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Analysis of Language Learning Strategies Used by Students of Traffic Technology

Summary

Language learning strategies play a vital role in the language acquisition process, and this includes the realm of ESP at the tertiary level of education. This contribution first defines the concept of language learning strategies and gives a historical background to language learning strategy research. The central section focuses on a comparative analysis of language learning strategies used by first year students of traffic technology at the Faculty of Maritime Studies and Transport in Portorož, University of Ljubljana. The analysis, based on Rebecca Oxford’s “Strategy Inventory for Language Learning”, aims to assess the students’ existing awareness of the process of language acquisition and the learning strategies that they use. Objectives of language teachers should include helping students to raise their awareness of language learning strategies and providing them with contexts for their development. Therefore, the concluding section contains sample ESP teaching materials and student instructions focusing on cognitive language learning strategies.

Key words: ESP, learning strategies, tertiary education

Analiza strategij učenja pri študentih tehnologije prometa

Povzetek


Ključne besede: jezik stroke, strategije učenja, visokošolsko izobraževanje

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1. Introduction

The situation: English class, first year of the three-year programme for students of traffic technology, end of the first semester a couple of years ago. The students were asked to read a short and simple text describing the process passengers have to go through at an airport before boarding the plane.

Teacher: “Can you tell me the main idea of this text?”
Student: “Profesorica, oprostite, jaz vas čisto nič ne razumem.”/(I’m sorry, teacher, but I don’t understand you.)
Teacher: “What is this text about?”
Student: “Oprostite, ne razumem.”/(I’m sorry, I don’t understand.)

This, of course, is an extreme case of language inproficiency that a student ‘reached’ after eight years of learning English at the elementary and secondary levels of education but it is also far from an isolated one. The question as to how this is possible would inevitably lead toward a very complex answer involving the individual characteristics of the student, the systemic nature of language teaching, the awareness and knowledge of language teachers in relation to language teaching, and other related factors.

One element that certainly plays a crucial role in language acquisition is learning strategies. The failure to reach the expected level of language proficiency after completing pre-tertiary studies can in part be a result of the lack of awareness and knowledge of learning strategies on the part of language teachers. As a consequence, we might assume that many students are not aware of the strategies that they could use to enhance the language acquisition process. Hence, the main reason for strategy research is to develop the awareness of language learning strategies in order to become able to help our students to recognize the learning strategies as tools that can make learning more effective, faster, and more enjoyable. Tudor (1996, 197), for example, describes the concept of learner empowerment and adds that we should aim at “an approach to course design which is structured not only around the attainment of certain objective learning outcomes but also around the initiation and exploration of a range of learning processes.”

The introduction to this paper aims to define learning strategies and individual student characteristics that they are intertwined with. Furthermore, it emphasizes the importance of strategy research, its benefits, and goals of strategy training.

Language teaching methodology and research is permeated with inter-related and sometimes overlapping terms such as learning strategies, learning style, cognitive style, learning techniques,
learning tactics, and learning behaviours, to mention just a few. In order to isolate learning strategies from these terms, the concept first has to be clearly defined.

Oxford (1990, 8) defines learning strategies as “specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations.” She also adds (1990, 9) that learning strategies are problem-oriented, often conscious, teachable, and flexible. O’Malley and Chamot (1990, 7) describe learning strategies as “highly useful deliberate approaches to learning a second language.” The concept of learning strategies is not linked exclusively to foreign or second language learning. Kardash and Amlund (1991, in Holman 2001, 1), for example, define learning strategies as “the practices that people use to aid the acquisition and development of knowledge in any context.” Furthermore, Ehrman et al. (2003, 3) point out that “virtually all definitions of strategies imply conscious movement toward a language goal.”

