GADVANCE DOCUMENTATION

Learner guide

Step-by-step guides for setting up your account, joining your organization, taking adaptive assessments, and understanding your results.

GADvance is an adaptive e-learning platform for gender sensitivity and Gender and Development (GAD) education.

Support: projectgadvance@gmail.com · 2026

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Introduction

What GADvance is, who it is for, and how this documentation is organized.

What is GADvance?

GADvance is an adaptive e-learning platform for gender sensitivity and Gender and Development (GAD) education. You learn through structured courses made of modules and lessons, and your understanding is checked with assessments that adjust to you.

Behind the assessments is **Bayesian Knowledge Tracing (BKT)**, a well-established model that estimates how likely it is that you have mastered a topic. GADvance updates that estimate after every answer and uses it to choose the difficulty of the next question.

Who it is for

Students and individual learners

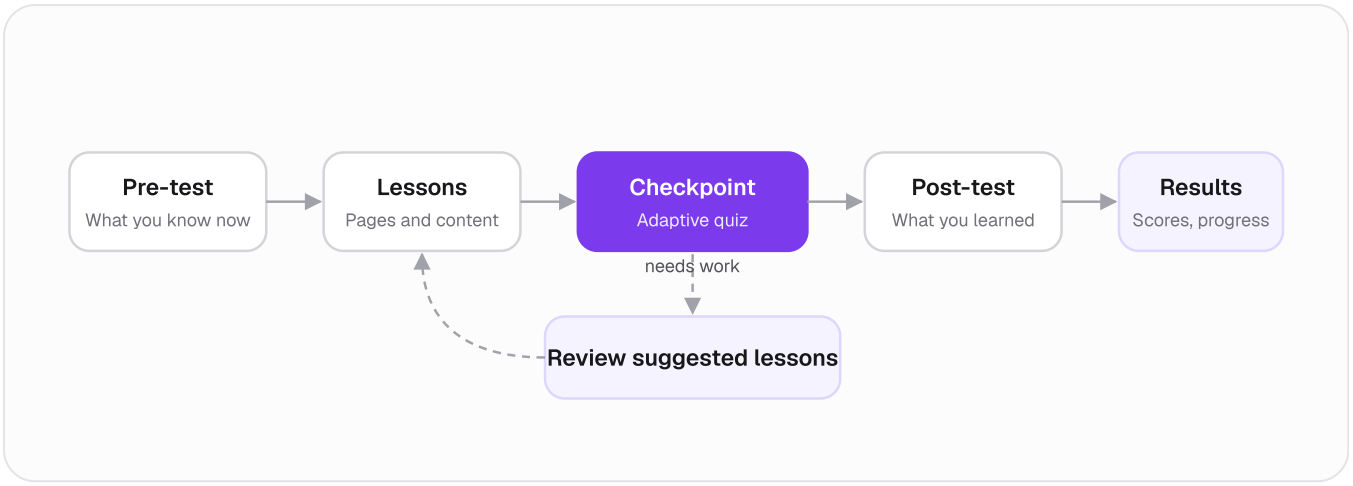
Build a working understanding of GAD concepts at your own pace.

Organizations

Schools, offices, and agencies can give their members a shared set of learning plans and follow their progress.

How it works at a glance

Most courses follow the same pattern:



A typical module: a pre-test, lessons with adaptive checkpoints, then a post-test. Checkpoints can send you back to related lessons for review.

- **Pre-test** records what you already know.
- **Lessons** teach the material in short pages.
- **Checkpoint quizzes** adapt their questions to your estimated mastery.
- **Post-test** shows how far you have come.

Using these docs

Getting started

Set up your account and begin your first course.

How BKT works

Understand what your mastery estimate means.

Looking for something specific?

Use the search box in the documentation menu. It searches article titles, descriptions, and section headings.

2. START HERE

Getting started

Create an account, verify your email, set up your profile, join an organization, and start your first course.

Setting up takes a few minutes. You need an email address you can open, and if you are joining through a school or workplace, the 6-digit join code your administrator gave you.

