ESP Course Delivered to Personnel Working in Shifts for the State Emergency Service of Ukraine through a Student-Tailored Model

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Abstract. The *purpose* of this research was to identify whether there had been an enhancement in students' language skills and perception of the ESP course if it had been delivered through a blended mode student-tailored model. The latter was aimed at training each English language skill separately. Reading and listening skills were trained online, the writing was taught both online and offline, and speaking was trained offline using speaking clubs that were held once a week. The TUTORROOM system was programmed to deliver materials online. The ongoing and final assessments were administered offline. A pre-test–post-test research design was utilised to analyse the change in variables which were students' English Language fluency (proficiency), cognitive ability, learning motivation, and learning styles. The study used a set of quantitative and qualitative empirical, experimental and statistical methods. The intervention improved the sampled students' English language skills, their cognitive ability and learning motivation. The use of the student-tailored ESP model led to the shift from the teacher-driven to autonomous learning. It had been proved by the responses of the interviewed students that they felt 'convenient' (16 out of 19 respondents), 'efficient' (13 of the interviewed students), benefited (6 of the interviewed participants), 'motivated', and 'responsible' for their progress in language fluency. The experiment showed that the model promoted students' responsibility for the learning outcomes which resulted in improved performance.

Keywords: ESP teaching; blended learning; student-tailored teaching model.

1. Introduction
English for Specific Purposes (ESP) is commonly taught as a classroom subject for tertiary students in Ukraine (Borg, 2019; Grytsyk, 2016a; Tarnopolsky, 2018; Lytovchenko et al., 2018). The instructors have little freedom when it comes to the ESP course content, structure, and delivery tools as it is regulated by curriculum and unit/faculty-level regulatory documents of the university (Grytsyk, 2016b). Notably, the system of the State Emergency Service is less flexible because the officers work in shifts and traditional learning, which is based on the classroom-homework-only model, does not fit their working schedule. As a result, students miss from 30 to 50% of classes and find it difficult to catch up. They often feel dissatisfied, frustrated, and demotivated. For these reasons, they often decide to drop the ESP course, yet reporting that the English language is crucially important to them as they are often involved in international joint training sessions. Addressing the demand of the students working in shifts like the officers from the State Emergency Service was a rationale for implementing a blended mode-based student-tailored model because it could both engage learners' individual learning styles and cognitive skills, enhance their learning motivation, and fit the learners' schedule.

Student-tailored system and its impact on learners' learning styles, cognitive skills, and learning motivation

A student-tailored or personalised approach to ESP teaching and training is proved to have a positive effect on learners' autonomy, cognitive ability, motivation, and language skills (Santipolo, 2017; Shirokikh, 2018; Xu, Chan & Yilin, 2018; Tuzlukova & Singh, 2018). For example, Shirokikh (2018) found that students are more enthusiastic when the content fits their professional field of knowledge. The learners' language skills improved due to a better-managed teacher-student interaction with the domination of the students' autonomy, and the online resources serve as an additional cognitive load. Moreover, students perceive this approach positively.

Interestingly, there is a growing demand for using tailor-made materials in the ESP courses and for an ESP teacher who is capable of developing them (Minasyan, n/d; Ibrahim, 2019).

Blended learning mode and its impact on learners' performance, cognitive ability, learning motivation, and learning styles

Literature review on the use of blended learning mode in the ESP training found that there is the relation between the mode and learners' performance, cognitive ability, learning motivation, and learning styles (Banditvilai, 2016; Bielousova, 2017; Radosavlevikj, 2015; Whyte & Sarré, 2017; Tawil, 2018; Tuomainen, 2016). For example, Radosavlevikj (2015) found that 80% of the surveyed students showed greater motivation in taking the online courses than in the in-classroom-based ones. Banditvilai (2016) experimentally proved that there was a 10% increase in the Achievement Test scores in the experimental group and the mean values for the Questionnaire aimed to identify the learners' perception of the impact of the e-learning course component on their language skills (4.3 out of 5 by Likert scale). Tawil (2018) indicates that the blended learning mode seems efficient 'in increasing the knowledge pool' due to additional cognitive load like

Internet-related assignments based on searching, synthesising and summarising information. Lu & Mustapha (2020) found that students had experienced an improvement in their 'intrinsic goal orientation', 'expectancy' and 'task value of value' due to various informal assessment tools that are available in a blended learning ESP course.