To summarize, learning strategies in this paper will be considered as conscious activities undertaken by the students to achieve the language goal required by the language task. Since language learning is an active and dynamic process involving the entire person, the use and effectiveness of learning strategies depend on a variety of factors. Research has shown that some strategies will only be effective for some students and other strategies will be more valuable for others. The most significant factors that have been identified as having an influence on the use and effectiveness of learning strategies in language acquisition are: learning style (Oxford (2003, 3–8): learning style includes sensory preferences, personality type, desired degree of generality, and biological differences), cognitive style (Messick (1984) in Sadler-Smith (2001, 4): “consistent individual differences in preferred ways of organizing and processing information”), affective factors (Ehrman et al. (2003, 5–8): affective factors include motivation, self-efficacy, tolerance of ambiguity, anxiety, defence mechanisms, internal attitudes, self-esteem, alertness required to act, self-regulation, self-management, beliefs, emotional intelligence, and self-monitoring). Further factors are the course/proficiency level, gender, age, academic field of study or career orientation, culture, and mode of study.

After the key terms and issues have been highlighted, we can proceed to further sections of this paper that will highlight the beginnings of the research of language learning strategies and the results of recent studies.

2. Research of language learning strategies – historical background

Influenced by the developments in cognitive psychology, the beginnings of the research into language learning strategies and the introduction of the concept itself can be traced to the 1970s when researchers realized that the difference between effective and ineffective learners in terms of the learning strategies they employ should be investigated, a decision that provided valuable input into the development of learner and process-centred language teaching. It was thought that after identifying the learning strategies used by effective learners these strategies
could be taught to ineffective learners. In the 1980s, research focused on individual differences that affect the use of learning strategies, such as personality, age, maturity, experience with language learning, learners’ views and their learning needs (Stern 1992, 259).

The year 1990 represented a milestone in the research of language learning strategies when, based on previous research findings and developments in cognitive psychology, two fundamental works containing classifications of language learning strategies and research frameworks on which the majority of subsequent studies is based were published: Rebecca Oxford’s *Language Learning Strategies: What Every Teacher Should Know* and Michael O’Malley’s and Anna Uhl Chamot’s *Learning Strategies in Second Language Acquisition.*

Oxford (1990) proposed the classification of learning strategies into two groups: direct and indirect strategies. The direct strategies (Oxford 1990, 37) “directly involve the target language”. The direct strategy group contains memory strategies “helping students store and retrieve new information”, cognitive strategies that “enable learners to understand and produce new language by many different means”, such as practicing, receiving and sending messages, and analysing and reasoning, and finally compensation strategies that “allow learners to use the language despite their often large gaps in knowledge.” The indirect strategies (ibid., 135) can be further subdivided into metacognitive strategies that “allow learners to control their own cognition – that is, to coordinate the learning process by using functions such as centering, arranging, planning, and evaluating”, affective strategies that “help to regulate emotions, motivations, and attitudes”, and social strategies that “help students learn through interaction with others”. She denotes these strategies as indirect because they “support and manage language learning without (in many instances) directly involving the target language.”

Appendices B (283–291) and C (293–300) include the SILL (Strategy Inventory for Language Learning) for the research of language learning strategies of English speakers learning a new language and of speakers of other languages using English, which (in particular the latter) have been used by numerous researchers worldwide in assessing the learning strategies of their students.

O’Malley and Chamot (1990) propose a slightly different classification and framework for the research of learning strategies. Upon careful observation, however, significant similarities between these two independently created frameworks can be uncovered. O’Malley and Chamot classify strategies into three categories: cognitive strategies (a cognitive strategy [1990, 229] “involves mental manipulation or transformation of materials or tasks and is intended to enhance comprehension, acquisition, or retention”), metacognitive strategies (a metacognitive strategy [230–31] “involves thinking about or knowledge of the learning process, planning for learning, monitoring learning while it is taking place, or self-evaluation of learning after the task has been completed” and social-affective strategies (a social/affective strategy [232] “may consist of using social interactions to assist in the comprehension, learning, or retention of information. It may also consist of using mental control over personal affect that interferes with learning.”).

Although the majority of studies undertaken in the last two decades have relied on the two frameworks and classifications presented above, other learning strategy classifications have been proposed. Stern (1992, 262–6), for instance, classifies the strategies into management and planning strategies that “express the learner’s intention to direct his own learning”, cognitive strategies that are “the techniques learners make use of in the deliberate and formal study and practice of the second language”, communicative-experiential strategies which require that “the learner must seek opportunities for language use in real-life situations”, interpersonal strategies that help learners solve problems related to infantilization, satellization, and status, and affective strategies that help learners cope with frustrating elements of language learning.

