

# Developing Computer Science Undergraduate Students' Communicative and Self-Expression Skills: Digital vs. Traditional Storytelling Methods

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**Abstract**—To succeed in the modern digital workplace, to express ideas clearly and effectively, and to be convincing, university graduates should be equipped with communicative and self-expression skills even if their future jobs do not involve constant communication with different people. Digital and traditional storytelling used in the English language classroom are considered efficient methods for developing these skills among computer science undergraduate students. With the appearance of Artificial Intelligence and free access to various AI tools, creating digital stories is becoming easier and easier, and today's students, being representatives of the digital era, are proficient with these tools. The research aims to examine computer science undergraduate students' perceptions of the effectiveness of digital vs. traditional storytelling methods in developing their communicative and self-expression skills. Using the designed paper-based questionnaire, the researchers collected data from 119 first- and second-year computer science undergraduate students. The data were collected during September-October 2024 and the obtained data were processed qualitatively. Results suggest that in today's English language classroom digital storytelling is a more convenient way of engaging students in expressing their ideas and personal points of view. Presenting their digital stories in front of the class and defending their views provide developing their communicative and self-expression skills. Concerning computer science undergraduate students who prefer writing stories, we can claim that they understand the value of such assignments since they help them gather their thoughts and express them more logically and structured.

**Keywords**—Communicative skills; Computer Science Undergraduate Students; Digital and Traditional Storytelling

**Methods; English Language Classroom, Self-Expression Skills.**

## I. INTRODUCTION

Many modern scientists are convinced that the appearance of digital technologies and their implementation into the educational process of universities enable teachers to use innovative teaching and learning methods that inspire students' desire to acquire new knowledge and skills [1; 2]. Moreover, they claim that digital technologies modify conventional instruction so that it considers students' learning styles and becomes more autonomous, engaging, and personalised [3; 4].

What we believe is that although traditional teaching and learning methods and techniques used in the English language classroom aim to equip students with key language skills (reading, writing, speaking, and listening), innovative teaching and learning methods based on digital technologies open more opportunities for both teachers and students, make instruction more interactive and improve students' soft skills. The advantages of digital technologies include numerous opportunities to engage students in independent cognitive activity, the interactive nature of online educational content, the opportunity to share information among all participants of the educational process, and to get feedback etc. One more advantage of implementing digital technologies into the instruction of higher education institutions is that it can embrace various learning models (face-to-face, online, social, personalised, and hybrid) and enhance students' digital skills [5].

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Thus, Noytim believes that Web blogging, regarded as an innovative storytelling method, encourages students to self-express and enhance their reading and writing skills in English classes [6]. To support this point of view, the researcher explains that “Weblogs offer real communication in which writing and reading take place in an authentic environment and there is a real audience” [6, p. 1128]. In addition, the researcher states that collecting and analysing information for posts implies the development of students' analytical and critical thinking skills.

Research conducted by Malykhin et al. shows that such story-based teaching and learning methods and techniques as making up stories, expanding sentences, chain story writing, cutting down sentences, and writing storms used in English language classrooms help effectively develop Computer Engineering and Information Technology undergraduates' innovative thinking [7]. The researchers also determine sub-skills that constitute the basis of innovative thinking, namely, creativity, ability to analyse information, ability to think critically, ability to see the differences, openness to new experience, willingness to experiment, ability to summarise information, ability to group different ideas, ability to evaluate information critically, ability to find the way out of the situation, adaptability to change and ability to be agile.

To encourage students to improve their four language skills inside and outside the English language classrooms, and to develop their cognitive, communicative, and social skills, English language teachers should implement collaborative language learning. Mansor et al. claim that collaborative language learning implies the use of dialogue journal writing, which is an effective means for teaching students to express their thoughts and feelings in a foreign language, to develop their writing skills, and to improve their social skills [8].

