Communication Interaction Using Information and Communication Technology

Galina Kavaliauskienė, Vilhelmina Vaičiūnienė

Abstract. Lately e-learning has become a fast-moving discipline online because the Internet offers a diversity of activities for learners in particular. Since e-mail has proved to be the most important and unique method for communication all over the world, pedagogical benefits of using e-mail in teaching and learning a foreign language include extension of learning time and place beyond the classroom, real life communication and asynchronous interaction, promotion of autonomous learning, and learner collaboration.

This report presents theoretical analysis of scientific literature on e-mail communication for learning purposes, collaboration in learning, students learning experiences while learning online; a research into an ICT collaborative project between two groups of e-partners who studied English for Specific Purposes at tertiary level. The project aimed at placing students in authentic professional situations. Learners were expected to perform a series of negotiation tasks with e-partners they have never met face to face. The exchange of e-mails constructed a continuous interaction chain, from requests, replies to requests, suggestions, and responses to suggestions, negotiations, taking decisions, making adjustments, and finalizing tasks.

The research was conducted into learning outcomes, analysis of language styles in messages, gender differences on error points in messages, self- and peer-assessment of task completion. Learning effects were estimated by analyzing students’ performance such as the ability to get the message across at the first attempt and avoiding erroneous attempts or reformulations.

Two types of statistics were used to analyze the quantitative data on e-mail language style and errors between female and male students. Descriptive statistics were used to determine the central tendency and to show the dispersion around the centre. Inferential statistical processing of quantitative data was employed and statistical significance was calculated. Double statistical processing proves that the findings could be generalized in spite of the small size of the investigated sample.

Key words: communicative interaction, information and communication technology, English for specific purposes, self-assessment, e-mail writing activities, gender differences.

Introduction

E-mail is a form of asynchronous communication via computer-mediated application of the Internet. Using an e-mail extends language learning time and place beyond the classroom, offers real communication in the target language, and provides possibilities to increase the amount of time that learners spend reading and writing in a communicative context. In spite of being a relatively plain medium, e-mail can offer effective pedagogical benefit of communicative interaction to the process of learning a foreign language.

This paper aims at researching the e-mail exchange activities between two English for Specific Purposes (ESP) classes of different specializations. The notion was to arrange the e-communication between different groups within the same faculty. E-mail activities within a single group are proved to be unsuccessful for two reasons: first, learners resort to mother tongue, second, negotiate face to face. It was important to ensure that students do not meet each other informally either in or outside classes in order to discuss their assignments. The primary objective of this research has been to investigate e-partners’ ability to negotiate the choice of materials and content of presentations on professional themes via e-mail exchanges. Such an approach emphasizes learner’s ability to search for information online, critically analyze and sort out materials and select reliable information. Appropriate use of multimedia for this purpose encourages learners to become more self-directed and autonomous in their learning. Integration of learner collaboration into e-mail exchange project develops their skills of negotiating, planning, and sharing information. The secondary aspect of this research has been a comparative analysis of online correspondence and the quality of designed presentations that were delivered in face to face conference session. The implications of this experiment are discussed. The research methods applied were an analysis of the state-of the-art references on e-mail communication for learning purposes, collaboration in learning, students learning experiences while learning online; descriptive statistics of students errors in e-mail messages and qualitative analysis of e-mail language style between male and female students with the aim of rating gender differences.
Literature Review of Contemporary E-mail Learning

Current advances in Information and Communication Technology (ICT) affect the ways how English language is taught and students develop their language skills. Lately nearly all learning via the Internet has incorporated letter ‘e’, and e-learning has become natural part of English instruction.

Keeping up to date with e-learning is a fast-moving discipline on the Internet. Nowadays Internet offers the activities of reading daily e-learning newsletters, online magazines and attending e-learning conferences. Interpersonal exchanges engage learners in real life communication with key partners. E-partners can be found on the Net by employing common search engines. It is claimed (Wasschauer 1995) that e-mailing between at random found key pals does not lead to effective learning, and, as a rule, is limited to exchanging personal information. Even with suitable key partners, e-mailing can often be problematic in terms of time and reliability of the contacts.