As noted in the introduction to this paper, the use and effectiveness of learning strategies as cognitive processes depend on a variety of individual characteristics of learners. Based on the two fundamental research frameworks presented above, studies in the last two decades have concentrated on the identification of those individual characteristics that exert an influence on or are influenced by the use of language learning strategies, e.g., language proficiency or course level, age, gender, level of previous education, experiences with language learning, cognitive style, learning style, aptitude, sensory preferences, personality type, culture, affective factors, motivation, etc. Summaries of the findings of some of these studies are presented below.

The first variable (individual learner characteristic that influences or is influenced by strategy use) that the use of language learning strategies can be matched against is language proficiency. Watanabe (1990, in Oxford and Burry Stock 1995, 8) discovered that higher-level students use SILL strategies more often than lower level students. Park (1994, in Oxford and Burry Stock 1995, 9), too, found a linear relationship between language proficiency and strategy use. Phillips, (1990, 1991, in Oxford and Burry Stock 1995, 9), however, saw that “middle scorers on the TOEFL, who thus had moderate proficiency in English, showed significantly higher overall strategy use than did the high-proficiency or the low-proficiency group”, revealing a curvilinear pattern. In addition, some strategies are used far more often by high scorers (such as paraphrasing) while low scorers displayed a significantly more frequent use of strategies that do not involve deep processing of language, such as the use of flashcards for vocabulary learning. Furthermore, Ehrman (2003, 3) reports on studies made by Abraham and Vann (1987) and O’Malley and Chamot (1996) in which it was discovered that there was not only a quantitative but also qualitative difference in strategy use because “less able learners often use strategies in a random, unconnected and uncontrolled manner” while more proficient users use a well-orchestrated set of strategies, called a strategy chain (Oxford 2001, in Ehrman 2003, 3). Research also shows (Oxford and Ehrman 1995, 362) that in fact “successful learners use an array of strategies, matching those strategies to their own learning style and personality
and to the demands of the task [...] they develop combinations of strategies that work for them.” However, some researchers question the cause-effect relationship between strategy use and language proficiency and claim that “one can [...] argue that learner strategies do not determine proficiency, *but are permitted by it.*” (Skehan 1989, in Halbach 2000, 6).

Research studies not only touched upon the general use of strategies but tried to identify the correlation between low/high language proficiency and specific strategy use. Griffiths (2003, 3) found that higher-level students use metacognitive strategies more often, which probably means that they are able to have greater metacognitive control over their learning. In addition, she identified fifteen strategies that more advanced students used more frequently than their less proficient peers (ibid., 6), in particular cognitive and social strategies. Griffiths (ibid., 9), for instance, also determined that lower level students more frequently use strategies related to vocabulary and affect (which higher proficiency students do not need any more) and that strategies used by higher level students are more sophisticated (involving deep processing) than those applied by lower level students.

In opposition to previous findings, Oxford and Ehrman (1995, 372) learned that the more frequent use of cognitive strategies was the only SILL category that showed a significantly positive correlation with language proficiency reached at the end of the training program. Their study also revealed that the students who display a more frequent use of cognitive strategies are better educated, able to speak more languages, are more persistent in their learning, more confident, positive, motivated and comfortable with language learning.

Perhaps the most important variable affecting or being affected by the use of learning strategies is motivation. From a research sample of 1,200 university students, Oxford and Nykos (1989, in Oxford and Ehrman 1995, 563) found that motivation, which also encompasses persistence as one of its main components, was the most significant factor influencing strategy use, both inside and outside the classroom. Moreover, studies have confirmed that strategy instruction resulted in higher motivation (Nunan 1997, in Oxford 2003, 11). However, as has already been noted regarding the cause-effect relationship between strategy use and language proficiency, the direction of the cause-effect relationship between the frequency and quality of strategy use and motivation has yet to be ascertained.

