



Readiness for virtual reality-supported French oral production: Perceptions of students and lecturers in a Ghanaian public university

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ABSTRACT

This study examined readiness for virtual reality (VR)-supported French oral production in a bachelor's programme at a Ghanaian public university. It documented students' oral production difficulties and current speaking opportunities, examined students' and lecturers' perceptions of the usefulness, acceptability, and feasibility of VR-supported activities, and identified activity types and implementation conditions considered suitable for the setting. A cross-sectional convergent mixed-methods design was used. Data were collected between August and September 2025 through a questionnaire completed by 69 students, semi-structured interviews with two oral-production lecturers, and observations of three oral-production classes. Questionnaire data were analysed descriptively, while open-ended responses, interview data, and observation notes were analysed thematically and integrated during interpretation. Lack of practice was the most frequently reported difficulty, followed by limited vocabulary and low confidence when speaking. Students expressed strong interest in using VR and preferred real-life scenarios, interaction with virtual French speakers, pronunciation practice, and role-play. Lecturers also saw potential value in simulated, response-oriented activities, but identified cost, infrastructure, technical support, and training as important constraints. Classroom observations showed that oral activities were already present, although participation and the duration of speaking opportunities varied across lessons. The study therefore provides evidence of perceived value and preliminary readiness, not evidence of learning effectiveness. It supports a small, syllabus-aligned pilot that tests usability, task design, classroom integration, and institutional capacity before wider implementation.

Keywords: Virtual Reality, Oral Production, Higher Education, Ghana, Technology Readiness

INTRODUCTION

French has long-standing educational and regional relevance in Ghana, whose immediate neighbours are predominantly Francophone. However, the language is learned in a multilingual and largely Anglophone environment in which English remains the principal language of formal schooling and

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Ghanaian languages are central to everyday communication.¹ For many university students, sustained use of French therefore occurs mainly through scheduled courses rather than through routine participation in Francophone social settings. This difference between studying a language and having regular occasions to use it has direct implications for oral production.

Research on French teaching and learning in Ghana has identified policy challenges, curricular demands, limited exposure, and weak support for authentic communication as important barriers.² Other studies have reported difficulties in oral assessment, pronunciation, spontaneity, and learner confidence.³ Oral performance requires learners to retrieve vocabulary, organise grammar, manage pronunciation, and respond to other speakers in real time. These demands become more difficult when speaking opportunities are brief, highly evaluative, or concentrated among a small number of confident participants. The problem is therefore not reducible to knowledge of linguistic forms; it also concerns access to sustained, meaningful, and manageable interaction.

Digital technologies have been discussed as a means to extend language practice beyond the classroom. Among these tools, virtual reality (VR) offers particular possibilities for simulated communication. VR has attracted attention because it can simulate settings in which learners respond to people, objects, and events rather than merely describe them from a textbook. Reviews of VR-assisted language learning report positive learner perceptions and potential benefits for contextualised vocabulary, interaction, engagement, and willingness to communicate, while also noting inconsistent evidence, technical barriers, and the importance of repeated exposure and pedagogical design.⁴ Empirical studies have likewise explored oral proficiency, willingness to communicate, and speaking anxiety in VR-supported tasks, but most have been conducted outside African Francophone-learning contexts.⁵

The relevance of VR to French oral production in Ghana cannot be established solely from international evidence. Equipment, maintenance, electricity, technical support, lecturer preparation, curriculum time, and the availability of suitable French-language content all shape whether an immersive activity is usable in practice. In addition, favourable first impressions do not necessarily translate into sustained acceptance after learners and lecturers encounter the demands of actual use. Readiness must therefore be considered at learner, pedagogical, and institutional levels.

Although research on immersive learning is emerging in Ghanaian higher education, it has not yet established how students and French lecturers perceive VR-supported oral production before an intervention, which activities they regard as worthwhile, or what conditions they consider realistic for

¹ Michael Akinpelu and Stella Afi Makafui Yegblemenawo, "Teaching French as a Foreign Language in Multilingual and Anglophone Contexts: The Experiences of Teachers in Nigeria and Ghana," *Educational Considerations* 49, no. 2 (2023): 7; Elias Kossi Kaiza and Sewoenam Chachu, "Plurilingualism and the Learning of French as a Foreign Language in Ghana," *International Journal of Multilingualism* 21, no. 4 (October 20, 2024): 1887–1905, <https://doi.org/10.1080/14790718.2023.2224006>; Raymond G Gordon Jr, "Ethnologue, Languages of the World," <http://www.ethnologue.com/>, 2005.

² Fiawomorm Kofi Fiagbe, Jonas Kwabla Fiadzawoo, and James Kofi Agbo, "Systemic Barriers to Effective Teaching/Learning of French in Ghana: Policy and Curriculum Perspectives," *European Journal of Language Policy* 15, no. 1 (2023): 105–26.

³ Seth Kosi Emmanuel Afari, Caroline Akpene Aku Yegblemenawo, and Edem Kwasi Bakah, "Oral Production Assessment Among Learners of French In Senior High Schools In Ghana: The Case of WASSCE French Examination," *Mars* 327, no. 344 (2023): 328; Caroline A. A. Yegblemenawo et al., "Dramatization and Foreign Language Learning Anxiety: The Case of French in Ghana," *Journal of Educational Development and Practice* 6, no. 1 (December 1, 2022): 1–15, <https://doi.org/10.47963/jedp.v6i.1461>; Fiadzawoo Jonas Kwabla, Y S Makafui, and Quansah Joseph Yaw Dwamena, "Pronunciation in the Study of French: Attitudes of Teacher-Trainees in Colleges of Education in Ghana," 2017; JAMES KWAKU Dumenyah, "Impact de l'approche Communicative Sur La Performance Orale Des Apprenants de FLE Dans Quelques Lycées de La Métropole d'Accra" (University of Ghana, 2015); Elaine K. Horwitz, Michael B. Horwitz, and Joann Cope, "Foreign Language Classroom Anxiety," *The Modern Language Journal* 70, no. 2 (June 20, 1986): 125–32, <https://doi.org/10.1111/j.1540-4781.1986.tb05256.x>.

