

ISSUES OF TRANSLATING ENGLISH KINESIOLOGICAL TERMS INTO CROATIAN

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Abstract:

An experimental univariate and multivariate analysis of variance with a repeated measures (ANOVA/MANOVA-Repeated Measures) design of two samples of physical education students (male, n = 51, and female, n = 43, totalling 94) from the Faculty of Kinesiology, University of Zagreb was used in this research. The two measurements, which implied the same 40-item test, were conducted at the beginning and at the end of an eight-month interval during which the students attended the course in English for Special Purposes amounting in total to 60 classes. The goal of this research was to examine the progress made by the students in translating the technical kinesiological terms from English into the Croatian language, and to see whether any gender differences existed in the test results.

After eliminating one item because of its lack of variability, the remaining 39 items were analysed. Consequently, five latent dimensions were extracted that explained 35% of the total variance.

The Repeated-Measures MANOVA was employed for the purpose of realizing the research goals. The computations showed a significant improvement between the two measurements, and they also showed a significant interaction of gender and measurement. Additionally, it was found that there existed no significant differences between the genders as regards their knowledge of English kinesiological terms.

Key words: *technical terms, kinesiology, translation, English language, Croatian language, gender, MANOVA - Repeated Measures*

THEMEN BEIM ÜBERSETZEN KINESIOLOGISCHER TERMINE AUS DEM ENGLISCHEN INS KROATISCHE

Zusammenfassung:

In dieser Untersuchung wurde eine experimentale univariate und multivariate Varianzanalyse mit dem wiederholten Messen (ANOVA/MANOVA Repeated Measures) zweier Stichproben von Studenten (Studenten, n = 51 und Studentinnen, n = 43, insgesamt 94) der Kinesiologischen Fakultät Zagreber Universität angewendet. Zwei Messverfahren, die denselben 40 Einheiten umfassenden Test bewerteten, wurden am Anfang und am Ende einer achtmonatigen Periode durchgeführt, in der die Studenten an 60 Stunden Sprachunterricht im Englischen (Fachsprache) teilgenommen haben. Das Ziel der Untersuchung war, Fortschritte im Übersetzen kinesiologicaler Fachterme aus dem Englischen ins Kroatische zu überprüfen sowie festzustellen, ob Geschlechtsunterschiede die Testergebnisse irgendwie beeinflussten.

Nachdem eine Messeinheit wegen mangelnder Unterschiedlichkeit eliminiert wurde, wurden die übrigen 39 Einheiten analysiert. Folglich wurden fünf latente Dimensionen ausgezogen, die 35% der Totalvarianz erklärten.

Das Messverfahren „Repeated-Measures MANOVA“ wurde zur Realisation der Untersuchungsziele verwendet. Die Berechnungen wiesen auf den bedeutenden Fortschritt zwischen zwei Messpunkten auf und zeigten auch eine bedeutende Wechselwirkung vom Geschlecht und dem Messen. Zusätzlich wurde es festgestellt, dass keine bedeutenden Unterschiede zwischen den Geschlechtern bezüglich ihrer Kenntnisse englischer kinesiologicaler Termine existierte.

Schlüsselwörter: *Fachterme, Kinesiologie, Übersetzen, englische Sprache, kroatische Sprache, Geschlecht, MANOVA - Repeated Measures*

Introduction

What is it that makes one scientific discipline that which it actually is? Firstly, it is its research field, secondly, its research goal, then the methodology applied to achieve this goal and finally, the technical language that enables the comprehension of terms used (*Nomen est omen!*), the communication and exchange of ideas and research results among people engaged in this particular scientific field, etc.

Kinesiology, a relatively new scientific field that is developing rapidly also has its technical vocabulary that semantically covers its contents. The research field of kinesiology is comprised of an extremely wide range of foci within its research objects such as sports, recreational sport, physical education, but also within the associated sciences such as medicine, psychology, sociology, etc. Consequently, the vocabulary used in kinesiology is remarkably wide and abundant in technical terms. Research methodology in kinesiology and the technical kinesiology-related language are the indispensable tools necessary for the realization of research studies and for the implementation of research results.

The technical language of kinesiology is, as previously stated, abundant in vocabulary that covers the semantic array necessary for the transfer of meaning. This technical vocabulary should be understood and spoken by all those engaged in this scientific discipline, regardless of their native language or mother tongue. Acquisition of technical vocabulary is, therefore, of essential importance for an accurate communication of ideas and research results among the experts from the field in question. However, because of the interference between various languages spoken by researchers from all parts of the world who conduct the studies in numerous scientific fields, that is, the researchers who are speakers of different languages (English, German, Italian, Croatian), the nomenclatural differences in the terminological designation of particular contents sometimes occur, thus causing confusion and incompatibility of the contents and terms assigned to these contents. These differences are best evidenced by the terms *strength*, *power* and *force*. The last one, *force*, has its equivalent in Croatian - *sila*. However, the first two, *strength* and *power*, although they do have their linguistic equivalents – *jakost* and *snaga* – are frequently ambiguously used so that the first one – *strength* – is in the Croatian language often used both to mean *jakost* and to mean *snaga*. In German, the confusion is even bigger, since the German word *Kraft* may denote *strength*, *power* (although there

also exists a more accurate expression, *Schnellkraft*, to denote the work done in a unit of time) and *force*! This is where an accurate translation from one language into the other comes into operation and it is of vital importance for the transfer of messages and, consequently, for the communication between people who deal with the same research field.

Successful translation from one language into the other depends on several factors. The competence of a translator, i.e. his/her knowledge of a language and of the formal patterning of language, is the most important one. To achieve a satisfactory knowledge necessary for a successful translation is not easy. Namely, such knowledge does not imply only the issue of learning the system of signs in one language and its transfer into the system of signs of another language (Borić, 2000), but it also connotes the issue of knowing their equivalents in the other language and, ultimately, of the successful adaptation of a text to the language into which this text is translated.

It may, therefore, be said that a successful translation is transparent, which means that 'in it there is no such thing as a full-scale substitution of translation units', but that 'what is transferred is the complete information' (Ivir, 1984:55).

So, what is the purpose of translating? As the Canadian linguist J.-P. Vinay stated in his first, out of three basic axioms regarding the issue of translating and the ways in which it is done (Klaić, 1992), we translate for the purpose of enabling others to understand. In order to achieve this goal it is necessary to find out the ways in which the meaning of an expression may be transferred from one language into the other.

The importance of translating today is indisputable for the purpose of a successful understanding of the message sent. This importance is evidenced in the priority-level status of applied linguistic studies that deal with this issue (Bratanić, 1997:2).

Previous research

What are the prerequisites for a successful translation from one language into the other?

