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The influence of pedagogical conditions on the development of other language communication for future agrarian engineers

Wpływ pedagogicznych warunków na rozwój komunikacji w języku obcym przyszłych absolwentów uczelni rolniczych

Key words: educational future of graduates of agricultural higher schools, communication in a foreign language, communication codes, teaching as a communication, individual professional development, internet Moodle training, levels of testing, indicators.

Słowa kluczowe: losy edukacyjne absolwentów uczelni rolniczych, komunikacja w języku obcym, kody komunikacyjne, nauczanie jako komunikacja, indywidualny rozwój zawodowy, elektroniczny kurs Moodle, poziomy testowania, wskaźniki.

Streszczenie

Artykuł opisuje doświadczenie uściślenia pojęcia, wyznaczenia komponentów i poziomów komunikacji w języku obcym studentów technicznych fakultetów uczelni rolniczych Ukrainy i po stosowaniu pewnych pedagogicznych warunków przy studio-waniu języka angielskiego na pierwszym roku w latach 2011–2014. Przeprowadzono porównanie poziomów komunikacji eksperymentalnej i kontrolnej grup studentów pierwszego roku. Oprócz tego określono środki i odpowiednie metody praktycznej pracy dla rozwoju odpowiednich komunikacyjnych przyzwyczajzeń.

Introduction

Nowadays the other language communication is mainly related to the sphere of traditional foreign language sign system and adequate country cultural features studying itself (see [3], [7], [8], [10]). Our aim is to define the components of other language engineering communication mentioning engineering communication through transition to many other sign systems involving technical subjects, technical devices,

either collective or inner planned instructional communication being realized on the lessons of professionally oriented English. Besides it, pedagogical conditions to form professional engineering competence are reviewed in general regardless of the development of other language skills themselves (see [9], [11], [12], [13],[14]). Our aim is to focus pedagogical conditions on the aspect of other language communication and to test its levels on practice. Also our purpose is to elaborate the adequate model to develop different other language professional communicative skills for agrarian engineers in need combining several pedagogical trends like [1],[2], [4], [5], [6].

Analysis

The studying experiment has been held for three years during 2011-2014 being supervised by prof. L.Kalmykova. It took place two times during each studying year. At the beginning of the Septemer we used to detect the primary level of experience to actuate such professional communicative skills which were represented before enrolling to higher school.

The general components of other language professional collective and inner competence (responsibility and planning using communication, intercultural communication, technological informative off-line and self-government for inner communication with oneself as the the specialist to become useful to fulfil possible collective professional actions) were detected from some normative documents like the National Standard of Foreign Language, European Strategy of Multilingualism, National Frame of Qualification, Branch Standard of Competence to Train Mechanical Bachelors etc.

We correlated such found features of professionally oriented other language communication with following criteria (identification, commutativity, epistemological skills, factual events skills, demonstration, will, perception) with the detailing indices by numbers: № 1 – the identification within community of specialists, the introduction of collective ethics; № 2 – the orientation in changing conditions for other language communication development within the studying process; № 3 – the organization of collective body to elaborate one strategy and tactics of optimal cooperation behaviour; № 4 – the flexibility to changes, motivative readiness to other language professional communication; № 5 – the responsibility for the results of own work as the part of collective work; № 6 – the transition and reception of information from different schemes, texts, video and audio sources; № 7 – encoding and decoding of short cliché frazes or the information from different schemes, texts, video and audio sources; № 8 – the ability to use concrete frazes, to put specifying question to make the mutual communicative situation more exact for both sides; № 9 – to initiate other language communication and to compromise; № 10 – to represent unprepared communication and to be able to use voice (oral speech) for conversation; № 11 – to recognize necessary data due to the common experience; № 12 – other language sentence correct structuring; №13 – other sign systems transition involving reading and writing; № 14 – the preparation of potential interlocutor to perceive other language; № 15 – the skill to hear parthner and adequate reaction with futrher coordination of actions; № 16

– the attraction of attention to oneself as to the possible interlocutor; № 17 – the representing of own achievements and expression of own opinion using foreign language; № 18 – the expression of requesting and invitation using foreign language; № 19 – the expression of stimulus using foreign language and influence on interlocutor; № 20 – the adequate valuation of own achievements after communication with partner, the resistance to criticism; № 21 – the development of reflection, identification and regulation to master epistemological skills.

Mentioning total other language communicative skills development as the 100 per cent development of all twenty one branch indices, we defined every separate index per cent (4,76) and divided that per cent within five levels according to the quantity of indices for every feature itself.

The percentage for every index from 21 (which in general concluded total other language communicative skills) was placed among 5 levels: the 1st level – 0–0.95%, the 2^d level – 0.95–1.90%, the 3^d level – 1.90 – 2.86% , the 4th level – 2.86–3.81%, the 5th level – 3.81–4.76%.