Additionally, the blended learning mode was found 'effective and motivating for adult students' by the overwhelming majority of the surveyed ESP teachers from the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" (Lytovchenko et al., 2018).

The benefits of the mode seen in terms of learning outcomes are a shift to enhancing practical language skills and self-learning skills. This is supported by the research conducted by Aswardi & Nellitawati (2020) who experimentally established the advantageous difference of using the blended learning model over the conventional one in terms of acquiring job-related skills. Cognitive ability also improves due to blended learning because in this case cognitive load is consistent and can be controlled by students themselves (Sithole, 2019). For this reason, the use of cognitive load theory (CLT) principles to design the materials is advocated by the studies to have been examined (Sweller, 2016; Nikolayeva & Lezhneva, 2019).

Learning motivation also increases due to students feeling 'comfortable with technology and believe that technology can save their time effort' (Tafazoli & Chirimbu, 2015). Students' learning styles become more efficient as this mode uses both tailored and balanced approaches to involve every learning style dimension (Lee, 2018).

The *purpose* of this research was to identify whether there had been an enhancement in students' language skills and perception of the ESP course if it had been delivered through a blended mode student-tailored model.
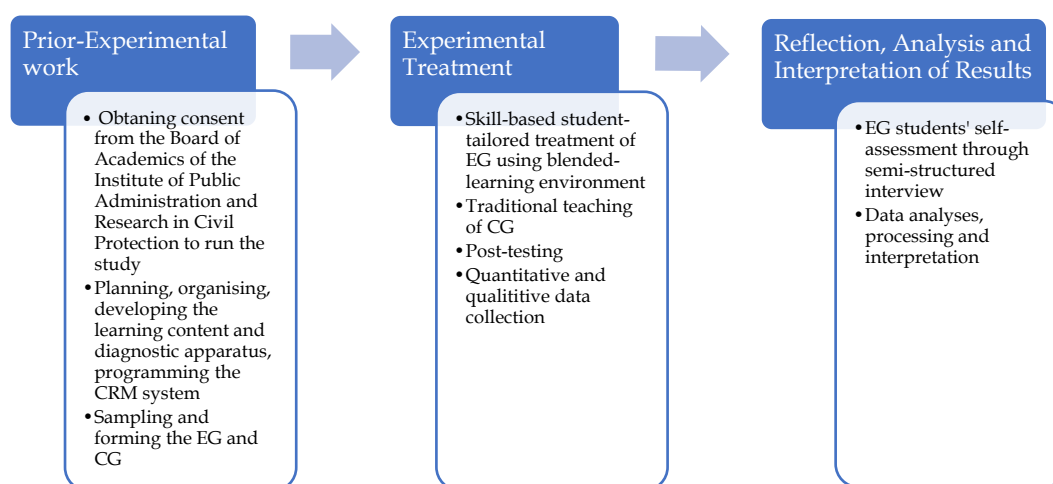
The research questions were as follows: 1) how a blended mode-based student-tailored ESP training model effects English language fluency (proficiency), cognitive ability, learning motivation, and learning styles of the student officers for the State Emergency Service of Ukraine, and 2) how the students from the experimental group perceive the way the course was delivered.

2. Method

A quasi-experimental research design of a pre-test–post-test type was utilised to analyse the change in variables which were students' English Language fluency (proficiency), cognitive ability, learning motivation, and learning styles. These were measured before and after the experiment using mixed methods. These were as follows: an English Language Achievement Test, a Cognitive Ability Test (FCATP, 2019), a Foreign Language Learning Motivation Questionnaire (Gonzales & Lopez, 2015) and Kolb's Learning Style Questionnaire (2005-2006). The quantitative component was a priority in the study, and a qualitative one used as secondary to increase the reliability of the data (Morgan, 2014).