E-mail seems to be the most important, unique method for communication and developing relationships since the telephone (Suller 1998). First, it is easy to use. Second, people find it familiar and safe – it is similar to letter writing. Third, it is the most common and powerful. Unlike face to face encounters, e-mail exchanges are asynchronous, i.e. do not happen in ‘real time’. A person has time to think, evaluate, and compose a message. Availability of thinking time can save e-partners from unnecessary misunderstandings and arguments. However, a person’s ability to communicate effectively via e-mail depends highly on their writing skills (Suller 1998):

‘E-mail is a less spontaneous form of communicating than speech. Unlike verbal conversation – where words issue forth and immediately evaporate – writing places one’s thoughts in a more visible, permanent, concrete, and objective format. Poor writing can result in misunderstandings and possibly conflicts’.

Spelling, grammar, vocabulary, sentence structure and style influence the quality of the writing and reflect one’s personality.

ICT collaborative project between two schools in Singapore and Birmingham explored different writing tasks through the electronic exchange of information (Mei Lin Ho 2000). The pupils’ confidence, awareness and understanding of their own and their correspondents’ cultures were enhanced in this project. The study also examines the role and place of the foreign language teachers over a period of project time, and discusses the implications for both the teachers and learners. Students proved to be more motivated and displayed a positive attitude towards writing. Analysis of the electronic messages showed a level of maturity in pupils’ cognitive development. Learners learnt to work collaboratively and improved their communication skills. Pedagogical implications of the project include knowledge on who, what, why, and how. In other words, teachers need to know well the people who are involved in the project, the specific areas for research and follow-up that have to be worked out clearly with specific objectives, to understand overall purpose of the project and how it will help participants in specific areas, and, finally, to know a clear step-by-step process of implementation.

Rationale and suggestions for using e-mail in foreign language teaching are described in (Gonglewski et al. 2001). Pedagogical benefits of e-mail are: extending language learning time and place, providing a context for real-world communication and authentic interaction, expanding topics beyond classroom-based themes, promoting student-centred language learning, and encouraging equal opportunity participation. A number of suggestions for using e-mail are offered: group e-mail exchanges, e-mail interaction within the class, e-mail interaction between classes, one-to-one e-mail interaction.

The survey of computer use at the University of Canberra revealed that a little over half of the 128 respondents were regular users of computers, spending time surfing the Internet or e-mailing (Jones 1998). According to survey conducted at the University of Urbon, in Thailand, (Jones 2001), 100% of 68 respondents used computers for e-mail and expressed a desire to develop computer skills in order to improve their English.

Attitudes of Lithuanian learners’ to e-learning are described by G. Kavaliauskiene (2003). It was revealed that 71% of 74 respondents use e-mail for communication with peers, and 52% like learning English online. The major difficulty that learners face is evaluation of information which is caused by problems of reading comprehension in English.

Majority of researchers concur with the opinion that e-mail writing is a hybrid of discourse, combining features of both spoken and written genres. Therefore it has the potential to help improve language learners’ oral skills. However, e-mail writing remains essentially written discourse. While writing in the target language, e-partners give each other a chance to read authentic expressions, notice grammatical structures, copy words when responding. What is paramount in e-mail learning experience is learner reflection on language and making use of various resources such as dictionaries and grammar books (http://www.well.ac.uk/wellclass/email.html).

The concept of etiquette in e-mail is known as ‘netiquette’, which includes some straightforward rules, like being positive, polite, accurate, brief, and clear. Identifying oneself, pointing ‘subject’, and avoiding unfamiliar acronyms are rules of a thumb. Guidelines of e-mail writing in business communication extend netiquette rules further: clearness, conciseness, courtesy, consideration, completeness, concreteness, correctness (Jones & Alexander 1996).

