

Received: 31.08.2024
Revised: 08.12.2024
Accepted: 12.12.2024
Published: 20.12.2024

Predictors of Success in Digital Oratory: Assessing the Impact of an English Digital Oratory Course on Public Speaking Competence

Diana POPA*, Carmen Mihaela CRETU**

Abstract

This study sets out to examine the predictors of success in Public Speaking (PS) within digital contexts, referred to as digital oratory (DO), by evaluating the impact of an English Digital Oratory (EDO) course on high school students' PS competence. Specifically, it investigates how English as a Foreign Language (EFL) proficiency, prior PS experience, and intelligence is associated with PS performance in DO. DO encompasses traditional PS skills while integrating competencies required for virtual engagement and the effective use of digital tools. The study involved a quasi-experimental design, with pre- and post-tests, and a sample of 100 Romanian EFL high school students who attended a six-month EDO course on Google Classroom. Relevant theories, such as educational, EFL, emotional and psychological development, talent and giftedness, and multimedia integration informed our curriculum, framed in Fink's Taxonomy of Significant Learning. The intervention featured synchronous sessions, peer evaluations, flipped classroom methodology, digital technologies, and interactive and learner-centered activities. We measured PS performance before and after the course using Schreiber's (2012) Public Speaking Competence Rubric and our results demonstrated a significant improvement in both expert-evaluated and self-reported PS competence. Intelligence primarily is associated with content-related skills, whereas EFL proficiency and prior PS experience had an impact on overall PS competence. Our findings substantiate the fact that EDO instruction should be an integral part of communication education. The research offers valuable insights into replicable efficient digital oratory instruction in EFL, suitable for students with diverse linguistic and cognitive features.

Keywords: Digital oratory, public speaking, English as a Foreign Language, intelligence, high school

* PhD student, Department of Psychology and Educational Sciences, Alexandru Ioan Cuza University of Iasi, Romania, dianaepopa@yahoo.com

** Professor PhD, Department of Psychology and Educational Sciences, Alexandru Ioan Cuza University of Iasi, Romania, carmen.cretu@uaic.ro

Literature review

Digital Oratory

Lind (2012) introduced the term 'digital oratory' (DO) to describe a communication nexus that extends beyond traditional public speaking (PS) by blending conventional rhetorical techniques—such as structured arguments, body language, and voice variation—with the technical expertise required to engage synchronous and asynchronous online audiences. DO stems from English-speaking countries, particularly from the American corporate world (Rossette-Crake, 2020, p. 3), and draws on using English as the Lingua Franca. According to Lucas (2013), the rise of PS competitions in English has helped establish this language as a central educational movement, simultaneously honing communication skills, critical thinking, writing, confidence, and intercultural communication. Exploring the relationship between cultural norms and PS by comparing Western rhetoric traditions, which favor logic and individual expression, to Asian approaches that focus on formality, indirect communication, and collective values, Power and Galvin (1997) concluded that PS education should embrace cultural diversity and equip students with varied rhetorical styles. Rossette-Crake (2019) also believes that DO training should incorporate theatrical presentation skills and sensitivity to cross-cultural values so that students communicate culturally appropriately. Similarly, EFL instruction should develop, apart from language proficiency, a self-motivated, culturally aware environment that breaks down psychological barriers (Mbato, 2020).

Digital communication became a dominant medium during the COVID-19 pandemic. Continuous engagement with a new medium overrides former social structures, individual traits, and cognitive processes (Innis, 2008). As such, DO reflects a broader socio-economic and cultural paradigm housed within digital platforms, which impacts the way speakers interact with audiences and receive messages globally (Rossette-Crake, 2022). The 'new oratory' restructured traditional discourse communities marked by vertical relations, featuring horizontal knowledge-sharing and peer-to-peer support (Rossette-Crake, 2019), as online speakers adopt a great degree of informality, directness, openness, and pragmatism to convey ideas. The rise of video production and consumption led to an increase in the number of speakers and audiences (Rossette-Crake, 2022). Due to multimedia integration in the Communication Act, instructors must devise holistic evaluation methods to account for digital literacy, presentation characteristics, audience engagement, interactivity, and multimedia incorporation. Consequently, these changes should be reflected in the way PS and DO are conceptualized, practiced, and taught in postsecondary education (Rossette-Crake, 2022).

Despite the fact that there is an increased demand for online K-12 education worldwide (Dahana, 2020), research on how effective online instruction is for skills-based subjects remains limited. PS is a skill-based discipline, as it develops student autonomy and independent thinking and comprises pre-assessment, conceptual learning,

practice and feedback, and application, which leads to improved practical cognitive and emotional outcomes (Karimzadeh et al., 2014). While traditional PS has been extensively investigated, studies on DO remain limited, especially at the high school level, where the unique challenges and opportunities of digital platforms have been largely overlooked (Broeckelman-Post & Hosek, 2014).

DO calls for specific, adaptable, technology-based pedagogies to reflect digital literacy and the new communication shifts (Cretu & Popa, 2024). Our research tries to fill the gap in our understanding of how EDO instruction impacts EFL high school students, uncover key predictors of success in DO, and propose educational strategies suitable for varied student profiles.

Theoretical Foundations

Scholars (Eyman, 2015, 2016; Hess & Davisson, 2017; Hodgson, 2019; Jensen & Helles, 2011; Kedrowicz & Taylor, 2016; Warnick & Heineman, 2012) have made significant advancements in the analysis and theorization of digital rhetoric. DO combines traditional rhetorical strategies with digital affordances, such as hyperlinks, interactive media, and algorithms (Eyman, 2015). The DO curriculum should subsequently integrate market-driven and conversational discourse strategies, techniques that create a sense of dialogue, and training in communication technology. Ward (2016) warns against teaching traditional PS online, as it does not accurately prepare students for face-to-face interactions, which should be their main target, while Zappen (2005) suggests the opposite also applies. As such, DO needs to be conceptualized as a new skill-based discipline, distinct from conventional PS practices (Ward, 2016), and should be accompanied by a specific pedagogy (Bailey, 2012; Beall, 2003).

DO reflects both a continuation and a development of traditional rhetorical theories. Traditional face-to-face PS focuses on physical presence, body language, and vocal tone (Baccarani & Bonfanti, 2015), whereas DO involves engaging global audiences by using multimedia tools, managing online feedback, synchronicity, and asynchronicity (Ward, 2016). Eyman (2016) proposed adapting Aristotel's modes of persuasion—*ethos*, *pathos*, *logos*—as well as more recent ones, *kairos*, and *mythos*, to the complexities of online communication.

In the digital realm, where immediacy and authenticity are paramount, *ethos* needs to establish credibility (Ward, 2016) and is achieved through the use of multimedia (Verderber et al., 2014). Since authority now depends less on institutional prestige and more on the speaker's ability to connect with diverse, non-specialist audiences, digital *ethos* extends to building and managing an online identity and receiving endorsement through subscriptions, shares, and likes. German (2017) contends that *logos*, traditionally understood as the logical structuring of arguments and ideas, is now adapted to the fragmented and often non-linear digital consumption, where logical connections are

clearly outlined, and arguments are reinforced with links and multimedia. Online platforms hone *pathos* through interactive features (likes, subscriptions, shares, polls, quizzes, live chats, emojis, visuals, audio, and background music) to trigger emotions and support and compensate for the lack of physical presence.

Kairos, the conventional reference to timing, gains prominence online, where even minor missteps may result in audience disengagement. Speakers are, therefore, expected to timely combine live with asynchronous communication to balance interactions and achieve the intended outcomes (Kalman & Rafaeli, 2006) and choose appropriate communication strategies, particularly when addressing diverse audiences in varied contexts (Morreale et al., 2019). In DO, *mythos* invokes shared cultural values, allowing speakers to connect with their audience through familiar stories and legends that resonate with a collective identity. Technological tools make message delivery more dynamic and presentations more interactive and engaging (Sandars et al., 2008; Smeda et al., 2014).

The *rhetorical canons* have also extended and adapted their functions in online communication (Eyman, 2016). Apart from generating ideas, *invention* tackles multimodality and engagement with online discourse and *arrangement* shifts from linear speaker-controlled organization to non-linear user-accessed structures like tagging and hypertext. *Memory*, no longer confined to mere information recall, is seen by Eyman (2016) as a process of archiving and retrieving digital artifacts. Researchers (Boyle et al., 2018; Jaffe, 2015) argue for more focus on the canons of *style* and *delivery* to secure audience participation on digital platforms, as engagement depends more on technology rather than on the speaker's physical presence. The canon of *style* in DO expands beyond mere word choice into design, incorporating multimedia and interactive elements (Coopman & Lull, 2014) and features a less ornate, more straightforward, and informal register. This approach is particularly important in formats where complex research must be distilled into accessible and engaging content for heterogeneous audiences. The canon of *delivery*, according to Gehrke (2016) and Eyman (2016), transcends physicality, concentrating on how digital tools can establish a compelling virtual presence and ensure audience engagement.