Research Procedure Model

The study used a three-stage procedure. All the treatments were conducted throughout 2018 and 2019. The empirical stage was dedicated to planning and organising the experiment, and designing the modules of skill-based materials to train reading, listening, writing and speaking separately. Following that, all the learning content was uploaded into the CRM system (TUTORROOM – Learning Management System). Pretesting was administered to both experimental and control groups to know whether the sample had been homogeneous. The valid diagnostic research instruments were selected. At the experimental stage, the experimental group was taught using blended and skill-based student-tailored materials, and the control group was trained using course books only and attending classes twice a week. Upon finishing the experimental treatment, both post-testing and self-reflection were administered to the sampled students. See Fig. 1. visualising the research model.

Prior-Experimental work
- Obtaining consent from the Board of Academics of the Institute of Public Administration and Research in Civil Protection to run the study
- Planning, organising, developing the learning content and diagnostic apparatus, programming the CRM system
- Sampling and forming the EG and CG

Experimental Treatment
- Skill-based student-tailored treatment of EG using blended-learning environment
- Traditional teaching of CG
- Post-testing
- Quantitative and qualititive data collection

Reflection, Analysis and Interpretation of Results
- EG students' self-assessment through semi-structured interview
- Data analyses, processing and interpretation

Figure 1: The Abstract Structure of the Research Model

The instructional components of the ESP training programme for both sampled groups presented in Table 1.

Table 1: Instructional Components of the ESP training programme

Component of the learning environment	EG	CG
Course book	–	✓
Separate skill-development purpose modules	✓	–
Classroom activities	–	✓
Speaking club	✓	–
Home assignments	✓	✓
Professionalism-related topics	✓	✓
Online learning	✓	–
CRM system	✓	–

Note: EG – Experimental Group; CG – Control Group.

Description of an ESP training programme

It was a 120-hour ESP course (52 classroom hours and 68 out-of-classroom hours) that was based on the use of a blended and skill-based student-tailored learning environment in which each skill of the English language was trained and assessed separately. Reading and listening skills were trained online, the writing was taught both online and offline, and speaking was trained offline using speaking clubs that were held once a week. Prior to the experiment, the EG students provided a written consent to attend at least 80% of the offline classes. Furthermore, a student-tailored approach meant that the learning material was selected to address the student's level of language proficiency and the field of Civil Protection (emergencies, fire-prevention security, hydro-meteorological service, an inspection of safety of a technogenic environment, *etc.*) they were working in. The CRM system (TUTORROOM) was programmed to deliver materials and approach a student of the experimental group in three steps: *first,* to remind them (in an encouraging and motivating manner) that they were going to have an English Language class (time and duration); *second*, to let them know (or remind them) which skill they were supposed to train and what the lesson objectives were; *third,* to conduct the lesson. Each student could get postponed feedback from their tutor on the assignments they had done. There were deadlines for reading, listening, and writing assignments and there was a flexible schedule for the speaking club classes. They took place every week, but it happened sometimes that some classes were either rescheduled or repeated for those (four or more) students who were involved in dealing with the accidents and could not make it on the agreed day. It required the increased commitment to the course goals for both students and tutors.

The ESP training course varied in topic-related workload, activities, assignments, content, and assessment approaches. The latter intended to foster students' field-specific English language and communication skills.

The tutors were two Assistant Professors for the Department of Language Training who were involved in the materials design and classroom work throughout the course.

After completion of five lessons, the students in both groups were assigned to take an English language progress test. The final test was administered offline; it was task-based and covered the four language skills.

The topics, learning activities (LAs) and assignments (As) that were delivered online and offline were arranged in the way it is presented in Table 2.