Primarily, as already stated in the introduction to this paper, a successful translation implies an efficacious transfer of information as a whole (Ivir, 1984). However, this is not always easy, because, on the one hand, language is a formal system that operates with prescribed rules related to morphology, orthography or syntax, and on the other, it is replete with anomalies, polymorphisms, polysemy, etc. (Gojmerac, 1992:179)

Further, it is the knowledge possessed by the person who speaks and the knowledge possessed by the person who listens (or reads) that is important. This means that the knowledge possessed by a person that speaks implies his/her model of the listener's knowledge and vice versa (Boden, 1991:141). To achieve a successful transfer of information, a potential equivalent in the target language should be found. This equivalent must have the same communicative value as the segment from the original text (Gojmerac, 1992:179) or, in other words, the codes of the coded pieces of information must match. When talking about the coding of information then it is necessary, for the purpose of interpretation, to distinguish between the short-term and the long-term memory. Namely, the coding of verbal material, that is, the alteration of a piece of information into a form that may be stored and later on detected and retrieved is in the short-term memory primarily based on the phonological characteristics of words, whereas a meaningful organization of the material to be memorized is more significant for the coding of the material within the long-term memory (Zarevski, 1994:37). Data such as knowledge of facts may, according to Tulving (quoted according to Zarevski, 1994:51), in the long-term memory be stored in the episodic memory on the one hand, that is, the storing of data is accomplished with regard to the time and the place of the information's acquisition. Data retrieval into the conscious in this case occurs premeditatedly and deliberately. On the other hand, from the episodic memory the data may be stored in the semantic memory which is important for the usage of language and which implies memorising the meaning of the words, i.e. of the terms, and in which the detection of a piece of information occurs automatically. In semantic memory the material is organised according to categories in concordance with one's own internal cognitive schemes (Zarevski, 1994:39).

Where a particular piece of information will be stored, is not the one and only factor which will affect the (un)successful retrieval of the pieces of information from the memory system. The ways in which one learns, i.e. acquires data, or in the case of this research study, technical terms, and all other aspects connected herewith, for example, the affective factors in foreign language learning (Mihaljeviċ Djigunović, 1998), will indisputably have a decisive role in this respect as well.

What is it that causes most of the problems in translating?

Problems in translating arise owing to various reasons and in many cases these problems come

about as a consequence of interference between two languages (Tekavċić, 1996). For example, Swan (1997) talks about the interference between the mother tongue and the second language where the transfer of the communicated material on the basis of its similarity in source and in the target language may be either positive or negative. Further, interference may be connected with the emotional factor that affects memory or incorrect coding of information.

A problem also arises with the integration and adaptation of loan-words in a technical text, especially of loan-words that came into the target language, in this case Croatian, from English (for example, *kliknuti* ['kliknuti] derived from the English verb *click* ['klik], an expression used to denote the clicking sound produced by pressing a key on the mouse when operating a computer) (Zajec & Bauer, 1999) and for which no suitable equivalents in Croatian, that is, the target language exist. One segment of the same problem relates to the adaptation of orthography of loan-words, e.g. Anglicisms, in the Croatian language (Filipović & Menac, 1997:61-71).

Further, there are also problems with constructs of words called collocations whose terminological determination and typological classification varies from author to author (Hornby, 1989; Carter, 1987; Sinclair, 1991) usually depending on the firmness of the connection between the collocation elements (Gramley & Patzold, 1992; Hausmann, 1991; Cowie, Mackin & McCaig, 1983; Carter, 1987; Matešić, 1978; Menac, 1970; 1993; Maċek, 1992). Structuring of collocations varies in every language so that incorrect combinations of collocation items are not surprising. Namely, a lexeme changes its meaning under the influence of the item it combines with. A *pivot foot* is not translated as **pivotirajuće stopalo* in Croatian (the word *stopalo* being the equivalent of *foot*, the headword of the English collocation, and *pivotirajuće* being the equivalent of the English word *pivot*). Instead, in Croatian the equivalent of the term *pivot foot* is *pivotirajuća* (or *stajna*) *noga*, the underlined term meaning *leg* and not *foot*. A literal translation frequently produces an incorrect collocation pair.

The next reason for many incorrect translations are false pairs (*false friends/false cognates/falsche Freunde/faux amis*). These are the pairs of linguistic (not only lexical) units, in two different languages that have something in common, however, they are not entirely the same. The similarity between the terms that constitute a false pair lies in the similarity of their forms, in the similarity of their semantic contents, etc. (Ivir,

1984). When talking about false pairs one usually talks about two possible situations. The first one deals with loan-words that are loan-words in both languages observed, that is, these words were taken from a third language (usually Latin or Greek), and they exist in the two languages compared in two different meanings. As an example, let us analyse the English term *gymnasium* and the Croatian term *gimnazija*. Both words were derived from the Greek word *gymnasion* that has the same root as another Greek word, *gymnázesthai* to exercise in the nude. The Greek term entered the English language in the meaning that denotes a place where one can work out, usually on different machines, such as a lat machine, biceps curl machine, leg extension machine, etc'. However, the word entered the Croatian language in the meaning *high school*. The second situation relates to the terms originating in one of the two compared languages and which were taken over by the second language observed, however, in the target language they assumed a meaning different from the one in the source language. For example, the word *dress* in English denotes *clothing* or *an article of clothing usually worn by women*. In Croatian, on the other hand, the word *dres* [dres] is used to denote *characteristic sports clothes worn by (a) competitor(s) at competitions* (Anić, 1991:125). To denote this particular piece of clothing in English one must use the terms such as *football shirt* (if the sport in question is football) or *jersey*.

Additionally, when translating, attention should be paid to calques that are by some authors treated as loan-words, by some as original constructs and by some as alloglottal elements. The Italian linguist Roberto Gusmani (in Tekavčić, 1996) has a moderate approach to calques and he emphasizes that each example should be treated separately and that some of these constructs are either complete or partial translations, whereas some have an evocative or some other value. Tekavčić (1996) listed a series of examples of calques that are the result of interference between the Italian and the Croatian language.

When translating, attention should also be paid to the usage of the correct denotative meaning of a term, which should be differentiated from its connotative meaning (Raffaelli, 1997).

Finally, some incorrect translations are the result of completely arbitrary interpretations and combinations.

Since the point of interest in this research study was to determine whether the test applied will point to some differences between the male and female examinees, if any, it would be interesting to list some

research studies that deal with this issue. Scientists are aware of the fact that, apart from the primary and the secondary differences between men and women, there also exist some other subtle differences that relate to the ways in which the brain of a man and the brain of a woman process language, information, emotion or cognition, to the ways in which men and women determine time, the speed of events, to the ways in which they carry out mathematical computations or to the levels of their spatial orientation. Namely, it is considered that there certainly exists a reason why there are significantly more men than women who are mathematicians, aircraft pilots, engineers, architects or racing-car drivers. On the other hand, it is known, women prove to be better in interpersonal communication, in recognizing emotions in others, they are better in language-related issues (such as verbal communication), they are better in expressing emotions, in artistic expression and in accomplishing tasks that were previously planned in detail (Sabbatini, 1997).

As regards the ways in which men and women process language, Kimura (1999) concluded that women memorize lists of words or paragraphs significantly better than men. E.O. Wilson, the father of sociobiology, found (1992) that women have a more developed sense of empathy than men and that they are better than men in verbal and social skills, whereas men express more such characteristics as independence, dominance, aggression connected with social position, and mathematical skills.

Whether any gender differences will appear in the efficacy of translating technical kinesiological terms from English into the Croatian language will be one of the two foci of this research.

