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LEARNERS' ATTITUDES ASSESSMENT IN TERMS OF COGNITIVE TEACHING PARAMETERS AND MOTIVATION WITHIN THE ENGLISH IN GEOTECHNICS COURSE AT THE TODOR KABLESHKOV UNIVERSITY OF TRANSPORT

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Abstract: *The paper examines our institution MS students' learning attitudes and motivation with respect to completed ESP course in geotechnics. Analysis is based on a survey carried out among learners, asked to evaluate relevant cognitive course parameters, components of cognitive teaching approach, implemented in the purpose of successful mental representations formation. Mental representations overriding importance in general and specialized language knowledge building is highlighted. ESP learning motivation is commented on in terms of motivation / cognitive teaching interconnection.*

1. Introduction

The current paper represents a continuation of a previous study of ours [1], focusing on ELT and ESP cognitive teaching approach significance, and providing exemplifying material from the geotechnics ESP curriculum methodology. The article aims at assessing students' attitudes in terms of cognitive methods applied within the ESP in geotechnics course and learners' studying motivation manifestations with respect to motivation / cognitive teaching relationship.

2. Paper layout

The paper will comply with the following rationale. Firstly, ESP teaching essence and objectives will be concisely commented on. Secondly, cognitive teaching approaches or ways of language awareness (LA) enhancement through language learning strategies (LLS) implementation will be revealed as prerequisites to mental representations (MR) construction. Thirdly, we will describe overriding LLS (or cognitive course parameters) within the framework of the ESP in geotechnics course. Next, conducted learners' evaluation survey of course cognitive approaches will be considered with respect to methods (or descriptors) presentation and result ratings. Attention will be paid to students' performance indices testifying to learners' language studying motivation (LLSM) and ESP further studying motivation (ESPSM), and corroborating survey scores. Finally, conclusions will be made as to cognitive approaches usefulness within the ESP course in geotechnics and ELT.

3. ESP – essence and objectives

ESP is a relevant branch of ELT and applied linguistics, due to its practicality in a scientifically and technologically developing environment, within the framework of growing

plurilingual requirements to specialists. ESP aims at equipping learners with specific communicative competence (rf. [2]) in / and [3]), by means of investigating their language needs and applying appropriate teaching methodology (rf. [1]). To conform with its purpose, ESP teaching involves a reasonable general FL knowledge, preconditioning students' underlying communicative spheres interaction; hence, ESP curricula are predominantly developed for intermediate or advanced learners (rf. [1]).

It must be taken into consideration that there is a constant bidirectional leakage between general and specific communicative competence components and levels. The competent in applied linguistics lecturer benefits from this circumstance in their teaching while improving learners' cognitive skills and abilities through enhancing LA and LLS use.

4. Cognitive approach usefulness in ESP

As it has been already proved, linguistic knowledge involves active and conscious manipulation, accompanied by LA rising procedures. Knowledge building is selective, it implies not only facts storage, but also information retrieval skills, establishing concepts interconnections, task accomplishment strategies (rf. [4] in [5]); hence, knowledge formation and elaboration is tightly connected with MR generation and development.

It is vital to be aware that MR:

- are personal[1] constructs (rf. [6] in [5]), information structures (rf. [7] in [5]), knowledge basic units accumulated in the mind (rf. [5]), logically organised and interrelated, allowing the setting up of a higher rank cognitive structures participating in further knowledge edification;
- consist of non-linguistic information, in cognitive linguistics perspective, but are in close relationship with all types of language categories and communication contexts (rf. [8]);
- concern not only vocabulary, but also grammar categories (rf. [9]).

Thus, in ESP (and in ESP in geotechnics), along with general English courses, the widening and improvement of language categories MR (or the cognitive teaching aproach) turns out to be of crucial relevance in terms of learners' communicative competence enhancement, with respect to needs, objectives, real-life situations practice, accuracy and learning experiences selection, consistent with course parameters.

Based on the above MR characterization, MR construction is impossible without LA improvement through LLS application, contributing to language and linguistic peculiarities noticing, understanding and interest enhancement.

5. LLS implementation within the ESP in geotechnics course and their learner assessment

The English in geotechnics course curriculum [10] sets the objectives to support our MS learners in the process of specialized (along with general) communicative competence acquisition in many spheres of geotechnics (rf. [1]), some of which interdisciplinary (in connection with railways and roads construction, e.g.), supporting specialists in international communication, translation, explanation of schemes, formulae, equations, preparation of statements, summaries, annotations, etc.

Here below we will proceed with characterizing underlying cognitive teaching approaches applied, in line with basic LLS types (rf. [1], [11]).

[1] MR are individually established, though there are regularities in MR formation, allowing LLS development, and stemming from learners' features, such as interests, personality characteristics, values, prior language knowledge, motivation, native language and other FLs level of mastery, ways of thinking, LA degree, learning strategies applied, etc.