The main benefits of the use of technology include the development of linguistic skills, increased motivation, student-centred learning, active processing and engagement in the learning process. Conversational aspect of e-mail writing helps students to activate common expressions and promotes the learning of language structures. In the study, where 358 students were questioned, 50% of the students believed that their writing skills had improved, and only 43% of the learners attributed learning values to the Internet activities. However, 66% of the students agreed that use of computers made the course more interesting (Stepp-Greany 2002).
A survey conducted in Finland has shown that usage of e-mail increased five-fold in the last six years while the share of letters and faxes declined significantly (Wang & Altonen 2004). In business communication, e-mails tend to be stylistically close to a writing-based telephone talk with the obvious trend from the formality of business letters to the informality of e-mails. The e-mail project between Chinese and Finnish students aimed at placing students in authentic business situations, where they were expected to perform a series of negotiation tasks with partners. The exchange of e-mails constructed a continuous communication chain, from request, reply to request, order, order acknowledgement, to complaints and adjustments. The project participants were expected and encouraged to consider what, and how to communicate in the particular situation. Participants encountered some practical problems like different curriculum arrangements and choice of a group compatible with their counterpart group in another country. Project implementation problems included incorrect reading of e-mail addresses and the timing of the project. The international project was designed as an innovation to improve EFL Business Communication teaching and learning. Student participation was self-monitored and depended on students’ motivation and willingness to take responsibility.

Certainly the most readily accessible key partners for students in a class are their classmates themselves (Porcaro 2002). E-mail activities within the class can be effectively controlled, and structured communication is easily attainable. Possible disadvantage might be the excessive use of mother tongue in monolingual classes.

A valuable quality of e-mail communication is learners’ collaboration. Collaborative learning provides the opportunities for learners and teachers to communicate, discuss and collaborate online – either one-to-one or in groups. It helps to bring together groups of learners for a learning event, i.e. create learning communities. The term peer-to-peer learning is used for groups of learners who learn together by setting up connections between the peers. A survey into quality of e-learning (Massy 2002) indicates that respondents in the European Union are unimpressed with e-learning. 61% of respondents rated the overall quality of e-learning negatively. Only 1% rated it excellent, and 5% – very good.

The current review of references on e-mail application suggests that the language exchange activities via e-mail are beneficial to learners. Effective communication via e-mail depends on people’s proficiency in writing and reading skills. Being a less spontaneous form of communication, meaningful writing and reading other people’s messages raise language awareness, encourage to experiment with language and take risks, which should lead to improvement of linguistic skills.

We set up an e-mail project between two English for Specific Purposes (ESP) classes of different specializations. The major objective of this research has been to investigate key partners’ ability to negotiate the choice of materials and the content of professional presentations on suggested topics via e-mail exchanges. A final stage of a project is the collaborative delivery of prepared presentations in front of the audience.

Research Techniques

Each of us taught a class of learners with different specialization profile. We set up a pilot project between two classes with the objective of applying language exchange activities via e-mail for preparation of professional presentations. The project aimed to place students in authentic situation, where they could carry out a series of negotiation tasks with their e-partners. Attention was paid to outlining of ESP themes that students were expected to handle. The exchange of e-mails meant an on-going chain of communication on choice and selection of materials, negotiation on presentation layout and content, sharing and adjusting views and coming to a final consensus.

There were 24 participants – 12 from each class. Learner pairs were asked to contact their peers via e-mail, negotiate the choice of materials, contents of presentations and prepare PowerPoint variant for making a public presentation in front of the audience. Teachers’ task was to monitor students’ progress and keep track of e-mail exchange, both incoming and outgoing, and not interfere into students’ communication activities, i.e. let them work at their own pace. Regrettably, two students dropped out of this project soon after its outset for some vague reasons.

Results and Discussion

Research findings are described below. The data on students’ emailing activities and effectiveness of their negotiations aiming at preparation of professional PowerPoint presentations are analyzed. The performance of students in front of the audience and feedback on their learning experience are presented.

1) Analysis of e-mail messages

The purpose of e-mail communication between key pals was the exchange of information and negotiation of content and choice of material for the final stage of the project – delivery of presentations.

Having no opportunity to meet face-to-face learners had to plan their final product of the project – a PowerPoint presentation. Learners could enjoy full independence in use of information sources, choice of material, frequency of e-mail correspondence. E-mail provided students with an opportunity to interact with their key pals in the ‘specialist’ language, thus increasing their fluency in writing on professional topics. 52 e-mail letters were exchanged by the participants of the project in the allotted period. However, the frequency of correspondence between partners differed greatly. The most active learners communicated on regular basis, whereas one group of learners exchanged only 3 messages.