Research goal

In congruence with the curriculum of study at the Faculty of Kinesiology, University of Zagreb, the students are obliged to attend 60 classes of English (English for Special Purposes) during the 5th and the 6th semester (III. year of study). At faculties at which students do not major in philology the foreign language classes are focused on learning a foreign language for special purposes, that is, the students learn the technical language of the field they major in, for example, medicine, agriculture, engineering, and in the case of this study, kinesiology. The curriculum for the subject *Foreign Language* also comprises elements from general language, however, to the extent necessary for technical language acquisition. In the third year of their study at the Faculty of Kinesiology the students already possess a certain amount of

knowledge in their major. They acquire this knowledge through different subjects dealing with various areas of kinesiology (combat sports, swimming, track-and-field, team handball, volleyball and the subjects whose focus of interest are particular issues from the associated fields such as anatomy, physiology of sport, statistics, psychology of sport, sociology of sport, etc.). The students also have a certain level of knowledge of English as a general language since a foreign language, in this case English, is an obligatory subject both in the primary schools (four to five years of foreign language learning, from the fourth, and in some cases fifth, form to the eighth form) and in the secondary schools (four years of foreign language learning, from the first to the fourth form), which amounts to a minimum of eight years of learning a foreign language before enrolling in a faculty.

The goal of this research was to determine the level of knowledge of English kinesiological terms in physical education students, that is, to determine how successfully the students translated technical kinesiological terms in English into Croatian, and what progress they made after 60 classes of English for Special Purposes. Furthermore, any gender differences regarding this issue would be of interest. It is important to say here that the second measurement was carried out before the students took their exam in the English language, which implies that they had not actually learned for the exam, but that the knowledge they showed at the second measurement was only the result of auditing the English language classes and retaining in their memory only as much vocabulary as they had 'picked up' without, as already said, actually learning and preparing themselves for the exam. At this point it should be said that the students were asked to translate isolated terms, i.e. no context was offered.

The measurements were carried out at two time points. The first point was at the beginning of the academic year 1999/2000, that is, the beginning of the autumn semester of that academic year, and the second measurement was carried out at the end of the summer semester of that academic year (time interval of eight months). The measurements were conducted during the English language classes and they were carried out in groups in which the students were divided when attending the classes regarded as 'exercises'.

The terms selected for the test were selected in accordance with their supposed level of knowledge both of kinesiology in general and of the English language that the students had obtained so far.

This paper will not deal with the types of mistakes occurring during the translation process, but it will try to interpret the obtained results with regard to efficacy of translating kinesiological terms from English into the Croatian language.

This research is, therefore, expected to provide the following:

1. any evidence as regards the difference in the level of acquisition of the technical kinesiology-related vocabulary in English between the first measurement, carried out at the beginning of the academic year, and the second measurement carried out upon the completion of the 60-class course of English for Special Purposes (ESP) (realized in the V. and VI. semester, that is, in the third year of study) at the Faculty of Kinesiology, University of Zagreb. In other words, this research will try to show the progress that the physical education students made in the acquisition of technical kinesiology-related vocabulary in English over a period of eight months.
2. to determine any gender differences between the two samples of entities as regards the efficacy of the third year students from the Faculty of Kinesiology, University of Zagreb in translating technical kinesiological terms from English into Croatian.

Materials and methods

The sample of entities

The sample of subjects comprised 51 male and 43 female students, totalling 94, of the third year at the Faculty of Kinesiology University of Zagreb.

The students were tested at two time points. At both points they wrote the one and the same test. The student were informed about the investigation and gave their oral consent as regards the participation in this experiment.

Assessment tool

The test was comprised of forty technical kinesiological terms in English. The students were instructed to translate these terms into Croatian.

Mark four (4) was given to a translation that was completely correct within the technical kinesiological vocabulary. For example, a *javelin throw* *bacanje koplja* (the Croatian expression listed here being an accurate equivalent of the English term). Mark two (2) was given to translations that were nearly correct, e.g. *steplechase 3,000 metara s preprekama* (the Croatian expression listed here as an example reads in English *3,000m run with barriers*; the correct translation should, however, read *3,000 metara sa zaprekama*, i.e. paraphrased in English

3,000m run with obstacles). The list also included some terms that a student could translate both by a term that would have its meaning within the technical language and by a term that would have its meaning in the general language – these two meanings not corresponding in this case. The authors were of the opinion that such translations could be regarded neither as correct nor as nearly correct. Translations of this type were therefore marked by one (1 - the translation is correct in general language, but not in technical language) since a student knew its meaning in general language, however, he/she did not know what this term meant in technical language. An example of such translation is the translation of the English word **travelling**. The correct translation into Croatian in this case should read *koraci* (a ball-dribbling violation in basketball). However, some students translated **travelling** as *putovanje* (*going on a trip*) which is correct if used in general language, for example, in the sentence *Travelling to sporting events is a part of sport tourism*. On the other hand, such a translation is meaningless in technical kinesiological language. Zero points were awarded in cases when a student did not attempt to translate the given term. The mark minus one (-1) was given to translations that were regarded as incorrect. For example, in some cases **oxygen uptake** was translated as *dug kisika* (which would be a Croatian equivalent for the English term **oxygen debt**) instead of *primitak kisika*, which is the correct translation into Croatian. If a student wrote two translations out of which one was correct and the other one incorrect, then such translations were marked by -2. The reasoning behind such a decision was that a student actually did not know the correct translation, however, he/she tried to guess what the correct translation would be thus offering the evaluator two translations in the hope that at least one would be accidentally correct. Mark minus four -4 was given to those translations that were considered to be completely absurd. These translations had absolutely nothing in common with the English term and some of them could even be regarded as foolish. In many of these cases the English terms were translated literally into Croatian and it is the literal translation that was completely absurd in these cases. However, since the goal of this research was not to evaluate and consequently analyse the types of mistakes in translation, but to identify the level of knowledge of technical kinesiological vocabulary, the authors decided to qualify such translations not only as incorrect but as completely meaningless. As an example of such a translation let us take a look at the ways in which some students translated the

term **downhill racing** (an Alpine skiing event). The Croatian equivalent would be *spust*. Some translations that were marked by -4 were: *utrka niz padinu* [*a race down a slope*], *trka nizbrdo* [*a race down a hillside*], *voznja nizbrdo* [*a drive/a run down a hillside*], *brdska utrka* [*a hill-country race*] or *spuštanje niz padinu* [*coasting down a slope*].

Data processing methods

An experimental univariate and multivariate analysis of variance with a repeated measures (ANOVA/MANOVA-Repeated Measures) design of two samples of students (male and female) was used in this research. Principally, the two-factor multivariate analysis of variance was employed in which the first factor of classification represented the repeated measurement on the dependent entity sample at an interval of eight months. The logic of significance testing in such a design is simply an extension of the univariate case (*t*-test for dependent samples).

The second factor of classification represents independent samples of the two gender entities and it is called a *between-groups factor*. The methods of the analysis of variance are commonly used to estimate the significance of differences that describe more than two samples. The estimation of the test significance differs from the one in dependent samples.

Although each item of the test contributed by its proportion to the measurement error, the sample of forty items was sufficiently large for a satisfactory estimation of *the true measurement subject* (proficiency in technical kinesiological vocabulary in English). The multivariate approach to the processing of results obtained by students in particular test items contributed to a better estimation of the size of differences between the two measurements.

