$ . The model of Est-SILL included six factors, four of them – metacognition, social, compensation and memory strategies – coincided with the original model of SILL (Oxford, 1990). In addition, two new strategy groups were formed – active language use and connecting strategies. The strategies of active language use expressing the learner initiated activities used in real life situations was formed of cognitive and social strategies and considerably overlapped with Cohen's (1996) *rehearsal* and *communication strategies*. The group of social strategies of Est-SILL had overlapping with O'Malley and Chamot's (2002) strategies of *questioning for clarification*. The connecting strategies of Est-SILL have a lot in common with O'Malley and Chamot's (ibid.) *elaboration* and *transfer* strategies. The structure of Est-SILL and the large-scale concurrence with different taxonomies reveal the complicity of structuring LLS because of interpreting and specifying their content and major overlapping.

The relations between learners' strategy use and their learning outcomes were investigated with a SEM analysis which revealed good results on unitary and mediated models. Drawn on the fit indices and correlation coefficients between LLS and learning outcomes, we proceeded with the mediated model. As correlation co-efficients did not show any significant relations between metacognitive and compensation strategies, and learning outcomes, it became important to investigate the direct and indirect effects of LLS on learning outcomes and other strategy groups.

Similarly to Purpura (1997) and Zhang (2014), the results of the current study revealed that cognitive learning strategies (active language use and connecting strategies) are directly connected with the learning outcomes. While the effect of active language use on the outcome was positive, the effect of connecting strategies was negative. It means that using connecting strategies in the tense test situation may lead to lower test results throughout all four competencies. The direct negative effect on learning outcomes

was also detected in the case of social strategies. The current study showed that metacognitive strategies do not contribute to the learning outcomes directly but indirectly through cognitive strategies (e.g. Purpura, 1997). Metacognitive as well as compensation strategies revealed a positive effect on cognitive strategies, however, some of these were very weak. Metacognitive strategies had a significantly positive effect on the use of social strategies. Compensation strategies had a positive effect on active language use and connecting strategies. It can be stated that metacognitive strategies that are important in the learning process, do not reveal considerable significance in the test results. Metacognitive strategies should rather be instructed to enable learners the implementation of cognitive and social strategies more efficiently.

In conclusion, it can be said that the current study contributed to language learning in two ways. First, it provided a valid self-report questionnaire Est-SILL to measure the learners' LLS in the Estonian language. Its structure that differs a little from the original structure of SILL, reflects the multidimensional nature and associations of LLS. At the same time, the study confirmed the complicity of classifying LLS. Similarly to many international studies, the strategy group of active language use distinguished among other strategies. The active language use strategies proved to be the strongest predictor of learning outcomes. Second, the study revealed the role of LLS in learning outcomes. The study confirmed the direct effect of cognitive strategies on all four language competences but the effect of metacognitive strategies is indirect and needs further research with the learning process and test-taking strategies. These results confirmed the findings of earlier studies which led us to conclude that the effect of learning strategies on outcomes does not depend on the learning context, but are transferrable to other foreign language learning contexts. The results of the research can be implemented in language studies and teacher training directing learners' and teachers' attention to teaching the most efficient LLS to achieve better results.

*Keywords:* language learning strategies, structural equation model, confirmatory factor analysis