A study conducted by Hayes and Allinson (1996) reported by Sadler-Smith (2001, 5) observed that an individual’s cognitive style, too, bears vital importance for strategy use and that “while matching learning strategy to the style of the individual may improve learning performance in a given context, it will do nothing to help prepare the learner for subsequent learning tasks where the activity does not match the individuals’ preferred style.”

Furthermore, the learning style, as defined in the introduction, is highly significant in the use of learning strategies. Ehrman and Oxford (1988, 1989, in Oxford 2004, 1) discovered that learning style significantly influences the choice of strategies employed by the learner and that both, learning strategy and learning style, affect learning outcomes. In fact, some researchers (Holman 2001, 4)
doubt whether there is a distinction between learning style and learning strategies or whether the learning strategies are simply contextualized occurrences of learning styles.

It should also be noted that the learning setting affects the use of learning strategies. Those who are learning a language as second language learners typically use more learning strategies than their peers who learn the language as a foreign language, where that language is not used for everyday communication (Oxford and Ehrman 1995, 372).

Last but not least, a thorough study of language learning strategies was presented by Oxford and Ehrman (1995), already cited above, in which they correlated strategy use with a number of variables: language proficiency, teacher perception, gender, aptitude, learning style, personality type, ego boundaries, motivation, and anxiety. They found significant correlations between these variables and strategy use. They reported that the frequency of language learning strategies directly relates to language performance, measured by means of proficiency, achievement, or self-rating tests. However, their research also showed that the use of cognitive strategies was the only category that had a significantly positive correlation with language proficiency at the end of the training program. In addition, they reported that no correlation had been found between progress and effort but that a significant correlation had been found between progress and aptitude. They also reported findings in relation to affective factors: some degree of anxiety can have a facilitative effect on language performance and strategy use; students who can tolerate ambiguity more easily than their peers are likely to persist in language learning and are more prone to taking risks, which is essential for making progress. They assert (1995, 379) that “we can foster use of language learning strategies by helping students persist in their learning, maintain and enhance their own motivation, and develop skills in systematic planning.” The study included the research of the influence of formal education of the use of learning strategies. It was found (1995, 374) that respondents who had more previous education also displayed a more frequent use of cognitive and metacognitive strategies. Finally, they emphasized the importance of cognitive strategies involving deeper processing and semantic-level connections that enable the anchoring of new knowledge into existing schemata. As a result, the two authors assert that strategy training should focus on cognitive strategies, except with highly specific aspects of language learning, such as the learning of vocabulary (1995, 381).

3. Learning strategy assessment

The sections on the research in strategy use have highlighted the importance of the use of learning strategies and the awareness of other individual differences for effective language learning. As the language proficiency of our students has to be assessed before the beginning of a language program to enable us to define the suitable target level of proficiency, revealed by the target situation analysis, which is especially valuable for ESP settings, the assessment of learning strategies must be conducted before the application of strategy training. Its results will allow the teacher to determine the strengths and weaknesses of the students and consequently upon which strategies additional attention should be laid.
The assessment of learning strategies of first year students (2001/2002) at the Faculty of Maritime Studies and Transport in Portorož was carried out as a part of my master’s thesis that encompassed a wider spectrum determined by the concept of ‘needs analysis’. The SILL, Version for Speakers of Other Languages Learning English (Oxford 1990, 293–300), has been selected as the instrument for the assessment of student strategies because it provides a general assessment of strategies of individual students, it is easy and quick to administer, and above all, being a widely employed instrument, it is easy to establish comparisons between studies. In addition, it has been tested for its utility, validity, and reliability by its author and numerous other researchers.

The SILL is a questionnaire consisting of 50 statements related to 50 strategies divided into six strategy groups. The mean value reveals the frequency of use of individual strategies and groups of strategies. Values from 3.5 – 5 and considered as high, values from 2.5 – 3.4 as medium, and those from 1.0 – 2.4 as low.

This paper presents the results of the learning strategy assessment of first year students of traffic technology at our faculty, matched against comparable results obtained by other researchers.

