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## Fostering Tertiary Student Professional Mobility Skills via Convergence of the Professional Training and Foreign Language Learning

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**Abstract:** The purpose of the study was to identify how the instructional model that converges professional training and foreign language learning can influence the students' professional mobility and students' readiness to build their careers. The study used the methods of a quantitative kind for the evaluation study and descriptive research. The variables for the study were as follows: levels of student professional mobility skills proficiency that included students' competence in their professional field, foreign language proficiency, students' networking skills, personality qualities, and sampled students' satisfaction with the reshaped course. The field phase of the study found that the Erasmus and Work-and-Travel programmes contributed to the former students' adaptability and flexibility, the experience of work abroad, and practical specialism-related experience gained during study. The students developed their abilities to project a positive social image, ability to build and maintain relationships, foreign language proficiency, proficiency in presenting and negotiating, and theoretical knowledge. The English Language-delivered Professional Mobility course brought shifts in the levels of students' professional mobility skills. The experimental group students reported that they improved their competence in their professional field, foreign language proficiency, networking skills, and personality qualities. The experimental group students' judgements concerning the quality of the course were complimentary.

**Keywords:** *Foreign language learning, higher education, professional mobility skills, professional training, tertiary students.*

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### Introduction

Professional mobility has become a strong labour market trend worldwide, including in Europe and Ukraine (Meyenberg, 2016; Sudakova & Megedynyuk, 2016). This trend is driven by the emerging shift to remote work, changing careers, and increasing unemployment rates amongst college and university graduates (Ryan, 2020). The above stipulates the changes in the professional training of the tertiary students to address the issues of acquisition of real-life professional experience, applied knowledge, and skills that are demanded in both local and international labour markets. In this context, the professional mobility skills and foreign language proficiency of students of higher educational institutions are seen as prerequisites of their successful professional life. In Ukraine, the tertiary students' professional mobility skills, which are mainly trained for outbound mobility, are commonly fostered either in a controlled, or uncontrolled, or semi-controlled environment. Another key point is that professional experience and applied knowledge are given paramount significance in the training while foreign languages are of secondary importance (Hurska, 2020; Tereminko, 2020). The professional dimension of the students' professional mobility is commonly developed at universities through the activities that simulate students' future professional functions, local internship programmes, networking activity and visiting lectureship programmes (Bobrytska et al., 2020; Campos et al., 2020; George Brown College, 2018; Luzik et al., 2019). Training students in professional-focused communication in a foreign language is conducted through the technologies of active learning, role-plays, and business games that are enhanced through gamification (Hurska, 2020; Mikhnenko & Absaliamova, 2018; Tereminko, 2020). Admittedly that both dimensions of the students' professional mobility are covered separately in the university setting, both of those

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seem mainly artificial, i. e. like a mock training which does not provide the students with the entirely comprehensive experience of the mobility under the study. This reasoning inspired the research.

#### *Professional dimension and foreign language dimension of the students' professional mobility*

Content and Language Integrated Learning (CLIL) created the theoretical framework for the study. Relevant literature interprets CLIL as a dual-focused – content and language – instructional model (Yang, 2016). The CLIL is found highly appropriate in tertiary educational settings, specifically to meet the requirements of internationalised higher education, in non-English countries (Vega & Moscoso, 2019). In the context of training students' professional mobility, CLIL had proved to develop not only one's awareness of their future professional functions, professionally-focused foreign language soft skills, their specialism knowledge but also their intellectual abilities, strategies to build up their expertise and career, networking skills, their logical and creative thinking, and self-reflection (Bryntseva, 2020; Hurska, 2020; Tereminko, 2020). The above approach is appropriate for training student professional mobility skills because it supposes using cross-disciplinary themes through collaborative work that lets the student acquire multidisciplinary, task-based skills using a foreign language as a medium (Kuzminska et al., 2019).

The literature that was reviewed found that students from the universities in Ukraine do not fully exercise the potential international mobility programmes such as "Erasmus Mundus", "Tempus", "Socrates", or "Jean Monnet" that are aimed at enhancing professional and academic mobility of the students because they lack the appropriate level of proficiency in a foreign language for the professional purposes. They are trained in their professional competency separately from the foreign language which results in both lack of awareness of the content of their future professional activities and a lack of foreign language-based communication strategies for building their expertise and career (Bryntseva, 2020; Hurska, 2020; Tereminko, 2020).

Therefore, the purpose of the study was to identify how the instructional model that converges the professional training and foreign language learning can influence the students' professional mobility and students' readiness to build their careers.

The research questions sought to learn i) how specifically the Erasmus and Work-and-Travel programmes contributed to the former students' international mobility experience to discover gaps in the university professional mobility training system and produce guidelines for a mobility course design; ii) how the course that converged the professional training and foreign language learning influenced the experimental group (EG) students' professional mobility skills; iii) how the EG students evaluated the quality of the course, course content, instructor's performance, students' efforts.

### **Methodology**

The study used the methods of a quantitative kind for the evaluation study and descriptive research. These were as follows: a self-assessment survey utilised to explore the former students' international mobility experience (adapted from Janson et al., 2009) (the electronic version of the questionnaire can be accessed through the link: <https://forms.gle/obasgdQbXdkJHXKR7>); the self-observation questionnaire (can be accessed through the link: <https://forms.gle/oq81KyFSBexATwy96>), and the course evaluation online form (see Appendix C). The variables for the study were as follows: levels of student (self-rated) professional mobility skills proficiency that included students' competence in their professional field, foreign language proficiency, students' networking skills, personality qualities, and sampled students' satisfaction with the reshaped course.

#### *Research design*

The study relied on the combination of a descriptive research design and a quasi-experiment research one-group pretest-posttest design (Price et al., 2019). The concept of the study was developed by the researchers. The flow of the research, which lasted from February 2020 to the end of March 2021, included four basic phases such as a field phase, course design phase, course running phase, and a reporting phase (See Fig.1).