Considering English as a global language, which opens wide opportunities for people worldwide, Arroba & Acosta find it helpful to apply innovative communicative strategies inside and outside the English language classroom [9]. Although researchers regard all four language skills as equally important, much effort should be put into developing undergraduate students' speaking skills. They explain that the ability to speak English fluently clearly indicates students' language proficiency and is connected with their communicative skills. In today's English language classroom, the development of speaking skills is impossible without the use of various speaking activities. However, if these activities are not student-centred, and ignore students' interests, needs, and previous experience of using English, engaging students in communication is a real challenge for teachers. In this connection, digital storytelling is effective in motivating students to develop their speaking skills.

To succeed in the modern digital workplace, to express ideas clearly and effectively, and to be convincing, university graduates should be equipped with communicative and self-expression skills even if their

future jobs do not involve constant communication with different people. In this regard, storytelling methods and techniques used in the English language classroom seem effective in enhancing these skills among students of different specialties.

#### A. *Traditional Storytelling*

Some researchers believe that storytelling performs not one but several functions in the classroom. Depending on the topic discussed, storytelling can enhance intercultural understanding and communication by teaching students to appreciate different perspectives on the problem or cultural traditions. It helps develop students' soft skills, namely, imagination and creative thinking skills and helps increase their verbal and written proficiency. In this regard, the following definition by Dvalidze is of scientific interest to our study: “Storytelling is a unique way for students to develop an understanding, respect and appreciation for other cultures, and can promote a positive attitude to people from different lands, races and religions” [10, p. 208].

Fachraini expresses a similar idea and claims that as one of the widespread techniques used in the English language classroom storytelling is distinguished by cultural value [11]. It also helps students master their listening and reading skills and significantly improve their grammar and pronunciation skills.

As one of the oldest forms of human communication, Lucarevschi believes storytelling plays a pivotal role in promoting education and cultural values [12]. The researcher states that the role of storytelling in facilitating comprehension is undeniable. While preparing a story, foreign language learners can visualise its content and use verbal repetitions, which makes it possible to create a highly contextualised story.

#### B. *Digital Storytelling*

Digital technologies have already changed the traditional way of delivering instruction in the English language classroom, the teaching and learning strategies used, the roles teachers and students play, and approaches to developing students' skills.

According to Zuana, classroom digital storytelling in the English language classroom is a means that combines “both personal narratives with the use of technology” [13, p. 28]. The study conducted by this researcher shows that digital storytelling helps students believe in their ability to speak English since it enables them to practice their English language speaking skills. In addition, students admit that preparing digital storytelling videos is challenging and requires much effort.

Arroba & Acosta maintain that applying authentic digital storytelling in the English language classroom enables undergraduate students to improve their vocabulary, grammar, and pronunciation, become aware of their weaknesses, and overcome speaking mistakes [14].

Gregori-Signes claims that along with language skills, digital story creating involves shaping a wide range of skills, namely, “research and writing skills, organization

skills, technology skills, presentation skills, interpersonal skills, or problem-solving skills, which, in turn, develop digital literacy, global literacy, technology literacy, visual literacy, or information literacy” [15, p. 45]. As an innovative teaching and learning tool digital storytelling helps teachers bring innovation into the English language classrooms, and raise the motivation and cognitive interest among their students that way. With regard to students, new approaches to selecting the content and images, its structuring, and the style of presenting prepared digital stories, provide students with more possibilities to manifest their creativity and flexible thinking skills, that is, to self-express.

In our research, we share the opinion expressed by Towndrow that digital story making and storytelling are the basis for developing agency in students, and the way they present their digital stories reveals “who we are as people, what we value, and what we would like others to notice about us” [16, p. 84]. The way of telling a digital story manifests students’ self-representation and self-expression skills and how they view and represent the content they create.

Syam concludes that digital storytelling inspires students’ curiosity and can turn them into interested readers [17]. Implementing digital storytelling into the educational process implies developing students’ writing and reading skills and ensures the improvement of their communicative skills.

Thus, the analysis of the relevant literature shows that storytelling methods and techniques used in the English language classroom may help improve students’ language skills and teach students to express their ideas freely, respect their groupmates’ opinions, reduce the risks of misunderstanding, help expand their horizons and networking opportunities. Therefore, the research aim is to examine computer science undergraduate students’ perceptions of the effectiveness of digital vs. traditional storytelling methods targeted at developing their communicative and self-expression skills.