Every message dealt with some kind of information or data on the chosen topic, very often with attached files of information dealing with a specific question. Thus, e-mailing between key pals performed a referential function. The most typical scenarios of correspondence were as follows: a) introducing; b) suggestions on the plan for the presentation on the selected theme; c) exchange of information, website addresses; d) negotiating the content of the presentation, agreeing or disagreeing on the chosen
material; e) discussing the delivery of the presentation, technical aspects, possible difficulties with PowerPoint equipment.

The most challenging aspect of the e-mailing between key partners from two groups of different specializations was students’ autonomy and collaborative responsibility in decision making process. All collaboration and e-negotiations proceeded in the learners’ spare time at their own convenience. There are some advantages and disadvantages of this arrangement. On the one hand, students were able to respond to a peer’s message after having had sufficient time to think over their replies, and classroom time was spared for other learning activities. On the other hand, writing activities outside classes deprive learners of leisure. However, learning activities out of classroom time serve for becoming an autonomous / independent learner who controls her / his activities, thus increasing learner’s motivation to learn.

2) Learning effects

Learning effects are usually estimated by analyzing the students’ performance. When learners manage to get the message across correctly, this part is categorized as successful communication. When learners fail to get their message across at the first attempt, the second attempt is usually categorized as reformulation. The remaining parts of erroneous communication are coded as other attempts (Sakai 2004).

In our settings, there have been neither reformulations nor other attempts. Learners have been able to get their messages across at the first attempt, and their performance can be coded as successful communication. Students forwarded their e-mail messages to teachers who were continually able to keep track of the progress that students made. The majority of the participants of the project (86%) feel their performance was successful.

However, the learners produced a variety of writing errors, such as lexical, grammatical, and syntactic errors, which were counted for each learner. The analysis of the present study is based on error points defined as the absolute number of errors identified in learners’ e-mail messages. The errors included the omission of the definite or indefinite articles, the 3-rd person singular form, and the word order in the main or subordinate clauses. Errors in spelling have not been taken into account because this type of errors has not caused any misunderstandings in communication. The analysis of students’ writing has been performed at the end of the project. Generally speaking, errors can be divided into ‘interlingual errors’, i.e. errors that occur between English and the mother tongue, and ‘intralingual errors’, i.e. those that occur within the language being learned (Bolitho & Tomlinson 2005). In our settings, amongst the causes of the errors are the mother tongue interference, and interference from items within English – cross association and false analogy. Errors might not only have one of the causes, there could be two or more causes operating at the same time. Feedback provided on students’ errors helps to raise learners’ awareness in language usage and examine error sources. The most frequent mistakes were prepositions and word order, i.e. interference of the mother tongue. In the second position, there was omission of articles which were scarcely used in both male and female students e-mails.

Two types of statistics are used to analyze the data. Descriptive statistics are used to characterize a set of data in terms of central tendency and to show how the numbers disperse or vary around the centre. Central tendency is defined as the propensity of a set of numbers to cluster around a particular value. The important thing, however, is to note that descriptive statistics do not allow drawing any general conclusions that would go beyond the sample, but data would show a trend in the research area. Three computations are often used to find central tendency: the mean, the mode, and the median. The mean is the average of all numbers. The median is the point in the distribution below which 50% of the values lie and above which 50% lie. The quantitative statistics are usually used to find the level of significance in obtained data, and a variety of tests is used for this purpose. The most reliable for small samples is considered to be the t-test.

The aim of analysis has been to compare the performance of two groups – 12 women and 10 men. Individual scores of error points are summarized in Table 1. Participants are presented in pairs.
Our application of t-test computation to the data in Table 1 gives the $t$-value of 2.738. In the $t$-test Table (Brown & Rodgers 2002), for $df = 20$ the critical values for $t$ are: at the $p = 0.01$ level of significance (two-tailed) $t$ is equal to 2.845, at the $p = 0.02$ level of significance (two-tailed) $t$ = 2.528, at the $p = 0.05$ level of significance (two-tailed) $t$ = 2.086, at the $p = 0.10$ level of significance (two-tailed) $t$ = 1.725.