⁴ Congchao Hua and Jia Wang, "Virtual Reality-Assisted Language Learning: A Follow-up Review (2018–2022)," *Frontiers in Psychology* 14 (March 20, 2023), <https://doi.org/10.3389/fpsyg.2023.1153642>; Antigoni Parmaxi, "Virtual Reality in Language Learning: A Systematic Review and Implications for Research and Practice," *Interactive Learning Environments* 31, no. 1 (January 2, 2023): 172–84, <https://doi.org/10.1080/10494820.2020.1765392>.

⁵ Saman Ebadi and Marjan Ebadijalal, "The Effect of Google Expeditions Virtual Reality on EFL Learners' Willingness to Communicate and Oral Proficiency," *Computer Assisted Language Learning* 35, no. 8 (2022): 1975–2000; Isabelle Godefride et al., "Using Virtual Reality and Peer Feedback to Reduce L2 Speaking Anxiety: An Exploratory Study," in *CALL and Professionalisation: Short Papers from EUROCALL 2021* (Research-publishing.net, 2021), 100–105, <https://doi.org/10.14705/rpnet.2021.54.1316>.

adoption.⁶ The present study addresses that gap through a non-interventional readiness assessment in one public university. Its contribution lies in bringing together student survey data, lecturer perspectives, and observations of current oral-production practice before any decision about a VR intervention is made.

The study has three objectives. First, it documents the oral production challenges reported by students and examines the speaking opportunities currently available to them. Second, it explores students' and lecturers' perceptions of the potential usefulness, acceptability, and feasibility of VR-supported oral activities. Third, it identifies the types of VR-based activities and implementation conditions that appear most suitable for the study context.

Three research questions guide the study:

1. What challenges do learners report in developing spoken French, and what gaps exist in current practice opportunities?
2. How do learners and lecturers perceive the potential usefulness, acceptability, and feasibility of VR-supported oral production activities in this context?
3. What VR-supported oral production activities and implementation strategies are considered most suitable and realistic for a Ghanaian public university?

The remainder of the paper reviews the relevant literature, presents the conceptual framework and methodology, reports and discusses the findings, and concludes with recommendations, limitations, and directions for future research.

LITERATURE REVIEW

Oral-production challenges in foreign-language learning

Oral production combines linguistic, cognitive, interactional, and affective demands. Learners must retrieve words and structures quickly, produce intelligible speech, monitor their own output, and respond to another speaker without the planning time available in many written tasks. Pronunciation is therefore best considered in relation to intelligibility and comprehensibility rather than imitation of an idealised native norm.⁷ Vocabulary access also matters because a learner may recognise a word during reading or listening but fail to retrieve it quickly enough during interaction.

Affective conditions can intensify these linguistic demands. Horwitz et al. describe foreign-language anxiety as a situation-specific complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning.⁸ In oral work, fear of negative evaluation and communication apprehension may discourage participation even when learners possess relevant knowledge. Ghanaian evidence similarly indicates that French learners may experience low confidence and anxiety in speaking situations, while interactive drama activities may create more supportive opportunities for participation.⁹ Such findings suggest that effective oral instruction must address both the language needed for communication and the conditions under which learners are willing to use it.

Practice is not simply a matter of increasing the number of speaking turns. Opportunities differ in duration, spontaneity, audience, feedback, and communicative purpose. Repeating a prepared sentence, responding briefly to a lecturer, and negotiating meaning with a peer all involve oral production, but they do not provide the same scope for developing fluency. A readiness study for VR must therefore consider what kinds of speaking opportunities already exist and what is missing from them.

⁶ Isaac Wiafe et al., "Learning Satisfaction in Virtual Reality: The Role of Persuasive Design," *International Journal of Human-Computer Interaction* 41, no. 17 (September 2, 2025): 11021–37, <https://doi.org/10.1080/10447318.2024.2440205>.

⁷ Tracey M. Derwing and Murray J. Munro, *Pronunciation Fundamentals*, vol. 42 (Amsterdam: John Benjamins Publishing Company, 2015), <https://doi.org/10.1075/llt.42>.

⁸ Horwitz, Horwitz, and Cope, "Foreign Language Classroom Anxiety."

⁹ Yegblemenawo et al., "Dramatization and Foreign Language Learning Anxiety: The Case of French in Ghana."

French oral production in Ghanaian and Anglophone multilingual contexts

French education in Ghana operates within a complex multilingual ecology. Learners may use several Ghanaian languages in family and community life, while English dominates much formal education. This ecology should not be treated as a deficit: plurilingual resources can support language comparison, meaning-making, and strategic learning.¹⁰ At the same time, the limited routine use of French in many learners' immediate environments can restrict opportunities for spontaneous interaction.

Studies of French teaching in Ghana and neighbouring Anglophone settings have identified a persistent gap between the policy value assigned to French and the material conditions under which it is taught.¹¹ At the postsecondary level, Agbottah found that existing approaches did not always meet learners' linguistic needs, potentially limiting their ability to use French in academic and professional contexts.¹² Challenges include curriculum implementation, access to appropriate teaching resources, continuity across educational levels, and opportunities to use French beyond assessment requirements. At the level of oral competence, Ghanaian studies have drawn attention to pronunciation, anxiety, communicative teaching, and the limited representation of speaking in high-stakes assessment.¹³

These studies provide an important local basis for the present investigation. They indicate that learners' speaking difficulties are unlikely to be explained by individual ability alone. Classroom organisation, task design, material availability, assessment traditions, and the wider linguistic environment all influence how often and how freely learners speak. A technology intended to support oral production must therefore fit these conditions rather than assume a generic language classroom. Yegblemenawo and Yegblemenawo also emphasise creative, learner-centred and interactive activities that promote active participation and communication, while recognising that limited support and structural constraints can hinder their implementation in Ghanaian French classrooms.¹⁴

Virtual reality in second- and foreign language learning

VR-assisted language learning covers a range of technologies, from smartphone-based and desktop simulations to head-mounted displays that create a stronger sense of immersion. These formats should not be treated as interchangeable because they differ in cost, interaction, sensory involvement, and classroom management. Across the field, systematic reviews report growth in research but considerable variation in devices, duration, target skills, and study quality.¹⁵

The most consistent findings concern contextualisation and learner perceptions. High-immersion VR can associate vocabulary and expressions with places, objects, and actions, and repeated exposure appears more useful than a single encounter.¹⁶ Studies of oral learning have also reported

¹⁰ Kaiza and Chachu, "Plurilingualism and the Learning of French as a Foreign Language in Ghana"; Paul Okyere Omane et al., "Diversifying Language Acquisition Research Can Be (Partly) Achieved in Urban Societies and with Simplified Methodologies: Insights from Multilingual Ghana," *Journal of Child Language* 50, no. 3 (May 15, 2023): 532–36, <https://doi.org/10.1017/S0305000923000090>.

