

Dear Participant,

Research Study Title: Investigating Cognitive Load in a VR-Based Generative-AI Language Teaching Assistant

Researchers at UNSW are conducting a project about conducting a comparative study which ultimately seeks to determine whether an adaptive, AI-guided VR lesson can yield tutor-level long-term retention while maintaining comparable learners' cognitive effort relative to face-to-face methods. Findings are expected to inform the development of scalable language-learning platforms that balance immersion with cognitive-load principles.

The research study is looking recruit people who meet the following criteria:

- Adults aged 18–40 years
- Fluent English speakers with no prior formal study of the Russian language
- Individuals with normal or corrected-to-normal vision and hearing, sufficient to view and hear lesson materials clearly
- Participants who are comfortable using a computer or VR headset after a short orientation
- Individuals who are available for all three sessions (baseline, lesson, and delayed follow-up) over a two-week period

Participants meeting the following criteria will be excluded from the study:

- Individuals under 18 years of age
- Participants who have previously studied Russian or possess intermediate/advanced knowledge of any Slavic language (to prevent prior knowledge bias)
- Individuals who report a history of severe motion sickness, vertigo, epilepsy, or photosensitivity, as these may be aggravated by VR use
- Participants with uncorrected visual or hearing impairments that would interfere with viewing or hearing lesson materials
- Individuals unable to commit to the scheduled baseline, lesson, and follow-up sessions

Participants will be asked to complete the following research activities if they agree to participate:

Baseline session (≈20 minutes, Week -1):

Participants will provide consent, complete a brief questionnaire, and take a 15-item quiz on basic Russian vocabulary and phrases. This helps measure prior knowledge before the lesson.

Lesson session (≈60 minutes, Week 0):

Participants will attend one language lesson, either through a **Virtual Reality (VR)** headset with an **AI-powered teaching assistant**, or face-to-face with a **human tutor** delivering identical scripted content.

The session will include a short orientation, a ~30-minute beginner Russian café scenario lesson, and a 15-item immediate quiz. Participants will also complete the **NASA-TLX workload questionnaire** and a short post-lesson survey to describe their experience.

Delayed session (≈15–20 minutes, Week +1):

Participants will complete the same 15-item quiz again one week later to measure retention, followed by a brief debrief.

The total duration will be over a course of 2 weeks with an active commitment of approximately 2 hours across the 2 weeks.

A full description of all research activities, including detailed information about any potential risks, discomforts, or inconveniences (such as mild VR motion sickness or fatigue), is provided in the attached Participant Information Statement and Consent Form (PISCF). This document explains the study procedures, time commitment, and your rights as a participant, including the option to withdraw at any time without penalty.

Reimbursement

You will receive a **\$50 cash** as a token of appreciation for your participation, provided after completion of the delayed session.

Please contact the following person via email or phone to register your interest in taking part in the research:

Name	Albert Kim
Position	Student Researcher
Telephone	0451 166 534
Email	albert.kim1@student.unsw.edu.au

If you have questions about the research and would like to Investigator, Chief Investigator please contact the following person:

Chief Investigator

Name	Ali Darajeh
Position	Research Supervisor
Telephone	N/A
Email	ali.darejeh@unsw.edu.au