



# ВІСНИК

Національного  
Авіаційного  
Університету

Репозиторий БарГУ

UDC 37.035-057.87 (045)

DOI:

Iryna Piniuta

## ASSESSMENT OF COLLABORATIVE SKILLS

Baranovich State University, the Republic of Belarus  
Parkovaya street, 62, Baranovich, 225406, Brest region.  
E-mail: pinyuta@msn.com

### Abstract

*The article deals with the assessment of the ways to develop collaborative skills. In the study, the students were suggested to do activities in teams using traditional practices and by means of Google Docs and Meeting Words web applications. Using the criteria of equality, participation and shareness, the development of collaborative skills was assessed. The mixed research method which combined the survey of the students and the content analysis of their projects helped to reveal the effectiveness of using technology in the development of collaborative skills.*

**Keywords:** collaboration; equality; participation; shareness; set of exercises; skills

### 1. Introduction

Collaboration is seen as a core skill in the 21st century. Cambridge dictionary defines collaboration as the activity of working together to create or achieve the same thing, or a product of this [1]. The benefits of collaboration and team work in education include peer support and feedback on the students' practices. Collaborative skills are necessary to solve complex, interdisciplinary problems. Besides, they promote the understanding of alternative perspectives, which is vital for the progression of society and useful for achieving educational goals. Moreover, learning how to collaborate allows students to have a broader set of skills that will help industries and economies progress.

In recent years the characteristics of collaborative learning have been carefully investigated. Numerous studies show that collaborating in group assignments and projects, compared to working independently, results in deeper information processing and more meaningful psychological connections among the participants [2]. But little research is done to investigate the development and assessment of collaboration skills as an educational outcome. Meanwhile this goal would help to create more effective activities to satisfy the learners' needs. In this study, we suggested that the development of collaboration skills will be more effective in case of using technology. For his reason, we asked the students to choose Google Forms or Meeting Words applications to do a task in teams. The mixed research method made it possible to compare the effectiveness of collaboration using the traditional

and online methods.

### 2. Literature review

Modern researchers agree that the goal of collaboration is to create new insights during discussions [3]. While working together, students build new understanding by challenging others' ideas and defending their own. As a result, this creates a product that is different from what any individual could produce alone. The most important criteria for collaboration is the synthesis of information — that is, creating a new product through the combination of different perspectives and ideas, as well as a more or less equal contribution from each participant [4].

Collaborative skills are considered as both cognitive and social skills. Cognitive skills include task regulation and knowledge building, whereas social skills include participation, perspective taking and social regulation [5]. Their development presupposes the use of McGrath's Input-Processes-Outcomes mode [6]. Input generally includes students' prior knowledge, the need to do a group task and interpersonal personal relationships. The collaboration process then leads to output, which includes learners' new constructed knowledge, membership in the collaborating group, and the satisfaction of the learning process [7, 41]. Thus, students' team work is usually analyzed and assessed in terms of: (a) equality, or to what extent contributions are equal; (b) participation, or how much interaction occurs; and (c) shareness, or what portion of ideas are shared with the whole group.

### 3. Methods of research

This research was done in 2018 at Baranovich State University (the Republic of Belarus), the department of professional foreign language training, in the course of “Intercultural communication” on the topic “Cross-cultural education”. All together, there were thirty 3rd year students (six males and twenty four females), who were pre-service English teachers. The trainees were enrolled in the four hours module on the topic “Teaching compliments and responding to them”. The task was to design a set of exercises according to the six levels of educational objectives: remembering, understanding, applying, analyzing, evaluating and creating [8].

Three teams of students in the controlled and experimental groups with five members in each were

asked to do activities in collaboration. The themes of their projects included: (A) “Language structures that are used in compliments”, (B) “Why a compliment can become a source of cross-cultural misunderstanding?” and (C) “Ways to respond to a compliment in the target culture.”

In the controlled group collaboration was organized in the traditional way, without the use of technology.

In the experimental group in order to choose a technology to collaborate, we asked students about Google Docs and Meeting Words web applications in relation to the development of collaborative skills. The survey included a written statement about students’ perceived benefits of each web application (Tables 1 and 2).