Pedagogical Frameworks and Educational Shifts

DO should be incorporated in PS curricula to train students to master both digital literacy and rhetorical aspects of communication (Lind, 2012). Owing to its wide popularity and accessibility, this new form of public discourse demands scholarly and educational attention, blending traditional rhetoric with digitally adapted approaches to foster continuous learning and interactive engagement (Cretu & Popa, 2024, p. 3). Introducing students to PS from a young age can significantly boost their confidence and reduce speech anxiety (Boyce et al., 2007).

PS training around the globe varies, with countries like the United Kingdom and the United States, and many Asian nations where it is prioritized (National Institute of Education, Singapore, 2017; UK Government, 2014; U.S. Department of Education, 2016). Japan and South Korea, where education favors rote memorization and exam preparation, PS skills lay a comparatively lower emphasis (OECD, 2016; Tsuneyoshi, 2013), while in many parts of the Middle East and Sub-Saharan Africa, there is even less interest in developing PS skills (UNESCO, 2017). PS training is nearly non-existent in Romanian high schools, with only a few debate clubs or EFL classes incorporating it, thanks to individual teacher initiatives, while at the university level, it is often elective.

Given the current lack of resources specifically tailored to online speech delivery, there is a pressing need for innovative pedagogical frameworks (Morreale et al., 2019). The modern academic and professional world demands that students be equipped with effective PS and DO skills, as they are expected to persuasively, dynamically, flexibly and clearly convey ideas online and in-person, synchronously and asynchronously, to professionals and non-experts, transcending cultural and linguistic barriers.

Previous studies

Digital platforms are highly effective for developing communication and language proficiency. Traditional English for Specific Purposes (ESP) tasks, such as structured presentations, persuasive speeches, and role-playing, can be easily integrated into online instruction (Karapetyan, 2020). Butler's (2017) research on online PS instruction found that consistent instructor presence, interactive videos, and note-taking techniques enhance knowledge transfer, boost student engagement, and improve learning outcomes. Interestingly, online students' speaking evaluations scored better than those of students involved in face-to-face training, indicating that digital platforms can effectively replicate traditional instructional dynamics. Yet, Butler (2017) warned that poorly designed online activities can negatively impact learning outcomes.

Recent PS research has shifted towards creative methods for skill development. Yu-Chih (2008) demonstrated that the *Toastmasters Model* is effective in enhancing EFL learners' PS skills by combining PS training with English communication practice in a collaborative setting, fostering self-directed learning through interactive participation. Other innovative training models, such as *TED Talks and TikTok*, proved to be effective in honing communication skills (Edwards, 2021; Kedrowicz & Taylor, 2016) as well as in engaging EFL university students, inspiring them to emulate and innovate the delivery styles of successful speakers (Li et al., 2015).

Digital platforms provide an appropriate interactive, learner-centered environment for EFL students to hone their PS abilities at the high school (Sukma, 2022) and university level (Ramadhani, 2020). Sukma's (2022) Self-Regulated Learning (SRL) model encourages students to actively manage their own learning through goal-setting,

planning, practice and feedback, performance monitoring, and self-reflection, often absent in conventional methods, fostering learner independence and the development of cognitive and metacognitive skills. However, some of the main challenges of online instruction are preserving student motivation and handling anxiety (Ward, 2016). Students feel disconnected, and their sense of isolation is aggravated by the instructor's delayed feedback and a lack of real-time interaction (Yang & Cornelius, 2004), which can impede the development of essential oratory skills which traditionally depend on immediate, face-to-face engagement (Linardopoulos, 2010). Apart from instructors' active involvement, Johnston (2007) advocates for building a supportive online community, as both factors mitigate students' feelings of isolation. Nevertheless, many teachers fail to properly adapt traditional instruction to digital formats. Another problem, common especially in countries with underdeveloped technological infrastructure, is students' limited access to technology and unstable internet connections, which can disrupt instruction (Argawati & Suryani, 2020).

Some studies (Karapetyan, 2020; Ramadhani, 2020; Al-Tamimi, 2014; Westwick et al., 2016)) have shown that apart from boosting communication competence and language proficiency, online PS training is effective in alleviating communication apprehension and PSA. Interactive digital applications, like ORAI and Kahoot!, create a less intimidating yet dynamic and engaging environment for practicing and refining speaking abilities (Argawati & Suryani, 2020). Synchronous online discussions alleviate the anxiety frequently associated with traditional PS contexts (Carragher Wolverson & Tanner, 2019).

Individual self-perceptions and intelligence strongly correlate to communication competence. A study (Kasap, 2021) involving gifted and talented university students, found that higher cognitive abilities act as a double-edged sword, both facilitating and hindering foreign language acquisition. Despite their high cognitive capacities, gifted students' speaking anxiety can affect their communication competence (Rosenfeld et al., 1995). Referring to EFL learners, Hasrul Kamarulzaman et al. (2013) recommended tailored strategies to dismantle psychological barriers that hinder effective communication in students with exceptional abilities. Enriching English curricula with PS activities, such as creative drama or debates can tap into gifted students' advanced abilities and help them improve self-awareness, leadership and communication skills (Chan, 2003; Cramond, 1993).

Digital platforms are suitable for online PS instruction (Dufner, 2022; McGarrity, 2021). Teachers can engage students and achieve immediacy by using cameras and providing personalized feedback during live sessions. Their warm tone, facial expressions, and eye contact can positively impact relational dynamics, a proper pace and precise written guidelines can ensure clarity, while authority and credibility can be

established by clearly communicating expectations, delivering constructive feedback, and using humor sensibly to avoid misunderstandings (Morreale et al., 2019).

Online learning transcends geographic barriers, is more inclusive than traditional education, and can easily be accessed despite inherent obstacles (Yang & Cornelius, 2004). EDO enhances traditional PS by integrating skills like active listening, self-awareness, emotional regulation, and digital literacy with core abilities such as communication, persuasion, and critical thinking, addressing the demands of modern digital contexts (Cretu & Popa, 2024, p. 6). Therefore, EDO pedagogy should blend traditional and digital rhetorical strategies and be mindful of students' cognitive, psychological, linguistic, and technological needs. To accomplish this, our EDO course integrated various educational theories to create meaningful online learning experiences.

Introduction to the Study

Research has demonstrated that structured training can positively impact students' outcomes (Al-Tamimi, 2014; Clark & Jones, 2001; Morreale et al., 2019). Nevertheless, PS and DO training do not have the same impact on all learners. Mastering the art of DO can help us succeed in today's hyperconnected society, ruled by social media, Zoom calls, LinkedIn webinars, and YouTube. DO, as a dynamic blend of rhetoric and digital literacy, improves communication competency while also promoting lifelong literacy development. It extends traditional PS by incorporating skills necessary for engaging virtual audiences, managing digital tools, and navigating online communication platforms. While rooted in classical rhetoric, DO introduces new challenges, such as the integration of multimedia, real-time audience interaction, and adapting speeches for virtual formats (Cretu & Popa, 2024).

Communication competence is a key factor in ensuring people's academic, personal, and professional success (Morreale et al., 2000, p. 1). The outcomes of communication instruction are associated with participants' characteristics, such as EFL proficiency (Al-Tamimi, 2014), prior PS experience (Dahana, 2020), psychological features (Maryansyah & Wadison, 2017; Morreale et al., 1995; Nadiah et al., 2019; Tripudiyana et al., 2022) and cognitive abilities (Mönks & Katzko, 2005; Rosenfeld et al., 1995; Sternberg, 1985). Specifically, the higher the EFL level students have, the better they can adapt to online communication; students with prior PS experience can channel knowledge and skills to digital communication contexts more efficiently, and a higher level of intelligence enables them to create and organize information better.

DO provides a dynamic platform for the practical application of giftedness, where exceptional intelligence, creativity, and task commitment—core elements of giftedness as defined by Renzulli (2012)—converge to enhance communication competence. Gifted learners possess advanced verbal skills and cognitive flexibility, enabling them to adapt

effectively to complex communication tasks and leverage multimedia tools to engage diverse audiences in digital contexts (Kontostavlou & Drigas, 2019; Lucas, 2013). They often demonstrate exceptional creativity and precision when engaging with complex tasks, such as crafting multimedia-rich and audience-adaptive messages (Wan Ng & Nicholas, 2010). Through language training, their intellectual curiosity and motivation drive the integration of rhetorical techniques with digital literacy, fostering deeper engagement and refined communication abilities (Blackburn et al., 2016). Developing these skills requires a holistic approach that addresses intellectual, emotional, and contextual factors, ensuring tailored interventions optimize outcomes in digital communication environments (Bar-On, 2007).

Objective

This research aims to investigate the predictors of success in English Digital Oratory by examining the impact of an EDO course on PS competence among high school EFL students, with a focus on how linguistic proficiency, prior experience, and intelligence shape instructional strategies for diverse learners, providing research-based recommendations for tailoring instructional strategies to meet the needs of diverse learners.

Research questions:

RQ1: What is the effect of EDO instruction on high school students' PS competence?

RQ2: How do *EFL proficiency*, *Prior PS experience*, and *intelligence* levels predict students' success in digital oratory instruction?

RQ3: How do participants' individual characteristics mediate the effects of EDO instruction?