The assessment results provided by three separate studies are presented in the table below:

<table>
<thead>
<tr>
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<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
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<th>(5)</th>
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</thead>
<tbody>
<tr>
<td>Memory strategies</td>
<td>2.45</td>
<td>2.53</td>
<td>3.01</td>
<td>2.79</td>
<td>2.56</td>
</tr>
<tr>
<td>Cognitive strategies</td>
<td>2.65</td>
<td>3.00</td>
<td>2.97</td>
<td>3.54</td>
<td>3.10</td>
</tr>
<tr>
<td>Compensation strategies</td>
<td>2.84</td>
<td>3.09</td>
<td>3.07</td>
<td>3.78</td>
<td>3.16</td>
</tr>
<tr>
<td>Metacognitive strategies</td>
<td>3.10</td>
<td>3.30</td>
<td>3.21</td>
<td>3.60</td>
<td>2.91</td>
</tr>
<tr>
<td>Affective strategies</td>
<td>2.34</td>
<td>2.43</td>
<td>2.97</td>
<td>2.97</td>
<td>2.34</td>
</tr>
<tr>
<td>Social strategies</td>
<td>2.74</td>
<td>2.85</td>
<td>3.25</td>
<td>3.77</td>
<td>3.15</td>
</tr>
<tr>
<td>Mean values</td>
<td>2.69</td>
<td>2.87</td>
<td>3.10</td>
<td>3.40</td>
<td>2.87</td>
</tr>
</tbody>
</table>

(3) Griffiths, Carol. 2003. Population: learners at the elementary level studying English in an ESL setting in New Zealand, aged 14-64, n=44.
(4) Griffiths, Carol. 2003. Population: learners at the advanced level studying English in an ESL setting in New Zealand, aged 14-64, n=34.

Additional information about students in groups (1) and (2) is that:
– according to the rating scales presented in the Common European Framework of Reference, the language proficiency level of students in group (1) ranges between A1 and B2, with the majority at the A2 level. The mean value for their motivation for studying English on a
scale from 1 (low) to 5 (high) is 3. In terms of language proficiency but not learning setting, the group is comparable to group (3);

– according to the rating scales presented in the Common European Framework of Reference, the language proficiency level of students in group (2) ranges between A2 and B2, with the majority at B1/B2 levels. The mean value for their motivation for studying English on a scale from 1 (low) to 5 (high) is 3.2. In terms of language proficiency and learning setting, the group is comparable to group (5); in terms of language proficiency but not in terms of learning setting, the group is comparable to group (4).

A comparison between groups (1) and (2) reveals that the mean value for all groups of strategies is higher in group (2), whose proficiency level is also higher. Similar conclusions can be reached after a comparison between groups (3) and (4), with the exception of memory strategies, whose mean value is lower in the more proficient group.

Comparing groups (1) and (3), whose proficiency level is similar, we can see that all mean values for strategy use are higher in group (3), which can probably be attributed to the fact that these learners learn English in an ESL setting where the language is used as a means of everyday communication, providing numerous opportunities for practice outside the classroom.

Groups (2), (4) and (5) share similar proficiency levels but students in group (4) also have the advantages supplied by the ESL setting, which probably contributed to the higher mean values for all strategy categories. Interestingly, the overall mean values for groups (2) and (5) are equal. Other partial mean values are also comparable, with the exception of mean values for metacognitive and social strategies, which are significantly lower and higher, respectively, for group (5).

We can conclude that the results confirm the relationship between the frequency of strategy use and language proficiency on one hand, and that between strategy use and setting on the other. For detailed comparisons and reasons resulting in the presented differences, no sufficient data about other individual differences among students in the five groups are available.

4. Sample reading activity and cognitive strategies

Initial assumptions that have to be made before strategy training is implemented are that:
– learning strategies are trainable and
– learning strategies enhance learning effectiveness.