Arithmetic means and standard deviations of results in each item of the test were calculated for each gender category, as well as collectively for both categories; on the basis of these data the first item of the test (*football*) was omitted from further analysis. Condensation of the remaining 39 items was done by factor analysis. This was also done partly because of the need to achieve a more appropriate number of the degrees of freedom for further data processing.

The factor analysis under the component model with the PB extraction criterion by Stalec and Momirović and with the Kaiser Varimax rotation was carried out. The PB criterion is a strict criterion and as a rule it produces a smaller number of

dimensions than the Guttman-Kaiser (GK) criterion, so it stands to reason that it was selected for this analysis. The orthogonal relationship between the latent dimensions was selected to achieve the clearest possible differentiation between the items of the test. Each manifest variable in this analysis was represented by the results of students in the initial and in the final measurement. Thus, each examinee was represented in the analysis by the two series of data in the two measurements. Since no significant differences between the genders were obtained, the factor analysis encompassed the results for both genders together as well. These dimensions (factor results of students calculated on such shared dimensions) were later used to differentiate between the genders/measurements in ANOVA/MANOVA analyses. To be able to identify more clearly those items that caused the differences either between the measurements or between the genders, the basic parameters of factor scores of varimax factors both for the total sample, for the male and female students separately and for the repeated measurements were computed. Since the factor scores had been standardized (Parameters 0 and 1), the values were expressed in standard deviations of factors of the total sample for the first and for the second measurement.

The data were processed by the statistical program *STATISTICA* for Windows, Version 6.0.

Results and discussion

In concordance with the research goals statistical data processing was carried out and the set of 40 items of the test was analysed. On the basis of the values of the basic parameters and the frequencies of test item translations, the first test item was eliminated; namely, this item showed that the terms that occur rather frequently in everyday life and are, therefore, known to a large number of people regardless of whether they learn or whether they do not learn English systematically, had no discriminant value in this type of a test intended for a particular population. Accordingly, the zero variability of the results achieved by the students in the variable *football* did not permit that it be further present in the data analysis.

The rest of the analysis was carried out on the set comprised of 39 items. Due to the condensation of results and to becoming acquainted with the latent structure of the assessment tool, five latent dimensions (Table 1) were extracted.

These dimensions explain 35% of the total variance of the system of items, the percentages of the explained variance of factors ranging from 10.3% to 4.8%. Although it may be concluded

that these values are not satisfactory, it is the nature of the variables, i.e. the terms applied in the test that should be borne in mind. These terms are more or less independent (the average correlation in the correlation matrix is 0.10) and they refer either to particular sports and elements of sports games or to the scientific disciplines associated with kinesiology (physiology, kinesiological anthropology, etc.), so that the structure of the obtained dimensions is in accord with this selection of terms. One should bear in mind that this is the first testing of this particular assessment tool. The authors of these papers intend to select from this assessment tool a set of items that have the satisfactory characteristics and combine them with a certain number of new items in order to obtain a tool that would be of an optimal structure for this population of students (physical education students). The obtained results should also provide some data on any possible modifications of the English language curriculum at the Faculty of Kinesiology.

The first dimension is predominantly defined by the terms denoting various sports, as well as the elements of sports games – such an example is the term *throw-in* (a throw-in is awarded against the team that last touched the ball before it went out of bounds across the sideline [*football*; *team handball*]). The variability of the marks assigned to the translations ranges, as expected, from the best ones, meaning completely correct, to the worst ones, that is, to the completely absurd.

The terms such as *speed skating*, *pole vault*, *shot put*, *long jump* and *javelin throw* are among the most frequently correctly translated ones. One of the possible explanations why this is so is that track-and-field belongs to those sports that the students from the Faculty of Kinesiology most probably and most frequently watch on TV channels in the English language (Eurosport, Sky Sports), and are, therefore, better acquainted with the terms connected with the ‘queen of sports’.

On the other hand, the second set of terms, such as *scuba diving*, *downhill racing* or *fencing* that can also be found on this factor, is comprised of the terms that the students, in most cases, translated either incorrectly or they wrote completely absurd translations. The reasons why the students wrote such translations, either incorrect or absurd, might be the following. The term *scuba diving* was mostly translated by the students as *ronjenje* [*diving*] without specifying what type of *diving* the term actually denotes. Namely, the students do not know that the word *scuba* is an acronym of the expression *self-contained underwater breathing apparatus*. It is the full

Table 1: Varimax factors of items and tests of the significance of differences on the basis of ANOVA Repeated Measures (only the significant differences are listed) for 39 test items for the total sample of students (both genders together).

	Fac-1	Fac-2	Fac-3	Fac-4	Fac-5	Significant differences (p<.05)
speed skating	.38	-.01	.15	-.25	.01	measurement
tie ball	-.03	.03	.20	-.08	.32	
volleyball	-.04	.20	.07	.43	.02	
sculling	.29	.01	.23	-.05	.52	measurement
cross-country skiing	.33	.00	.13	-.07	.13	measurement*gender
scuba diving	.43	.12	.30	-.10	.18	measurement
front crawl	.43	.16	-.11	-.30	.13	measurement
medley	.24	-.03	.58	.01	.15	measurement
throw-in	.39	.20	.08	.11	-.16	measurement
paddling	.13	-.30	.08	.18	.58	measurement
luge tobogganing	.25	.12	-.15	-.16	.47	measurement
oxygen debt	.27	.51	.10	.06	.04	measur., measur.*gender
downhill racing	.36	-.02	.31	.08	-.04	measurement
pole vault	.45	.19	.16	.23	.10	measurement
shot put	.71	.04	.07	.20	.11	measurement
javelin throw	.67	.17	-.07	.09	-.06	measurement
fencing	.54	.01	-.06	-.07	.13	measurement
oar-boat racing	.05	-.03	.03	.44	.55	
long jump	.41	.27	-.18	.32	-.11	measurement
steeplechase	.13	.30	.27	.42	-.07	
hurdles	.58	.01	.14	.05	.01	measurement
speed	-.12	.35	.29	.24	.13	
endurance	.36	.42	.11	-.37	.08	measurement
power	-.14	.18	-.09	.05	.36	
ability	.25	.53	-.44	-.04	.26	measur., measur.*gender
skill	.23	.58	.04	-.27	.10	measurement
oxygen uptake	.01	.37	.18	-.18	.07	measurement
breaststroke	.50	.20	.23	-.12	-.12	measurement
carbohydrate	-.01	.18	.31	-.41	.12	
lean body mass	-.11	-.16	-.21	.20	.17	
weight	-.00	.65	.04	-.00	.07	
accuracy	.39	.28	.28	.05	-.30	measurement*gender
injury	.09	.73	.07	.11	-.01	measurement
disability	.04	.16	.58	-.07	.03	
medley relay	.27	.07	.58	.14	.01	measurement
top sport	.11	.46	.20	.16	-.07	measurement
strength	.06	.58	-.09	.09	-.24	
wrestling	.07	.59	-.02	-.01	-.02	
vertical jump	.21	-.07	.01	.34	.15	measurement
Explained variance	4.03	3.87	2.21	1.74	1.89	
Proportion of total	.10	.10	.06	.04	.05	

expression that presents us with a clearer picture of what type of diving is an issue here. The very translation *ronjenje* is the type of translation in which an examinee translates the given term by the term that has a meaning that is too broad, that is, he/she translates the hyponym with a superordinate (Petrović, 1997:241-250).