The EDO Conceptual Framework

The EDO course combines elements from established educational theories into a flexible, comprehensive framework. Our course is based on the Constructivist Learning Theory (Bruner, n.d.; Ertmer & Newby, 1993), which supports active participation and collaboration within real-world digital communication contexts and integrates elements of the Technological Pedagogical Content Knowledge (TPACK) model (Mishra & Koehler, 2006) as well as Mayer's (2009) Multimedia Learning Theory to ensure digital literacy, and to enhance student engagement. To offer differentiated instruction tailored to participants' individual learning styles, and diverse cognitive and psychological abilities, we drew inspiration from Renzulli's (2005) personalized learning model for giftedness, Piirto's (1999) model of self-awareness and emotional regulation, Sternberg's (1985) Triarchic Theory of Intelligence, and Gardner's (1983) Theory of Multiple Intelligences.

The EDO Course Design

The Taxonomy of Significant Learning (Fink, 2003), helped us weave together situational factors, learning goals, assessment, and active learning into the EDO curriculum. EDO includes appropriate educational theories, strategies, techniques, aids, and technologies to maximize student motivation, engagement, and skill development.

We incorporated many elements related to the Agora Speakers International model (Www.Agoraspeakers.Org, 2020), which offers a flexible context for continuous practice, where participants engage in speech delivery, discussions, debates, projects, and evaluations to cultivate persuasion, critical thinking, and leadership. Constructive feedback allows for the progressive refinement of skills across speech types and delivery types. Participants can customize their learning paths according to personal preferences, goals, and strengths by taking on various roles during meetings and doing speech projects of varied difficulty. This way, EDO fosters a flexible, adaptable environment that aligns with diverse learning styles and yields remarkable learning outcomes.

EDO was further refined using the Plan-Do-Study-Act cycle (Park, 2013). During the 'Plan' phase, we analyzed students' baseline forms and tests to set targeted goals, enhancing our methodologies by integrating digital tools such as interactive presentations and online forums. In the 'Do' phase, students participated in live meetings, discussion forums, and online speaking communities and used these tools in speech exercises, group discussions, and multimedia presentations. In the 'Check' phase, we monitored progress through peer reviews, self-assessments, and instructor evaluations, promoting reflection through journaling. This informed the 'Act' phase, where adjustments were made to the course design, incorporating new tools, modifying speech assignments, and intensifying hands-on practice and peer mentoring.

Google Classroom enabled flipped classroom content distribution, scaffolded support, the incorporation of multimedia resources and interactive activities such as role-plays and peer feedback, and collaborative projects to enhance participants' autonomy. We balanced theoretical content and practice with real-time video conferencing, recorded presentations, and self-paced activities. Activities also included games, workshops, reflective journaling, projects, feedback, and iterative improvement aligned with participants' English proficiency and personal goals. To ensure cultural sensitivity, content resonates with Romanian and international values. EDO instructors' varied expertise enriched the course and contributed to cultivating a supportive learning environment across the student groups. The EDO curriculum integrated adapted core principles of traditional PS (Eyman, 2016), namely rhetorical canons, appeals, speech analysis, structure, and delivery techniques, with a focus on multimodal communication and interactive components. A core feature of the course was continuous evaluation and feedback. Tailored rubrics guided participants through self-assessment in the preparation phase and how to provide, receive, and incorporate focused feedback and

assessment into speech performance. This feedback loop was essential for critical thinking and DO skill development as well as for fostering a supportive learning environment.

Method

This study adopts a quasi-experimental design to explore the effects of a six-month EDO course on high school students' PS competence while examining how factors such as EFL proficiency, prior PS experience, and intelligence are associated with their performance. Given the constraints of the educational setting, where random assignment was not feasible due to pre-existing class structures, this approach was considered appropriate. The quasi-experimental longitudinal framework allowed us to examine the course impact on students' PS competence by employing pre- and post-intervention evaluations and ensured our findings apply to similar educational environments. Statistical methods include correlation analysis, regression, and mediation models to explore relationships between individual predictors and performance outcomes.

Participants

The study included Romanian high school EFL students from Colegiul Național Gheorghe Vrănceanu in Bacău, Romania. The purposive sample consisted of 28% male and 72% female, aged 15-17, with a mean age of 15.11 years; 62% were in the ninth grade, 33% in the tenth grade, and 5% in the eleventh grade. Students volunteered to take part in the course, and the inclusion criterion was having a minimum B1 (intermediate) English-speaking level (CEFR, 2020). Out of the 122 EDO course attendees, 100 subjects complied with all research requirements.

Research Design and Measures

We analyzed the impact of three independent variables, *EFL proficiency*, *Prior PS experience*, and *intelligence*, on *PS performance* in digital contexts. While PS competence was the measured variable, it framed within the broader scope of DO, addressing the additional requirements of engaging virtual audiences and using digital tools effectively. We used research-validated instruments to strengthen the accuracy and robustness of the measurements of the variables, and participants filled in pre-test and post-test questionnaires to gather demographic data, self-reported impact, and satisfaction ratings. At T0, we assessed *EFL proficiency* using the CEFR (2020) scale, and intelligence with the Raven Progressive Matrices Test (2003). EFL proficiency was categorized as B1 (intermediate), B2 (upper-intermediate), and C1 (advanced) and treated as an ordinal variable, while intelligence was classified into average, above average (bright), and superior levels and also treated as ordinal.

Students submitted *recorded* speeches at T0 and T1 via Google Classroom and held a *live* speech at T2 on Google Meet for an audience of more than 18 peers and adults. *PS*

performance was independently evaluated by four experts using the Public Speaking Competence Rubric (PSCR) (Schreiber et al., 2012), which has a $\alpha = .7$ reliability coefficient and a 5-point Likert scale. *PS performance* was measured using the PSCR interval scale to rate criteria such as organization, delivery, or audience adaptation. To ensure consistency in scoring, evaluators participated in a calibration session before grading. The evaluators also standardized their scoring to minimize discrepancies and reinforce reliability and validity. A pilot assessment ($n = 10$) demonstrated strong agreement among the expert evaluations, with a Cohen's kappa of 0.78. In parallel, students conducted self-assessments for *recorded* (T1) and *live* (T2) performances.

Procedure

We obtained approval from the high school to conduct research involving human participants, complied with ethical requirements, and obtained consent from students and legal representatives for data processing, video recordings, and assessment. Following the selection, the 100 EFL students were divided into six groups of 18-20, each led by experienced coaches. Participants attended the EDO course in a standardized manner, the syllabus consistent and uniform across all the groups, and used Google Classroom for resource, assignment, and assessment provision. Prior to the course, coaches received specialized training in EDO fundamentals, digital tools, and PS and DO pedagogy. The data resulting from self-reported questionnaires and expert evaluations was organized in Microsoft Excel and then investigated using IBM SPSS Statistics after being checked for errors.

Data Analysis

To observe changes that can be attributed to the intervention, we used descriptive statistics like mean, standard deviation, skewness, and kurtosis, with the latter two used to assess normality (Cain et al., 2017). We employed Pearson correlations to test relationships between numerical and ordinal variables, while point-biserial correlations were used to assess associations between the nominal variable gender and numerical variables, determining the strength of the associations (Schober et al., 2018). T-tests measured differences in *PS performance* for variables such as *prior PS experience and gender*, and paired T-tests gauged changes in *PS performance* and self-evaluations over time. One-way ANOVA (Ross & Willson, 2017) tested variations across *Baseline* (T1), *Recorded* (T1), and *Live PS performances* (T2), considering *EFL proficiency* as a factor. We uncovered key predictors of success in *PS performance* through linear regression, and by using mixed ANOVA with repeated measures, we evaluated the interactive effects of *intelligence* and test timing. Mediation analysis uncovered the causal connections between improvements in PS performance, the EDO intervention, and the possible factors that influenced this relationship (Hayes, 2021).

Results

The majority of the 100 students, 56%, had B2 (upper-intermediate) *EFL proficiency*, while 34% were at B1 (intermediate) and 10% at C1 (advanced). Among the participants, 49% demonstrated *superior intelligence*, 40% were classified as above *average or bright*, and 11% had *average intelligence* levels. The descriptive statistics in Table 2 show the standard deviations, means, and ranges for the variables (*PS performance, EFL proficiency, prior PS experience, and intelligence*).

Table 1

Descriptive statistics of study variables.

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Skewness (SE)</i>	<i>Kurtosis (SE)</i>
Intelligence level	118.62	7.17	100	130	-.18 (.24)	-.57 (.47)
Baseline PS performance	112.87	22.54	64	188	.73 (.24)	1.40 (.47)
Recorded PS performance	130.81	29.87	75	194	.34 (.24)	-.59 (.47)
Live PS performance	132.25	29.08	75	199	.23 (.24)	-.39 (.47)

Note. PS = public speaking.

The table below illustrates the correlations between numerical and ordinal study variables, illustrating the strength and direction of associations with statistical significance levels noted by asterisks. Since gender is a nominal variable, point-biserial correlations were used to assess its relationships with numerical variables, ensuring the appropriate statistical approach. For ordinal and interval variables, Pearson correlations were computed to evaluate their associations.