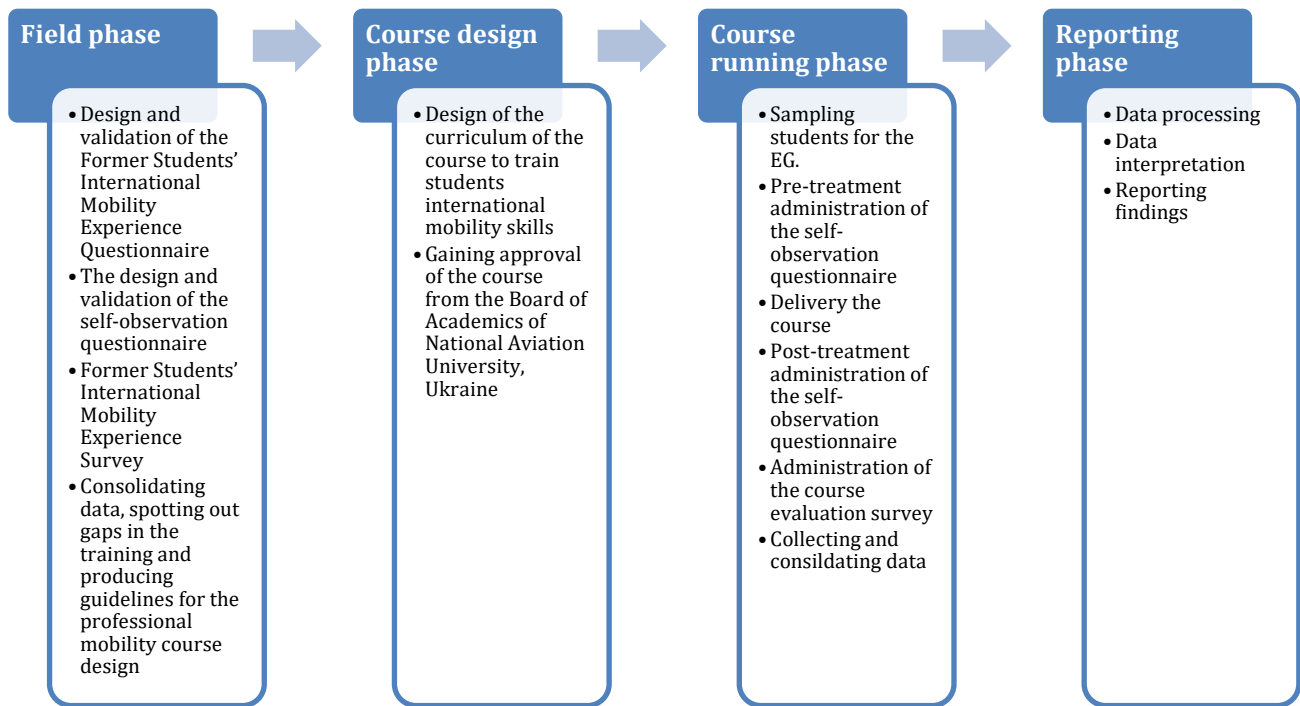


Figure 1. Design of the research

As can be seen in Figure 1, in the field phase, the study attempted to answer the first research question. This phase relied on the former students' international mobility experience survey which was designed, validated, and administered. The guidelines for the mobility course design were produced in this phase as well. The course design phase was dedicated to course design and approval. The course running phase aimed to answer the second and third research questions. The reporting phase provided findings, conclusions, and recommendations for this study.

#### *English Language-delivered Professional Mobility Course outline*

This course was 4-credit-long (120 hours, ECTS). It consisted of 7 modules and used a blended learning model. The theoretical content was delivered online. The training sessions were conducted either online or offline. It involved visiting experts and alumni association members to share their experience and insights they gained from moving from company to company and their career building. The English language was used as a medium of learning and teaching. CLIL 4 Cs concept was applied to course design and delivery. The 4Cs stands for "Content" (gaining new knowledge, skills, specialism area skills), "communication" (use the language to build up knowledge), "cognition" solving (problem situations development to develop cognitive abilities), and "culture" (development of cross-cultural awareness and intercultural understanding) (Coyle et al., 2010).

Table 1. Modular and hour structure of the English language-delivered professional mobility course

#	Module	Hours
1.	Express upgrading of my IT skills: from learning to selling	22
2.	Presentation & negotiation: how to get the best deal	20
3.	Psychology and practice of positive image-making	16
4.	Self-branding and self-promotion through networking: Use of social media, events, and blogging	22
5.	The art of being flexible	18
6.	Pure culture? Or a culture of loyalty practice for an onboarding "buddy"	12
7.	Hunting for opportunities: You want to never miss a chance of becoming a chance	10

As one can notice in Table 1, the modules were designed to enhance students' IT and soft skills, to build up their confidence as professionals, to raise their awareness of methods of selecting optimal job opportunities, and to upgrade their skills of gaining new knowledge and solving job-related problems.

#### *Sample*

The first pilot of the Former Students' International Mobility Experience Questionnaire (see Appendix A) used random sampling. It was administered to 104 people who were former students from five universities in Ukraine that majored

in Engineering. These were as follows: National Aviation University, the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, the National Technical University “Kharkiv Polytechnic Institute”, Vinnytsia National Technical University, and Lviv Polytechnic National University. Those former students were reached out through the alumni associations and International Relations Departments of those universities. This phase attempted to collect data to perform reliability analysis and Exploratory Factor Analysis (EFA) of the questionnaire.

The second pilot of the Former Students’ International Mobility Experience Questionnaire was administered to 93 randomly selected former graduates for National Aviation University, the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, the National Technical University “Kharkiv Polytechnic Institute”, Vinnytsia National Technical University, and Lviv Polytechnic National University. This pilot attempted to yield data for the Confirmatory Factor Analysis (CFA).

Along with piloting the above questionnaire, 138 people were randomly hired to gather data to validate the self-observation questionnaire. The respondents were the students for National Aviation University, the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, the National Technical University “Kharkiv Polytechnic Institute”, Vinnytsia National Technical University, and Lviv Polytechnic National University.