¹¹ Akinpelu and Yegblemenawo, "Teaching French as a Foreign Language in Multilingual and Anglophone Contexts: The Experiences of Teachers in Nigeria and Ghana"; Michael Akinpelu and Stella Afi Makafui Yegblemenawo, "L'apprentissage Du Français Langue Étrangère En Contextes Multilingues et Anglophones d'Afrique de l'Ouest : L'expérience Des Apprenants Au Nigeria et Au Ghana," *Canadian Journal of African Studies / Revue Canadienne Des Études Africaines* 59, no. 1 (January 2, 2025): 1–22, <https://doi.org/10.1080/00083968.2024.2388074>; Fiagbe, Fiadzawoo, and Agbo, "Systemic Barriers to Effective Teaching/Learning of French in Ghana: Policy and Curriculum Perspectives."

¹² Stephanie Yedem Agbottah, *L'étude Du Français Comme Matière Dans Un Contexte Anglophone: Le Cas de Trois Établissements Postsecondaires Au Ghana* (The University of Regina (Canada), 2021).

¹³ Afari, Yegblemenawo, and Bakah, "Oral Production Assessment Among Learners Of French In Senior High Schools In Ghana: The Case Of WASSCE French Examination"; Dumenyah, "Impact de l'approche Communicative Sur La Performance Orale Des Apprenants de FLE Dans Quelques Lycées de La Métropole d'Accra"; Kwabla, Makafui, and Dwamena, "Pronunciation in the Study of French: Attitudes of Teacher-Trainees in Colleges of Education in Ghana"; Yegblemenawo et al., "Dramatization and Foreign Language Learning Anxiety: The Case of French in Ghana."

¹⁴ Doreen Enyonam Esi Yegblemenawo and Stella Afi Makafui Yegblemenawo, "Critical Pedagogy in The French Language Classroom in Ghana: Challenges and Perspectives," *Educational Considerations* 50, no. 3 (July 2, 2025), <https://doi.org/10.4148/0146-9282.2419>.

¹⁵ Hua and Wang, "Virtual Reality-Assisted Language Learning: A Follow-up Review (2018–2022)"; Parmaxi, "Virtual Reality in Language Learning: A Systematic Review and Implications for Research and Practice."

¹⁶ Jennifer Legault et al., "Immersive Virtual Reality as an Effective Tool for Second Language Vocabulary Learning," *Languages* 4, no. 1 (February 18, 2019): 13, <https://doi.org/10.3390/languages4010013>.

gains in willingness to communicate or oral performance under particular instructional conditions.¹⁷ However, these results do not justify assuming that any VR activity will improve speaking. The effectiveness of an intervention depends on the task, the comparison condition, the form of feedback, the learners' prior experience, and the length of use.

Affective responses are similarly mixed. Small exploratory studies suggest that VR rehearsal combined with feedback may help learners manage L2 speaking anxiety,¹⁸ while reviews identify both motivational benefits and drawbacks, including discomfort, distraction, usability issues, and cognitive demands.¹⁹ The pedagogical question is therefore not whether VR is immersive in a technical sense, but whether the environment prompts meaningful language use and supports reflection and feedback.

Acceptance, readiness, and implementation conditions

Readiness includes more than access to devices. At the learner level, perceived usefulness, anticipated ease or difficulty, prior experience, and willingness to try a system shape initial acceptance. Davis's technology acceptance model identifies perceived usefulness and perceived ease of use as central to user acceptance, although the present study does not test the model statistically.²⁰ The concepts are used here as interpretive lenses for understanding why students may welcome VR while still expressing concerns about cost, usability, feedback, or access.

Lecturer and institutional readiness are equally important. Lecturers must be able to connect a virtual scenario to learning outcomes, prepare learners for the task, manage participation, and provide feedback afterwards. Reviews of VR in education repeatedly identify technical configuration, cost, support, staff preparation, content quality, and pedagogical grounding as constraints on sustained use.²¹ A positive attitude towards an innovation can therefore coexist with low implementation capacity.

In a Ghanaian public university, readiness also has a sustainability dimension. Shared equipment must be stored, maintained, updated, scheduled, and supported when faults occur. A pilot that works under researcher supervision may not remain workable when transferred to routine teaching. For this reason, the present study considers preferred activities alongside classroom practices and institutional conditions, rather than treating acceptance as a sufficient basis for adoption. Internationally, research has established that VR can create contextualised language-learning environments and that many learners respond positively to them. What remains uncertain is how these possibilities translate into the teaching of oral French production in Ghanaian higher education. Existing Ghanaian research has examined French education, pronunciation, anxiety, policy constraints, and broader uses of immersive technology, but not the combined question of learner needs, stakeholder acceptance, preferred oral activities, and institutional feasibility prior to a VR intervention.

The present study addresses this gap by examining readiness rather than effectiveness. It brings together learner reports, lecturer interviews, and observations of existing oral-production lessons to identify where VR might add value and where implementation may encounter practical limits. This distinction is important because perceived promise is not equivalent to demonstrated learning gain.

CONCEPTUAL FRAMEWORK

This study draws on three complementary perspectives: experiential and situated learning, presence, and technology acceptance. Together, these perspectives help explain how learners may engage with simulated oral tasks, how presence may shape communicative involvement, and how perceived

¹⁷ Ebadi and Ebadijalal, "The Effect of Google Expeditions Virtual Reality on EFL Learners' Willingness to Communicate and Oral Proficiency."