Impact of the EDO Course on PS Competence (RQ1)

Expert evaluations using Schreiber's (2012) PSCR demonstrated statistically significant improvements in *PS performance* from *Baseline T0* to *T1* and *T2*. Specifically, the mean PS scores increased from 112.87 at the *Baseline* to 130.81 at *T1* ($t(99) = -7.54, p < .001$) and further to 132.25 at *T2* ($t(99) = -8.22, p < .001$). No substantial differences were found between *Recorded* and *Live PS performance* ($t(99) = -1.38, p = .16$). These results prove consistent improvement of students' PS competence post-EDO course participation, as well as a gradual decrease in performance fluctuations over time, as illustrated in the histogram below.

Table 2

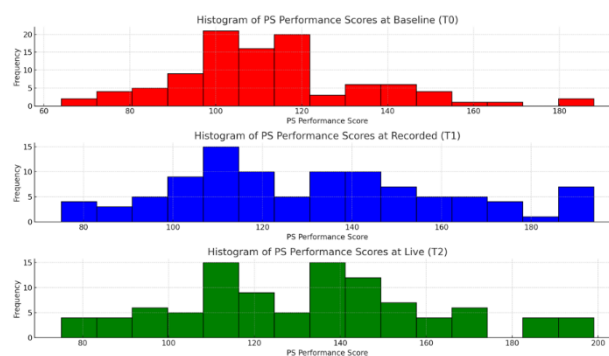
Correlations between study variables.

Variables	1	2	3	4	5	6	7
1. Intelligence level T0	-	0.1	0.14	0.12	-	0.02	0.12
2. Baseline PS performance T0	.10	-	0.62***	0.61**	-	0.25*	0.16
3. Recorded PS performance T1	.16	.62***	-	0.94**	-	0.38***	0.28**
4. Live PS performance T2	.15	.60***	.93***	-	-	0.60***	0.24*
5. Gender	.06	-.00	-.05	-.08	.05	-0.04	0.07
6. English level T0	0.25*	0.38***	0.60***	0.63**	-	0.38***	0.38***
7. Prior PS experience T0	0.12	0.16	0.28**	0.24*	0.07	0.38***	-

Note. * $p < .05$; ** $p < .01$; *** $p < .001$; $N = 100$; PS = public speaking; T0 – first measurement of the variable; T1 – second measurement of the variable All correlations for the gender variable represent point-biserial coefficients. Gender was coded as 0 female and 1 male.

Figure 1

Students' PS performance progression over time



The relationship between EFL Proficiency, Prior PS Experience, and Intelligence on PS Performance (RQ2)

EFL Proficiency: Students with higher *EFL-speaking proficiency* showed better expert-evaluated *PS performance* at all stages. Those with B1 level scored lower at all measurement points compared to B2 and C1 level students (*Baseline*: $F(2,97) = 10.90$, $p < .001$; *Recorded*: $F(2,97) = 32.27$, $p < .001$; *Live*: $F(2,97) = 39.27$, $p < .001$). We did not observe any significant differences between B2 and C1 level students, which suggests that after a certain language proficiency plateau is reached, further improvement levels off.

Prior PS experience Expert-evaluated *PS performance* at T1 and T2 was positively impacted by *prior PS experience*, with students who had *prior PS experience* outperforming peers in both recorded ($t(98) = -2.85, p = 0.005$) and live ($t(98) = -2.42, p = 0.017$) *PS performances*. Although *Prior PS experience* did not significantly affect *Baseline PS performance*, it had a notable impact post-intervention, indicating that the EDO course facilitated the translation of prior experience into improved performance.

Intelligence: Correlation analysis revealed weak positive relations between *intelligence* and expert-evaluated *PS performance* at T0 ($r = 0.104$), T1 ($r = 0.139$), and T2 ($r = 0.115$). The regression models for T0, T1, and T2 showed low R-squared values of 0.011, 0.019, and 0.013, suggesting that *intelligence* explained only a small portion of the variability in *PS performance* outcomes. *Intelligence* did not have a significant impact on students' *PS performance*, as the coefficients for *intelligence* were not statistically significant at any evaluation points ($p > 0.05$).

Given these unexpected findings, we investigated whether *intelligence* yields statistically significant changes in *content*-related skills (items 1-6, 9, and 11) or *delivery*-related skills (items 7, 8, 10 and *skilfully uses the camera, the microphone, the background, and the light to convey the message effectively), as identified in Schreiber's (2012) PSCR. Students with *superior* and *above-average intelligence* outperformed those with *average intelligence* in *content* for expert-evaluated *Recorded PS performance* ($F(2,97) = 3.56, p < .05$) (Figure 2), while *delivery* scores were not significantly different across *intelligence* levels (Figure 3). Similarly, for *Live PS performance*, students with higher *intelligence* scored significantly better in *content* ($F(2,97) = 3.34, p < .05$), while *delivery* scores showed no significant variation showed no significant variation. This indicates that *intelligence* has a greater impact on *content*-related PS skills than *delivery*.

Figure 2

Interaction graph between intelligence and PS Performance for speech content

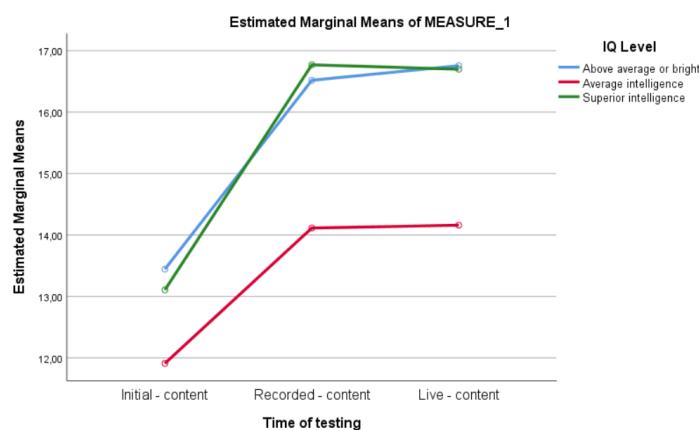


Figure 3

Interaction graph between intelligence and PS Performance for speech delivery.

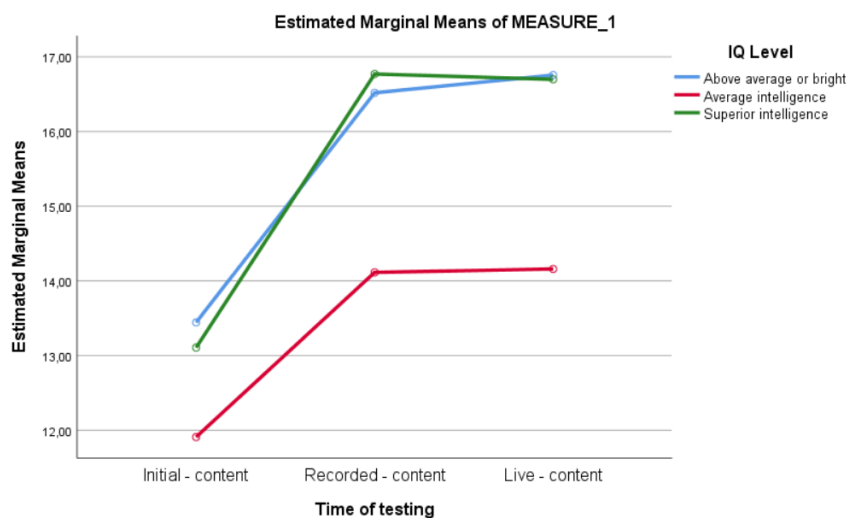


Figure 3. Interaction graph between intelligence and PS Performance for speech delivery.

Mediation of Predictors on EDO Instruction's Effect on PS Performance (RQ3)

EFL Proficiency served as a significant mediator and predicted higher self-evaluation at T1 ($\beta = 0.468$, $p = 0.014$), which then led to higher self-assessment at T2 ($\beta = 0.531$, $p = 0.007$). Participants with higher *EFL proficiency* levels obtained better results in both *Recorded* and *Live PS performances*, demonstrating that language proficiency is associated with the effects of EDO instruction on *PS performance*.

Prior PS experience was associated with the effects of the EDO course, resulting in increased self-assessment scores at both T1 and T2 and demonstrated a significant relationship with T1 self-evaluation ($\beta = 0.379$, $p = 0.014$), which then predicted T2 self-evaluation ($\beta = 0.535$, $p = 0.008$). The indirect effect (0.203) suggests that T1 self-evaluation served as a mediator between *prior PS experience* and T2 self-evaluation, indicating that participants with *prior PS experience* made more progress throughout the intervention and derived more benefits.

Intelligence mediated the impact of the EDO course on *content*-related evaluations, with higher *intelligence* levels consistently resulting in stronger *content* performance at each stage while *delivery* remained mostly unaffected. Higher *intelligence* levels consistently led to superior *content* performance at T0, T1, and T2, whereas *delivery* remained relatively unchanged. This suggests that *intelligence* mediated the impact of the EDO course on *content*-related ratings. At T1 ($\beta = 0.498$, $p = 0.011$), *intelligence* was found to predict good self-evaluation, and this association continued through T2 ($\beta = 0.421$, $p = 0.008$).