A homogeneous purposive sample method was employed in the field phase of the research to hire 62 graduates of the above five technical universities who did the Erasmus and Work-and-Travel programmes in Europe and the USA in the period between 2016 and 2019 to participate in the survey on their experience of international mobility (Crossman, 2020). The sample included 34 males and 28 females aged 27 to 31.

The typical case sampling was utilised to select 81 engineer graduates for the National Aviation University to form the experimental group (EG) to take part in the originally designed English language-delivered course on International Mobility. The EG consisted of 57 males and 24 females aged 20-22 who majored in software engineering. The cumulative G.P.A. (Grade Point Average) was calculated for each student to identify whether the group was homogeneous. The G.P.A. values ranged between 3.64 and 3.79 that meant the EG was homogeneous and could be involved in the intervention.

### *Instruments*

The study used former students’ international mobility experience survey (Appendix A), the self-observation questionnaire (Appendix B), and the course evaluation online form to collect statistical data. The data were processed using the *Jamovi* computer software (Version 1.8.1) (Jamovi project, 2021) and IBM SPSS Statistics (Version 26)

### *Former Students’ International Mobility Experience Questionnaire (FSIMEQ)*

The questionnaire consists of six domains such as professional field (5 items), foreign language proficiency (5 items), networking skills (3 items), personality qualities (3 items), factors that influenced employability (8 items), and impacts on first job choice (4 items). It relies on a 5-point Likert importance scale with 1 meaning “Not at all important”; 2 – “Slightly important”; 3 – “Moderately important”; 4 – “Very important” and 5 – “Extremely important”. It was piloted two times and tested for reliability before it was administered in the field phase (evaluation study). It was shared with 197 former students – in total for the first and second pilot – who majored in engineering.

The validation procedure of the questionnaire relied on several phases such as content validation, reliability analysis and Exploratory Factor Analysis (EFA), and Confirmatory Factor Analysis (CFA). The latter two used the data drawn from the first and second questionnaire pilots.

The validation of the content involved five graders and was conducted as recommended by Yusoff (2019). They reviewed and rated the relevance of each question in the questionnaire. The raters employed the 4-point scale where 1 meant “not relevant to the measured domain”, 2 = “somewhat relevant to the measured domain”, 3 = “quite relevant to the measured domain”, and 4 = “highly relevant to the measured domain”. The item-level content validity index (IL-CVI) of the questionnaire was 0.82. The Fleiss’ Kappa coefficient value was 0.624 which meant “substantial agreement” and was considered a sufficient level of inter-rater agreement among the experts, according to Polit and Beck, (2006). The general questionnaire reliability and item reliability statistics were computed using Jamovi software (Jamovi project, 2021) to identify the internal consistency for this questionnaire (Taherdoost, 2016). The general questionnaire reliability statistics values were as follows: *Mean* = 3.77; *SD* = 0.3586; Cronbach’s  $\alpha$  = 0.829. The item reliability statistics are presented in Appendix D. The reliability analysis identified two outlier questions (q9, q17) that were paraphrased for the EFA.

The Exploratory Factor Analysis (EFA) attempted to identify the unsatisfactory items using a ‘minimum residual’ extraction method was used in combination with an ‘oblimin’ rotation. A six-factor factor loading analysis with a factor loading of 0.4 was used as the reference value for variable acceptance (see Appendix E for Factor Loading Statistics). The factors were identified as follows: Factor 1 was marked as ‘Professional field (PF)’, ‘Foreign language proficiency (FLP)’ was Factor 2, ‘Networking skills (NS)’ were Factor 3, and ‘Personality qualities (PQ)’ were Factor 4, Factors

influenced employability (FIE)' were identified as Factor 5, and 'Impacts on first job choice (IFJC)' were Factor 6. The factor summary statistics are presented in Table 2.

Table 2. Factor Summary Statistics

Factor	SS Loadings	% of Variance	Cumulative %
1	2.43	13.50	13.5
2	1.75	9.73	23.2
3	1.72	9.53	32.8
4	1.54	8.56	41.3
5	1.55	8.58	49.9
6	1.22	6.77	56.7

As can be seen in Table 2, Factor 1 accounted for 13.5 of cumulative %, Factor 2 was 23.2%, Factor 3 scored 32.8%, value for Factor 4 was 41.3%, Factor 5 scored 49.9 of cumulative %, and the cumulative % for Factor 6 was 56.7. Appendix E provides detailed Factor Loading Statistics yielded from the Exploratory Factor Analysis of the FSIMEQ. Table 3 provides the summary of model fit measurements for the FSIMEQ.

Table 3. Model fit measurements

CFI	RMSEA	RMSEA 90% CI		TLI	Model Test		
		Lower	Upper		$\chi^2$	df	p
0.927	0.0332	0.0243	0.0407	0.921	112	60	<.001

The values in Table 3 imply that the model seems to perform a sufficient fit to the data. The implication is supported by the values for CFI (.927), the RMSEA (.0532), and TLI (.921) (Coşkun & Mardikyan, 2016).

The Confirmatory Factor Analysis (CFA) was performed using the data from the second pilot of the FSIMEQ. The summarised results of the Confirmatory Factor Analysis of the FSIMEQ are provided in Appendix F. The analysis of factor correlation which was based on the CFA is provided in Table 4.

Table 4. Results of Factor Correlation Analysis based on the CFA

Factor	1	2	3	4	5	6
Professional field	1					
Foreign language proficiency	.46	1				
Networking skills	.51	.14	1			
Personality qualities	.14	-.21	.35	1		
Factors influenced employability	.11	-.19	.13	.7	1	
Impacts on first job choice	-.16	-.24	.4	-.17	.3	1

The values in Table 4 illustrated that the strongest correlation was between networking skills and the professional field ( $r = .51$ ). The substantial correlation was the strongest was between the foreign language proficiency and professional field ( $r = .46$ ). A middling correlation was observed between personality qualities and networking skills ( $r = .35$ ). However, The impacts on first job choice and foreign language proficiency ( $r = -.24$ ), personal qualities and foreign language proficiency ( $r = -.21$ ), impacts on first job choice and professional field ( $r = -.16$ ) correlated negatively.