## II. MATERIALS AND METHODS

The participants in this study were 119 first- and second-year computer science students who studied English as a second language at Kyiv National University of Technologies and Design (Kyiv, Ukraine) and Kyiv National Economic University named after Vadym Hetman (Kyiv, Ukraine).

The discipline “English as a Second Language” taught to first- and second-year computer science students in the mentioned higher education institutions in Ukraine aims to develop language skills (reading, writing, speaking, and listening) and key competencies for lifelong learning, including communicative and self-expression skills. This discipline is a preparatory stage before students start specialising in developing their communicative competence in the IT sphere. Digital storytelling and writing essays are typical activities used in the English language classroom. While studying a definite topic,

English language teachers usually offer students tasks to create a digital story or to write an essay to show how well they absorb the educational material they learn and to present it in front of the class. Such a practice helps teachers understand how well the students have learned the lexical and grammatical material related to the topic. Moreover, these activities help students with different memory types develop their communicative and self-expression skills. To reach the research aim, which was to examine computer science undergraduate students’ perceptions of the effectiveness of digital and traditional storytelling methods targeted at developing their communicative and self-expression skills, the researchers developed a paper-based questionnaire which contained the following questions:

*Do you find storytelling helpful in developing your communicative and self-expression skills? Explain why.*

*Which helps you express yourself better: creating a digital story or writing a story (an essay)? Explain your point of view.*

*What do you find most comfortable to present in front of the class: a digital story or a story created in written form? Explain your point of view.*

During the data collection period, respondents were asked to carefully ponder the questions given in the questionnaire, and share their thoughts on developing their communicative and self-expression skills in the English language classroom via digital and traditional storytelling methods. The data were collected from September to October 2024, and the obtained data were processed qualitatively.

## III. RESULTS AND DISCUSSION

The first question was aimed at figuring out if respondents found storytelling helpful in developing their communicative and self-expression skills. 76 respondents (63.9%) gave a positive response to this question. 25 respondents (21.0%) replied negatively and 18 respondents (15.1%) found it difficult to answer the question. Figure 1 shows the results of question 1.

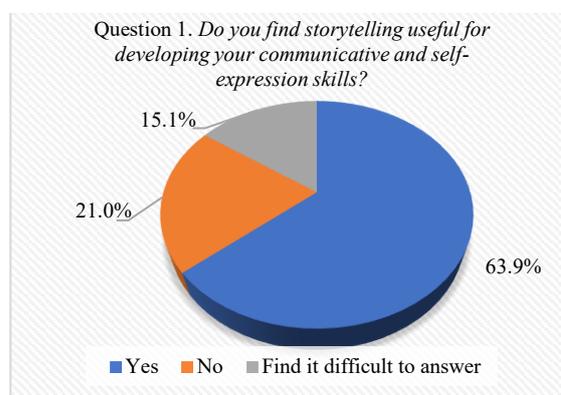


Fig. 1. Respondents’ responses to question 1.

76 respondents (63.9%) who admit that storytelling is helpful in developing their communicative and self-expression skills explain that this activity helps them better

understand themselves, learn to express their thoughts logically, and substantiate these thoughts with some facts or real-life examples. While preparing a story, they improve their vocabulary, which they can use in the future. These respondents claim that storytelling is an effective way of expressing their views on different topics. 25 respondents (21.0%) who neglect the usefulness of storytelling for developing their communicative and self-expression skills mention that the connection between these skills and storytelling is rather vague. In their replies respondents point out that they associate storytelling assignments only with requirements given in the syllabus of the discipline "English as a Foreign Language" and do not regard them as assignments for self-expression or communication with their groupmates. Concerning the 18 respondents (15.1%) who find it difficult to answer this question, we can assume that they lack self-reflection skills and are not used to analysing their emotions connected with such assignments.