Discussion

The results of this study demonstrated that the EDO course effectively developed PS skills tailored to digital contexts, aligning with the broader framework of DO. This distinction is essential, as DO builds upon traditional PS while addressing the unique demands of engaging virtual audiences and leveraging multimedia tools. We also found that *PS performance* is associated with *intelligence*, prior *PS experience*, and *EFL competence* to varying degrees. The findings demonstrated the effectiveness of the EDO approach, as evidenced by the significant improvements participants achieved in both recorded and live PS performance, as evaluated by experts and the participants themselves.

Based on the Constructivist Learning Theory (Ertmer & Newby, 1993), the interactive elements of EDO established a participatory learning environment in which students participated in group Webquests, peer mentorship, and debates. The dynamic and encouraging atmosphere that derived from students' active participation explains their marked PS outcomes. We developed a suite of digital resources—including 'My DO Companion,' role cards, and tutorials—that supported students in their preparation and learning. These materials provided step-by-step guidance, access to external resources, and a 'remix engine' (2016) that allowed learners to edit, enrich, and share content, fostering a collaborative and dynamic learning community.

The course fostered core PS skills along with multiculturalism, creativity, listening skills, and leadership through structured role-playing and evaluation tasks. Students engaged in brainstorming, role-playing, and storytelling to stimulate creativity and took on roles like 'Meeting leader,' which taught them to organize, motivate and lead their peers. Active listening and critical thinking were reinforced through evaluation roles such as 'Listening evaluator,' which promotes attentive participation. We used peer mentoring, collaborative projects, and divergent thinking activities to support cognitive skill development and self-discovery of creativity triggers.

EDO emphasized multicultural awareness by including role-playing, cultural scenario exercises, and discussions considering topics from a range of perspectives. 'Today we travel to' Project (*Www.Agoraspeakers.Org*, 2020) encouraged students to explore demonized or discriminated groups and point out positive, lesser-known aspects of these cultures, promoting empathy and open-mindedness. This approach, combined with virtual intercultural meetings and debates, helped students develop their cultural adaptability and ethical engagement and achieve better EDO outcomes.

Impact on PS Competence (RQ1)

Expert evaluations confirmed that the EDO course led to significant improvements in students' PS competence from *Baseline (T0)* to both *Recorded (T1)* and *Live PS performances (T2)*. The absence of a substantial difference between T1 and T2 suggests that the intervention resulted in marked gains in both *recorded* and *live* speech

competence. Our results reinforce previous research findings (Broeckelman-Post et al., 2019; Clark & Jones, 2001; Linardopoulos, 2010) on the efficacy of structured PS training on online platforms in honing PS competence.

Communication skill training improves self-confidence and self-efficacy, bringing about broader psychological benefits, which empower students both socially and academically (Parris & Estrada, 2019). The incorporation of Piirto's (1999) Model into our EDO design, which emphasizes self-awareness and emotional regulation through peer feedback, emotional check-ins, journaling, mindfulness, and breathing exercises, mitigated learners' performance anxiety. Consequently, students were better able to manage the psychological demands of PS, resulting in improved expert-evaluated and self-perceptions in both *recorded* and *live* presentations.

Our findings are consistent with research on transitioning traditional PS instruction to digital formats, such as Li et al.'s (2015), who demonstrated that the TED Talks model can effectively develop PS skills in an EFL context when students get appropriate feedback and engage in self-directed learning. The EDO approach incorporates speech analysis, video recordings, peer mentoring, invited keynote speakers, and expert assessments. Our participants' improved skills are concurrent with the research (Menzel & Carrell, 1994) which proved that structured practice and feedback in online instruction can replicate the benefits of traditional in-person PS courses. The significant progress observed across performances likely resulted from the strategic integration of technology, guided by the TPACK framework (Mishra & Koehler, 2006) and Mayer's (2009) Multimedia Learning Theory.

The consistent and organic incorporation of technological tools in the EDO course helped students better engage with tasks and each other and prepare better presentations, which elevated their overall performance. This approach mirrors Linardopoulos's (2010) study, which showed that online PS courses can be as efficient as traditional face-to-face ones. EDO made use of Google Classroom management and learning features along with video technology, online research, multimedia presentations, and collaboration tools like Google Docs and discussion forums.

Impact of EFL Proficiency, Prior PS experience, and Intelligence on DO Performance (RQ2)

Participants with higher *English-speaking* proficiency (B2 and C1 levels) outperformed those at the B1 level across all evaluation stages, which is congruent with other scholarly research (Karapetyan, 2020; Ramadhani, 2020). The higher the language proficiency and cognitive resources students possess, the better equipped they are to effectively organize and present their thoughts. Similar findings (Al-Tamimi, 2014; Zhang et al., 2019, 2020) showed that PS instruction contributes to reducing communication apprehension and improving EFL learners' proficiency, particularly in vocabulary, pronunciation, and fluency.

Online synchronous discussions and digital platforms can effectively simulate real interactions and thus train communication skills (Carragher Wolverton & Tanner, 2019). Higher *English proficiency* allows students to engage more with course content, participate more actively, and deliver articulate presentations, as linguistic abilities facilitate understanding and self-expression (Karapetyan, 2020), which is one of the main findings of our research. Given the need for modern speakers to communicate to diverse, multicultural, and multilingual DO audiences, our EDO employed EFL strategies to enhance speakers' communication skills, such as scaffolding, collaborative learning, role-playing, task-based learning, EDO communication forum, instructional study resources, projects, rubrics, videos, and immediate feedback).

At baseline, *Prior PS performance* did not yield statistically significant differences in students' *PS Performance*, which can be attributed to several factors: overconfidence or, quite the contrary, lack of confidence in their abilities, they might struggle with PSA, they engaged with PS in different contexts (according to their initial form), or the skills they developed might not have been sufficient to produce measurable improvements in a more structured PS environment. Despite these unexpected findings, which need to be further investigated, prior PS experience gave participants an advantage over their inexperienced peers at both T1 and T2, demonstrating that foundational skills acquired through earlier exposure can be effectively transferred to digital formats. Our results are consistent with previous studies (Dahana, 2020; Johnson, 2012), which substantiated the impact of early PS training in developing long-term communication competence, as well as studies (Sukma, 2022) on self-regulated learning (SRL) among EFL students, showing that prior knowledge and independent learning strategies have a significant impact on speaking performance. This proves the role of early PS training in establishing proficiency in digital communication.

Participants of all *intelligence* levels showed significant results following the EDO course, which proves the intervention successfully tackled students' diverse cognitive strengths. These results may be attributed to the fact that the curriculum was grounded in the Theory of Multiple Intelligences (Gardner, 1983) and incorporated activities like speech drafting, debates, and visual aids. Renzulli's (2005) model of personalized learning informed individualized pacing, allowing high-achievers to excel through curriculum compacting and advanced project-based learning. Sternberg's (1985) Triarchic Theory added instructional depth by enhancing componential, experiential, and practical intelligence through dynamic speech training, speech analysis, and critical thinking, fostering creativity in impromptu speech and storytelling sessions, and developing practical intelligence through role-playing and real-world scenarios. Gagné's (2000) differentiated model for talent and giftedness inspired our progressive tasks, personalized mentoring, and project-based and self-paced instruction using the flipped

classroom model to meet gifted students' unique needs. Flexible grouping, meditation, counseling, mentoring, and facilitation from caring adults, which we strategically used in our EDO approach have been proven to have a positive impact on gifted students' learning outcomes (Cohen, 2011).

An unexpected result was that EDO participants with higher *intelligence* levels had better expert evaluations for *content* in both *recorded* and *live PS performances*, yet their scores in *delivery* did not reflect the same level of improvement. This suggests that while cognitive ability gives students an advantage in speech writing (*content*), it does not extend to enhancing speech *delivery*. Our insight supports Gehrke's (2016) argument that PS instruction tends to focus more on *content*, often dedicating too little of the teaching time (12% on average) to developing *delivery* skills (p. 247). Our study reinforces the need for an even more balanced teaching approach and/or an extended instruction period, especially for students with high cognitive abilities, to ensure they develop both strong *content* and effective *delivery*.

Mediating Effects of Predictors on DO Performance (RQ3)

Our results revealed that *EFL proficiency* and *Prior PS experience* mediated the rapport between the EDO training and *PS performance*. Participants with higher EFL-speaking ability improved their *PS performance* more, proving how important linguistic competence is in digital communication. Zhang et al.'s (2019) self-efficacy PS assessments of non-native speakers also showed a strong correlation between language proficiency and practical communication skill acquisition.

The challenges of online PS courses include missing face-to-face interaction and reduced audience feedback in asynchronous formats, technological issues, retention, and motivation-related issues (Broeckelman-Post et al., 2019). Our study addressed these problems by integrating both asynchronous and synchronous elements—such as study weeks and recorded speeches, as well as discussion forums and live meetings to maintain student engagement. Students also benefitted from a preparatory session, which offered technical assistance and guidance on creating a proper setup for online presentations. The 'Multimedia evaluator' role assessed how participants managed to create a multimedia experience for the audience and gave specific feedback on their online presence and technical set-up. Google Classroom served as a hub for communication resources, recordings, and assignments.