The term *downhill racing* was rarely translated correctly by the examinees, and if the students tried to translate it at all, then the translations were mostly absurd. Such an absurd translation is in the case of this term frequently either the result of a literal translation or of a completely fabricated combination of a partial and of an incorrect translation

of one of the two lexical items comprising the given term. As already said in the part of this paper that deals with the description of the assessment tool, the students translated this term in the following ways: *utrka niz padinu* [a race down a slope], *trka nizbrdo* [a race down a hillside], *vožnja nizbrdo* [a drive/a run down a hillside], *brdska utrka* [a hill-country race], *spuštanje niz padinu* [coasting down a slope]. In each of the listed examples it is evident that particular parts of the term were translated either literally or partially, and an attempt to set up a collocation between the two elements translated in this way was not successful. For example, the translation *trka nizbrdo* [a race down a hillside] is an example of a literal translation. However, the collocation *trka nizbrdo* is, in this case, completely semantically empty. True, it is really the *race* [utrka], and this *race* [utrka] is really executed *down the hill* [niz brdo]. However, in such a translation neither the sport nor the event are specified. Additionally, the word *trka* does not belong to the standard Croatian language; the word *utrka* should be used instead. The translation *brdska utrka* [a hill-country race] is an example of a completely made-up collocation of the translations of collocation elements in the English language. In the term *downhill* the lexeme *~hill* was translated into Croatian as *brdski*, which is correct; however, it is only a partial translation of the whole collocation element. The second collocation element, *racing*, was translated correctly as *utrka*. Still, such a combination of collocation elements translations generates in the Croatian language a completely made-up translation of the given term. Why do such fabricated collocations, or, generally, incorrect collocations appear as translations is the question that needs further analysis which is not the subject of this paper.

The term *fencing* [mačevanje] was translated by a significant number of students as *obrana* [defence] because it partially sounds the same as the word *defence*, which is the English equivalent of the Croatian term – *fencing* [‘fensiŋ]; *defence* [‘di:fens] – so that from the contents stored in the memory an expression matched to the given term is retrieved according to the acoustic scheme in the (sub)conscious of the examinee who translated it.

Apart from the terms that are actually the names of particular sports, some other kinesiological terms may be found on this factor that relate to other areas of kinesiology, but are, however, immanent to each sport, which is probably the reason why they are to be found on this factor. Examples of these terms are *accuracy*

and *endurance*, the basic motor abilities that relate to the area of the basic athletic conditioning of athletes.

The second dimension was comprised of the terms that, if the highest projections be taken into consideration, relate to anthropological dimensions, that is, to the description of the psychomotor status of a subject. The terms such as *injury*, *weight*, *strength*, *skill*, *ability*, *oxygen debt*, *top sport*, *endurance*, *oxygen uptake* etc. have the highest projection on this factor.

It is interesting that the term *wrestling*, which does not belong to the described typological set of terms, may also be found on this factor and it holds, according to the size of its projection (.59), the high third place among the variables occurring on this factor. When trying to explain this phenomenon from the point of view of episodic memory, then it may be said that the subject *Wrestling* belongs to the group of the first-year-of-study subjects so that the students learn its contents either simultaneously (anatomy) or shortly before (physiology, anthropology, psychology) they learn the contents of other subjects that relate to the anthropological status of an athlete. It is highly probable that a certain number of examples in these subjects are taken from *Wrestling* since it is taught, together with *Judo*, *Track-and-Field* and *Team Handball* in the first year of study, so that the first pieces of knowledge related to sports, among them *wrestling*, are taught to the students in the listed subjects.

The next interesting example from this factor is the term *paddling* whose projection has a negative sign and which does not belong in any way to the type of terms occurring on this factor. This term is completely atypical for this group of terms and it will appear once again, but this time with a positive sign, on the fifth factor where it will be a typical representative of terms grouped on this factor.

The third factor comprises the variables whose names are in a way similar, for example, **ability|disability**, **medley|medley** relay. The variable *ability* dominantly belongs to the second factor containing the terms that denote the psychophysical and functional status of athletes. However, on the third factor this variable has a highly negative projection and describes this factor with one part of its variance. Yet, it does that in such a way as to explain with its highly negative projection the negative pole of this factor, that is, it introduces the term *disability* which, on the other hand, has a very high positive projection, so that, with a slight

restriction, this leads to the conclusion, that what connects this term with the terms such as *medley* and *medley relay*, and also *scuba diving*, although this last one is connected with the previous ones indirectly, is the success of Croatian athletes, both the able-bodied ones (Gordan Kožulj – swimming) and the ones with a disability (Ana Sršen – swimming), at international-level championships in swimming. Namely, because of the outstanding success of Croatian athletes in swimming it is very probably that the students watch the competitions in which these athletes participate more frequently than they watch other sports on TV. Additionally, apart from watching the broadcasts of these competition events on Croatian TV channels, the students probably watch the TV channels in the English language (Eurosport, Sky Sports, etc.) and they probably also surf through the Internet to read about these athletes, so that again, they probably read the texts in English. This is the reason why the terms connected with water sports are well known to the students of the Faculty of Kinesiology. Likewise, the variable *downhill skiing* also has a high positive projection, which can, accordingly, also be contributed to the sport achievements of Croatian athletes at international competitions, namely, Janica and Ivica Kostelić.

To conclude: The terms connected with those sports in which Croatian athletes achieve world-class results are well known to physical education students, because they not only follow the performances of these athletes at championships in which they participate, but they follow them on the TV channels in English (Eurosport, Sky Sports, etc.) or on the Internet, again, most probably, in English.

The fourth factor may be described as the one dominated by the terms implying *jumps*. The term *volleyball* has a very high projection on this factor, and so does the term *steeplechase*. The term *vertical jump*, the name of one of the motor tests, may also be found here. This term may be said to be interesting because it is the term that was least frequently correctly translated. Among the terms with a high projection on this factor there is also the term *long jump*. All this makes it possible to conclude that the terms denoting or implying *jumps*, either directly (*vertical jump* and *long jump*) or indirectly (*steeplechase* – the runners *jump* over the obstacles, whereas in *volleyball* many hits at the ball are executed from a jump), have the highest positive projections on this factor.

The terms that prevail on **the fifth factor** are also the terms connected with sports (as was the

case with the first and the third factor); however, these terms have one additional characteristic. All the sports found on this factor imply the utilization of a vehicle or a vessel. Namely, in *oar-boat racing*, in *sculling* and in *paddling* (kayak, canoe) the athletes use a vessel (a boat) to negotiate the course. In *luge tobogganing* they use a vehicle (a luge/a sled) for coasting, that is, racing down the chute. The terms that do not denote any sport but are connected with the anthropological status of an athlete (for example, *power*) and that are also found on this factor may be said to be connected with, or even important for the sports concentrated on this factor. *Power* is definitely important and characteristic for *oar-boat racing*, *sculling* or *paddling*. The last term, *paddling*, gave the largest portion of its variance to the fifth factor, and with the rest of its variance it explained, with a negative sign, the second factor. To explain: The terms grouped on the second factor are the terms that describe the anthropological status of an athlete and the term *paddling* not only belongs to the group of terms denoting sports, but it is also a specific term within such a group, because it denotes the type of rowing in which the paddle is not fixed to the boat (kayak and canoe).