Cognitive strategies

This type of LLS, aimed at better comprehension of language material, include activities such as: all levels of language description analysis, summarizing, information reorganizing, knowledge schemes design (exemplifying language categories interrelation), consciously practicing structures, prior knowledge inferences, key words exploration, word-formation, discourse markers and pattern observation, charts, illustrations analysis, categories values and functioning hypothesizing, testing out and verifying hypotheses, EL ↔ NL/FL translation, contrastive and comparative EL/NL/FL examination of categories in terms of form, semantics and function, among others (rf. [1], [11]).

Metacognitive strategies

This LLS group is targeted at corroborating cognitive LLS through supporting students in learning process parameters evaluation (e.g. degree of achievement, acquired general or specific knowledge, types of hardships, their nature and remedy), setting learning objectives and tasks with respect to needs and progress, study materials organizing, asking for assistance after having analyzed problem issues (rf. [1], [11]).

5.1. Cognitive course descriptors, their exemplification and learners' assessment

Our institution MS students in geotechnics and geotechnical engineering were asked in an author survey, on ESP in geotechnics course completion, to determine in numbers the usefulness of essential cognitive procedures based on LLS teaching with respect to LA improvement (course parameters 1- 9), overall course usefulness (parameter 10) and further ESPSM (parameter 11) (see below). Numbers interpretation is the following: 1- excellent rating; 2- very good; 3- good; 4- not good, but still positive score; 5- fail.

The following paper section focuses on course parameters presentation (italicized) and their exemplification.

1. *English ↔ Bulgarian translation in terminology teaching* helps learners grasp terms value and use, in the appropriate context, through becoming aware of the frequent lack of full semantic equivalence in both languages. Thus, while translating *shear stress* (or *shear strength*) (En) equalling *сила, издръжливост, съпротивление на срязване* (Bg), students can be shown bidirectional correspondences, e.g. *stress – натиск, напрежение, давление, натоварване, сила* and *натиск – pressure, stress, compression; напрежение – tension, strain, voltage; натоварване – loading (or even bearing capacity – допустимо натоварване); сила – strength, power, intensity, force; or съпротивление – strength, resistance, resistor, impedance*. Likewise, while teaching *cofferdam*, the lecturer reveals the equivalences *cofferdam – кесон, камера, шлюз, насип за изолиране на вода, водонепроницаема камера,* along with *кесон – caisson, coffer, panel; камера – chamber, cell, cabinet, (along with waterproof chamber); шлюз – lock, sluice, floodgate; насип – embankment, mound, fill*.

2. *Commenting on some terms origin and on their specific professional functioning* makes learners acquainted with patterns and regularities, which promotes word-formation inference making, e.g. *datum (sg.) – data (pl.)*, *curriculum – curricula; nucleus – nuclei; radius - radii; focus - foci; formula – formulae*, etc. Students can also be shown etymologies contributing to the better understanding and thus, memorizing, of some branches of science plural, e.g. *mechanics* ← *mechanicus* (Latin) + *-ics* (Greek); *mathematics* ← *mathematicus* (Latin) + *-ics* (Greek); *dynamics* ← *dynamikos* (Greek) + *-ics* (Greek*); pneumatics* ← *pneumatikos* (Greek) + *-ics* (Greek).

3. *Explanatory terminology procedures based on word-formation and synonyms* promote understanding through comprehension in related words formation regularities, e.g. application (apply; applicant; applicative; applicable; appliance) + synonyms (implementation (implement, implementer); investigation (investigate, investigator, investigatory), exploration

(explore, explorer, exploratory); liquefaction (liquefy, liquefiable, liquid, liquidity, liquate, liquesce).

4. *Commenting on lexical items with respect to functioning similarities / differences in general and specific English* increases LA due to insights into lexical items acceptations and their grammar behaviour. Thus, for example, *soil* is predominantly treated as uncountable, whereas in specialized materials in geotechnics it can be also used in plural with the meaning of various types of soil.

5. *Referring to terms acceptation, depending on specific branch of technics,* widens learners' comprehension of semantic overlapping of terms, e.g. *insulate* and *insulation* are prevailingly used in civil engineering and geotechnics, while *isolate* and *isolation* are more typical to electrical engineering.

6. *Passive voice essence elucidation procedures and corresponding activities* corroborate learners' grasping of voice category essence through PV / AV form ↔ semantics comparisons (En / Bg), AV ↔ PV transformation elucidation and exemplification, and, thus enhance the Passive correct implementation (rf. [1], [11])

7. *Elucidation procedures about the essence, formation and use of simple forms in contrast with periphrastic continuous ones (present simple, past simple, present continuous) and corresponding activities* contribute to simple and progressive forms comprehension and implementation; this approach also supports tight relationship explanation between the present participle, the progressive and – ing words in terms of form and meaning (rf. [12]).

8. *Explanatory procedures about English perfect periphrasis, accompanied by "for", and its Bulgarian equivalent*, involve basic Bulgarian equivalents presentation of the English perfect (rf. [13]) and equip students with improved awareness of both languages categories values and use; this course descriptor is rather useful due to established and justified typical to Bulgarian learners interference errors (rf. [13]).