Table 2: The outline of the topics, LAs and As delivered online and offline in the EG

No	Topic	LAs and As delivered online Reading, listening, and writing skills	LAs and As delivered offline Speaking and writing skills
1.	Public Administration as an academic discipline and social science	Use of language. Internet research reports. Web quizzes. Writing assignments.	Presentations. Skills training lessons. Machu-Picchu, Prezi Software-based presentations. Peer

			assessment of a presentation. Peer proofreading home assignment.
2.	Business Management and Public Administration	Theoretical concepts. Use of language. Internet research. Information collection and processing. Participating in the Skype conference with colleagues from abroad. Students' written feedbacks on their groupmates' presentations.	Speaking Club format: Think-Pair-Share', 'Write-Pair-Share', Topic-based listening-check.
3.	Bureaucracy in Civil Protection	Searching information to prepare for the debate.	Speaking Club format: The debate entitled "Bureaucratical roller coasters of governmental bodies in Ukraine: blessing or curse?" Tutor feedback and peer assessment.
4.	Inspection of the safety of a technogenic environment (fire-prevention security)	Use of language and communicative grammar drills. Designing an instruction for inspection of safety of a technogenic environment	Speaking Club format: Case-study, 'Illogical story-telling' activity, Peer assessment. Topic-based listening-check.
5.	Hydro-meteorological service	Making videos of the students' presentations.	Case study. Peer assessment. Skills training activities. Teamwork, Topic-based listening-check.
6.	Communicating in an emergency	Internet research for best practices in communicating in emergencies in European countries. Writing the report.	'Illogical story-telling' activity. Presentational skills training.
7.	Decision-making in emergencies	Recommended reading. Writing a review.	Think-Pair-Share', 'One Minute Paper' activities. Topic-based listening-check. Peer assessment.
8.	Emergency response planning: key aspects	Writing an essay to compare the emergency response planning in two countries.	'Speaking Club format: Think-Pair-Share', 'Write-Pair-Share' 'One Minute Paper' activities.
9.	Managing search and rescue operations	Making videos of the students' presentations. Writing the solution to the problem essay on search and rescue operations.	'Speaking Club format: Think-Pair-Share', 'Write-Pair-Share' 'One Minute Paper' activities. Case study. Peer assessment.

Sample

A two-stage sampling approach was used in this study. First, the Needs Analyses Questionnaire was administered to 97 students doing the ESP course run at the Institute of Public Administration and Research in Civil Protection to find out, among the other things, whether the students needed flexible or tailored ESP training programme. Following that, the sample group (Experimental Group – EG) of 19 volunteers was drawn randomly from those who indicated their needs of a tailored approach based on their work schedule. Concurrently, the Control Group (CG) of the same number of volunteers ($n = 19$) was also selected randomly. The sample size of the EG (19 people) was found sufficient from the perspective of the classroom and out-of-classroom management effectiveness.

Four quantitative tools – the English language achievement test, the cognitive ability test, the foreign language learning motivation questionnaire, and Kolb's learning style questionnaire – were used to ensure that the members of both groups were relatively homogeneous. The mean results of the administered tests and questionnaires are presented in Table 3.

Table 3: Means of ELPT, CAT, FLLMQ and KLSQ scores ($n = 38$)

Test/ questionnaire	Pooled	EG (n = 19)	CG (n = 19)	Differences between groups	
				Subtraction	*p* Value*
ELAT	3.26	3.19	3.34	0.146	0.002
CAT	3.27	3.27	3.27	0.001	0.992
FLLMQ	3.25	3.24	3.37	0.131	0.199
KLSQ	3.14	3.19	3.09	0.099	0.824

Note: ELAT - English Language Achievement Test; CAT - Cognitive Ability Test; FLLMQ - Foreign Language Learning Motivation Questionnaire; KLSQ - Kolb's Learning Style Questionnaire.

Table 3 reveals that the figures seemed approximately equal for both groups, which were the indicator that the sampled groups (EG and CG) could participate in this experimental study and the data obtained could be considered reliable. Moreover, the p-value, which is highly statistically significant (0.002), for ELAT suggests that overall students' performance in English fluency corresponds to the null hypothesis though the data for other parameters do not.

Instruments

The study used a set of quantitative, qualitative and statistical instruments.

The achievement test, the cognitive ability test, the foreign language learning motivation questionnaire and Kolb's Learning Style Questionnaire, the English Language Progress and Final Tests were the quantitative instruments. A semi-structured interview was used to collect qualitative data.