Table 1

**Student reported benefits of the Google Docs application**

Reported benefits	Number of students (n=15)
1. Numerous functions and opportunities: add and load video, audio, pictures and documents.	6
2. Edit and change the text.	4
3. Work of a number of students.	3
4. Commentary is available.	3
5. Modern, simple interface.	2
6. Publication in PDF may be done.	2
7. Checking the changes.	1

Table 2

**Student reported benefits of the Meeting Words application**

Reported benefits	Number of students (n=15)
1. Everyone can continue, edit, correct one's' own or other's ideas.	8
2. There is a chat to discuss the challenging areas.	7
3. The teacher can follow the process and check everyone's impact to the final product.	3
4. Everybody can produce a text on a number of problems.	3
5. Group / team work is done.	3
6. Interaction of the participants.	2

7. Every participant is easily identified by the personal color.	2
8. Everyone is allowed to suggest an idea.	1

Having correlated the students' responses next to the criteria of collaboration, we see that they find it possible and beneficial to use both tools in order to develop collaborative skills and complete a group project: Google Docs (points 2, 3, 4, 7) and Meeting Words (all the points). The evident benefit of the latter web application includes the option that the teacher can follow the collaborative process from the very beginning, because it is easy to track each student contribution to the team work. Each participant can be identified on the written text by a specific colour.

That is why for this study, we gave our students the option of using either Meeting Words or Google Docs in their project. As a result, in the experimental group, two teams (A and B) chose Google Docs and one team (C) collaborated by means of Meeting Words.

In the phase of reflection, after designing the sets of exercises, each student from controlled and experimental groups assessed the effectiveness of their collaboration on the criterion of equality. The students answered how many words they used in the task, and how many exercises they suggested in the

set. After that, the content analysis of students' projects of the controlled and experimental groups was done in order to determine the quality of the suggested activities. We used the parameters of order of exercises and language literacy to assess the students' participation and shareness.

#### 4. Data presentation

In the controlled group, the students prepared three sets of exercises with five (in one group) or six tasks. The total number of words was 1,158 (346 / 457 / 355). The average number of exercises was approximately 1.2 per person in each group.

In the experimental group, the final projects looked much more different. We found out that 14 students (93.33%) collaborated when doing their projects (one student did not participate for technical reasons). Altogether, 21 exercise was analyzed (3; 10; 8 accordingly in each set) with a total of 1,607 words (143; 871; 593 words in each set). The average number of exercises constituted 2.27 per person: group A — 1.6 per person; group B — 2.6; group C — 2.6 (Table 3).

Table 3

#### Collaboration in the experimental group

Group	Group Member	Number of Words (%)	Number of Exercises
<b>A</b>	<b>Altogether (5)</b>	<b>143 (100%)</b>	<b>3</b>
A	1	27 (18.88%)	2
A	2	31 (21.67%)	1
A	3	55 (38.46%)	3
A	4	0 (0%)	0
A	5	30 (20.97%)	2
<b>B</b>	<b>Altogether (5)</b>	<b>871 (100%)</b>	<b>10</b>
B	1	355 (40.76%)	4
B	2	146 (16.76%)	3
B	3	115 (13.2%)	2
B	4	183 (21.01%)	2

B	5	72 (8.27%)	2
C	<b>Altogether (5)</b>	<b>593 (100%)</b>	<b>8</b>
C	1	58 (9.78%)	3
C	2	140 (23.61%)	2
C	3	145 (24.45%)	2
C	4	66 (11.13%)	1
C	5	184 (31.02%)	5

## 5. Discussion

The students in the controlled group, before designing the sets of exercises distributed all the tasks according to the educational objectives: remembering, understanding, applying, analyzing, evaluating and creating. After that, some students in two groups added one more task to their sets. As a result, cooperative work was done by the students with little actual collaboration which presupposes discussions of their suggestions with mates.

In the experimental group, the obtained data demonstrates to what extent contributions were equal within each team. The results showed that, according to the criteria of equality, the majority of students collaborated doing activities. Sixty percent of trainees contributed with more than 20% of words that constitute the sets of exercises. Also, 80 % of students participated in the design of more than one activity. These data proves the benefits of using technology in collaborative work.

Having obtained the quantitative data, we analyzed the quality of the suggested sets of exercises using the markers of sequence of exercises and language literacy. It showed that in the experimental group the exercises were presented in the logical order, the complexity of thinking skills was taken into consideration (only one mistake was made in their sequencing); meanwhile, in the controlled group, the students suggested good exercises, but not all of them were arranged in the appropriate order, moreover four exercises had inappropriate goals. Also, in the set of exercises that were presented by the experimental group, there were fewer language mistakes. All of that proves that better participation (the interaction of the members of the group) and more shareness (the portion of ideas which are shared with the whole group) were done by trainees in the experimental group. It means that technology is effective for the development of collaborative skills.