¹⁸ Godefridi et al., "Using Virtual Reality and Peer Feedback to Reduce L2 Speaking Anxiety: An Exploratory Study."

¹⁹ Hua and Wang, "Virtual Reality-Assisted Language Learning: A Follow-up Review (2018–2022)"; Mario A. Rojas-Sánchez, Pedro R. Palos-Sánchez, and José A. Folgado-Fernández, "Systematic Literature Review and Bibliometric Analysis on Virtual Reality and Education," *Education and Information Technologies* 28, no. 1 (January 27, 2023): 155–92, <https://doi.org/10.1007/s10639-022-11167-5>.

²⁰ Fred D. Davis, "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly* 13, no. 3 (September 1, 1989): 319–40, <https://doi.org/10.2307/249008>.

²¹ Parmaxi, "Virtual Reality in Language Learning: A Systematic Review and Implications for Research and Practice"; Rojas-Sánchez, Palos-Sánchez, and Folgado-Fernández, "Systematic Literature Review and Bibliometric Analysis on Virtual Reality and Education."

usefulness, anticipated ease of use, and institutional conditions may influence readiness for VR adoption. The framework is used interpretively and is not tested as a structural model.

Experiential and situated learning

The framework first draws on experiential learning, which treats learning as a cycle in which experience is interpreted through reflection and used to guide further action.²² This lens is relevant because the activities preferred by participants, such as ordering food, travelling, or responding to a virtual interlocutor, are not valuable merely because they look realistic. Their pedagogical value depends on whether learners prepare for the task, attempt it, receive feedback, reflect on performance, and try again. Constructivist assumptions are embedded in this process: learners make meaning by acting in a situation and revising their understanding, rather than by passively receiving language forms.

Experiential learning also clarifies the lecturer's role. A VR scenario is one stage in a teaching sequence, not a substitute for instruction. Pre-task vocabulary and pronunciation work, guided performance, and post-task correction can connect virtual experience to course objectives. This lens, therefore, informs the interpretation of preferred activity types and the recommendation to integrate VR with existing oral-production practice.

Presence and communicative involvement

The second lens is presence, defined by Lombard and Ditton as the perception that a mediated experience is not mediated.²³ Presence is distinct from the technical characteristics of immersion: a sophisticated headset may create sensory enclosure, but learners may still experience an activity as artificial or irrelevant. For oral production, the key issue is whether a simulated setting creates enough communicative involvement for learners to attend, interpret, and respond.

Presence helps explain why realistic scenarios may be attractive to learners who have limited access to Francophone interaction. It also provides a cautious basis for interpreting expectations of increased engagement. The study did not measure presence or anxiety during actual VR use, so the concept is used to explain anticipated value rather than to claim that participants experienced immersion or reduced pressure.

Technology acceptance and implementation readiness

The third lens concerns technology acceptance and readiness. Davis proposes that perceived usefulness and perceived ease of use shape acceptance of information technology.²⁴ The questionnaire included related concepts, anticipated usefulness, interest, willingness to try VR, prior experience, and concerns, but it was not designed as a formal test of the technology acceptance model. The model is therefore used as a sensitising framework rather than as a predictive model.

For this study, acceptance is nested within wider readiness. Student willingness may indicate that an intervention would be acceptable, but implementation also depends on lecturer preparation, curriculum alignment, technical support, equipment, cost, and maintenance. This broader interpretation allows the framework to address RQ2 and RQ3 without reducing adoption to individual attitudes.

Integrated analytical framework

Together, the three lenses connect the research questions. Experiential learning explains why participants may prefer purposeful, scenario-based speaking and why preparation and reflection are necessary. Presence explains the anticipated value of simulated settings for communicative involvement. Technology acceptance and readiness distinguish positive perceptions from the practical capacity to implement VR. The framework therefore directs attention to three linked dimensions: the

²² David A Kolb, *Experiential Learning: Experience as the Source of Learning and Development*, vol. 1 (Prentice-hall Englewood Cliffs, NJ, 1984).

²³ Matthew Lombard and Theresa Ditton, "At the Heart of It All: The Concept of Presence," *Journal of Computer-Mediated Communication* 3, no. 2 (June 23, 2006): 0–0, <https://doi.org/10.1111/j.1083-6101.1997.tb00072.x>.

²⁴ Davis, "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology."

quality of the oral-learning experience, stakeholders' anticipated acceptance, and the institutional conditions required to sustain use.

METHODOLOGY

Research design

This study used a cross-sectional convergent mixed-methods design to examine readiness for VR-supported oral production activities in a public university's French programme in Ghana. It investigated three areas: the challenges learners report in developing oral competence and the gaps in current speaking opportunities; learner and lecturer perceptions of the usefulness, acceptability, and feasibility of VR-supported oral production activities; and the VR-supported activities and implementation conditions considered most suitable in this context.

Quantitative data were collected through a learner questionnaire, while qualitative data were collected through lecturer interviews, classroom observations, and open-ended responses to the questionnaire. The data were collected within the same general period and integrated during interpretation through data-source triangulation. This design was suitable because readiness involved both measurable patterns of student response and contextual explanations of current practice and implementation conditions.²⁵ The study was non-interventional: no participant used VR as part of the research. The findings are therefore reported in terms of readiness, perceptions, and implementation conditions rather than measured learning outcomes.

Setting and participants

The study was conducted in a public university in Ghana, where oral production is taught as part of the undergraduate French curriculum. Sixty-nine students completed the questionnaire (N = 69). In addition, two oral production lecturers participated in semi-structured interviews, and three oral production lessons were observed to document baseline teaching practices and learner participation in non-VR lessons. Students were recruited through a targeted voluntary participation process. Eligibility was limited to students admitted to a four-year BA French and Francophone programme, as the study focused on French oral production. All eligible students were invited to complete the questionnaire voluntarily. The two lecturers were purposively selected because they taught oral production and were familiar with the learners' speaking difficulties, classroom practices, and the possible use of VR-supported activities.

Instruments

The learner questionnaire had four sections: respondent background; learning context; technology use and VR familiarity; and perceptions of VR for oral production. The questionnaire included closed-ended items and a small number of open-ended prompts. This format allowed students to select responses while also providing short explanations and suggestions in their own words.