9. *Explanatory procedures about the essence, formation and use of –ing words* (*present participle, adjective and gerund*) imply setting up parallels with the progressive, comparisons within *–ing words* (En / Bg) and with *–ed* forms, in terms of form and values, to enhance discrimination and implementation (rf. [12]).

10. *Overall ESP in geotechnics course usefulness*

11. *Desire for further work to improve knowledge in ESP in geotechnics*.

Learners' assessment results are presented by parameters in the tables which follow.

Table 1: Learners' assessment of some ESP in geotechnics course cognitive parameters and ESPSM

Parameter (rf. the above numbers)↓ **% of surveyed students →**	**1Excellent (%)**	**2Very good (%)**	**3Good (%)**	**4Not good, but (+) (%)**
1. Translation	**75%**	**25%**	**-**	**-**
2. Terms origin	**54,55%**	**18,18%**	**9,09%**	**18,18%**
3. Word-formation	**75%**	**25%**	**-**	**-**
4.Gen. ↔ spec. En	**83,33%**	**16,67%**	**-**	**-**
5. Terms variations	**75%**	**25%**	**-**	**-**
6. PV / AV	**58,33%**	**33,33%**	**8,33%**	**-**
7.Simple/continuous	**66,67%**	**25%**	**-**	**8,33%**
8. En. perf.(for) / Bg	**58,33%**	**25%**	**-**	**16,67%**
9. –ing words	**66,67%**	**25%**	**8,33%**	**-**
10. Overall course	**66,67%**	**33,33%**	**-**	**-**
11. Further geotechnics ESPSM	**75%**	**16,67%**	**8,33%**	**-**

Table 2: Learners' general assessment with respect to 1-10 parameters

Mean % of students having assessed 1-10 parameters as:	Excellent (%)	Very good (%)	Good (%)	Not good, but (+) (%)
	67,96%	**25,15%**	**2,58%**	**4,32%**

Survey results reveal that the geotechnics ESP course has proved to be cognitively beneficial to students. *Ratings (by individual parameters and general assessment, tables 1, 2) refer us to the fact that the applied LA procedures, within the framework of cognitive and metacognitive LLS, contribute to MR successful formation at all levels of language description.*

It must be pointed out that LLS teaching outcome was in line with our MS students learning reactions or LLSM indices which will be considered below.

6. LLSM during the ESP geotechnics course

Hereby we will mention some of most important LLSM indices observed during the course, witnessing to enhanced general and specific studying motivation: interest in LLS application, manifested through desire to efficiently perform the tasks and follow teacher's instructions; asking purposeful questions to overcome understanding problems; analyzing patterns, regularities and hypothesizing, benefitting from lecturer's guidance; active participation in terminology, grammar, functional and translation activities based on developed intercomprehension cognitive strategies in terms of contrastive and comparative teaching approach implementation; offering translation equivalents to specialized terminology and commenting on terminology variations with respect to context; successful pair work (along with pair correction), etc.

Strong LLSM can be unequivocally supported by further ESPSM, amounting to 75% (score 1) and 16, 67% (score 2) (rf. table 1, descriptor 11).

High LLSM during the course is undeniably in compliance with already researched and established LLSM ↔ LA (prerequisite to MR formation) relationship (rf. [14]), consistent with the following insights of:

- established tight connection between LLSM and linguistic knowledge, conscious learning, developing competence awareness, individual achievement assessment [15];
- LLSM connection with learners' error awareness and knowledge transfer [16], [17];
- LLSM improvement resulting from various LLS implementation (rf. [16, [17]).

7. Conclusion

Present study testifies to strong assessment of geotechnics ESP course learners, in terms of cognitive teaching parameters and motivation, as well as to cognitive teaching / LLSM beneficial connectedness. Paper results substantiate cognitive teaching importance not only in the ESP in geotechnics curriculum, but also in ESP courses, in general, and ELT.

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ОЦЕНКА НА НАГЛАСИТЕ НА ОБУЧАЕМИТЕ ВЪВ ВРЪЗКА С ПАРАМЕТРИТЕ НА КОГНИТИВНОТО ПРЕПОДАВАНЕ И МОТИВАЦИЯТА В РАМКИТЕ НА КУРСА ПО АНГЛИЙСКИ ЕЗИК В ГЕОТЕХНИКАТА ВЪВ ВТУ „ТОДОР КАБЛЕШКОВ“

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Ключови думи: *АСЦ, когнитивен подход на преподаване, мотивация*

Резюме: *Статията разглежда нагласите за учене и мотивацията на студентите магистри в институцията ни в рамките на завършен курс по АСЦ в геотехниката. Анализът се основава на осъществено проучване сред обучаемите, помолени да оценят значимите когнитивни параметри на курса, компоненти на когнитивния подход на преподаване, прилаган с цел успешното формиране на ментални репрезентации. Подчертава се първостепенната важност на менталните репрезентации в процеса на изграждане на общи и специализирани езикови познания. Мотивацията за учене в рамките на АСЦ се обяснява от гледна точка на взаимната обвързаност между мотивация и когнитивно преподаване.*