To detect the level of development we elaborated the testing units for each index separately. Thus, we got more than 25 questionaring papers.

For example, according to identificational skills the presence of № 1 indice was determined by the Ex. 1: 1) to describe in one sentence the special features of own role as the copartner to master professional foreign language within collective body; 2) to describe the way to cooperate and to interact on the group foreign language practical lessons, 3) to determine the principle of collective interaction during on the group foreign language practical lessons; 4) to describe own experience to deal with cooperation and interaction to master professional English. The valuation of answers was scaled as. «The absence of adequate answer» – 0 marks, «Some cursor understanding» – 1 mark, «Clear answer of specialist-communitator-beginner» – 2 marks. According to this exersise the highest achivement – 8 marks because of four represented tasks. Thus, 1 mark as the result of division 4.76 on 8 got the least result 0.6 to determine the least per cent to determine the level of general other language communicative skills. Also the similar identicational index № 2 was detected by the Ex. 2: 1) to write five nearest kinds of activity to master professionally oriented foreign language and the tool to deal with; 2) to elaborate five stage plan to master professionally oriented communicative skills on the practical lessons of English. The results were valued as 1 mark for each adequate statement to show the adequate experiance from two tasks. The highest result – 10 marks. The least mark to detect such skill was 0.48% as the result of division of 4.76 on 10.

Besides, such communicative in index № 10 was analyzed due to the answers for The presence of the index was searched y the polling «How to solve problematic situation »according to the studied specialized topics. Each one from two elaborated situations cost 5 marks. Thus the greatest achievement valued as 10 marks. 1 mark percentage was calculated as $4.76 : 10 = 0.476\%$.

The example epistemological skill in index № 12 was analyzed due to the answers for Ex. 12: 1) to retell the main idea of each professionally oriented specialized English text from appendix in own words; 2) to create communicative

situation using specialized term from the appendix. The correct adequate statement was valued as 5 marks. The highest result – 10 marks. 1 mark – 0.476%. The least communicative level was defined as $0,476 \times 5 = 2.38\%$.

The factual event skills were tested too. To represent factual events skills for example in index № 14 there was Ex. 3: 1) to note 5 ways to prepare possible copartner to be dealt with other language information in 5 sentences; 2) to describe the experience to involve possible copartner into collective work to do foreign language practical works in 5 sentences. Each statement to have confirmed the adequate experience from two tasks was valued in 1 mark. The highest result in 10 correct sentences was valued as 10 marks. The lowest result = $4.76 : 10 = 0.48\%$ within general skills presence.

Such demonstrative skill as № 17 was detected due to the answers for Ex. 9: 1) to describe the experience to write specialized term reports / presentations / conference theses to be dealt profession in appendix; 2) to describe how to express with the help of English or other sign system own opinion about importance, difficulty, actuality of each specialized text from the appendix. The answer to be valued in 2 marks detected the topic understanding. There were two tasks. So the least mark (2) for one answer was calculated as $4.76 : 4 = 1.19\%$.

The example of the will skill testing to be dealt with index № 19 was observed due to Ex. 11: 1) to describe the ways to create English language Imperative mood for conversation in one sentence; 2) to write the fraze of polite attraction to start the conversation in one sentence with the help of English sign system; 3) to write the fraze of polite attraction to start the conversation in one sentence with other sign system; 4) to write the fraze to have immediate reaction from partner according to every short specialized text to be studied during the studying period. There was 1 mark (1.19%) was for every clear full answer and 0.5 балів – for cursor understanding. The best possible result – 4 marks. 1 The lowest result (0.5 mark) valued 0.6%. Within general other language skills.

Also to detect, for example, perceptive index № 21 there was polling «Five studied topics passive vocabulary» with the task to connect translating equivalents and name 3 additional words on own choice for every topic. If student correlated the columns correctly without adequate additional words noticing he would get 0.5 marks. If the task was fulfilled completely the student would get 1 mark. Such 1 mark from that exercise occupied 0.48% from general skills, and the lowest mark (0.5) percentage was determined as $0.48 : 2 = 0.24\%$.

Research results

In the beginning of studying year we found the next results which were primary equal either for experimental or control groups. (see Table 1–Table 7) marking the best results on the fourth and fifth level before the application of the pedagogical conditions.