The analysis of differences according to gender and repeated measurements

To test the differences between the results achieved by male and female students from the Faculty of Kinesiology in the repeated test of knowledge of kinesiological terms in the English language, several analyses of variance with repeated measures were carried out. As already said, the two-factor multivariate analysis of variance, in which **gender** represented one and **measurement** the other classification factor, was employed in this study.

The Repeated-Measures MANOVA of the set comprising 39 items (Table 2) showed a significant improvement of the results achieved by the students between the two time points at which the measurements were carried out, but it also showed a significant interaction of gender and measurement.

Therefore, a significant improvement of the results after a period of eight months was noted; however, the data showed that this improvement occurred differently with male and female students (the difference was significant in the interaction of gender and measurement). In this case the number of the degrees of freedom is unfavourable (too large a number of variables in relation to the total number of students), so that the results of this

Table 2: MANOVA – Multivariate tests of significance on the basis of 39 items of the test.

Effect	Value	F	Effect df	Error df	p
Intercept	.01	149.89	39	55	.00
Gender	.50	1.42	39	55	.11
Measurements	.19	5.85	39	55	.00
Measur.*gender	.44	1.83	39	55	.02

analysis should be taken with a grain of salt and one should rely more on the results of the MANOVA calculated on the basis of the varimax factors.

The condensation of results on the five extracted factors and the computed factor scores of the students made it possible to carry out the MANOVA with a more favourable number of degrees of freedom (Table 3).

Table 4 displays the basic parameters of factor scores of the varimax factors of the total sample, of the male and female group of students separately and of the repeated measurements. Significant differences ($p < 0.05$) between the factor scores, printed in bold numbers (the values are expressed in the parts of standard deviations of factors of the total sample in the first and in the second measurement), were obtained from the results of the

Table 3: MANOVA – Multivariate tests of significance on the basis of five extracted varimax factors.

Effect	Value	F	Effect df	Error df	p
Intercept	1.00	.01	5	88	1.00
Gender	.95	.99	5	88	.43
Measurements	.40	26.02	5	88	.00
Measur.*gender	.98	.44	5	88	.82

In this analysis the differences between the results of students are observed on the basis of five latent variables (varimax factors) for the two genders and for two measurements. The tests of differences observed through the varimax-factor scores of students behave differently from the previous ones. In terms of factors the results of the students differ significantly only between the two measurements. According to the factors of this test, gender did not differentiate between the students as regards their knowledge of English kinesiological terms. It is interesting that not even a difference in the interaction of gender and measurement was obtained.

students in the two measurements. Since no significant differences between the genders were obtained in any of the factors, these data were omitted from this paper.

Observed as a total sample (Table 4) the male and the female students achieved a significant improvement ($p < 0.05$) in their knowledge in the first, second and in the fifth factor between the two measurements. If considered separately, then the male students achieved a significant improvement in the translations of terms comprised in the first, second and in the fifth factor, whereas the female students achieved such an improvement in translations of terms comprised in the first and in the

Table 4: Standardized values of basic parameters of varimax factors for the total sample and for the two groups of students, male and female students.

	Total n = 94		Male n = 51		Female n = 43	
	\bar{x}	σ	\bar{x}	σ	\bar{x}	σ
Fac-1:1	-.48	.92	-.20	.86	-.49	.92
Fac-1:2	.48	.84	.20	1.09	.50	.81
Fac-2:1	-.16	1.10	.02	1.12	-.36	1.06
Fac-2:2	.16	.86	.27	.83	.02	.90
Fac-3:1	-.00	.89	.05	.96	.06	.81
Fac-3:2	.00	1.10	.13	1.08	.06	1.12
Fac-4:1	.03	1.08	-.03	1.11	.09	1.05
Fac-4:2	-.03	.92	.02	.83	-.09	1.03
Fac-5:1	-.20	.86	-.15	.73	-.25	1.01
Fac-5:2	.20	1.09	.28	1.12	.10	1.05

second factor. It is evident in all three groups (total, male students, female students) that there was no improvement between the two measurements in the efficiency with which the students translated the terms comprised in the third and in the fourth factor. This either means that the students initially knew the meanings of some terms, so that no significantly better results were to be expected in the second measurement, or that some terms were for them both difficult and incomprehensible, so that they were equally unsuccessful in translating them both in the first and in the second measurement.

To explain the **significant differences between the measurements** achieved by the multivariate analyses (Tables 2, 3 and 4), it is necessary to take a second look at Table 1 which contains the test of differences for each item separately, being statistically different on the basis of one or both classification factors (ANOVA with repeated measures). Significant difference on the basis of both classification factors (measurement and interaction of measurement and gender) was obtained only for two items (*oxygen debt* and *ability*), whereas a significant difference on the basis of interaction between gender and measurement was obtained for the items *cross-country skiing* and *accuracy*. Out of the remaining number of items in most of them the significance was achieved on the basis of differences between the two measurements. These data are in congruence with other analyses of variance (Tables 2, 3 and 4) in which the item of data about the significant differences between the initial and the final measurement recurs. Most variables take part in this phenomenon. It is probably more interesting here to list the variables that did not contribute to significant differences between the two measurements (*tie ball*, *volleyball*, *oar-boat racing*, *steeplechase*, *speed*, *power*, *carbohydrate*, *lean body mass*, *weight*, *disability*, *strength*, *wrestling*), which means that the students were relatively efficient in translating them in the initial testing so that the number of those who achieved poor results in these items in the initial measurement, and who were more efficient in translating them in the second measurement, was insufficient to achieve any significant difference between the measurements in these variables. Not in a single case here are we talking about the dominant variables of the first varimax factor, which, in some way, characterizes the items that define this factor. Namely, one group of these terms belongs to the general and applied kinesiology, that is, it is very likely that the students have learned some of these terms while attending

the classes in the subjects taught in the first and in the second year of study, for example, *Basic Kinesiological Transformations*, *Anatomy*, *Physiology*, *Kinesiological Anthropology*, *Biomechanics*, etc. in which students encounter the terms such as *speed*, *strength* or *lean body mass*. In the second group of terms connected with sports the terms *volleyball* and *wrestling* are also connected with the subjects taught in the first two years of study, whereas the terms such as *oar-boat racing* and *steeplechase* cause most of the problems as regards their translation, that is, the students find it difficult to translate these terms and the results that are achieved in this respect are relatively poor not only in the second measurement, but also later in the written part of the official exam in the subject *English Language*. However, the results of this written part of the exam are not the subject of this paper and will not be discussed further here.

If Tables 1, 2, 3 and 4 are compared, then it is obvious why no significant differences between the genders were obtained. No significant difference was obtained either by item, by set of items or especially by varimax factors. This speaks in favour of the statement that male and female physical education students do not differ either in the initial measurement or, which is interesting, in the final measurement. The only differences occur in some variables as regards the amount of the acquired knowledge during the period of eight months.