We addressed potential obstacles by following a contingency plan and providing a standardized syllabus, learning resources, and consistent assessments through Google Classroom across all six EDO student groups. Experienced coaches ensured the high quality of the EDO instruction by participating in monthly guidance meetings, which enabled an exchange of information, support, practice sharing, and continuous

professional development. A constant focus on technological infrastructure and student support helped prevent EDO implementation challenges.

While Westwick et al. (2015) observed that online courses tend to reduce anxiety but have little effect on self-perceived competence due to limited interaction, our intervention led to both anxiety reduction and self-perceived competence, an improvement that can be attributed to the inclusion of larger live audiences during synchronous sessions. Piirto's (1999) model helped us hone self-awareness and emotional management. To mitigate PSA, we employed techniques such as mindfulness, relaxation, and emotional preparation strategies. Students practiced speeches in supportive contexts, receiving feedback aimed at gradually overcoming fears and building confidence in their DO abilities. By incorporating Bandura's (1997) strategies for self-efficacy, students built confidence through constant practice, observed peer performances, peer mentoring and feedback, positive reinforcement, and a supportive learning atmosphere.

Implications, Limitations and Further Research

This study proposes a practical, replicable framework for developing EDO skills and proves that it can be successfully integrated into high school education. We attribute the success of the EDO course to Fink's (2003) Taxonomy of Significant Learning, which enabled us to incorporate in our syllabus integrative learning techniques. The framework allowed us to consider linguistic, cognitive and psychological learning factors to improve participants' EDO abilities while also supporting their deeper engagement with the content, promoting holistic growth. The quasi-experimental design offers a replicable instructional model that delivers personalized interventions aligned with learners' varied proficiency levels. Role-playing ensures skill practice and dynamic learning. By incorporating *live* and *recorded* speaking opportunities, students refine their real-time responsiveness and reflective communication skills in a supportive learning community. The flipped classroom model, combined with scaffolded learning, offers targeted EFL language support and vocabulary development and stimulates self-directed learning, confidence, and autonomy. Culturally sensitive content and emotional preparation strategies mitigate PSA and nurture inclusivity and engagement. Personalized learning paths, curriculum compacting, and peer mentoring challenge high achievers, while supporting learners at all levels. EDO combines expert assessment, self-assessment, reflective journaling, and feedback to enable students to discover their strengths and areas for improvement. EDO pedagogy ensures that all students, regardless of their linguistic, cognitive, and psychological makeup, build strong EDO skills.

One of our limitations is the small sample size of 100 participants, all of whom were Romanian high school students, which may limit the generalizability of the results. This may constrain the statistical power to detect subtle effects, which is why future research

should include more diverse populations. Furthermore, since much of the existing research includes college-level learners, future investigations should replicate the experiment and examine EDO instruction at various levels of education.

Conclusion

Our study demonstrates the potential of DO training to refine and further develop PS competence by examining the positive impact of the EDO course on students' abilities and identifying key individual factors that are associated with performance, namely *EFL proficiency* and *Prior PS experience*. Providing practical guidance for tailoring instructional strategies to diverse learners, our research contributes to educators developing DO programs that effectively address a range of linguistic, cognitive, and experiential profiles.

This study bridges the gap between traditional PS practices and the evolving demands of digital communication, offering a research-based foundation for inclusive and adaptive communication education. It answers researchers' (Lind, 2012; Morreale et al., 2019; Ward, 2016) call for integrating digital communication into PS instruction. Consistent with previous research on structured PS instruction (Morreale et al., 1995, 2019) and the effectiveness of online platforms (Clark & Jones, 2001; Linardopoulos, 2010), our conclusions extend these benefits to high school learners, reinforcing the value of early digital interventions. The EDO model proves its efficacy across both *recorded* and *live* speech formats, replicating traditional PS benefits while addressing the limitations of asynchronous-only PS course formats by improving real-time communication skills (Suwinvattichaiporn & Broeckelman-Post, 2016).

Our research fills a critical gap, demonstrating that digital formats can hone PS competence and are also suitable for lower educational stages. This is consistent with Johnston's (2007) findings, which show that when online courses are designed with interactivity and a sense of community, they can achieve similar outcomes to face-to-face instruction or even exceed them. While Rosenfeld et al. (1995) emphasized the communication strengths of gifted students, our findings reveal that early EDO instruction improves their ability to structure speech *content*. Given the strong connection between *EFL proficiency* and *PS performance*, we recommend that EDO training offer embedded linguistic support, especially for EFL students with lower speaking proficiency levels. Early exposure to PS lays a solid foundation for the development of DO skills, which is why we advocate for the incorporation of EDO training in the high school curriculum.

Acknowledgments: The authors are grateful to the editor, reviewers, Oara Prundeanu, Mihaela Jitaru, Colegiul Național Gheorghe Vranceanu, Bacau, Romania, and Agora

Speakers International for their useful feedback and invaluable support. This research was funded by Agenția de Dezvoltare Comunitară „Impreuna”, Bucharest, Romania, under Contract no. 5122/27/08.2020.

Data Availability Statement: The data can be obtained from the corresponding author following a reasonable request via e-mail.

References

- Al-Tamimi, N. O. M. (2014). Public speaking instruction: Abridge to improve English speaking competence and reducing communication apprehension. *International Journal of Linguistics and Communication*, 2(4), 45–68. <https://doi.org/10.15640/ijlc.v2n4a4>
- Argawati, N. O., & Suryani, L. (2020). Digital-based instruction: Chances and challenges in English language teaching context. *International Journal of Evaluation and Research in Education (IJERE)*, 9(4), Article 4. <https://doi.org/10.11591/ijere.v9i4.20579>
- Baccarani, C., & Bonfanti, A. (2015). Effective public speaking: A conceptual framework in the corporate-communication field. *Corporate Communications: An International Journal*, 20(3), 375–390. <https://doi.org/10.1108/CCIJ-04-2014-0025>
- Bailey, S. B. (2012). *Efficacy of a basic public speaking course delivered via a virtual community college* [University of Southern Mississippi]. <https://aquila.usm.edu/dissertations/832>
- Bar-On, R. (2007). The Impact of Emotional Intelligence on Giftedness. *Gifted Education International*, 23. <https://doi.org/10.1177/026142940702300203>
- Beall, M. L. (2003). The online teaching guide: A handbook of attitudes, strategies, and techniques for the virtual classroom. *Communication Education*, 52(1), 70–71. <https://doi.org/10.1080/03634520302456>
- Bejerano, A. R. (2008). The genesis and evolution of online degree programs: Who are they for and what have we lost along the way? *Communication Education*, 57(3), 408–414. <https://doi.org/10.1080/03634520801993697>
- Blackburn, A. M., Cornish, L., & Smith, S. (2016). Gifted English Language Learners: Global Understandings and Australian Perspectives. *Journal for the Education of the Gifted*, 39(4), 338–360. <https://doi.org/10.1177/0162353216671834>
- Boyce, J. S., Alber-Morgan, S. R., & Riley, J. G. (2007). Fearless public speaking: Oral presentation activities for the elementary classroom. *Childhood Education*, 83(3), 142–150. <https://doi.org/10.1080/00094056.2007.10522899>
- Boyle, C., Brown, J. J., & Ceraso, S. (2018). The Digital: Rhetoric Behind and Beyond the Screen. *Rhetoric Society Quarterly*, 48(3), 251–259. <https://doi.org/10.1080/02773945.2018.1454187>
- Broeckelman-Post, M. A., Hawkins, K. E. H., Arciero, A. R., & Malterud, A. S. (2019). Online versus face-to-face public speaking outcomes: A comprehensive assessment. *Basic Communication Course Annual*, 31(10), 29. <https://ecommons.udayton.edu/cgi/viewcontent.cgi?article=1569&context=bcca>
- Broeckelman-Post, M. A., & Hosek, A. M. (2014). Using in-class versus out-of-class peer workshops to improve presentational speaking. *Basic Communication Course Annual*, 26(11), 39.
- Bruner, J. (n.d.). *Actual minds, possible worlds*. Harvard University Press.
- Butler, N. D. (2017). Learning to speak in the digital age: An examination of instructional conditions for teaching public speaking online. *Voice and Speech Review*, 11(1), 40–54. <https://doi.org/10.1080/23268263.2017.1370805>
- Cain, M. K., Zhang, Z., & Yuan, K.-H. (2017). Univariate and multivariate skewness and kurtosis for measuring nonnormality: Prevalence, influence and estimation. *Behavior Research Methods*, 49(5), 1716–1735. <https://doi.org/10.3758/s13428-016-0814-1>
- Carraher Wolverson, C., & Tanner, J. (2019). Teaching public speaking to business students in the digital age: Updating our methods. *International Journal of Education and Development Using Information and Communication Technology*, 15(3), 22–33. <https://eric.ed.gov/?id=EJ1228177>