In addition, since research findings in relation to strategy use and its effect on the rate of language development have been controversial, some researchers have questioned the attempts made to train learning strategies and whether the time can be more effectively spent if we concentrate on language only (Rees-Miller 1993, in Griffiths 2003, 7). Therefore, the main concern of language teachers should rest upon language teaching while strategy training should be seen as a supplement to language activities.
Research has revealed the importance of cognitive strategies, which involve deeper processing and semantic-level connections that enable the anchoring of new knowledge into existing schemata. In addition, the comparison between highly proficient language groups (2), (4) and (5) revealed a lower use of language learning strategies among university level students of traffic technology. Therefore, strategy training in this group of students should focus on cognitive strategies.

For the reasons presented in this section, the next section concentrates on a sample reading activity and a presentation of cognitive skills that could be integrated into the reading task in the form of reading activities, related to what at first sight may seem a fairly short and simple text for tertiary level students.

The fifteen cognitive strategies identified by Oxford (1990, 43–7) and classified into four major groups are:

a) Practicing: (1) repeating – doing something several times, (2) formally practicing with sounds and writing systems – practicing pronunciation or rewriting sentences, (3) recognizing and using formulas and patterns – being aware of routine formulas and unanalysed patterns, (4) recombining – combining known elements in new ways, and (5) practicing naturalistically – reading an article in the TL.
b) Receiving and sending messages: (6) getting the idea quickly – skimming to determine the main idea, and (7) using resources for receiving and sending messages.

c) Analysing and reasoning: (8) reasoning deductively – using general rules to apply them to new situations, (9) analysing expressions – understanding expressions by breaking them down into parts, (10) analysing contrastively – comparing elements to elements in the mother tongue, (11) translating – converting expressions into mother language equivalents, and (12) transferring – directly applying previous knowledge.

d) Creating structure for input and output: (13) taking notes – writing down the main idea or main points, (14) summarizing – making a summary of the passage, and (15) highlighting – using emphasis techniques.

Instructions to students that could be used in relation to the text ‘Historical Big Shots and Flight’ and to the fifteen cognitive strategies identified by Oxford might be as follows:

Instructions Strategy
• Which milestones in aviation history can you think of? Write them down. 12, 13
• Read the passage. What is the main idea it expresses? Does it relate to what you have mentioned before? 6
• Reread the text and identify what other points the author is trying to make. Do you agree with him? 1
• In the text find and highlight all words, expressions or collocations related to aviation. Can you guess what they mean? 3, 9, 11
• Find an article in English that discusses aviation history. Does it mention Edvard Rusjan? Write a summary of 100-150 words of the article you have found. 5, 7, 14

The brief sample reading activity presented above shows that strategy training can fairly easily be embedded into the use of the language teaching materials that we ordinarily use with our students and that in a way, implicit strategy training is what we are all already doing.

Nevertheless, in order to be able to expose our students to explicit (discussed, tried and evaluated) strategy training, the teachers first have to be aware of the options that they can provide their students in order to maximize their learning potentials, always bearing in mind that only a broad variety of options can meet all the diverse needs of our students.

5. Conclusion

This paper represents an attempt to emphasize the importance of the awareness of learning strategies on the part of the language teachers first and consequently by their students.

Too many students rely on too few learning options, which might be one of the reasons for their failure to achieve the expected level of proficiency after (eight) years of learning English.
Therefore, one of the goals of strategy training is raising the awareness of the different strategies that the students might find helpful in enhancing their learning.

Since strategies have been proved to enable more autonomous and (therefore) lifelong learning, another goal of strategy training includes learner empowerment, which entails that learners should become responsible, self-aware, and equipped with knowledge as to how to learn a language even after the completion of their formal education. Hence, the approach to learning should be learner-centred, involving also the exploration of the language learning process that would develop student awareness of the learning process itself.

Effective strategy training is expected to increase the students’ intrinsic motivation, which can only be achieved if teachers strive to meet their students’ learning desires and needs for language competence, self-esteem, and enjoyment.

Results of many studies still provide controversial outcomes in terms of strategy training and use, which is why studies have to be repeated under different conditions and in relation to a number of variables so that more comparable information becomes available.

In conclusion, considering the number and effect of individual differences, teachers should know their learners by assessing their styles and strategies, and should provide them with a rich array of learning situations that would enhance the development of different learning strategies, bearing in mind that there is no single methodology that suits the needs of all learners at the same time.

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