Table 1. The quantity of high school freshman-future agrarian engineers to obtain identificational skills (at the beginning of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 1	92.6 %	4.2%	2.5%	0.6%	0.1%
№ 2	91.3 %	5.3%	2.1%	1.2%	0.1%
№ 3	96.9%	2.2%	0.5%	0.3%	0.1%
№ 4	88.7 %	6.7%	3.2%	1.3%	0.1%
№ 5	73.8%	13.4%	7.7%	4.2%	1.1%

Table 2. The quantity of high school freshman-future agrarian engineers to obtain communicative skills (at the beginning of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 6	16.3%	37.9%	30.4%	12.4%	3.6%
№ 7	43.2%	26.0%	16.8%	12.2%	1.8%
№ 8	55.2%	20.3%	14.7%	8.4%	1.4%
№ 9	48.3%	32.3%	10.7%	6.1%	2.6%
№ 10	32.6%	40.0%	20.4%	5.8%	1.2%

Table 3. The quantity of high school freshman-future agrarian engineers to obtain epistemological skills (at the beginning of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 11	29.0%	36.5%	29.8%	3.5%	1.2%
№ 12	41.1%	32.2%	18.5%	5.9%	2.3%
№ 13	14.3%	53.5%	26.4%	3.2%	2.6%

Table 4. The quantity of high school freshman-future agrarian engineers to obtain factual events skills (at the beginning of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 14	28.3%	36.4%	20.2%	11.7%	3.4%
№ 15	19.9 %	45.3%	24.8%	7.5%	2.5%

Table 5. The quantity of high school freshman-future agrarian engineers to obtain demonstrative skills (at the beginning of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 16	2.5%	15.4%	52.1%	15.9%	14.1%
№ 17	12.1%	58.2%	18.4%	7.1%	4.2%

Table 6. The quantity of high school freshman-future agrarian engineers to obtain will skills (at the beginning of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 18	12.9%	56.3%	16.4%	9.1%	5.3%
№ 19	14.4%	48.8%	25.9%	8.5%	2.4%

Table 7. The quantity of high school freshman-future agrarian engineers to obtain perceptual skills (at the beginning of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 20	88.1%	9.8%	1.1%	0.9%	0.1%
№ 21	78.9%	13.7%	3.4%	2.8%	1.2%

The got results became the reason to conclude the model to develop other language communicative skills.

We applied the next pedagogical conditions as mainstay on the studying and communicative experience and other language competences to be given before enrolling to higher school, quidence of principles and demands of professional other language communication, maximal taking into account the special mental features of future agrarian engineers, completed direction of foreign language studying on the communicative needs of technical mobility.

Those pedagogical conditions were supported by involving of some methods like the providence of students' communicative community the formation of mini-collective body, the selection of adequate leader, studying work within other language environment; the recognition of special terms and speech frame frazes to solve working situations, the method of business conversation, explanation and recognition of different meanings of terms and video sketches; transition into other sigh systems, simplification of statements, planning, design of sign symbolic systems and background schemes for other language communication, making predictive algorithm for studying, valuation and positive comments about the done work, actual cognitive and communicative motivation; Moodle system usage as well. Besides, we involved some organizing forms : interlocution, lesson-debate, out of classes communication, lectures, lessons- business games, lessons- thematic discussions, annotations, students' coferences, the lesson-acquaintance with curriculum and algorithms to do tasks, the lesson to work with sign systems; preparing, sending and oral defending of practical works, individual tasks, testing, comments checking, the lesson to create presentations and schemes.

Also we elaborated the tool to fulfil the proposed pedagogic conditions. We meant the creation and realization of English language studying course for future agrarian engineers, It involved the creation of sub-groups, contextual 5 modules to be filled with 25 lectures, 33 presentations, with glossary and studying program ,with the list of sources, the register of valuation to detect the weakest components for different groups during different periods of studying in natural practical environmenti, dynamics observating to admit communicative skills development progress, fast feedback,automatic fixing of visitors' activity to work with Moodle, automatic valuation of 7 tests, distribution of professional roles and tasks, personal and group correspondence, fixing of asoluteness and accuracy of answers to be dealt either with 3 variants for every practical work within 11 ones or 15 variants for every individual task within 11 ones with the different sign systems transition in scholar's comments.

In the end of studying year we found the next results which were different for experimental (E) and control (C) groups. (see Table 8–Table 14) marking the best results on the 4th and 5th level before the application pedagogical conditions.