The second question aims to understand respondents' opinions on which helps them self-express better: creating a digital story or writing a story (an essay). The results demonstrate that 68 respondents (57.1%) find it easier to create a digital story to self-express, while 31 respondents (26.1%) prefer writing a story. In addition, 20 (16.8%) respondents find it difficult to answer this question. Below are excerpts of responses in which respondents express their positions on using digital storytelling for developing their communicative and self-expression skills:

R10: *My level of English allows me not to write anything before I create a digital story. I can make some notes, which include information about the structure of a digital story and some reminders about images or ideas about the final product. That's all. ... Writing a story takes much time and does not allow to provide any visual support. Digital storytelling is an entirely different thing. It is an unusual way of expressing your personality and your thoughts. Putting your heart and soul in creating a digital story, can make your groupmates think about the same thing or the same situation in a totally different way.*

R25: *Although I like both activities, digital storytelling is more effective in developing my communicative and self-expression skills. The explanation is simple: before creating a digital story, I always write a text. It helps me stay focused and think through all the details. So, I can say that I always combine these two activities when I prepare a digital story. They are equally important in developing the mentioned skills, and the only difference between them is the way we present the results.*

R17: *I like writing stories because every story is unique. First, it allows me to express my ideas and my emotions freely and to understand my personal attitude towards the topic I write about. On the one hand, it is more challenging to write a story but on the other hand, a written story can offer any topic in depth which cannot be done with a digital story. Digital storytelling is an entirely different thing. It is more about presenting your ideas through visual and sound effects.*

R34: *I find it difficult to answer this question because before creating a digital story, I usually write an essay. I thoroughly choose vocabulary and phrases that relate to the topic of my essay and select images that visualise all the ideas described in the essay. I like English and the activities we do in our classes, but my English proficiency is not very high and I am afraid to make mistakes. Presenting a story makes me feel more confident. In my personal opinion, digital storytelling is inextricably linked with writing stories. The only difference is the way we present the results. Therefore, it is hard for me to decide which one helps me self-express better.*

The results demonstrate that digital technologies have already become integral to our everyday lives. It is evident that with the appearance of Artificial Intelligence and free access to various AI tools, creating digital stories is becoming easier and easier, and today's students, being representatives of the digital era, are proficient with these tools. The 68 respondents (57.1%) who opt for digital storytelling insist that access to various digital tools makes it easy to create digital stories that are optimal for visual perception. Among the main advantages of creating digital stories, these respondents mention the ability to choose any visual material they need, the content and structure of the presentation, to add music, or to convert text into sound. Moreover, a digital story usually requires less text, which respondents also find convenient. In their explanations, these respondents point out that such digital tools as Canva, Book Creator, Powtoon, PowerPoint, and SlidesGo are simple to use and are helpful in developing their creative thinking skills. As for those who prefer writing stories, we may assume that they understand the value of such assignments for developing their reasoning and persuasion skills. They also claim that writing a story helps them gather their thoughts and express them in a more logical and structured way. The results of question 2 are presented in Fig. 2.

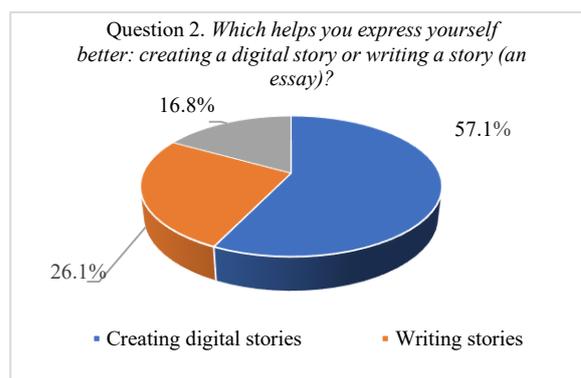


Fig. 2. Respondents' responses to question 2.

Question three seeks to answer to the following question: "What do you find most comfortable to present in front of the class: a digital story or a story created in written form?" According to the results obtained, 79 respondents (66.4%) find most comfortable to present a digital story in front of the class. In their replies, they explain that since a digital story is distinguished by more

vivid visual perception, presenting a digital story in front of the class seems to be a more modern way of self-expressing and showing creativity. We believe that despite the differences in presenting stories, both digital storytelling and traditional storytelling enable students to improve their presentation and communicative skills. However, as we can see, digital storytelling may provide reliable visual support and a more convenient way of presenting prepared educational content. 24 respondents (20.2%) do not mind presenting a story created in the written form. 16 respondents (13.4%) find it difficult to answer the question. Figure 3 provides the results of question 3.