The lecturer interviews explored learners' oral production challenges, current approaches to teaching and practising oral skills, existing use of technology, and lecturers' views on the pedagogical value and feasibility of VR. The interviews also addressed expected barriers and possible institutional requirements for implementation.

Classroom observations followed a structured guide focused on learners' participation, instructional tools used during oral activities, learners' reactions to speaking tasks, and the teacher's facilitation of oral production activities.

Data Collection

Data collection took place between August and September 2025. Students were invited to complete the questionnaire voluntarily. The questionnaire was administered online using Google Forms and took approximately 10 minutes to complete. Lecturer interviews were conducted in the Department of

²⁵ John W Creswell and Vicki L Plano Clark, *Designing and Conducting Mixed Methods Research* (Sage publications, 2017); Michael D. Feters, Leslie A. Curry, and John W. Creswell, "Achieving Integration in Mixed Methods Designs—Principles and Practices," *Health Services Research* 48, no. 6pt2 (December 23, 2013): 2134–56, <https://doi.org/10.1111/1475-6773.12117>.

Language and Communication Sciences, and observations took place during scheduled oral-production lessons. The data sources were collected within the same period so that student perceptions could be considered alongside lecturer perspectives and observed classroom practice. Each lecturer interview lasted between 20 and 30 minutes. Audio recording was not permitted, so detailed notes were taken during the interviews. Each classroom observation covered one complete two-hour oral-production lesson.

Data analysis

Questionnaire data were exported to Excel and analysed in Google Colab using Python and pandas. Categorical responses were summarised with frequencies and percentages. For multiple-response items, each percentage was calculated using the full questionnaire sample ($N = 69$) as the denominator; consequently, percentages within an item do not sum to 100%. No inferential tests were conducted because the study's purpose was exploratory description rather than hypothesis testing. Qualitative material from open-ended responses, lecturer interviews, and observation notes was analysed thematically following the general logic of familiarisation, coding, theme development, review, and naming described by Braun and Clarke. Meaning units were coded in relation to the research questions and grouped into broader themes.²⁶ Small theme counts were used only to organise source patterns; they were not treated as inferential evidence. Integration occurred through a joint interpretive comparison of convergence, complementarity, and divergence across the questionnaire, interviews, and observations.²⁷

Ethical considerations

Participation was voluntary and based on informed consent. Questionnaire responses were anonymous. Interview and observation data were reported without identifying information, and examples were used only to illustrate themes.

PRESENTATION OF FINDINGS

Participant profile, learning background, and personal device use

A total of 69 university-level students completed the questionnaire. The sample included 15 males (21.7%) and 54 females (78.3%). Most respondents were between 16 and 25 years old (97.1%) and were distributed across all four academic years. Most students self-rated their French proficiency as intermediate (85.5%), while more than 60% had studied French for at least five years. In addition, most respondents reported frequent personal device use. This profile indicates that the respondents had sustained experience learning French and were familiar with digital device use, making their views relevant to a readiness study on VR-supported oral production.

Table 1. Participant profile, learning background and personal device use (N=69)

Variable	Category	n	%
Gender	Female	54	78.3
	Male	15	21.7
Age group	16-20	28	40.6
	21-25	39	56.5
	Above 25	2	2.9
Academic level	First year	16	23.2
	Second year	19	27.5
	Third year	17	24.6
	Fourth year	17	24.6

²⁶ Virginia Braun and Victoria Clarke, "Using Thematic Analysis in Psychology," *Qualitative Research in Psychology* 3, no. 2 (2006): 77–101.

²⁷ Fetters, Curry, and Creswell, "Achieving Integration in Mixed Methods Designs—Principles and Practices."

Years of learning French	1-4 years	23	33.3
	5-8 years	24	34.8
	More than 8 years	22	31.9
Self-rated French level	Beginner	4	5.8
	Intermediate	59	85.5
	Advanced	6	8.7
Personal device use	Always	42	60.9
	Often	22	31.9
	Sometimes	3	4.3
	Rarely	2	2.9

Source: Authors' primary data

Reported challenges and gaps in current speaking opportunities

In the learner questionnaire, respondents could select more than one difficulty affecting their oral French production. As shown in Figure 1, lack of practice was the most frequently selected difficulty, reported by 40 students (58.0% of respondents). Limited vocabulary and lack of confidence when speaking were each selected by 35 students, representing 50.7% of respondents. Pronunciation was selected by 14 students (20.3%), while only 1 respondent (1.4%) reported no difficulty. The distribution points to overlapping linguistic and participation-related challenges rather than a single dominant deficit.

Open-ended responses added that fear of making mistakes and difficulty retrieving vocabulary restricted fluent expression. Lecturer and observation data showed that oral activities were present, but the duration, spontaneity, and distribution of participation varied. One observed class involved regular contributions from most learners, a second showed uneven participation and incomplete responses, and a third included more frequent spontaneous exchanges. The interviews also identified difficulty sourcing suitable authentic materials across varied oral-production topics and uneven learner engagement. Table 2 summarises these qualitative patterns without treating the small number of coded source occurrences as quantitative prevalence.

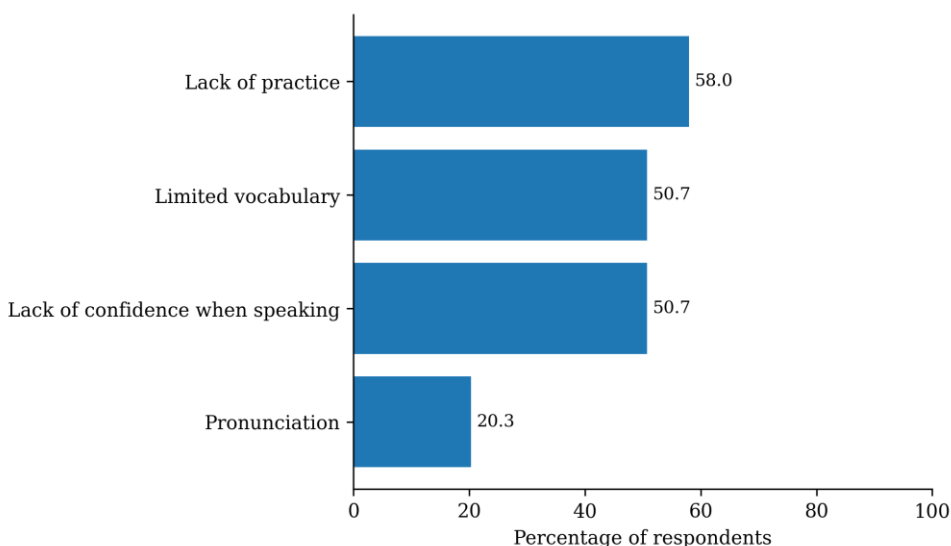


Figure 1. Main difficulties experienced by learners in oral production (multiple responses; $N = 69$).