The $t$ value that we calculated using the Means and Standard Deviations for both groups was 2.738. This value is greater than the critical values in the $t$-test Table both at the 0.10, 0.05 and 0.02 levels of significance, but smaller than tabled value at 0.01. Therefore it means that statistically we have found a significant difference between men and women at $p < 0.01$, i.e. men are significantly better than women at avoiding errors in e-mail writing.

3) Analysis of e-mail language style

The vast majority of people, 82%, believe good manners matter online, and 56% of 2000 adults questioned got annoyed by e-mail messages that were over-familiar, including spelling or grammatical errors, or lacked a proper greeting (Ward 2001).

Irma Heemskerk et al. (2005) reviewed literature on the application of ICT in learning, its impact on male and female learners in schools. The Dutch researchers in their analysis of literature on gender, ethnic and socioeconomic status differences related to ICT in learning present controversial findings. They discovered that some authors (Barret and Lally 1999) who investigated the issue empirically found that men tend to write more and longer messages containing more social talking in comparison with women’s messages, whereas other researchers claim that women write longer messages and demonstrate higher participation rate. Lithuanian data support the latter group of findings. Notwithstanding this controversy, all the above mentioned researchers indicated gender differences. Male and female students’ style differences can be seen from the e-mail letters presented below. Male students expressed themselves more concisely and were oriented towards the aim of their correspondence that is negotiation of the content. It should be noted that the language of the letters has not been corrected.

E.g. “Hello,
We looked you materials about drugs and decided that we will talk now concretely:
1. reasons of drug abuse
2. types of drugs, drugs effects
3. drug trafficking
4. prevention
So, if you agree we will speak about reasons of drug abuse and types of drugs.
Bye”

Female letters were much longer with the use of linking words, explanations, references or apologies.

E.g. “Hello,
Sorry for not replying to you at once. Actually, we can not get to internet very long. Thank you for comprehensive information about types of computer related crimes. .... By the way, what do you mean by saying......... As we’ve understood, you would like to talk on such parts of the project........
We found some material about subjects ........
We would like to find out your opinion....
So bye for now:)
We look forward to hearing from you: ) “

Analysis of email language supplied information on students’ abilities to explore a foreign language for meaningful communication. Students use a typical mixture of formal and informal styles. Beginning a letter with “Hi!” or “Hello!” they finish it with “Sincerely yours”. Many researchers note that e-mail communication reminds of a delayed conversation. The analysis of students’ correspondence indicated this similarity with the oral communication. Some letters had no introduction or greeting, and just delivered important information. This is peculiar to male letters.

E.g. “It looks like we are in the final stage of our project.....Or “If you have the blue book, you can find information related with our subject.....”

All students who participated in the project benefited from the opportunity to negotiate the contents of the professional topics and develop their social and collaboration skills. It is known that e-mail language performs referential and affective functions. Referential function is to convey information or content, whereas affective expresses feelings, emotions and social relationships between partners of correspondence. Women use more compliments and apologies. Generally speaking, women’s e-mail language is more affective than men’s. Lithuanian female students’ letters contain more features of affective language, i.e. thanks, compliments, or apologies. The women’s letters sound more personal and friendly.

E.g. Female messages: “Hello, Thanks for your letter, and sorry we haven’t written for so long........”
“Hello, Simona and Ruta. Sorry for not replying to you at once........”

E.g. Male message: “Hi, you know I had time, therefore I have made an example of our presentation. .....”

Some findings on gender-based affective aspects of e-mail messages are presented in Table 2.

<table>
<thead>
<tr>
<th>Affective aspects</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apologies</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Compliments</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Thanks</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

Gonleviski et.al. (2001) in their research into e-mail use in foreign language teaching among other positive aspects note that it is a practical opportunity to improve vocabulary and writing. The aim of Lithuanian e-mail correspondence was particular: to discuss and negotiate the material for preparation of PowerPoint presentations upon professional topics. Therefore, no visible improvement of written language was observed. Students had an opportunity to clarify their opinion, or offer some help, or reject peers’ suggested plan or idea. Thus, the focus was on collaboration and communication via the Internet.
4) Timing and assessment of preparation and delivery

Students were allotted five weeks to prepare their presentations via e-mail negotiations with e-partners they have never met before. Teachers have been able to monitor learners’ progress in preparation of their presentations via e-mails forwarded to them. There was no teachers’ interference into students’ activities. All collaboration and e-negotiations proceeded in the learners’ spare time at their own convenience. Presentation time for each team was limited to 20 minutes. Regrettably, not all presenters managed to deliver their talks within the time limit.