This means that the difference between the genders in the ways, that is, in the amount of knowledge acquired throughout the learning period is insignificant. It is assumed that the eight months of classes led to an increase of comprehension of the test contents on the one hand, and to memorizing the terms, equally with both genders, on the other. Since the students are young people, therefore, both comprehension and the memorizing of contents are expressed. It is not easy to explain the absence of differences between the genders with regard to the linguistic character of the test and the proved advantage of women in this cognitive dimension.

A complex network of reasons and causes lies in the background of this absence of significant differences between the genders in the test, which examines the knowledge of technical kinesiological terms in the English language. However, let us only say briefly that, in congruence with the facts listed at the beginning of this text, an additional factor that contributed to the absence of significant gender differences in this test is the one relating to the structure of the cognitive space in women who

choose this type of study (kinesiology/physical education) in which the tendency to be equal with men in elements that traditionally belong to the male field of interest (bodily strength) is expressed at the expense of developing and fostering verbal skills. This may be explained, as already said, by an increased interest expressed by men for following athletic competitions or for reading technical literature (frequently in English), which consequently resulted in an improvement of verbal skills, or, at least, in acquiring some technical terms. If the issue of this paper is considered from any of these two viewpoints, one will arrive at the same conclusion, namely, that on the whole there are no significant differences, except in a very small number of cases, between male and female students from the Faculty of Kinesiology in Zagreb, in this respect.

As regards the results dealing with the first factor, and the data from Table 4 confirm this, a possible explanation might be that in the first measurement men knew the terms grouped on the first factor better. In the second measurement, their progress was less than the progress achieved by women, so it may be said that women learned the new terms better. Although numerous research studies showed the differences between the genders as regards verbal skills, the ways in which men and women determine time, speed of events, the ways in which men and women process pieces of information, emotions and perception, there are other studies which showed that the differences between the genders in these issues start to decrease or even disappear (Zarevski, 2000). According to this author there exists the so-called gender role which is determined by behaviour, interests, attitudes and the like, typical for a particular gender. If this gender role is observed from the environmental or socio-cultural point of view then the absence of significant differences between the genders in this study is easier to explain. In this research the population tested is the one in which the environmental factors, such as specific characteristics of the study and the increased interest of male students for sports-related events (following of competitions on TV, in the newspapers, etc.), annul in some way, because of the increased level of being informed about certain issues, the advantage of women as regards the issues connected with verbal skills, in this case, the skills related to translating technical terms from one language (English) into the other (Croatian). This may also be substantiated by the study conducted by Viskiċ-Štalec & Katović (2001) in which no difference between the male and the female physical education students was

found in the dimension in which men traditionally dominate (spatial ability). Finally, all these results are in congruence with the meta-analysis of verbal abilities in genders. According to Hyde and Linn (1998; according to Zarevski, 2000) this analysis points to the trend of the decrease of differences between genders.

Conclusion

The Repeated-Measures MANOVA was employed on 39 test items to determine whether there was any significant improvement in the efficacy of translating English kinesiological terms into Croatian between the two time points (60 ESP classes over an eight-month interval), and whether there were any significant differences between the genders in this respect. These computations not only showed a significant improvement between the two measurements, but they also showed a significant interaction of gender and measurement. However, the data indicated that the difference between the genders as regards the results achieved in the test was only in that this improvement occurred differently with male and female students.

Factor analysis under the component model with the PB extraction criterion and with the varimax rotation was used for the condensation of results achieved by students in each test item. Consequently, five latent dimensions were extracted that explained 35% of the total variance. Significant differences between the two measurements were obtained on the basis of the first factor, which contains the terms that define sports, as well as the elements of sports games. Similar results were obtained for the second factor, which contained terms related to anthropological dimensions and the psycho-motor status of subjects. As regards the third factor, defined predominantly by the terms connected with water and winter sports, no significant difference between measurements was obtained. This is explained by the popularity of some sports in which some Croatian athletes achieve top results (swimming and skiing). Consequently, the physical education students follow the competition events on TV channels, presumably sometimes also in English, thus learning the terms connected with these sports. No significant difference was obtained on the basis of the fourth factor that comprised the terms denoting or implying jumps. The fifth factor, however, as was the case with the first two factors, pointed to a significant improvement in the acquisition of English kinesiological terms in male students (but not in female students) between the two measurements. The terms that had the highest projections on this factor were the terms connected

with sports, however, they denoted those sports in which a vehicle (a luge/a sled) or a vessel (a boat) is used to negotiate a course. On the whole and taking into account the final size of improvement, there were no differences between the genders.

On the whole, the students, both male and the female, achieved a significant improvement as regards their knowledge of English kinesiological terms. However, no significant difference between the genders was obtained either by item, by set of items or by varimax factors

References

- Anić, V. (1991). *Rječnik hrvatskoga jezika*. [Dictionary of the Croatian Language.] Zagreb: Novi Liber.
- Boden, M.A. (1991). *Computer Models of Mind*. Cambridge: Cambridge University Press.
- Borić, N. (2000). Kompleksni jezični znakovi s osvrtom na praktične probleme njihova prevođenja. [Complex linguistic signs with regard to the practical problems of their translation. In Croatian.] *Strani jezici*, 29(4), 201-208.
- Bratanić, M. (1997). Od intuicije do opservacije i natrag (Višejezična leksikografija i paralelnikorpusi). [From institution to observation and back again (Multilingual lexicography and parallel corpora). In Croatian.] *Suvremena lingvistika*, 23(1-2), 1-12.
- Carter, R. (1987). *Vocabulary – Applied Linguistic Perspectives*. London: Allen Unwin.
- Cowie, A.P., Mackin, R. & McCaig, I.R. (1983). *Oxford Dictionary of Current Idiomatic English*. Oxford: Oxford University Press.
- Filipović, R. & Menac, A. (1997). Adaptacija ortografije anglicizama u hrvatskom i ruskom jeziku: teorija i primjena. [Adaptation of the orthography of Anglicisms in Croatian and Russian: theory and application. In Croatian.] *Suvremena lingvistika*, 23(1-2), 61-71.
- Gojmerac, M. (1992). Ireverzibilnost prijevoda - znak strukturalnih razlika među jezicima. [Irreversibility of translation – the sign of structural differences between the languages. In Croatian.] *Strani jezici*. 21(3-4), 175-18.
- Gramley, D. & Patzold, K.-M. (1992). *A Survey of Modern English*. London: Routledge.
- Hausmann, F.J. (1991). Collocations in monolingual and bilingual English dictionaries. In Winter (Ed.), *Trends in Linguistics – Studies and Monographs*, 54, 225-236. Berlin – New York: Mouton de Gruyter.
- Hornby, A.S. (1989). *Oxford Advanced Learner's Dictionary of Current English*. Oxford: Oxford Advanced University Press.
- Ivir, V. (1984). *Teorija i tehnika prevođenja*. [Theory and the techniques of translating. In Croatian.] Novi Sad: Zavod za izdavanje udžbenika Novi Sad.
- Kimura, D. (1999). *Sex and Cognition*. Cambridge: MIT Press.
- Klaić, Ž. (1992). Sedam prevoditeljskih postupaka prema J.-P. Vinayu. [Seven translating procedures according to J.-P. Vinay. In Croatian.] *Strani jezici*. 24(3-4), 190-195.
- Maček, D. (1992). Neka pitanja o definiciji idiomatskih fraza. [Some issues regarding the definition of fixed idiomatic phrases. In Croatian.] *Filologija*. 20-21, 263-275.
- Matešić, J. (1975). O poredbenom frazemu u hrvatskom jeziku. [On the comparison phrase in the Croatian language. In Croatian.] *Filologija*. 8, 211-226.
- Menac, A. (1970). O strukturi frazeologizama. [On the structure of phraseologisms In Croatian.] *Jezik*, 18(1), 1-4.
- Menac, A. (1993). Frazeologija u različitim tipovima jednojezičnih rječnika. [Phraseology in different types of one-language dictionaries. In Croatian.] *Filologija*. 22-23, 161-168.
- Mihaljević Djigunović, J. (1998). *Uloga afektivnih faktora u učenju stranoga jezika*. [The role of affect factors in foreign language learning. In Croatian.] Zagreb: Filozofski fakultet Sveučilišta u Zagrebu.
- Petrović, B. (1997). Nadređenice i podređenice u leksiku i rječniku. [Superordinates and hyponyms in the lexicon and in a dictionary. In Croatian.] *Suvremena lingvistika*, 23(1-2), 241-25.