The Needs Analysis Questionnaire (NAQ) that was used at the empirical stage of the study modified the items of the one designed by Hussam (2013). It consisted of nine sections of 28 items to address the importance of the ESP course, in general, for their career, the importance of various listening, reading, writing and speaking

skills, their needs concerning the format of the course. Cronbach's Alpha Formula was used to measure the internal reliability of the questionnaire. The reliability score of 0.95 was obtained which was greater than the standard rate cut-off point of 0.85 (Hussam, 2013).

Table 4: The reliability scores the NAQ distributed by sections (n = 38) (modified from Hussam, 2013)

No	Section	Item	Reliability
1	Level of English language fluency as perceived by students	0.86	8
2	Importance of the ESP course for a career	0.78	6
3	Importance of the ESP course for promotion	0.82	8
4	Importance of listening skills	0.65	5
5	Importance of reading skills	0.70	6
6	Importance of writing skills	0.80	5
7	Importance of speaking skills	0.83	6
8	Using English in the civil protection tasks	0.83	14
9	Importance of the tailored format of the course	0.87	6
	Total	0.95	56

Kuder-Richardson Formula 20 (KR-20) was used to measure the reliability of the achievement test, the English Language Progress and Final Tests. The internal consistency reliability coefficients were found sufficient ranging from 0.86 to 0.92 compared to the estimated 0,763 (Kara, & Çelikler, 2015).

The IBM SPSS Statistics 25.0.0.1. Software was utilised to process the whole data set.

Semi-structured Interview Questions

1. Use three words to describe your experience of participating in the ESP course based on the student-tailored system.
2. What made you feel positive or negative about the course?
3. Did the course address your needs?
4. Did the course meet your expectations?
5. What improvements could you report as a result of doing the course based on the student-tailored skill-based system?
6. What challenges did you experience while doing the course?
7. What would you suggest doing to meet the challenges you have mentioned?

3. Results

Overall, both sampled groups (EG and CG) showed dynamics associated with the research variables like students' English Language fluency (proficiency), cognitive ability, learning motivation, and learning styles. However, the positive change in the above research variables in EG students was more significant. See the graphic representation of the results in Fig 2.
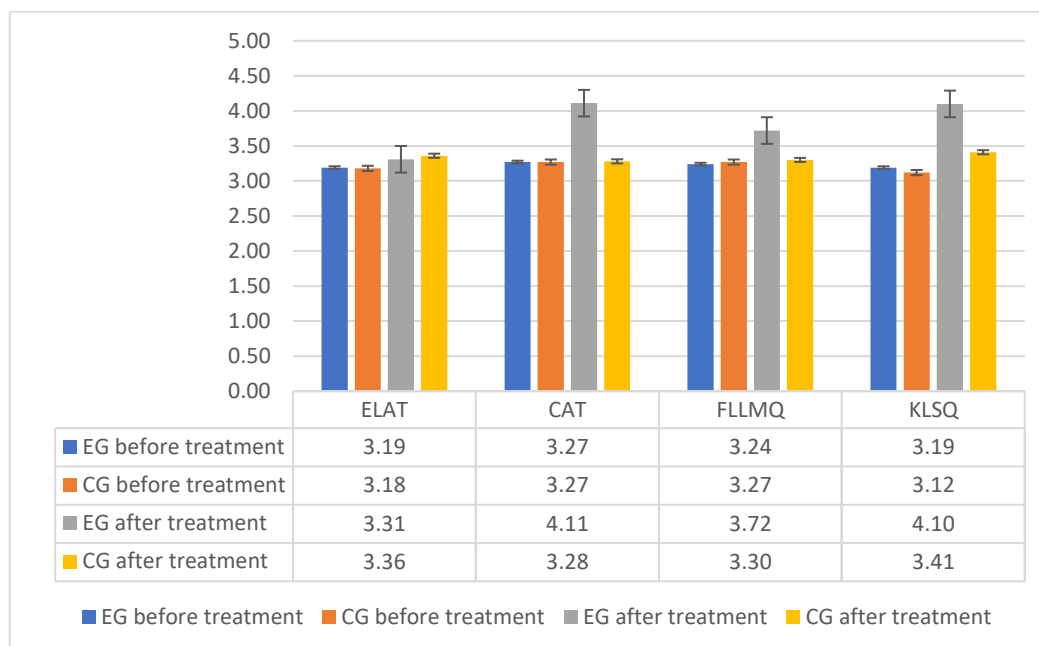
Note: ELAT – English Language Achievement Test; CAT – Cognitive Ability Test; FLLMQ – Foreign Language Learning Motivation Questionnaire; KLSQ – Kolb's Learning Style Questionnaire.