The model fit measurements provided in Table 5 showed that the scale exhibited a sufficient overall fit.

Table 5. Model fit measurements

CFI	SRMR	RMSEA	TLI	Model Test		
				$\chi^2$	df	p
0.932	0.067	0.0321	0.944	39.33	56	<.001

The values for CFI (.932), the RMSEA (.0321), and TLI (.944) were also sufficient, according to Coşkun and Mardikyan, (2016). The values for goodness-of-fit for the model were also significant ( $\chi^2 = 39.33$ ,  $df = 56$ ,  $p < .001$ ). The above values showed that the model is a sufficient fit for the data (Xia & Yang, 2019). Overall, the data that were drawn from reliability analysis, Exploratory Factor Analysis (EFA), and Confirmatory Factor Analysis (CFA) of the FSIMEQ proved that it could be used as a valid instrument in this study.

*The self-observation questionnaire (Appendix B)*

The questionnaire consisted of 16 items that covered the professional field domain, foreign language proficiency domain, networking skills domain, and personality qualities domain. The tool was based on a 7-point “Reflect me” Likert scale with 1 meaning “Very untrue of me”; 2 – “Untrue of me”; 3 – “Somewhat untrue of me”; 4 – “Neutral”; 5 – “Somewhat true of me”; 6 – “True of me”; 7 – “Very true of me”. Nine experts in the field of Reflection Psychology and Professional pedagogics were hired to assess the face validity, construct validity, and content validity of the questionnaire. Recommendations of Taherdoost (2016) were used to implement the procedure. The face validity analysis relied on the dichotomous scale (a Yes-No scale). It attempted to identify whether the questionnaire was feasible, readable, consistent in style and formatting, and clear in the language. This was followed by the computation of Fleiss’ Kappa coefficient which was 0.685. This value was greater than the minimally acceptable one of 0.60 for inter-rater agreement (Glen, 2014). The value for CVI for the self-observation questionnaire was .822 which is sufficient for our number of panelists given that the minimal value was supposed to be .78. The construct validity (discriminant and convergent validity) was measured employing a factor analysis that involved 138 randomly hired respondents. It was based on the principal component analysis (PCA) with the varimax rotation method (see the results in Appendix G). The values for the discriminant validity were loaded between 0.66 and 0.75 and the average variance extracted (AVE) values for convergent validity were loaded between 0.62 and 0.68. The Cronbach’s  $\alpha$  coefficient for internal consistency of the tool was .84 (Hamid et al., 2017). These values showed that the questionnaire could be used in the study.

*The criteria descriptions for the levels of students’ professional mobility skills (based on the self-observation questionnaire, Appendix B)*

The ‘conscious competence’ learning model developed by Broadwell (Nanz, 2017) created the theoretical framework for the scale of levels. The model was found reliable because it is commonly used to assess proficiency in accomplishing a task (Keeley, 2021) and in interprofessional learning (Houldsworth, 2018). There are four levels in the above model such as unconscious incompetence, conscious incompetence, conscious competence, and unconscious competence. Table 6 provides the matrix of levels of the ‘conscious competence’ learning model designed for the study and based on the self-observation questionnaire.

*Table 6. The matrix of levels of ‘conscious competence’ learning model*

	<b>Competence</b>	<b>Incompetence</b>
Conscious	3. Conscious competence – 80-95 – The student shows a middle-range self-efficacy and from time to time needs guidance in developing their theoretical knowledge, technical skills, foreign language proficiency, analytical competencies, and problem-solving abilities. They sometimes need supervision and control of students’ attempts to develop their general foreign language verbal fluency, foreign professional field language fluency, proficiency in a written foreign language, proficiency in cultural specifics of foreign language, proficiency in presenting and negotiating. They show confidence in building and maintaining relationships, tend to take advantage of influential connections. They try to project a positive social image. They look adaptable and flexible, persistent in reaching their goals. They show assertiveness, decisiveness, commitment, and integrity.	2. Conscious incompetence - 60-79 – The student has low self-efficacy and needs partial (loose) guidance in developing their theoretical knowledge, technical skills, foreign language proficiency, analytical competencies, and problem-solving abilities. Most of the time they need supervision and control of students’ attempts to develop their general foreign language verbal fluency, foreign professional field language fluency, proficiency in a written foreign language, proficiency in cultural specifics of foreign language, proficiency in presenting and negotiating. They show little esteem in building and maintaining relationships, tend to avoid taking advantage of influential connections. They try to project a positive social image. They try to be adaptable and flexible, persistent in reaching their goals. They try to show assertiveness, decisiveness, commitment, and integrity.
Unconscious	4. Unconscious competence – 96 – 112 – The student shows complete self-efficacy and autonomy in developing their theoretical knowledge, technical skills, foreign language proficiency, analytical competencies, and problem-solving abilities. They do not need supervision or control of their attempts to develop their general foreign language verbal fluency, foreign professional field language fluency, proficiency in a written foreign language, proficiency in cultural specifics of foreign language, proficiency in presenting and negotiating. They show confidence in building and maintaining relationships, take advantage of influential connections. They project a positive social image. They look adaptable and flexible, persistent in reaching their goals. They show assertiveness, decisiveness, commitment, and integrity.	1. Unconscious incompetence – 16-59 – The student has low self-efficacy and needs complete guidance in developing their theoretical knowledge, technical skills, foreign language proficiency, analytical competencies, and problem-solving abilities. They need constant supervision and control of students’ attempts to develop their general foreign language verbal fluency, foreign professional field language fluency, proficiency in a written foreign language, proficiency in cultural specifics of foreign language, proficiency in presenting and negotiating. They show low esteem in building and maintaining relationships, avoid taking advantage of influential connections, unable to project a positive social image. They lack adaptability and flexibility, persistence in reaching their goals. They lack assertiveness, decisiveness, commitment, and integrity.