## 6. Conclusion

In the study we used the criteria of equality, participation and shareness to assess the development of collaborative skills. The results of an experiment proved the effectiveness of technology (Google Docs and Meeting Words web applications) to provide collaboration among University students. The perspectives of this study are seen as considering the didactic conditions which are necessary to develop the collaborative skills without technology, as far it is still problematic sometimes to use technology while doing home assignments.

## References

- [1] Collaboration. In *Cambridge online dictionary*. Available at: <https://dictionary.cambridge.org/dictionary/english-russian/collaboration>.
- [2] Smith, B. L. & MacGregor, J. T. (1992). What is collaborative learning? In A. Goodsell, M. Maher, V. Tinto, B. L. Smith & J. T. MacGregor (Eds.), *Collaborative learning: A sourcebook for higher education*. University Park, PA: Pennsylvania State University, National Center on postsecondary teaching, learning, and assessment publishing, 175.
- [3] Henri, F. (1992). Computer conferencing and content analysis. In A. Kaye (Ed.), *Collaborative learning through computer conferencing: The Najaden papers* (pp. 117—136). Berlin: Springer-Verlag.
- [4] Ingram, A. L. & Hathorn L. G. (2004). Methods for analyzing collaboration in online communications. In T. S. Roberts (Ed.), *Online collaborative learning: Theory and practice* (215—241). Hershey, PA: Information Science Publishing.
- [5] Plucker, J. A. & Kennedy, R. N. E. C. & Dilley, A. What we know about collaboration: P21, the partnership for 21st century learning. Available at:

[http://www.p21.org/storage/documents/docs/Research/P21\\_4Cs\\_Research\\_Brief\\_Series\\_-\\_Collaboration.pdf](http://www.p21.org/storage/documents/docs/Research/P21_4Cs_Research_Brief_Series_-_Collaboration.pdf).

[6] Ilgen, D. R., Hollenbeck, J. R., Johnson, M., & Jundt, D. (2005). Teams in organizations: From input-process-output models to IMO models. In *Annual Review of Psychology*, 56, 517—543.

[7] Jahng, N., Chan, E. K.H. & Nielsen, W. S. (2010). Collaborative learning in an online course: A

comparison of communication patterns in small and whole group activities. In *The Journal of Distance Education*, 24 (2), 39—58. Available at:

<http://ro.uow.edu.au/cgi/viewcontent.cgi?article=2319&context=edupapers>.

[8] Anderson, L. W. & Krathwohl, D. R. (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's educational objectives. New York: Longman.

### **I.V. Пінюта**

#### **Оцінювання навичок співпраці студентів**

Барановичський державний університет, вул. Паркова, 62, м. Барановичі, 225320, Брестська обл., Республіка Білорусь  
E-mail: pinyuta@msn.com

В статті розглядається питання оцінювання засобів розвитку навичок співпраці студентів. В дослідженні студентам запропоновані види командної діяльності з використанням традиційних методів навчання та Інтернет додатків Google Docs, Meeting Words. Оцінювання здійснювалось з використання критеріїв рівності, участі та розподілу відповідальності. Комплекс дослідницьких методів, що поєднав спостереження за студентами та контент аналіз студентських проектів, допоміг у виявленні ефективності використання даної методики у розвитку навичок співпраці.

**Ключові слова:** співпраця; рівність; участь; розподіл; комплекс вправ; навички

### **И.В. Пинюта**

#### **Оценивание навыков совместной работы студентов**

Барановичский государственный университет, ул. Парковая, 62, г. Барановичи, 225406, Брестская обл., Республика Беларусь  
E-mail: pinyuta@msn.com

В статье рассматривается вопрос оценивания способов формирования у студентов умений работать в команде. В исследовании студентам были предложены виды командной работы с применением традиционных методов и Интернет приложений Google Docs и Meeting Words. Оценивание проводилось с использованием критериев равенства, участия и самовыражения. Комплекс исследовательских методов, который включал наблюдение за обучаемыми и контент анализ студенческих проектов, способствовал определению эффективности использования данной методики в развитии умений совместной работы.

**Ключевые слова:** совместная работа; равенство; участие; самовыражение; комплекс упражнений; умения.

**Irina Piniuta.** PhD in Education.

Associate Professor, Baranovichi State University, Department of Professional Foreign Language Training, Parkovaya street, 62, Baranovichi, 225406, Brest region, Belarus.  
E-mail: pinyuta@msn.com