- Raffaelli, I. (1997). O konotaciji. [On connotation. In Croatian.] *Strani jezici*, 26(4), 405-416.
- Sabbatini, R.M.E. (1999). Are There Differences between the Brains of Males and Females?. *Brain & Mind - Electronic Magazine on Neuroscience*, No. 11, http://www.epub.org.br/cm/home_i.htm
- Sinclair, J.M. (1991). *Corpus, Concordance, Collocation*. Oxford: Oxford University Press.
- Swan, M. (1997). The influence of the mother tongue on second language vocabulary acquisition and use. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: Description, Acquisition and Pedagogy* (pp. 156-180). Cambridge: Cambridge University Press.
- Tekavčić, P. (1996). Jezične interferencije, jezično posuđivanje i s time povezane teme. [Language interference, loaning and the related issues. In Croatian.] *Strani jezici*, 25(1-2), 18-23.
- Viskiće Štalec, N. & Katović, D. (2001). Skydive virtual environment: cognitive processing. In *Pass.com performance analysis, Sport Science, Computers (2001). World Congress at the Centre for performance Analysis UWIC*. Cardiff 26-29 June (pp. 49-56).
- Wilson, E.O. (1992). *Sociobiology: The New Synthesis*. Twenty-fifth Anniversary Edition. Cambridge: The Belknap Press of Harvard University Press.
- Zajec, J. & Bauer, I. (1999). Integracija i adaptacija tuđica u stručnom tekstu. [Integration and adaptation of loan-words in a technical text. In Croatian.] *Strani jezici*, 28(2), 85-9.
- Zarevski, P. (1994). *Psihologija pamćenja i učenja*. [The Psychology of Memory and Learning. In Croatian.]. Jastrebarsko: Naklada Slap.
- Zarevski, P. (2000). *Struktura i priroda inteligencije*. [The Structure and the Nature of Intelligence. In Croatian.]. Jastrebarsko: Naklada Slap.

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PROBLEMI PREVOĐENJA KINEZILOŠKIH POJMOVA S ENGLESKOGA NA HRVATSKI JEZIK

Sažetak

U nastavi stranog jezika na dodiplomskim studijima na nefilološkim fakultetima u Hrvatskoj naglasak je na stručnom jeziku pojedinog znanstvenog područja, premda se poučavaju i elementi općeg jezika. Ovim se istraživanjem željelo utvrditi koliko studenti kineziologije poznaju stručno kineziološko nazivlje na engleskom jeziku, kao i to u kojoj su mjeri fundus tog svoga znanja tijekom nastave u fondu od 60 nastavnih sati (na trećoj godini studija na Kineziološkom fakultetu Sveučilišta u Zagrebu) uspjeli proširiti. Dobiveni bi rezultati također trebali poslužiti kao smjernice za eventualne modifikacije programa nastave engleskog stručnog jezika.

Cilj ovog istraživanja bio je utvrditi napredak koji studenti postižu u prevođenju stručnih kinezioloških pojmova s engleskoga na hrvatski jezik i ustanoviti postoje li razlike među spolovima u rezultatima testa.

Mjerni je instrument bio sastavljen od 40 čestica (pojmovi na engleskom jeziku). Prijevodi pojmova koje su načinili studenti ocijenjeni su na skali od 0 do ± 4 . U obradi rezultata primijenjene su dvije temeljne analize. Za kondenzaciju rezultata studenata na česticama testa upotrijebljena je faktorska analiza pod komponentnim modelom s PB kriterijem ekstrakcije i varimaks rotacijom. Dobiveno je pet varimaks faktora sa 35% objašnjene varijance skupa čestica testa. Ovi su faktori poslužili u eksperimentalnom nacrtu u multivarijantnoj analizi varijance s ponavljajućim mjerenjem studenata i studentica (51 student i 43 studentice; ukupno 94). Analiza rezultata, provedena na temelju ekstrahiranih faktora, pokazala je značajne razlike samo između dva mjerenja (inicijalnog i finalnog između kojih je proteklo osam mjeseci) i to samo u nekim faktorima. Premda očekivane, nisu dobivene razlike među studentima prema spolu u sposobnosti prevođenja stručnih

pojmovi. Autorice smatraju kako se taj podatak može pripisati specifičnostima ženske kineziološke populacije, ali i pozitivnim učincima motivacije muške kineziološke populacije za praćenje sportskih događanja na engleskom jeziku.

Značajne razlike između dva mjerenja dobivene su na temelju prvog faktora, koji obuhvaća pojmove koji definiraju sport, kao i elemente sportskih igara. Ista je situacija i s drugim faktorom, koji okuplja pojmove što se tiču antropoloških dimenzija i psiho-motoričkog statusa subjekata. Na trećem faktoru, definiranom kako pojmovima koji opisuju psihofizički i funkcionalni status sportaša, tako i onima koji se izravno odnose na pojedine sportove, nije dobivena značajna razlika među mjerenjima. To je objašnjeno popularnošću nekih sportova, posebice popularnošću hrvatskih sportskih zvijezda, koje su kineziološkoj studentskoj populaciji pomogle pri usvajanju novih stručnih pojmova. Nije dobivena razlika niti na temelju četvrtog faktora koji okuplja pojmove povezane sa skokovima u različitim sportovima. Peti faktor, međutim, kao i prva dva faktora, ukazuje na značajan pozitivan pomak u usvojenosti pojmova kod studenata (ali ne i studentica) između dva mjerenja. I u ovom slučaju radi se o pojmovima povezanim sa sportovima, ali onima koji se odvijaju na različitim plovilima ili vozilima.

MANOVA s ponovljenim mjerenjem 39 čestica testa pokazala je značajne razlike između dva mjerenja, ali i razlike u interakciji spola i mjerenja. Najzanimljiviji je podatak kako je kod većine čestica zabilježena značajna razlika među mjerenjima, a samo u nekoliko slučajeva i razlika koja se može pripisati spolnim karakteristikama ili interakciji spola i mjerenja.

Ključne riječi: stručni pojmovi, kineziologija, prevođenje, engleski jezik, hrvatski jezik, spol, MANOVA - ponavljajuće mjerenje