- CEFR. (2020). *The CEFR Levels—Common European Framework of Reference for Languages*. Common European Framework of Reference for Languages (CEFR). <https://www.coe.int/en/web/common-european-framework-reference-languages/level-descriptions>
- Chan, D. W. (2003). Leadership skills training for Chinese secondary students in Hong Kong: Does training make a difference? *Journal of Secondary Gifted Education*, 14(3), 166–174. <https://doi.org/10.4219/jsge-2003-427>
- Clark, R. A., & Jones, D. (2001). A comparison of traditional and online formats in a public speaking course. *Communication Education*, 50(2), 109–124. <https://doi.org/10.1080/03634520109379238>
- Cohen, L. M. (2011). Simplicity in complex times: Six principles for teaching the gifted. *Revista de Psicología*, 29, 131–151. <http://www.scielo.org.pe/pdf/psico/v29n1/a05v29n1.pdf>
- Coopman, S. J., & Lull, J. (2014). *Public speaking: The evolving art* (4th ed.). Cengage Learning.
- Cramond, B. (1993). Speaking and listening: Key components of a complete language arts program for the gifted. *Roeper Review*, 16(1), 44–48. <https://doi.org/10.1080/02783199309553534>
- Cretu, C., & Popa, D. (2024). Expert eye-view of English digital oratory. *Cogent Education*, 11(1), 1–19. <https://doi.org/10.1080/2331186X.2024.2426975>
- Dahana, E. E. (2020). *Public speaking syllabus evaluation and needs analysis as the identity of school with entrepreneurship profile*. 118–120. <https://doi.org/10.2991/assehr.k.200804.022>
- Dufner, S. (2022). Best practices of teaching public speaking online. *Master's Alternative Plan Paper, Minnesota State University, Mankato, Cornerstone: A Collection of Scholarly and Creative Works for Minnesota State University, Mankato*. <https://cornerstone.lib.mnsu.edu/etds/1182/>
- Edwards, A. (2021). From TED talks to TikTok: Teaching digital communication to match student skills with employer desires. *Basic Communication Course Annual*, 33(1), 236–241. <https://ecommons.udayton.edu/bcca/vol33/iss1/17>
- Engleberg, I. N., Ward, S. M., Disbrow, L. M., Katt, J. A., Myers, S. A., & O'Keefe, P. (2017). The development of a set of core communication competencies for introductory communication courses. *Communication Education*, 66(1), 1–18. <https://doi.org/10.1080/03634523.2016.1159316>
- Ertmer, P. A., & Newby, T. J. (1993). Behaviorism, cognitivism, constructivism: Comparing critical features from an instructional design perspective. *Performance Improvement Quarterly*, 6(4), 50–72. <https://doi.org/10.1111/j.1937-8327.1993.tb00605.x>
- Eyman, D. (2015). *Digital rhetoric: Theory, method, practice* (University of Michigan Press). University of Michigan Press. <https://doi.org/10.3998/dh.13030181.0001.001>
- Eyman, D. (2016). Looking Back and Looking Forward: Digital Rhetoric as Evolving Field | Enculturation. *A Journal of Rhetoric, Writing and Culture*. <https://www.enculturation.net/looking-back-and-looking-forward>
- Fink, L. D. (2003). A self-directed guide to designing courses for significant learning. In *Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses* (p. 37). Jossey-Bass. <https://www.deefinkandassociates.com/GuidetoCourseDesignAug05.pdf>
- Gardner, H. (1983). *Frames of Mind: The Theory of Multiple Intelligences*. Basic Books.
- Gehrke, P. J. (2016). Introduction to special issue on teaching first-year communication courses. *Review of Communication*, 16(2–3), 109–113. <https://doi.org/10.1080/15358593.2016.1195542>
- German, K. M. (2017). *Principles of public speaking* (19th ed.). Routledge. <https://doi.org/10.4324/9781315267890>
- Hasrul Kamarulzaman, M., Ibrahim, N., Md Yunus, M., & Mohd Ishak, N. (2013). Language anxiety among gifted learners in Malaysia. *English Language Teaching*, 6(3), p20. <https://doi.org/10.5539/elt.v6n3p20>
- Hayes, A. F. (2021). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). <https://www.guilford.com/books/Introduction-to-Mediation-Moderation-and-Conditional-Process-Analysis/Andrew-Hayes/9781462549030>
- Hess, A., & Davisson, A. (Eds.). (2017). *Theorizing Digital Rhetoric* (1st ed.). Routledge. <https://doi.org/10.4324/9781315203645>
- Hodgson, J. (2019). *Post-digital rhetoric and the new aesthetic*. The Ohio State University Press.
- Innis, H. A. (2008). *The bias of communication* (2nd ed.). University of Toronto Press. <https://utorontopress.com/9780802096067/the-bias-of-communication>
- Jaffe, C. (2015). *Public speaking: Concepts and skills for a diverse society* (8th ed.). Cengage Learning.
- Jenkins, H. (2006). *Convergence culture: Where old and new media collide*. NYU Press.

- Jensen, K. B., & Helles, R. (2011). The internet as a cultural forum: Implications for research. *New Media & Society*, 13(4), 517–533. <https://doi.org/10.1177/1461444810373531>
- John, & Raven, J. (2003). Raven progressive matrices. In R. S. McCallum (Ed.), *Handbook of Nonverbal Assessment* (pp. 223–237). Springer US. https://doi.org/10.1007/978-1-4615-0153-4_11
- Johnson, K. H. (2012). The Effect of a High School Speech Course on Public Speaking Anxiety for Students in a College-Level Public Speaking Class. In *ProQuest LLC*. ProQuest LLC.
- Johnston, J. (2007). The effectiveness of online instruction: A literature review. *Canadian Journal of Medical Radiation Technology*, 38(2), 17–21. [https://doi.org/10.1016/S0820-5930\(09\)60245-0](https://doi.org/10.1016/S0820-5930(09)60245-0)
- Kalman, Y. M., & Rafaeli, S. (2006). Modulating synchronicity in computer-mediated communication. *Computer Mediated Communication, Computer Science*, 1–13. <https://www.kalmans.com/synchasynchICAsubmit.pdf>
- Karapetyan, M. (2020). Teaching public speaking skills online to ESP students. *Foreign Languages in Higher Education*, 24(2), 76–86. <https://doi.org/10.46991/FLHE/2020.24.2.076>
- Karimzadeh, M., Salehi, H., Amin Embi, M., Nasiri, M., & Shojaee, M. (2014). Teaching Efficacy in the Classroom: Skill Based Training for Teachers' Empowerment. *English Language Teaching*, 7(8), p106. <https://doi.org/10.5539/elt.v7n8p106>
- Kasap, S. (2021). Foreign language anxiety of gifted students in Turkey. *Pegem Journal of Education and Instruction*, 11(4), 169–176. <https://doi.org/10.47750/pegegog.11.04.16>
- Kedrowicz, A. A., & Taylor, J. L. (2016). Shifting rhetorical norms and electronic eloquence: TED talks as formal presentations. *Journal of Business and Technical Communication*, 30(3), 352–377. <https://doi.org/10.1177/1050651916636373>
- Kontostavlou, E. Z., & Drigas, A. (2019). The Use of Information and Communications Technology (I.C.T.) in Gifted Students. *International Journal of Recent Contributions from Engineering, Science & IT*, 7, 60–67. <https://doi.org/10.3991/ijes.v7i2.10815>
- Li, Y., Gao, Y., & Zhang, D. (2015). To speak like a TED speaker: A case study of TED motivated English public speaking study in EFL teaching. *Higher Education Studies*, 6(1), 53. <https://doi.org/10.5539/hes.v6n1p53>
- Linardopoulos, N. (2010). Teaching and learning public speaking online. *MERLOT Journal of Online Learning and Teaching*, 6(1), 198–209.
- Lind, S. J. (2012). Teaching digital oratory: Public speaking 2.0. *Communication Teacher*, 26(3), 163–169. <https://doi.org/10.1080/17404622.2012.659193>
- Lucas, S. E. (2013). English public speaking and the cultivation of talents for Chinese college students. *Chinese Journal of Applied Linguistics*, 36(2), 163–182. <https://doi.org/10.1515/cjal-2013-0011>
- Maryansyah, Y., & Wadison, E. (2017). *Picture of Students' Self-Esteem in Learning Speaking*. 35–39. <https://doi.org/10.2991/iselt-17.2017.6>
- Mayer, R. E. (2009). *Multimedia Learning* (2nd ed.). Cambridge University Press. <https://doi.org/10.1017/CBO9780511811678>
- Mbato, C. L. (2020). Confronting cultural barriers in public speaking through multiple learning strategies: A case of Indonesian EFL learners. *Humaniora*, 32(1), Article 1. <https://doi.org/10.22146/jh.53380>
- McGarrity, M. (2021). A case for teaching public speaking without live audiences. In J. M. Valenzano (Ed.) *Post-Pandemic Pedagogy: A Paradigm Shift* (pp. 203–218). Lexington Books.
- Menzel, K. E., & Carrell, L. J. (1994). The relationship between preparation and performance in public speaking. *Communication Education*, 43(1), 17–26. <https://doi.org/10.1080/03634529409378958>
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record: The Voice of Scholarship in Education*, 108(6), 1017–1054. <https://doi.org/10.1111/j.1467-9620.2006.00684.x>
- Mönks, F. J., & Katzko, M. W. (2005). Giftedness and Gifted Education. In R. J. Sternberg & J. E. Davidson (Eds.), *Giftedness and Gifted Education* (2nd ed.). Cambridge University Press. <https://doi.org/10.1017/CBO9780511610455.012>
- Morreale, S. P., Hackman, M. Z., & Neer, M. R. (1995). *Predictors of behavioral competence and self-esteem: A study assessing impact in a basic public speaking course*. 7. <http://ecommons.udayton.edu/bcca/vol7/iss1/11>
- Morreale, S. P., Osborn, M. M., & Pearson, J. (2000). Why communication is important: A rationale for the centrality of the study of communication. *Journal of the Association for Communication Administration*, 29, 1–25.