As can be seen in Table 6, the matrix provides the criteria that were used to track the students' progress in learning new skills in IT and communication (general foreign language verbal fluency, foreign professional field language fluency, proficiency in a written foreign language, proficiency in cultural specifics of foreign language, proficiency in presenting and negotiating), changing behaviors in selecting job opportunities, and enhancing techniques of gaining new knowledge and solving job-related problems. The criteria were based on the 7-point Likert scale that was used in the self-observation questionnaire.

#### *The course evaluation online form*

The evaluation survey included 25 questions that were intended to collect the sample students' judgements about the quality of the course, course content, instructor's performance, students' efforts that were paid, and their suggestions. It used a 6-point Likert quality scale with 1 meaning "Excellent" to 6 meaning "Very Poor" for the first 24 questions. Questions 25 was of a multiple-choice type. This tool was validated by the research team members – 5 people – who used the face validity analysis. The Fleiss's Kappa Index for the tool was 0.503 which indicated moderate agreement amongst raters (Polit & Beck, 2006).

### Results

The findings are presented in three sections such as the field phase data to address the first research question, the pre- and after-experiment data to respond to the second research question, and EG students' feedback data to answer the third research question.

#### *Findings from Former Students' International Mobility Experience Survey (FSIMES)*

The survey was administered online to 62 graduates of National Aviation University, the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", the National Technical University "Kharkiv Polytechnic Institute", Vinnytsia National Technical University, and Lviv Polytechnic National University who did the Erasmus and Work-and-Travel programmes in Europe and the USA in the period between 2016 and 2019. The key purpose of the survey was to produce guidelines to design a professional mobility course. Table 7 provides descriptive statistics drawn from the FSIMES.

*Table 7. Descriptive statistics drawn from the FSIMES*

#	Mean	Std. error mean	Median	Standard deviation	Shapiro-Wilk W
Q1	2.20	0.094	2.00	0.747	0.810
Q2	2.34	0.105	2.00	0.824	0.788
Q3	2.81	0.113	2.00	0.891	0.782
Q4	2.41	0.122	2.00	0.960	0.850
Q5	1.76	0.117	1.00	0.918	0.760
Q6	1.54	0.152	2.00	1.20	0.846
Q7	1.57	0.123	1.00	0.965	0.930
Q8	1.56	0.119	1.00	0.940	0.758
Q9	1.55	0.118	1.00	0.933	0.746
Q10	1.60	0.129	1.00	1.02	0.779
Q11	1.53	0.119	2.00	0.938	0.802
Q12	2.10	0.129	2.00	1.02	0.827
Q13	1.82	0.123	1.00	0.967	0.871
Q14	1.43	0.123	2.00	0.967	0.891
Q15	1.02	0.150	2.00	1.18	0.804
Q16	1.19	0.136	2.00	1.07	0.843
Q17	2.19	0.145	2.00	1.14	0.860
Q18	2.08	0.158	1.50	1.25	0.790
Q19	1.87	0.141	1.00	1.11	0.937
Q20	1.94	0.121	2.00	0.956	0.887
Q21	1.98	0.129	2.00	1.02	0.814
Q22	1.53	0.111	1.00	0.873	0.901
Q23	1.46	0.125	1.00	0.987	0.743
Q24	1.49	0.128	1.00	1.01	0.952
Q25	1.52	0.102	1.00	0.805	0.852
Q26	1.08	0.146	2.00	1.15	0.926
Q27	1.15	0.152	2.00	1.20	0.921
Q28	1.22	0.112	1.00	0.882	0.895

Note: Shapiro-Wilk  $p = < .001$

As can be seen in Table 7, the values suggested that the respondents while demonstrating relatively high scores in the professional field section and factors that influence employability, they underperformed in foreign language proficiency and adaptability and flexibility. They were also inefficient in networking skills due to the need to develop certain personality qualities. The respondents' awareness of the impacts on first job choice was also low. The insights gained from the survey helped the research team design the mobility course structure, specify the content and instructional approaches.

*Findings from the self-observation questionnaire administered before and after the intervention*

The Paired Sample t-test was used to identify how the EG students rated the effect of the course that converged the professional training and foreign language that it had on their professional mobility skills (see Table 8).

Table 8: Results of students' pretest and posttest self-assessment based on the Paired sample t-test (n = 81)

Mean		SD		t	Mean difference	SE difference	p	df	d
Before	After	Before	After						
3.87	6.11	1.49	1.31	-6.26	-2.24	0.211	<.001	79.0	2.203

As can be noticed in Table 5, the values indicated improvement in the EG students' professional mobility skills that were influenced by the course that converged the professional training and foreign language ( $t(79.0) = -6.26$ ,  $Mean\ dif. = -2.24$ ,  $SE\ dif. = 0.211$ ). The value for the effect size was also significant,  $d = 2.203$ .

The pretest and posttest self-measurements identified shifts in the levels of students' professional mobility skills (see Fig 2).