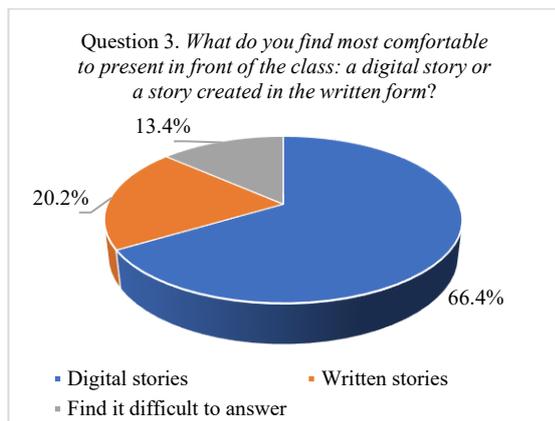


Fig. 3. Respondents' responses to question 3.

#### IV. CONCLUSIONS

The research examined computer science undergraduate students' perceptions of the effectiveness of digital vs. traditional storytelling methods targeted in developing their communicative and self-expression skills. The article also presented the practical experience of applying digital and conventional storytelling methods in the English language classroom. The research results demonstrate that most computer science undergraduate students consider digital storytelling more effective in developing their communicative and self-expression skills than writing a story. The advantages of digital storytelling include the ability to choose any visual material students need, the content and structure of the presentation, the ability to add music, or to convert text into sound. Moreover, free access to such digital tools as Canva, Book Creator, Powtoon, PowerPoint, and SlidesGo makes digital storytelling simple and user-friendly. In today's English language classroom, digital storytelling is a more convenient way of engaging students in expressing their ideas and personal points of view. Presenting their digital stories in front of the class and defending their views provide developing their communicative and self-expression skills. Concerning computer science undergraduate students who prefer writing stories, we can claim that they understand the value of such assignments since they help them gather their thoughts and express them in more logically and structured.

Although the research demonstrates the active use of digital tools in higher education by both students and university teachers, more research is needed to validate the effectiveness of digital storytelling in developing students' communicative and self-expression skills. Future research will consider a broader sample, including students of other specialties, and a longitudinal perspective that enables the recognition of any positive or negative changes in students' attitudes toward the use of digital storytelling.