Table 2: Qualitative synthesis of current speaking opportunities and constraints.

Theme	Data source(s)	Summary of evidence
Current practice opportunities	Classroom observations	Guided questions, reading aloud, short presentations,

Theme	Data source(s)	Summary of evidence
		interactive activities, and spontaneous exchanges were observed, although their intensity differed across lessons.
Classroom constraints	Lecturer interviews and classroom observations	Participation was uneven in one lesson, some responses were incomplete, and lecturers described challenges in preparing authentic materials across varied oral topics.
Limited practice opportunities	Lecturer interviews, supported by learner reports	Lecturers and learners indicated that available activities did not always provide sustained, widely distributed, or authentic speaking practice.

Learner and lecturer perceptions of the usefulness, acceptability, and feasibility

The second research question examined how learners and lecturers perceived the possible usefulness, acceptability, and feasibility of VR-supported oral production activities. Student responses were broadly favourable. A combined 79.7% agreed or strongly agreed that VR could make learning more interesting, 79.7% rated VR-supported speaking practice as helpful or very helpful, and 91.3% said they would like to try it. Five respondents (7.2%) reported concerns, while one response to the concern item was blank and was excluded from the yes/no comparison. These results indicate anticipated usefulness and willingness to try VR, not satisfaction after actual use. The two lecturers also saw potential value in environments that prompt learners to respond rather than rely on memorised answers. Their acceptance was conditional, however. They identified equipment, funding, technical support, and training for lecturers and learners as requirements. Classroom observations showed existing use of laptops, projectors, online video, images, dialogues, handouts, and whiteboards. VR would therefore represent a more demanding level of integration than the technologies currently used.

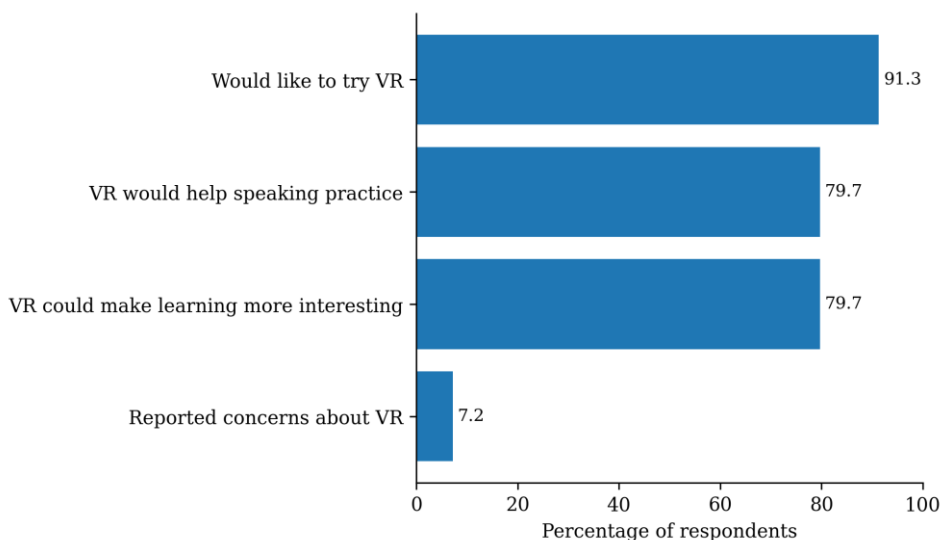


Figure 2. Learner perceptions of the usefulness, acceptability and feasibility of VR-supported oral production activities

Suitable VR-supported oral production activities and realistic implementation conditions

The third research question focused on the kinds of VR-supported oral production activities and implementation strategies that appeared most suitable for the study context. Real-life situations were the most frequently selected activity type ($n = 50$, 72.5%), followed by talking to virtual French speakers ($n = 45$, 65.2%), pronunciation practice ($n = 39$, 56.5%), and interactive role-play ($n = 31$, 44.9%). Learning about French culture (27.5%) and playing games in French (18.8%) attracted fewer selections. The pattern indicates a preference for activities closely tied to communicative practice rather than entertainment alone.

Lecturer suggestions were consistent with response-oriented activity design and included role-play, drama, music, and poems as prompts for oral responses. Observation data indicated that any VR activity would need to preserve lecturer facilitation, guided questions, encouragement, correction, and post-task interaction. At the institutional level, interview data identified infrastructure, funding, technical support, and training as necessary conditions. Table 3 presents these classroom and institutional requirements as a qualitative synthesis.