Table 8. The quantity of high school freshman-future agrarian engineers to obtain identificational skills (in the end of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 1	E –0.1% K–63.6%	E –3.2% K–3.2%	E –67.1% K–31.5%	E –23.2% K–0.7%	E –6.4% K–1.0%
№ 2	E –1.8% K–54.8 %	E –2.1% K–4.3%	E –44.2% K–19.7%	E –50.7% K–21.0%	E – 1.2% K–0.2%
№ 3	E –0.1% K–48.1%	E –0.4% K–1.2%	E –48.2% K–34.4%	E – 46.2% K–15.2%	E – 5.1% K– 1.1%
№ 4	E –0.2% K–56.0%	E –0.4% K–4.7%	E –32.1% K–15.8%	E – 64.7% K–23.2%	E –3.1% K–0.3%
№ 5	E –0.1% K–39.1%	E –5.3% K– 27.6%	E –53.4% K–11.4%	E – 36.2% K–20.1%	E – 5.0% K–1.8%

Table 9. The quantity of high school freshman-future agrarian engineers to obtain communicative skills (in the end of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 6	E –2.4% K–13.8%	E –12.6% K–38.4%	E –64.4% K–31.4%	E –16.3% K–12.6%	E –4.3% K–3.8%
№ 7	E –20.8% K–33.2%	E – 7.5% K–18.0%	E –45.8% K– 30.6%	E –23.3% K–16.2%	E –2.6% K–2.0%
№ 8	E –12.4% K–27.5%	E –10.1% K–16.3%	E –49.1% K–36.2%	E –23.7% K–16.2%	E –4.7% K–3.8%
№ 9	E –26.2% K–43.2%	E –20.1% K–29.2%	E –14.8% K–14.6%	E –12.1% K–10.2%	E –3.2% K–2.8%
№ 10	E –15.2% K–16.1%	E –11.5% K–19.7%	E –38.5% K–56.2%	E –29.2% K–6.2%	E –5.7% K–1.8%

Table 10. The quantity of high school freshman-future agrarian engineers to obtain epistemologic skills (in the end of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 11	E –9.9% K–20.1%	E –16.3% K–28.7%	E –51.0% K–40.1%	E –16.1% K–8.3%	E –6.7% K–2.8%
№ 12	E –14.1% K–16.1%	E –12.3% K–14.7%	E –41.5% K–39.5%	E –27.0% K–25.2%	E –5.1% K–4.5%
№ 13	E –5.2% K–14.0%	E –32.1% K–46.5%	E –37.7% K–25.9%	E –17.8% K–10.6%	E –7.2% K–3.0%

Table 11. The quantity of high school freshman-future agrarian engineers to obtain factual events skills (in the end of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 14	E –16.2% K–22.6%	E –15.0% K–30.4%	E – 52.3% K–31.6%	E –12.3% K–11.9%	E –4.2% K–3.5%
№ 15	E –1.5% K–14.2%	E –3.2% K–38.6%	E –68.1% K–34.7%	E –14.9% K–9.7%	E –12.3% K–2.8%

Table 12. The quantity of high school freshman-future agrarian engineers to obtain demonstrative skills (in the end of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 16	E -0.1%	E -1.3%	E -63.2%	E -19.4%	E -16.1%
	K-1.8%	K-12.6%	K-55.1%	K-16.3%	K-14.2%
№ 17	E -3.7%	E -14.7%	E -41.6%	E -29.5%	E -10.5%
	K-10.6%	K-49.2%	K-20.3%	K-13.7%	K-6.2%

Table 13. The quantity of high school freshman-future agrarian engineers to obtain will skills (in the end of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 18	E -2.7%	E -45.1%	E -28.0%	E -15.1%	E -9.1%
	K-5.4%	K-49.4%	K-26.2%	K-12.3%	K-6.7%
№ 19	E -5.5%	E -31.3%	E -39.7%	E -16.6%	E -6.9%
	K-10.8%	K-35.8%	K-38.1%	K-10.5%	K-4.8%

Table 14. The quantity of high school freshman-future agrarian engineers to obtain perceptual skills (in the end of studying year)

№ of skill	1 st level	2 ^d level	3 ^d level	4 th level	5 th level
№ 20	E -15.8%	E -7.6%	E -55.0%	E -11.4%	E -10.2%
	K-63.2%	K-14.4%	K-12.6%	K-4.8%	K-5.0%
№ 21	E -10.0%	E -9.0%	E -64.3%	E -5.4%	E -11.3%
	K-54.2%	K-16.3%	K-20.3%	K-3.1%	K-6.1%

Conclusion

The organization of experimental studying and its results got the opportunity to test and to confirm the efficiency of the proposed pedagogical conditions due to the application of author English language studying model as the tool to form primary professional other language competence involving different sign systems and communicative regimes within studying process as the natural environment to solve professional communicative tasks. Such experimental studying confirmed the development of experience to get and to apply adequate professionally-oriented other language skills comparing with the situation at the beginning of studying year and with the results of control group.

Thus the influence of several pedagogical conditions (mainstay on the studying and communicative experience and other language competences to be given before enrolling to higher school, quidence of principles and demands of professional other language communication, maximal taking into account the special mental features of future agrarian engineers, completed direction of foreign language studying on the communicative needs of technical mobility) being supported by some adequate methods, organing forms and Moddle course tool resources. favours the development of all professionally oriented other language skills in general and especially suits the identificational and perceptional skills formation.

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