Figure 2: Means of ELAT, CAT, FLLMQ and KLSQ scores before and after the treatment

The above suggests that the EG students experienced a statistically significant change in their English language fluency (proficiency) with an increase in scores from 3.19 to 3.44, cognitive ability (the rise from 3.27 to 4.11), learning motivation (dynamics from 3.24 to 3.72), and learning styles (positive change from 3.19 to 4.10) while the figures for the variables of the CG were noticeable with an increase by 0.16 points in ELAT, 0.01 points in CAT, 0.03 points in FLLMQ and 0.29 points in KLSQ. The subtraction values for the parameters also changed. They were as follows: ELAT – 0.148; CAT – 0.008; FLLMQ – 0.137; KLSQ – 0.109. The p −value figure remained the same for ELAT (0.002). It decreased for CAT (0.814), for FLLMQ (0.1437), and for KLSQ (0.631), which also indicated statistically important positive change.

Semi-structured Interview (EG students, $n = 19$, $df = 2$)

The interview was intentionally conducted to increase the reliability of this study. The results of the interview are NOT presented proportionally since the topics (dimensions) of the responses overlapped.

1. Use three words to describe your experience of participating in the ESP course based on the student-tailored approach. The most frequently mentioned noun was 'convenience' (16 out of 19 respondents), the second most commonly used noun was 'efficiency' (13 of the interviewed students), the third one was 'value' (6 of the interviewed participants). The nouns like 'progress', 'motivation', and 'responsibility' were also mentioned by the interviewed students.

2. What made you feel positive or negative about the course? Regarding positive feelings, seventeen students indicated better suited to their job content and sixteen

of the interviewed students reported improved course management. Twelve respondents mentioned the assessment approach. Students experienced *negative feelings* about being out of the community (11 respondents), not having a paper-book (9 people), and being treated (at times) by several tutors at the same time (3 respondents).

3. Did the course address your needs? The majority of the interviewed students – 17 people – confirmed that the course met their professional and educational needs. Only 2 (out of 19) students were hesitant to answer this question.

4. Did the course meet your expectations? Sixteen people answered positively, while two students were not certain, and one person responded to this question negatively.

5. What improvements could you report as a result of doing the course based on the student-tailored skill-based programme? Fourteen participants reported progress in their writing skills. Eleven people felt they had performed better in the understanding of non-adapted texts. Ten people had done better in spoken interactions, while eighteen respondents improved their self-study skills. The same number of the interviewed (18 students) reported they had been better in summarising, paraphrasing, synthesising and systemising of information.

6. What challenges did you experience while doing the course? Seventeen respondents confessed they suffered from using technology. Sixteen people lacked a competitive environment within the class. Three volunteers experienced challenges with adjusting themselves to the path of learning.

7. What would you suggest doing to meet the challenges you have mentioned? To deal with the greatest one, training the students in the use of technology before the treatment is seen as a solution by eighteen interviewed students. Nine people suggested resolving the problem of a lack of a competitive environment through the use of webinars, team projects, etc. The issue of the adjustment to the path of learning is seen by the respondents as a motivation-related one. It is suggested to be overcome by awarding additional scores for students' greater efforts and quicker learning (responses of 16 students).

The students' responses to the interview questions supported the results of the experiment and showed a generally positive perception of the ESP training system using the blended mode to build up a skill-based student-tailored learning environment.