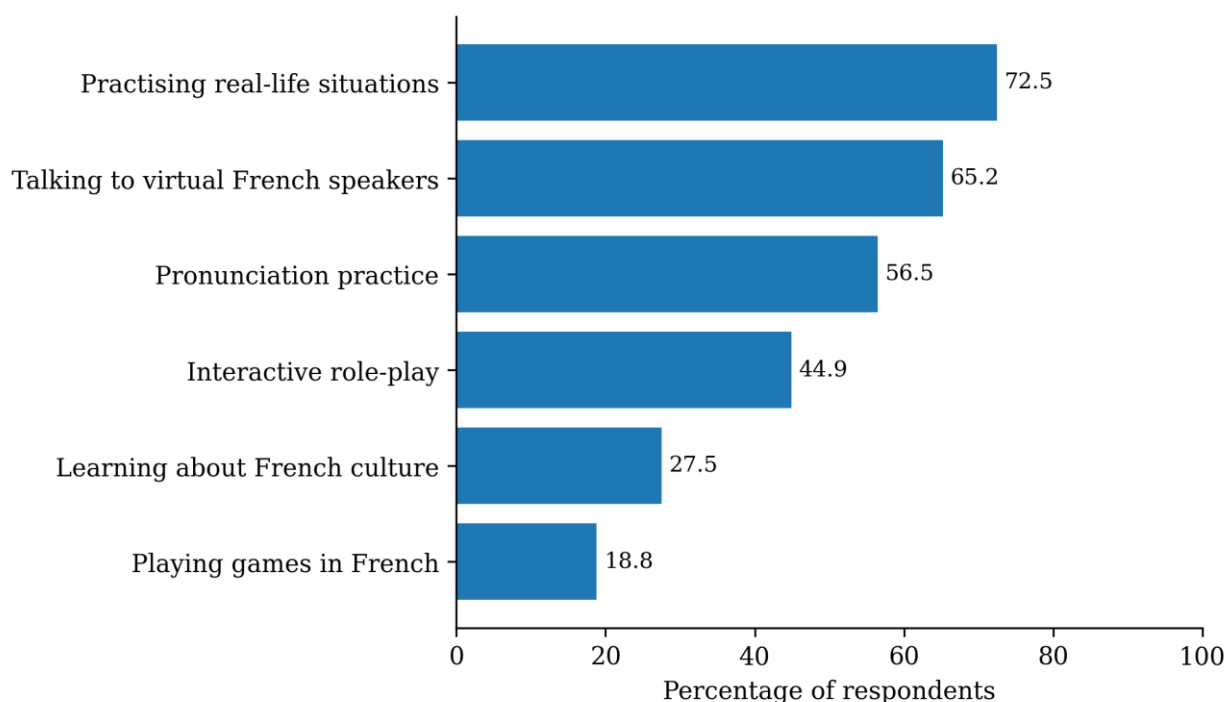


Figure 3: Suitable VR-supported oral production activities

Table 3: Qualitative synthesis of realistic implementation conditions

Implementation dimension	Data source(s)	Implication for adoption
Classroom requirements	Lecturer interviews and classroom observations	Activities should fit current facilitation practices, preserve lecturer guidance, and include preparation, correction, and reflection.
Promising activity types	Student questionnaire and lecturer interviews	Priority should be given to realistic scenarios, virtual interaction, pronunciation support, role-play, and response to meaningful prompts.

Implementation dimension	Data source(s)	Implication for adoption
Institutional conditions	Lecturer interviews	Adoption requires equipment, funding, maintenance, technical support, scheduling, and training for lecturers and learners.

DISCUSSION

Oral-production challenges and practice gaps

The prominence of lack of practice, limited vocabulary, and low confidence suggests that students experience oral production as an interaction between linguistic resources and opportunities to use them. This pattern is consistent with Ghanaian studies that locate French-learning difficulties in both individual performance and the conditions of teaching, assessment, and exposure.²⁸ It also echoes Agbottah's account of linguistic needs among French learners in Ghanaian postsecondary institutions.²⁹ The pattern further supports work on foreign-language anxiety, which shows that fear of negative evaluation and communication apprehension can inhibit speaking even where learners have studied the language for several years.³⁰

The classroom observations complicate any simple claim that students have no speaking opportunities. Oral tasks were present in all three lessons. However, participation varied markedly: some exchanges were brief and lecturer-directed, while one class showed more spontaneous interaction between peers and the lecturer. The gap identified by the study is therefore qualitative as well as quantitative. Learners need not only more turns but also opportunities that are sustained, distributed across the class, and open enough to require real-time choices. This finding extends earlier Ghanaian work by triangulating learner reports with lecturer explanations and direct observation in a university oral-production setting.

Vocabulary and pronunciation remain important within that broader practice gap. Derwing and Munro's emphasis on intelligibility is helpful here: pronunciation support should serve comprehensible communication rather than unattainable imitation.³¹ Similarly, vocabulary work needs to move beyond recognition towards rapid retrieval in interaction. The findings support teaching sequences that prepare learners for language resources and then require them to use them under manageable communicative pressure.

Acceptance, perceived usefulness, and feasibility

Learner willingness to try VR was high even though prior experience was not universal. This is broadly consistent with reviews reporting positive learner perceptions of VR-assisted language learning.³² It also resembles empirical findings in which VR-supported tasks have been associated with willingness to communicate or perceived value for oral practice.³³ The present study adds a Ghanaian French-learning perspective to that literature, but its evidence is more preliminary: participants responded to a proposed use rather than an experienced intervention.

²⁸ Afari, Yegblemenawo, and Bakah, "Oral Production Assessment Among Learners Of French In Senior High Schools In Ghana: The Case Of WASSCE French Examination"; Dumenyah, "Impact de l'approche Communicative Sur La Performance Orale Des Apprenants de FLE Dans Quelques Lycées de La Métropole d'Accra"; Fiagbe, Fiadzawoo, and Agbo, "Systemic Barriers to Effective Teaching/Learning of French in Ghana: Policy and Curriculum Perspectives."

²⁹ Agbottah, *L'étude Du Français Comme Matière Dans Un Contexte Anglophone: Le Cas de Trois Établissements Postsecondaires Au Ghana*.

³⁰ Horwitz, Horwitz, and Cope, "Foreign Language Classroom Anxiety"; Yegblemenawo et al., "Dramatization and Foreign Language Learning Anxiety: The Case of French in Ghana."

³¹ Derwing and Munro, *Pronunciation Fundamentals*.

³² Hua and Wang, "Virtual Reality-Assisted Language Learning: A Follow-up Review (2018–2022)"; Parmaxi, "Virtual Reality in Language Learning: A Systematic Review and Implications for Research and Practice."

³³ Ebadi and Ebadijalal, "The Effect of Google Expeditions Virtual Reality on EFL Learners' Willingness to Communicate and Oral Proficiency"; Godefridi et al., "Using Virtual Reality and Peer Feedback to Reduce L2 Speaking Anxiety: An Exploratory Study."