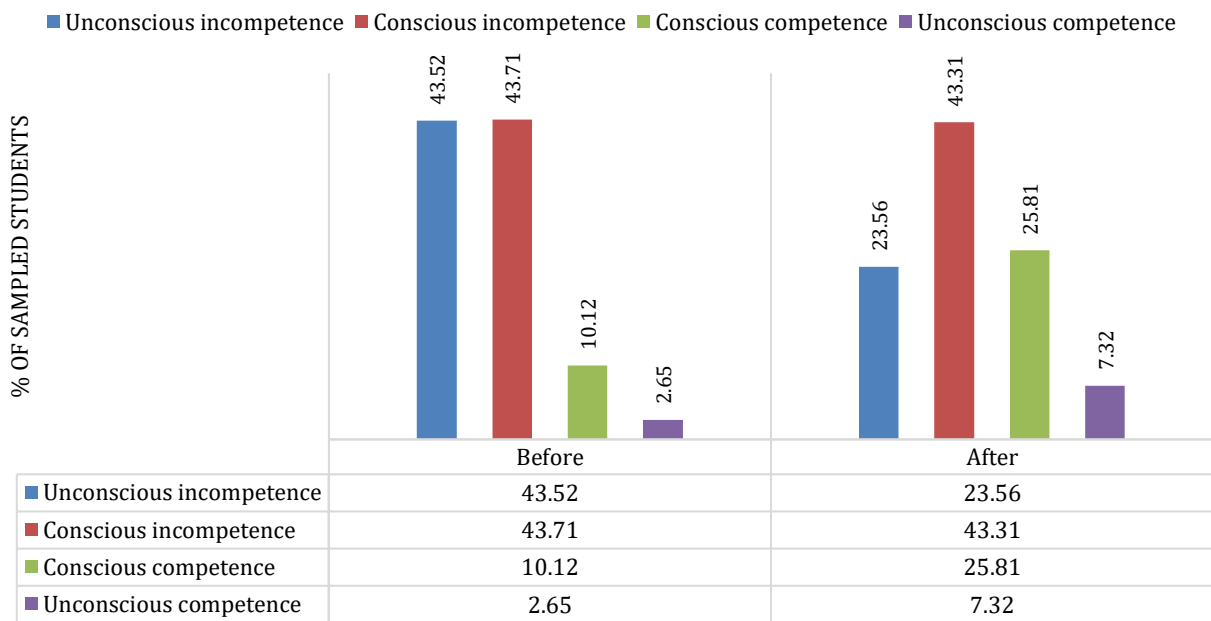


Figure 2. Shifts in the levels of the EG students' professional mobility skills

The proportions in Figure 2 suggested that the majority of the sampled students reported that they were at a level of unconscious and conscious incompetence (43.52% and 43.71%) in their professional mobility skills before the experiment. After the treatment, their judgement values moved to higher levels. Approximately a tenth of the course participants were at the level of conscious competence (EG = 10,12) before the intervention. This proportion of the students increased by 15.69% (EG=25.81) after the intervention. The proportion of the EG students who assessed their level of professional mobility skills as an 'unconscious competence' also grew by 4.67% after the treatment. The above data implied that the EG students experienced improvements professionally, and in their foreign language proficiency, networking skills, and personality qualities due to participation in the course.

*Course evaluation survey*

The summary of the survey that covered the EG students' judgements on the quality of the course, course content, instructor's performance, students' efforts is presented in Table 9.



Table 9. The summary of the course evaluation survey based on the descriptive statistics

	Mean	SD	Skewness	Std. error skewness	Kurtosis	Std. error kurtosis
QC	4.75	0.887	0.498	0.381	-0.34	0.741
CC	5.33	1.096	0.522	0.381	-0.65	0.741
IP	4.49	1.765	0.444	0.381	-0.18	0.741
SE	4.92	1.287	0.498	0.381	-0.17	0.741

Note: QC = quality of the course; CC = course content; IP = instructor's performance; SE = students' efforts.

The Mean values in Table 9 suggest that students' responses varied between 'Good', 'Very Good', and 'Excellent'. The distribution of the variables (responses) which is illustrated by the values for Skewness showed that those were skewed right. The distribution of values was flat which could be considered normal according to Hair et al., (2017).

Overall, the EG students' judgements on the English Language-delivered professional mobility Course were complimentary.

### Discussion

The study attempted to address three research questions which were as follows: how specifically the Erasmus and Work-and-Travel programs contributed to the former students' international mobility experience to discover gaps in the university professional mobility training system and produce guidelines for a mobility course design; how the course that converged of the professional training and foreign language learning influenced the experimental group (EG) students' professional mobility skills; and how the EG students evaluated the quality of the course, course content, instructor's performance, students' efforts.

The novelty of the study lies in the design and validation of an original instrument such as "Former Students' International Mobility Experience Questionnaire" (FSIMEQ) and the development of a comprehensive model based on the English Language-delivered Professional Mobility Course that used a blended learning model and involved visiting experts and alumni association members to share their experience and insights they gained from moving from company to company and their career building.

The data collected through the survey based on the "FSIMEQ" suggested that the respondents while demonstrating relatively high scores in the professional field section and factors that influence employability, they underperformed in foreign language proficiency and adaptability and flexibility. They were also inefficient in networking skills due to the need to develop certain personality qualities. The respondents' awareness of the impacts on first job choice was also low. The insights gained from the survey helped the research team design the mobility course structure, specify the content and instructional approaches.

The course brought shifts in the levels of students' professional mobility skills. The Paired Sample t-test found improvement in the EG students' professional mobility skills that were influenced by the course that converged of the professional training and foreign language ( $t(79.0) = -6.26$ ,  $Mean\ dif. = -2.24$ ,  $SE\ dif. = 0.211$ ). The value for the effect size was also significant,  $d = 2.203$ . It was identified that the majority of the sampled students reported that they were at a level of unconscious and conscious incompetence (43.52% and 43.71%) in their professional mobility skills before the experiment. After the treatment, their judgement values moved to higher levels. Approximately a tenth of the course participants were at the level of conscious competence (EG = 10,12) before the intervention. This proportion of the students increased by 15.69% (EG=25.81) after the intervention. The proportion of the EG students who assessed their level of professional mobility skills as an 'unconscious competence' also grew by 4.67% after the treatment. The above data implied that the EG students experienced improvements professionally, and in their foreign language proficiency, networking skills, and personality qualities due to participation in the course.

The study goes in line with the previous research. It also found a connection between internationalisation and employability (Tamrat & Teferra, 2018). The findings agree with Marsh (2012) who opines that the CLIL method of teaching that uses foreign language as a medium to deliver professional context to the students suits the purpose of fostering professional mobility skills best. The study goes in line with Beadle et al. (2017) who found that there had been a demand in the labour market for proficiency in a foreign language in every European country because fluent language ensures a competitive advantage for both job seekers and organisations. The insights gained from the study align with Bechichi et al. (2020) who state that pure educational background is no longer enough to face the challenges in the job market. The potential employee is supposed to be good at upskilling or reskilling. Additionally, the risk of occupation automation is the greatest job market threat that should be 'vaccinated against' at the university by bringing a new generation of flexible, outstanding, and multifunctional professionals.