After the delivery of presentations, we conducted the self-assessment and peer-assessment session by administering a specially designed questionnaire. Students were asked to assess the difficulties that they faced in stages of preparation and delivery of presentations. The major benefit of learner self-assessment is its impact on the learning. Furthermore, it reveals strengths and weaknesses of the given assignments and students performance.

The results of self-assessment of difficulties are shown in table 3. Almost half of the respondents (10 students) had difficulties in delivering their presentation. Interestingly, only 9% of learners have admitted being familiar with the PowerPoint software before this project. The majority of students had to master the PowerPoint technique in the process of preparing their presentations. 4 learners had problems in using PowerPoint software, only 1 student found it difficult to coordinate efforts in choosing the contents. 6 students had problems in searching for relevant materials.

Table 3. E-partners’ difficulties in preparation of presentations online

<table>
<thead>
<tr>
<th>Difficulties</th>
<th>Number of students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery of presentations</td>
<td>10</td>
<td>45%</td>
</tr>
<tr>
<td>PowerPoint technology</td>
<td>4</td>
<td>18%</td>
</tr>
<tr>
<td>Negotiating content</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Information search</td>
<td>6</td>
<td>23%</td>
</tr>
</tbody>
</table>

These results are consistent with the findings related with e-partners feedback on their performance. The data is shown in table 4. 20 out of 24 research participants (86%) feel their performance was successful, over the third (36%) consider their talks interesting, and 3 students (14%) – professional. In a questionnaire section of specifying one’s responses about quality of performance, there were such answers as lack of allotted time for presentation, a necessity to contemplate and reflect on delivery, and anxiety and thrill during performance. None of the respondents thought they were relevant.

Table 4. E-partners’ feedback on their performance

<table>
<thead>
<tr>
<th>Performance</th>
<th>Number of students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfect</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Successful</td>
<td>20</td>
<td>86%</td>
</tr>
<tr>
<td>Interesting</td>
<td>9</td>
<td>36%</td>
</tr>
<tr>
<td>Professional</td>
<td>3</td>
<td>14%</td>
</tr>
<tr>
<td>Boring</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Conclusions

The significance of this research is its relevance to meaningful communication in ESP. In e-mail project, communication of meaning prevailed over error avoidance and accuracy in writing messages. Language exchange activities via e-mail with the objective of preparing presentations demonstrated their experience as teaching tools in English for Specific Purposes. Learners succeeded in preparing presentations online and successfully delivering professional presentations in front of the audience.

Analysis of e-mail messages and delivery allows concluding that inter-group collaboration fosters learners’ autonomous learning, develops learners’ ability to negotiate and get the meaning across, demonstrates the significance of the meaningful learning, i.e. learning subject through English, and allows learners to experience sense of accomplishment.

The research was conducted into gender differences on error points in e-mail messages in ESP. Analysis of students’ e-mail letters revealed the use of formal and informal styles. Differences between male and female styles have been observed. Lithuanian female students’ letters contain more elements of affective language. However, statistically men participants are proved to be significantly better at writing e-mails than women participants.

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Galina Kavaliauskienė ir Vilhelmina Vaičiūnienė

Bendravimas naudojant informacines technologijas

Santrauka

The Authors

Galina Kavaliauskienė, dr., assoc. prof. at Mykolas Romeris University, Lithuania.
Academic interests: ESP, quality in teaching / learning, alternative assessment
Address: Mykolas Romeris University of Lithuania, Ateities str, 20, LT-2057 Vilnius, Lithuania
E-mail: gkaval@mruni.lt

Vilhelmina Vaičiūnienė, doctoral student, at Vytautas Magnus University and a lecturer at Mykolas Romeris University, Lithuania.
Academic interests: ESP, information literacy in HE, adult learning
Address: Mykolas Romeris University of Lithuania, Ateities str, 20, LT-2057 Vilnius, Lithuania
E-mail: vvaiciun@mruni.lt

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