Davis's distinction between usefulness and ease of use helps explain why strong interest does not amount to full readiness.³⁴ Students anticipated that VR would be interesting and helpful, but the lecturers drew attention to the effort and resources required to make it work. Infrastructure, equipment management, technical assistance, training, and funding are not secondary details; they determine whether perceived usefulness translates into routine use. This qualification agrees with systematic reviews that identify technical configuration and pedagogical grounding as recurring barriers to educational VR.³⁵

The observations reinforce this distinction. Lecturers were already using digital media, but mainly through familiar and comparatively low-maintenance tools. Moving from projected video or images to head-mounted VR would alter classroom organisation, access, troubleshooting, and supervision. The study therefore suggests that learner acceptance is promising, while institutional and pedagogical readiness remain conditional.

Activity design and implementation strategy

The preference for real-life scenarios, virtual interlocutors, pronunciation support, and role-play is closely aligned with the practice gap identified under RQ1. Learners appear to value VR less as a game platform than as a means of rehearsing situations that are difficult to access in their immediate environment. This supports the emphasis in VR language-learning research on contextualised, task-based activity rather than visual novelty alone.³⁶ It also aligns with experiential learning: a scenario is pedagogically useful when learners act, reflect, receive feedback, and repeat the task with greater control.³⁷

The lower selection of games and general cultural exploration should not be read as evidence that these activities lack value. It indicates that, when asked to prioritise, respondents favoured tasks with an obvious connection to speaking. A first pilot should therefore use a small set of syllabus-linked scenarios, such as travel, buying food, seeking information, or service encounters, rather than a broad collection of immersive experiences.

The qualitative data further show that VR should be layered onto existing pedagogy. Lecturers already used guided questions, role-play, correction, and encouragement, and learners sometimes became more engaged after direct facilitation. A workable sequence would include pre-task language preparation, clearly defined in-VR goals, limited and supported task time, and post-task feedback or classroom role-play. Presence may make the scenario feel involving, but the lecturer remains responsible for turning the experience into learning.³⁸ The need for sustained and participatory speaking tasks is also consistent with Yegblemenawo and Yegblemenawo's call for creative, learner-centred and interactive activities in Ghanaian French classrooms.³⁹

Implementation should also be phased. A small shared-device pilot would allow the university to test scheduling, device sharing, maintenance, technical support, accessibility, and curriculum fit before considering expansion. This approach is consistent with the study's readiness focus and avoids treating favourable perceptions as a mandate for immediate adoption.

RECOMMENDATIONS

The findings suggest that VR should be considered as a possible extension of existing oral production teaching, not as a replacement for it. The observed classes already included oral activities, teacher guidance, correction, encouragement, and some use of digital tools. The main issue is that learners still reported a need for more practice, and participation was not equally strong across all observed classes.

³⁴ Davis, "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology."

³⁵ Parmaxi, "Virtual Reality in Language Learning: A Systematic Review and Implications for Research and Practice"; Rojas-Sánchez, Palos-Sánchez, and Folgado-Fernández, "Systematic Literature Review and Bibliometric Analysis on Virtual Reality and Education."

³⁶ Legault et al., "Immersive Virtual Reality as an Effective Tool for Second Language Vocabulary Learning."

³⁷ Kolb, *Experiential Learning: Experience as the Source of Learning and Development*.

³⁸ Lombard and Ditton, "At the Heart of It All: The Concept of Presence."

³⁹ Yegblemenawo and Yegblemenawo, "Critical Pedagogy in The French Language Classroom in Ghana: Challenges and Perspectives."

VR may be useful if it helps create additional spaces for rehearsal and scenario-based speaking. For instance, learners could first practise a travel, restaurant, or service encounter in a virtual environment and later repeat or adapt the same language in a classroom role-play. This would allow VR-supported practice to feed back into lecturer-led and peer-based oral interaction.

The lecturer's role would remain central. Lecturers would need to choose appropriate scenarios, prepare learners before the task, support them during use, and guide reflection afterwards. The interview data also show that lecturers themselves would need training, as lecturers specifically identified training for both lecturers and learners as necessary for effective VR integration. The implication is that VR readiness is not only about student interest. It also depends on teacher preparation, technical support, institutional investment, and careful integration into existing oral production pedagogy.

CONCLUSION

This study examined students' and lecturers' readiness for VR-supported French oral production at a Ghanaian public university. The findings indicate that students reported several oral production difficulties, especially a lack of practice, limited vocabulary, and low confidence when speaking. The qualitative data further indicate that although opportunities for oral participation exist in current classes, they may not always provide sufficient sustained or authentic speaking practice.

Learners and lecturers viewed VR positively as a possible support for oral production. Students showed particular interest in real-life speaking scenarios, interacting with virtual French speakers, practising pronunciation, and role-playing. Lecturers recognised the pedagogical potential of VR but also emphasised the need for infrastructure, funding, technical support, and training.

The findings should be interpreted as evidence of readiness and perceived value, not as evidence that VR improves oral production. A small, syllabus-aligned pilot would be an appropriate next step. Such a pilot should examine usability, task design, classroom integration, and resource requirements before larger intervention studies are conducted. Later research should measure learning outcomes, including fluency, pronunciation, anxiety, and participation, once feasibility has been established.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

The findings are bounded by the exploratory design. The questionnaire involved 69 students from one institution, while the qualitative component comprised two lecturer interviews and three classroom observations. These sources provide useful triangulation but cannot represent all French programmes or universities in Ghana. The cross-sectional questionnaire captured self-reported difficulties and anticipated responses to VR rather than behaviour after sustained use.

No VR intervention was implemented, so the study cannot determine effects on fluency, pronunciation, confidence, anxiety, participation, or learning. In addition, the small coded source counts used to organise qualitative patterns indicate where themes appeared; they should not be interpreted as prevalence estimates. The study did not compare immersive and non-immersive delivery formats or estimate the full cost of implementation.

Future research should design and evaluate VR-supported oral production interventions using comparison or quasi-experimental designs. Such studies could measure outcomes such as fluency, pronunciation, speaking anxiety, participation, and communicative adequacy. Further research should also examine different delivery models, including shared VR labs, mobile or low-cost VR, and blended classroom integration. Lecturer training and technical support should be studied as part of implementation, since the present findings indicate that feasibility depends strongly on institutional and classroom conditions.

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