The summary of the survey that covered the EG students' judgements on the quality of the course, course content, instructor's performance, students' efforts found that the EG students' judgements on the English Language-delivered professional mobility course were complimentary. The Mean values in Table 5 suggest that students' responses varied

between 'Good', 'Very Good', and 'Excellent'. The distribution of the variables (responses) which is illustrated by the values for Skewness showed that those were skewed right.

### Conclusion

The evaluation study found that the Erasmus and Work-and-Travel programmes contributed to the former students' adaptability and flexibility, the experience of work abroad, and practical specialism-related experience gained during the course of study. The students also developed their abilities to project a positive social image, ability to build and maintain relationships, foreign language proficiency, proficiency in presenting and negotiating, and theoretical knowledge. The English Language-delivered Professional Mobility course brought shifts in the levels of students' professional mobility skills. The experimental group students reported that they improved their competence in their professional field, foreign language proficiency, networking skills, and personality qualities. The EG students' judgements concerning the quality of the course, course content, instructor's performance, students' efforts were complimentary.

### Recommendations

The practitioners are supposed to design the criteria for assessing students' projects and home assignments. It is also desired that the instructor use the gamified instruction elements that imitate some real-life situations. The teachers should design the lesson plans so that the training sessions engage, encourage, and motivate students for learning and cognitive development. Since there is a lack of course books, authentic materials, and other teaching resources to cover professional mobility skills, the teachers could benefit from organising a community to share materials, expertise, and experience.

Further research is needed in developing, validating, and testing the assessment system for the above course.

### Limitations

The study limitations might be as follows: the number of the population who participated in the field phase survey, the sample size because of the limited target audience. The observational data also leaves the possibility of approximation in the interpretation.

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### Conflicts of Interest

The research team reports no conflicts of interest related to affiliation, legal, financial, or commercial disputes.

### Authorship Contribution Statement

Bobrytska: Developed the research concept, designed the questionnaire for the field phase survey, collected and consolidated data. Luzik: Collected data, made data analysis and statistical analysis, revised the instruments. Skyrdia: Provided technical support and supervision, maintained communication among the research team, revised the first draft of the paper. Tereminko: Wrote the first draft of the paper, designed the criteria descriptions for the levels of students' professional mobility skills, collected data, provided supervision. Hurska: Proofread the drafts, edited and reviewed them, consolidated data, provided interpretation.

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## Appendices

Appendix A. Former Students' International Mobility Experience Survey (Adapted from Janson et al., 2009) (Access the electronic version of the questionnaire through the link: <https://forms.gle/obasgdQbXdkjHXKR7>)

Domain	#	Item	5-point Likert Importance Scale				
			1	2	3	4	5
Rate the below experiences in terms of their importance for your professional mobility							
Professional field	1	My theoretical knowledge.					
	2	My technical skills.					
	3	My foreign language proficiency.					
	4	My analytical competencies.					
	5	My problem-solving abilities.					
Foreign language proficiency	6	My general foreign language verbal fluency.					
	7	My foreign professional field language fluency.					
	8	My proficiency in a written foreign language.					
	9	My proficiency in cultural specifics of foreign language.					
Networking skills	10	My proficiency in presenting and negotiating.					
	11	My ability to build and maintain relationships.					
	12	My ability to take advantage of influential connections.					
Personality qualities	13	My ability to project a positive social image.					
	14	My adaptability and flexibility.					
	15	My persistence in reaching my goals, assertiveness, and decisiveness.					
	16	My commitment and integrity.					
Rate the below factors in terms of their importance for your employability							
Factors that influenced my employability	17	Employers considered my personality.					
	18	Employers considered my computer skills.					
	19	Employers considered my foreign language proficiency.					
	20	Employers considered my grades.					
	21	Employers considered the reputation of the institution of higher education I graduated from.					
	22	Employers considered references.					
	23	Employers considered my experience of work abroad.					
	24	Employers considered my practical specialism-related experience gained during the course of study.					
	25	Personal and professional development opportunities.					
Impacts on my first job choice	26	Long-term career opportunities.					
	27	Dynamic promotions salary.					
	28	International lateral move opportunities.					

Note: 1= Not at all important; 2= Slightly important; 3= Moderately important; 4= Very important; 5= Extremely important.

Appendix B. The self-observation questionnaire (the electronic version of the questionnaire can be accessed through the link: <https://forms.gle/oq81KyFSBexATwy96>)

#	Item	7-point "Reflect me" Likert scale						
		1	2	3	4	5	6	7
1	I am aware of how to develop my theoretical knowledge.							
2	My technical skills are well developed.							
3	I am fluent in a foreign language for professional use.							
4	My analytical competencies are sufficient for my future job.							
5	I am aware of how to develop my problem-solving abilities.							
6	My general foreign language verbal fluency is exemplary.							
7	My foreign professional field language fluency is well-developed.							
8	My proficiency in a written foreign language is exemplary.							
9	I can develop my proficiency in the cultural specifics of a foreign language.							
10	My proficiency in presenting and negotiating is sufficient for my future job.							
11	I can develop my ability to build and maintain relationships.							
12	I can take advantage of influential connections.							
13	My ability to project a positive social image is adequate for my future job.							
14	My adaptability and flexibility are well-developed.							
15	I am persistent in reaching my goals, assertive, and decisive.							
16	I am committed and show good integrity.							

Note: 1 - Very untrue of me; 2 - Untrue of me; 3 - Somewhat untrue of me; 4 - Neutral; 5 -Somewhat true of me; 6 - True of me; 7 - Very true of me.