#### V. REFERENCES

- [1] J.-A. García-Martínez, R.-N. Francisco-César, I. Romero-Tabeyo, S. López-Calvo, & E.-J. Fuentes-Abeledo, "Digital Tools and Personal Learning Environments: An Analysis in Higher Education", *Sustainability*, 12, no. 19: 8180. 2020. <https://doi.org/10.3390/su12198180>
- [2] D. Dancsa, I. Štempeľová, O. Takáč, & N. Annuš, "Digital Tools in Education", *International Journal of Advanced Natural Sciences and Engineering Researches*, vol. 7, no. 4, pp. 289-294, 2023. Available <https://as-proceeding.com/index.php/ijanser/article/view/717> [Accessed January 14, 2025], <https://doi.org/10.59287/ijanser.717>
- [3] O. Malykhin, N. Aristova, and S. Melikova, "Developing Computer Engineering and Information Technology Undergraduates' Learner Autonomy: Individualised Instruction in English Classroom", *ETR*, vol. 2, pp. 176-181, Jun. 2023, <https://doi.org/10.17770/etr2023vol2.7274>.
- [4] O. Malykhin, N. Aristova, and L. Dybkova, "Organising Personalised Learning in the English Language Classroom: Computer Engineering And Information Technology Undergraduates Perspectives", In *Proc. ETR International Scientific and Practical Conference*, vol. 2, pp. 424-427, Jun. 2024.
- [5] H. A. Liton, "Examining Student's Perception and Efficacy of Using Technology in Teaching English", *International Journal of Education and Information Technology*, vol. 1, no. 1, pp. 11-19, 2015.
- [6] U. Noytim, "Weblogs enhancing EFL students' English language learning", *Procedia Social and Behavioral Sciences*, vol. 2(2), pp. 1127-1132, 2010. Available <https://www.sciencedirect.com/science/article/pii/S1877042810001990> [Accessed January 11, 2025], <https://doi.org/10.1016/j.sbspro.2010.03.159>
- [7] O. Malykhin, N. Aristova, M. Vyshnevskaya, K. Kugai, and I. Makhovych, "Exploring Computer Engineering and Information Technology Undergraduates' Views on Developing Their Innovative Thinking in English Classroom", *ETR*, vol. 2, pp. 428-434, Jun. 2024, <https://doi.org/10.17770/etr2024vol2.8096>.
- [8] M. Mansor, L. A. Shafie, A. Maesin, S. Nayan, & N. Osman, "Self-expressions, Socialization and Learning in Dialogue Journals: Features of Beginner Writers in Second Language Writing", *International Journal of English Linguistics*, vol. 1, no. 2, pp. 155-165, September 2011. Available <https://www.ccsenet.org/journal/index.php/ijel/article/view/10018> [Accessed December 10, 2024], <https://doi.org/10.5539/IJEL.V1N2P155>
- [9] J. Arroba, & H. Acosta, "Authentic digital storytelling as alternative teaching strategy to develop speaking skills in EFL classes", *LEARN Journal*, vol. 14, no. 1, pp. 317-343, 2021. Available <https://files.eric.ed.gov/fulltext/EJ1284456.pdf> [Accessed January 21, 2025].
- [10] N. Dvalidze, "Teaching English Through Storytelling", *IJAEDU-International E-Journal of Advances in Education*, Vol. 8, no. 24, pp. 206-212, December 2022. Available <http://ijaedu.ocerintjournals.org/en/download/article-file/2753544> [Accessed January 12, 2025], <https://doi.org/10.18768/ijaedu.1199953>

- [11] S. Fachraini, "The Effect of Using Storytelling Technique in Teaching Grammar for EFL Classroom : (An Experiment Study At STKIP BinaBangsaGetsempena Banda Aceh)", *Getsempena English Education Journal*, vol. 3, no. 2, pp. 1-11, 2016. <https://doi.org/10.46244/geej.v3i2.704>
- [12] C. R. Lucarevski, "The role of storytelling on language learning: A literature review", *WPLC*, vol. 26, no 1, pp. 24-44, 2016. Available <https://journals.uvic.ca/index.php/WPLC/article/view/15309> [Accessed January 15, 2024].
- [13] M. M. M. Zuana, "Digital Storytelling: An Attractive Media to Teach Narrative Text in Speaking Class", *ALSUNA*, Vol. 1(1), pp. 26-39, 2018. Available <https://www.e-journal.uac.ac.id/index.php/alsuna/article/view/51> [Accessed December 17, 2024], <https://doi.org/10.31538/alsuna.v1i1.51>
- [14] J. Arroba, & H. Acosta, "Authentic digital storytelling as alternative teaching strategy to develop speaking skills in EFL classes", *LEARN Journal*, vol. 14, no. 1, pp. 317-343, 2021. Available <https://files.eric.ed.gov/fulltext/EJ1284456.pdf> [Accessed January 21, 2025].
- [15] C. Gregori-Signes, "Integrating the Old and the New: Digital Storytelling in the EFL Language Classroom", *GRETA*, vol. 16, no. 1-2, pp. 43-49, 2008.
- [16] P. A. Towndrow, "The multimodal meaning-making potential of self-representation and self-expression in digital storytelling", *Multimodality & Society*, vol. 3, no. 1, pp. 82-89, 2023. Available <https://journals.sagepub.com/doi/pdf/10.1177/26349795221140023> [Accessed January 21, 2025], <https://doi.org/10.1177/26349795221140023>
- [17] A. T. Syam, "Promoting the Development of Learners' Traditional Literacies Through Digital Storytelling", *LLT Journal*, vol. 25, no. 1, pp. 263-276, April 2022. Available <https://e-journal.usd.ac.id/index.php/LLT/article/download/4324/2701> [Accessed December 14, 2024]