Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

Examining the effects of artificial intelligence on students' learning skills

Protocol summary

Study aim
Determining the effects of artificial intelligence on students' learning skills

Design
This study is a randomized, parallel-group, double-blind trial conducted on 30 female sixth-grade students in Izeh County (15 participants per group). Participant allocation is performed using simple randomization via the RAND function in Microsoft Excel; initially, each participant is assigned an identification code and sorted based on a random number, after which they are divided into two groups of 15.

Settings and conduct
This study will use a field experimental research method and a large pre-test and post-test design. The research will be conducted in an elementary school. All participants and clinical caregivers and evaluators who interpret the data will be kept confidential and all information will be kept anonymous.

Participants/Inclusion and exclusion criteria
Inclusion Criteria Be between 11 and 13 years of age Be a sixth-grade elementary school student Provide informed consent to participate in the research Exclusion Criteria Having a physical illness that interferes with the treatment process Use of psychiatric medication

Intervention groups
Research Intervention: An AI-based educational intervention, based on the approach and frameworks designed to improve learning skills, will be implemented in 8 90-minute sessions, one session per week, in a group setting. These sessions are designed to enhance the learning skills of sixth-grade female elementary school students in Izeh County in Persian lessons and will utilize AI tools and platforms related to Persian language learning. Control Group: Students in the control group will not receive any AI-based educational intervention and their education will continue according to the usual and standard Persian lesson routine in sixth-grade elementary school.

Main outcome variables
Learning skills

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20260906070947N1**
Registration date: **2026-09-20, 1405/06/29**
Registration timing: **prospective**

Last update: **2026-09-20, 1405/06/29**
Update count: **0**

Registration date
2026-09-20, 1405/06/29

Registrant information

Name
Sahar Kiani Deh Kiani

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 916 820 6418

Email address
saharkiani582@gmail.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2026-10-06, 1405/07/14

Expected recruitment end date
2026-10-11, 1405/07/19

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Examining the effects of artificial intelligence on students' learning skills

Public title
Exploring the effects of artificial intelligence

Purpose
Education/Guidance

Inclusion/Exclusion criteria

Inclusion criteria:
Be between 11 and 13 years of age Be a sixth-grade elementary school student Provide informed consent to participate in the research

Exclusion criteria:
Having a physical illness that interferes with the treatment process Use of psychiatric medication

Age
From **11 years** old to **13 years** old

Gender
Female

Phase
N/A

Groups that have been masked

- Care provider
- Outcome assessor
- Data analyser

Sample size
Target sample size: **30**

Randomization (investigator's opinion)
Randomized

Randomization description
In this study, a simple randomization method is used to assign participants to two experimental and control groups. The randomization unit in this study is female sixth grade elementary school students in Izeh city who are eligible to enter the study. First, a complete list of volunteers who have been selected based on the study entry criteria is prepared. Then, each participant is assigned a unique numerical identification code. These codes are entered into the Random Number Generator software and a random number is generated for each individual. After generating these numbers, the participants are sorted in ascending order based on the value of the random number. Then, the individuals are assigned to two groups; sequentially, the first 15 people on the list are assigned to the experimental group (recipients of artificial intelligence-based training) and the next 15 people are assigned to the control group (recipients of conventional training). With this method, the order of entry into the study and the researcher's knowledge of the participants will not play any role in determining the group. To ensure allocation concealment, the person responsible for entering data and performing the randomization process in the software will be independent of the intervention administrators and study evaluators and will not have access to information about the session implementation process or changes in the allocation of individuals. Participant identification codes will also be kept confidential and separate from their other personal information. Therefore, it will not be possible to predict the assigned group for each participant before the randomization process.

Blinding (investigator's opinion)
Double blinded

Blinding description
In order to control bias and improve the internal validity of the study, this study was designed with a double-blind protocol; in this way, the sixth-grade teachers, the outcome assessor, and the data analyst will be kept unaware of the allocation of sixth-grade elementary school female students in Izeh County to the experimental and control groups. In this process, the outcome assessor will collect data at all stages of the pretest, posttest, and follow-up, without knowing the assigned group of the participants, in order to prevent bias in measuring learning skills; also, all raw data will be provided to the statistical analyst with anonymous codes (such as groups 1 and 2), and the true nature of the groups will not be revealed until the end of the data analysis process. All allocation steps will be performed by an independent person from the research team, and the decoding of the allocation codes will only be done after the final completion of the statistical analyses.

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Behbahan Islamic Azad University Ethics Committee

Street address
Shahid Bayani St., Amir Kabir Blvd.

City
Behbahan

Province
Khouzestan

Postal code
6361713198

Approval date
2026-08-24, 1405/06/02

Ethics committee reference number
IR.IAU.BEHBAHAN.REC.1405.243

Health conditions studied

1

Description of health condition studied
Children's learning problems

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Learning skills
Timepoint
Before performing the intervention and two weeks after completion of the intervention
Method of measurement
Zimmerman and Martinez-Pons Learning Skills Questionnaire (1986)

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: The AI-based educational intervention sessions will be based on new learning technology frameworks and smart Persian education protocols (Kashani et al., 2014). The sessions of this intervention will be conducted in 8 90-minute sessions (one session per week) in groups for the experimental group. AI-based education is an approach that aims to improve learning skills in Persian lessons, increase academic self-regulation, and develop comprehension by tailoring the education process to individual needs. It helps sixth-grade female students in Izeh County manage their reactions to Persian learning challenges, such as weaknesses in spelling, vocabulary, and text comprehension, by replacing passive and traditional learning patterns with interactive responses and smart learning tools. This approach has main educational axes that lead to improving academic self-activity and improving performance in Persian lessons; These axes include: establishing a learning connection and explaining the learning model with artificial intelligence, teaching the difference between traditional and intelligent learning styles, familiarizing with intelligent text and word processing tools, teaching interactive artificial intelligence techniques to create an active and engaging environment, cultivating key characteristics of independent learning (self-direction, critical thinking, motivation, and focus), teaching spelling and vocabulary practice techniques with immediate feedback, identifying and moderating learning anxiety and challenges of facing digital tools, and finally consolidating and summarizing the skills learned. The main emphasis of this intervention is to reduce the drop in academic motivation when facing difficulties in Persian lessons and replacing it with conscious, interactive responses based on modern educational technologies.
Category
Behavior

2

Description
Control group: They do not receive any intervention or treatment.
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
Asiah Elementary School
Full name of responsible person
Sahar Kiani Deh Kiani
Street address
Suleiman Khater Street, Enghelab Highway.
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Islamic Azad University
Full name of responsible person
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Islamic Azad University
Proportion provided by this source
100
Public or private sector
Public

Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact
Name of organization / entity
Islamic Azad University
Full name of responsible person
Sahar Kiani Deh Kiani
Position
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Latest degree
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available
Justification/reason for indecision/not sharing IPD
Participant data is completely confidential and I do not intend to publish it.
Study Protocol
Undecided - It is not yet known if there will be a plan to make this available
Statistical Analysis Plan
No - There is not a plan to make this available
Informed Consent Form
Undecided - It is not yet known if there will be a plan to make this available
Clinical Study Report
Undecided - It is not yet known if there will be a plan to make this available
Analytic Code
No - There is not a plan to make this available
Data Dictionary
No - There is not a plan to make this available