- Morreale, S. P., Thorpe, J., & Ward, S. (2019). Teaching public speaking online – Not a problem but an opportunity! *Journal of Communication Pedagogy*, 2, 76–82. <https://doi.org/10.31446/JCP.2019.15>
- Nadiah, N., Arina, & Ikhrom. (2019). The students' self-confidence in public speaking. *Elite Journal*, 1(1), Article 1. <http://www.elitejournal.org/index.php/ELITE/article/view/7>
- National Institute of Education, Singapore. (2017). *21st Century Competencies and Student Outcomes* [National Institute of Education, Singapore]. National Institute of Education (NIE). <https://www.ntu.edu.sg/nie>
- OECD. (2016). *Education in Japan: OECD Reviews of Policies and Practices*. OECD. <https://www.oecd.org/en.html>
- Paglis, L. L. (2013). A Review of Managerial Skills Training in the Classroom. *Journal of Management Education*, 37(4), 472–498. <https://doi.org/10.1177/1052562912436516>
- Park, S. (2013). Continuous improvement in education. *Foundation for the Advancement of Teaching, Carnegie Foundation for the Advancement of Teaching*. https://www.carnegiefoundation.org/wp-content/uploads/2014/09/carnegie-foundation_continuous-improvement_2013.05.pdf
- Parris, H., & Estrada, L. M. (2019). Digital age teaching for English learners. In L. C. Oliveira (Ed.), *The Handbook of TESOL in K-12* (1st ed., pp. 149–162). Wiley-Blackwell. <https://doi.org/10.1002/9781119421702.ch10>
- Piirto, J. (1999). Implications of postmodern curriculum theory for the education of the talented. *Journal for the Education of the Gifted*, 22(4). <https://doi.org/10.1177/016235329902200402>
- Piirto, J. & Sis. (2019). *The Piirto pyramid of talent development*. <https://doi.org/10.13140/RG.2.2.13190.63049>
- Power, M., & Galvin, C. (1997). The culture of speeches: Public speaking across cultures. *Culture Mandala: The Bulletin of the Centre for East-West Cultural and Economic Studies*.
- Ramadhani, P. (2020). The teaching procedures for online public speaking class. *Journal of Linguistics, English Teaching and Education*, 1(3), Article 3. <http://ejournal.seminar-id.com/index.php/jlee/article/view/691>
- Renzulli, J. S. (2005). The three-ring conception of giftedness: A developmental model for promoting creative productivity. In *Conceptions of giftedness, 2nd ed* (pp. 246–279). Cambridge University Press. <https://doi.org/10.1017/CBO9780511610455.015>
- Renzulli, J. S. (2012). Reexamining the role of gifted education and talent development for the 21st century: A four-part theoretical approach. *Gifted Child Quarterly*, 56(3), 150–159. <https://doi.org/10.1177/0016986212444901>
- Rosenfeld, L. B., Grant, C. H., & McCroskey, J. C. (1995). Communication apprehension and self-perceived communication competence of academically gifted students. *Communication Education*, 44(1), 79–89. <https://doi.org/10.1080/03634529509378999>
- Ross, A., & Willson, V. L. (2017). One-way Anova. In A. Ross & V. L. Willson (Eds.), *Basic and Advanced Statistical Tests: Writing Results Sections and Creating Tables and Figures* (pp. 21–24). SensePublishers. https://doi.org/10.1007/978-94-6351-086-8_5
- Rossette-Crake, F. (2019). *Public speaking and the New Oratory: A guide for non-native speakers*. Palgrave Macmillan US. <https://doi.org/10.1007/978-3-030-22086-0>
- Rossette-Crake, F. (2020). Argumentation and the “New Oratory”: The staging of the speaker in investor pitches in English. *Anglophonia. French Journal of English Linguistics*, 29, Article 29. <https://doi.org/10.4000/anglophonia.3123>
- Rossette-Crake, F. (2022). *Digital oratory as discursive practice: From the podium to the screen*. Springer International Publishing. <https://doi.org/10.1007/978-3-031-18984-5>
- Sandars, J., Murray, C., & Pellow, A. (2008). Twelve tips for using digital storytelling to promote reflective learning by medical students. *Medical Teacher*, 30(8), 774–777. <https://doi.org/10.1080/01421590801987370>
- Schober, P., Boer, C., & Schwarte, L. (2018). Correlation Coefficients: Appropriate Use and Interpretation. *Anesthesia & Analgesia*, 126, 1. <https://doi.org/10.1213/ANE.0000000000002864>
- Schreiber, L. M., Paul, G. D., & Shibley, L. R. (2012). The development and test of the public speaking competence rubric. *Communication Education*, 61(3), 205–233. <https://doi.org/10.1080/03634523.2012.670709>

- Smeda, N., Dakich, E., & Sharda, N. (2014). The effectiveness of digital storytelling in the classrooms: A comprehensive study. *Smart Learning Environments*, 1(1), 6. <https://doi.org/10.1186/s40561-014-0006-3>
- Sternberg, R. J. (1985). *Beyond IQ: A triarchic theory of human intelligence* (pp. xvi, 411). Cambridge University Press.
- Sukma, F. (2022). The implementation of self-regulated learning towards EFL students speaking skills: Senior high school case. *Inspiring: English Education Journal*, 5(2), 117–132. <https://doi.org/10.35905/inspiring.v5i2.2721>
- SuwinvattichaiPorn, T., & Broeckelman-Post, M. A. (2016). Assessing the effects of a public speaking course on native and non-native English speakers. *Basic Communication Course Annual*, 28, 30.
- Tripudiyana, T., Sartika, D., & Nery, R. (2022). A correlation between students' self-esteem and speaking skill. *JETLe (Journal of English Language Teaching and Learning)*, 3(2), 1–9. <https://doi.org/10.18860/jetle.v3i2.15610>
- Tsuneyoshi, R. (2013). *Japanese Model of Schooling: Comparisons with the U.S.* (1st ed.). Routledge.
- UK Government. (2014). *National Curriculum in England: Framework for Key Stages 1 to 4*. Department for Education. <https://www.gov.uk/>
- UNESCO. (2017). *Education for All Global Monitoring Report: Sub-Saharan Africa*. UNESCO. <https://www.unesco.org/en>
- U.S. Department of Education. (2016). *The Importance of Communication Skills in Education*. U.S. Department of Education. <https://www.ed.gov/>
- Verderber, R. F., Sellnow, D. D., & Verderber, K. S. (2014). *The challenge of effective speaking in a digital age*. Cengage Learning.
- Wan Ng, & Nicholas, H. (2010). A progressive pedagogy for online learning with high-ability secondary school students: A case study. *Gifted Child Quarterly*, 54(3), 239–251. <https://doi.org/10.1177/0016986209355973>
- Ward, S. (2016). It's not the same thing: Considering a path forward for teaching public speaking online. *Review of Communication*, 16(2–3), 222–235. <https://doi.org/10.1080/15358593.2016.1187458>
- Warnick, B., & Heineman, D. S. (2012). *Rhetoric online: The politics of new media* (2nd ed.). Peter Lang.
- Westwick, J. N., Hunter, K. M., & Haleta, L. L. (2015). Shaking in their digital boots: Anxiety and competence in the online basic public speaking course. *Basic Communication Course Annual*, 27(10), 36. <http://ecommons.udayton.edu/bcca/vol27/iss1/10>
- Www.agoraspeakers.org*. (2020). Agora Speakers International. <https://www.agoraspeakers.org/>
- Yang, Y., & Cornelius, L. F. (2004). Students' perceptions towards the quality of online education: A qualitative approach. *Association for Educational Communications and Technology*, 27, 861–877.
- Yu-Chih, S. (2008). The Toastmasters approach: An innovative way to teach public speaking to EFL learners in Taiwan. *RELC Journal*, 39(1), 113–130. <https://doi.org/10.1177/0033688208091143>
- Zappen, J. P. (2005). Digital rhetoric: Toward an integrated theory. *Technical Communication Quarterly*, 14(3), 319–325. https://doi.org/10.1207/s15427625tcq1403_10
- Zhang, X., Ardasheva, Y., & Austin, B. W. (2020). Self-efficacy and English public speaking performance: A mixed method approach. *English for Specific Purposes*, 59, 1–16. <https://doi.org/10.1016/j.esp.2020.02.001>
- Zhang, X., Ardasheva, Y., Egbert, J., & Ullrich-French, S. C. (2019). Building assessments for self-efficacy in English public speaking in China. *The Asia-Pacific Education Researcher*, 28(5), 411–420. <https://doi.org/10.1007/s40299-019-00441-9>