Appendix C. Course Evaluation Form (adopted from JotForm, 2021)

Question	1	2	3	4	5	6
1. Generally, the course was:						
2. The content of the course was:						
3. The contribution of the instructor to the course was:						
4. The effectiveness of the instructor in teaching the subject matter was:						
5. The organization of the course was:						
6. Clarity of the voice of the instructor was:						
7. Th instructor’s explanations were:						
8. The examples and illustrations used by the instructor were:						
9. Quality of questions or problems raised in the course was:						
10. Confidence of the student in knowledge of the instructor was:						
11. Enthusiasm of the instructor was:						
12. Encouragement given to students to take part was:						
13. Answers to questions of the students were:						
14. Availability of extra support when needed was:						
15. Use of class time was:						
17. Interest of the instructor in student's progress was:						
18. Volume you learned was:						
19. Relevance of the content of the course was:						
20. Grading techniques were:						
21. Volume of the assigned work was:						
22. Clarity of requirements to students was:						
23. Intellectual challenge was:						
24. The amount of effort you put into this course was:						

Note: 1 = Very Poor; 2 = Poor; 3 = Fair; 4 = Good; 5 = Very Good; 6 = Excellent.

25. Averagely, how many hours a week did you dedicate to this course (class time included)?

- a) 0-2
- b) 2-5
- c) 6-10
- d) 11-14
- e) 15-up

*Appendix D. Item reliability statistics of the FSIMEQ*

Item	Mean	SD	Item-rest correlation	If item dropped
				Cronbach's $\alpha$
q1	4.29	1.32	0.51076	0.810
q2	3.36	1.09	0.67120	0.815
q3	3.44	1.09	0.76243	0.832
q4	3.74	0.71	0.48476	0.826
q5	3.82	1.37	0.57147	0.813
q6	3.79	1.27	0.58239	0.832
q7	4.12	1.22	0.50142	0.837
q8	3.22	1.20	0.67196	0.820
q9	4.27	1.24	0.76599	0.807
q10	3.30	1.25	0.56648	0.821
q11	4.13	1.17	0.64966	0.833
q12	3.74	0.93	0.60470	0.824
q13	3.75	1.33	0.58530	0.812
q14	3.79	1.25	0.53320	0.823
q15	3.80	1.26	0.50605	0.838
q16	4.01	1.25	0.66414	0.834
q17	4.13	1.37	0.62081	0.794
q18	4.18	1.23	0.76990	0.807
q19	4.38	1.17	0.43410	0.834
q20	3.86	1.23	0.50595	0.812
q21	3.88	1.34	0.44906	0.808
q22	3.91	1.21	0.62400	0.817
q23	3.27	1.12	0.54190	0.838
q24	4.23	1.23	0.69203	0.819
q25	3.28	2.04	0.73848	0.826
q26	3.20	1.22	0.60810	0.812
q27	3.31	1.10	0.59762	0.830
q28	3.63	1.19	0.73420	0.835

## Appendix E. Factor Loading Statistics Based on the Exploratory Factor Analysis of the FSIMEQ

	Factor						Uniqueness
	1	2	3	4	5	6	
Q1	0.420						0.583
Q2	0.744						0.408
Q3	0.922						0.362
Q4	0.677						0.367
Q5	0.461						0.485
Q6	0.739						0.479
Q7	0.471						0.419
Q8	0.664						0.480
Q9					0.641		0.347
Q10					0.734		0.423
Q11					0.579		0.326
Q12					0.405		0.399
Q13				0.624			0.385
Q14				0.787			0.438
Q15				0.534			0.438
Q16				0.723			0.347
Q17			0.698				0.458
Q18			0.405				0.655
Q19		0.548					0.540
Q20		0.789					0.663
Q21		0.682					0.611
Q22		0.493					0.473
Q23		0.511					0.493
Q24		0.573					0.521
Q25						0.469	0.431
Q26						0.568	0.543
Q27						0.445	0.437
Q28						0.433	0.419

Note: 'Minimum residual' extraction method was used in combination with an 'oblimin' rotation



*Appendix F. Results of the Confirmatory Factor Analysis of the FSIMEQ*

<b>Factor</b>	<b>Indicator</b>	<b>Estimate</b>	<b>SE</b>	<b>Z</b>	<b>p</b>
Factor 1	Q1	0.691	0.0018	6.79	<.001
	Q2	1.209	0.0830	12.56	<.001
	Q3	1.535	0.0772	10.89	<.001
	Q4	1.318	0.0853	15.45	<.001
	Q5	0.990	0.0970	10.21	<.001
Factor 2	Q6	0.702	0.0175	5.97	<.001
	Q7	0.849	0.0227	6.92	<.001
	Q8	1.186	0.0063	11.16	<.001
	Q9	1.220	0.0085	11.24	<.001
	Q10	0.932	0.0093	8.53	<.001
Factor 3	Q11	0.993	0.0997	9.95	<.001
	Q12	1.696	0.0133	14.97	<.001
	Q13	1.052	0.0995	10.58	<.001
Factor 4	Q14	0.679	0.0373	4.95	<.001
	Q15	1.296	0.0212	10.69	<.001
	Q16	1.403	0.0165	12.04	<.001
Factor 5	Q17	1.978	0.0652	7.46	<.001
	Q18	0.826	0.0433	5.76	<.001
	Q19	0.992	0.0132	6.92	<.001
	Q20	0.749	0.0321	8.44	<.001
	Q21	1.251	0.0132	9.65	<.001
	Q22	1.173	0.0765	9.16	<.001
	Q23	0.921	0.0913	5.29	<.001
	Q24	1.226	0.0872	9.71	<.001
Factor 6	Q25	0.871	0.0658	8.22	<.001
	Q26	1.792	0.0183	8.78	<.001
	Q27	0.871	0.0014	9.29	<.001
	Q28	0.939	0.0073	9.11	<.001

*Appendix G. Results of Principal Component Analysis of the Self-Observation Questionnaire*

	Component						Uniqueness
	1	2	3	4	5	6	
Q1	0.612						0.551
Q2	0.817						0.281
Q3	0.837						0.192
Q4	0.661		0.419				0.280
Q5			0.630				0.351
Q6			0.794				0.316
Q7			0.729				0.247
Q8				0.415			0.266
Q9				0.788		0.729	0.244
Q10	0.722					0.415	0.262
Q11	0.845						0.243
Q12	0.613				0.533		0.272
Q13					0.804		0.254
Q14		0.575					0.251
Q15		0.802					0.282
Q16		0.805					0.428

Note: 'Varimax rotation' method was used