4. Discussion

The study attempted to explore how a blended mode student-tailored ESP training model effected English language fluency (proficiency), cognitive ability, learning motivation, and learning styles of the student officers working in shifts for the State Emergency Service of Ukraine and how the students from the EG perceived the way the course had been delivered. It was found that the above ESP training programme increased EG students' English language fluency (proficiency) by 0.23 points, and their learning motivation by 0.48 points, it improved their cognitive ability by 0.84 points and led to the shift from teacher-

driven learning to autonomous learning preferences. The results obtained from the experiment met expectations of this study and complied with literature as the learning environment ensured a more considerate attitude of the teacher to the student. That was in line with Xu, Chan & Yilin (2018) stating that a personalised or student-tailored learning environment is efficient for the training of ESP when it is integrated with technology, and when it is goal-oriented (Zarei & Gilanian, 2014). This study is also consistent with the findings of Abel et al. (2018) who proved that personalised feedback to students writing works had been much better. According to Shirokikh (2018), the student-tailored approach to teaching challenges a teacher with multifunctionality of their role and significance of closer teacher-student interaction while teaching the course.

The results agree with the previous research conducted by Banditvilai (2016) and Tawil (2018) that proved the effectiveness of using the blended learning mode in the ESP training as it enhanced learners' performance, cognitive ability, learning motivation, and learning styles. The experiment provides a new insight into ESP course management whose delivery might be based on the CRM system, which could maintain a teacher-student contact and provide automated guidance to a student throughout the course.

The study also attempted to deal with the insufficient target learner engagement which resulted in a lack of motivation to study the ESP and to get rid of the reading-translation format of the assignments that do not improve students' cognitive thinking (Bolitho & West, 2017).

It was found through the interview that the training system increased students' confidence as learners and created the situation of success. The study attempted to dispel a myth that the English language can be trained successfully only through the classroom-only-teaching.

The results should be taken into account when considering using digital devices because the study suggests that creating a learning environment based on technological advances is a challenging technical task for both instructors and students, though perceived as worthwhile.

The study contributed to the investigation of the problem of teaching ESP, in particular to the students who need a flexible training system. This research boosted the theory and methods of the ESP training (Susilowati, 2008; Laborda & Litzler, 2015; Fălăuş, 2017), in general, and in terms of the use of the blended-learning environment in ESP teaching (HAN Jia-jia, 2019), skill-based ESP teaching/training (Kostadinovska-Stojchevska, 2015; Mulleneaux, 2017:12-14; Rajeswaran, 2018), creating the student-tailored learning environment (Johns & Price-Machado, 2001; Pranckevičiūtė & Zajankauskaitė, 2012; Marjanovikj-Apostolovski, 2019).

5. Conclusion

The results of the study suggest that the use of the blended and skill-based student-tailored learning environment helps students improve their English language skills – reading, listening, writing and speaking – evenly, develops students' cognitive ability, accelerates their learning motivation, and leads to the

shift from teacher-driven learning to autonomous learning preferences. This ESP model also addressed the students' needs in the tailored or personalised learning environment and enhanced students' satisfaction. Though the reliability of the study was impacted by the intrinsic nature of the components like cognition and motivation, it had been proved by the responses of the interviewed students that they felt 'convenient' (16 out of 19 respondents), 'efficient' (13 of the interviewed students), benefited (6 of the interviewed participants), 'motivated', 'responsible' for their progress in language fluency. Since it was positively perceived, the model might be implemented into educational settings that could be dependent on shifts-based working schedules for the learners of other majors as it boosts the methodology of vocational training of the student civil servants working in shifts. The experiment showed that this model promoted autonomy in learning, responsibility for the learning outcomes and enhanced each student performance.

Further research is needed to explore whether this model could be automated through placing the course on the Chatbot to partially or wholly substitute the teacher.

7. Acknowledgements

8. Implications & Limitations

The EG interview results implied that currently students more appreciate challenging learning activities using English as a medium of gaining new knowledge than the conventional ones that are based on the course book. The delivery approach using the CRM system for online training implied that it could be used to automate the whole course losing no quality.

The duration of the experiment – one year – might cause discussions on the significance of the findings obtained in this research. The number of students sampled for the experiment might be claimed to be insufficient. The instruments could be also considered a limitation to this experimental study.

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