

Clinical Trial Protocol

Iranian Registry of Clinical Trials

15 Jun 2026

The effectiveness of flipped classroom based on cognitive load on self-regulated learning, high-level thinking skills and students' perceived cognitive load

Protocol summary

Study aim

Effectiveness of the flipped classroom based on cognitive load on self-regulated learning, high-level thinking skills, and students' perceived cognitive load

Design

The clinical trial includes an experimental group and a control group, randomized in a simple way, with pre-test and post-test on 30 students.

Settings and conduct

The experimental group receives cognitive-based flipped classroom instruction, but the control group receives no intervention. Both the experimental group and the control group are measured twice (pre-test-post-test) separately. The performance will be performed among the students of elementary education at Farhangian University of Chabahar in 12 sessions of 90 minutes.

Participants/Inclusion and exclusion criteria

Commitment to continuous participation in class meetings; Studying in the continuous undergraduate course of Chabahar Farhangian University; The same year of entry of intervention and control group students

Intervention groups

The design of training sessions will be done in a reverse way and according to the effects of cognitive load in 12 sessions of 90 minutes. Training in the control group is done in the form of lectures. Finally, after completing the course of cognitive load questionnaires, learning self-regulation and high-level thinking will be implemented as a post-test among the subjects of the two experimental and control groups. In order to maintain the effects of the intervention, one month later, both groups will undergo a follow-up test again.

Main outcome variables

Learning Self-Regulation; High-Level Thinking Skills, Perceived Cognitive Load

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20230911059405N1**

Registration date: **2024-01-04, 1402/10/14**

Registration timing: **prospective**

Last update: **2024-01-04, 1402/10/14**

Update count: **0**

Registration date

2024-01-04, 1402/10/14

Registrant information

Name

Gholamreza Sanagooi Moharrer

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 54 3113 5541

Email address

r.sanagoo@iauzah.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2024-02-10, 1402/11/21

Expected recruitment end date

2024-05-19, 1403/02/30

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

The effectiveness of flipped classroom based on cognitive load on self-regulated learning, high-level thinking skills and students' perceived cognitive load

Public title

The effectiveness of flipped classroom based on cognitive load on self-regulated learning, high-level thinking skills and cognitive load

Purpose

Education/Guidance

Inclusion/Exclusion criteria

Inclusion criteria:

Commitment to continuous participation in class meetings Studying in the continuous undergraduate course of Farhangian University The same year of entry of intervention and control group students

Exclusion criteria:

Age

No age limit

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: 30

Randomization (investigator's opinion)

Randomized

Randomization description

Since the sample size in each group is recommended to be at least 15 people in interventional research (Delaware, 2013), in order to select the sample, 30 qualified students who volunteered to participate in the research were selected using available sampling method. They will be randomly divided into two intervention and control groups (15 people in the intervention group and 15 people in the control group).

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee in Islamic Azad University Research

Street address

Islamic Azad University Complex, Zahedan Branch,
University Street

City

Zahedan

Province

Sistan-va-Balouchestan

Postal code

9816743545

Approval date

2023-12-31, 1402/10/10

Ethics committee reference number

IR.IAU.ZAH.REC.1402.090

Health conditions studied

1

Description of health condition studied

Flipped classroom, cognitive load, self-regulation, higher order thinking skills

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Self-Regulated Learning

Timepoint

Before Starting the Educational Intervention and 60, 90 Days After the Educational Intervention

Method of measurement

Self-Regulated Learning Questionnaire (MSLQ) Pintrich and DeGroot

2

Description

Higher level Thinking Skills

Timepoint

Before Starting the Educational Intervention and 60, 90 Days After the Educational Intervention

Method of measurement

Questionnaire of High-Level Thinking Skills of Moharery (1398)

3

Description

Cognitive Load

Timepoint

Before Starting the Educational Intervention and 60, 90 Days After the Educational Intervention

Method of measurement

PASS Cognitive Questionnaire

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Determining the goal, compiling the electronic content, sharing the content with the students of the educational intervention group, opening questions and answers, explanation of the example by the professor, explanation of the example by the students of the educational intervention group, conclusion

Category

N/A

2

Description

Control group: without receiving educational intervention

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Farhangian University of Chabahar

Full name of responsible person

Asma Mollazehi

Street address

Imam Khomeini street

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Islamic Azad University

Full name of responsible person

Kambiz Narmashiri

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Islamic Azad University Complex, Zahedan Branch,
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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

Asma Mollazehi

Position

PhD student

Latest degree

Ph.D.

Other areas of specialty/work

Psychology

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University Street, Islamic Azad University Complex,
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Person responsible for scientific inquiries

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Latest degree

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Person responsible for updating data**Contact****Name of organization / entity**

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Full name of responsible person

Asma Mollazehi

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Sharing plan**Deidentified Individual Participant Data Set (IPD)**

Yes - There is a plan to make this available

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

Yes - There is a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

Not applicable

Title and more details about the data/document

Information on the main outcome is shared

When the data will become available and for how long

Access started from 1403

To whom data/document is available

Supervisor, advisor and referees

Under which criteria data/document could be used

Checking the accuracy of the statistical data provided

From where data/document is obtainable

Contact the principal investigator through the
university's research unit Email address:
mollazehi1365@gmail.com Phone number: 09010795624

What processes are involved for a request to access data/document

Review of the presented research report Request to send
data files through the researcher's email address or
contact number Sending the data file by the researcher
via email, research assistant system or internal social
messaging

Comments