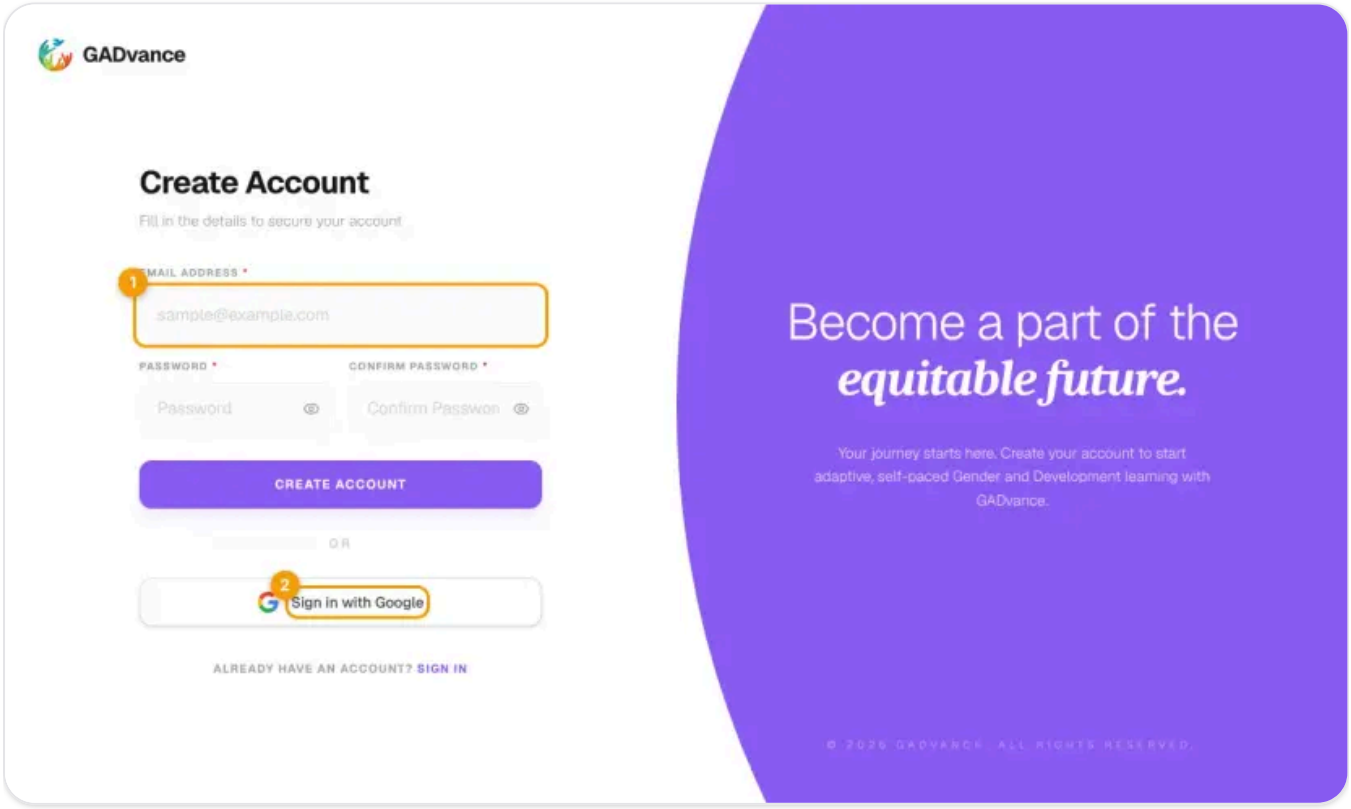
1. Create your account

1 **Open the sign-up page**

Select **Sign Up** in the top navigation, or go to the sign-up page.

2 **Choose how to sign up**

Enter your email and a password, or continue with your Google account. With Google you can skip email verification because Google has already confirmed your address.



The sign-up page. (1) Sign up with email and password, or (2) continue with Google.

2. Verify your email

1. **Open the verification email**

   GADvance sends a message titled "Verify your email to finish creating your GADvance account".

2. **Select Verify email address**

   The link opens GADvance and activates your account.

> ⚠ **The link expires after 30 minutes**
>
> If it expires, choose resend on the verification page or sign up again to get a new link. Check your spam or promotions folder if the email does not arrive within a few minutes.

3. Set up your profile

The first time you sign in, a short onboarding asks for three things:

1. **Personal details**

   Your first and last name are required. Middle name, age, gender, and birthday are optional.

2. **Contact and location**

   Optional. Your region, province, city or municipality, and barangay.

3. **Photo and bio**

   Optional. Add a profile photo (JPEG or PNG, up to 5 MB) and a short bio.

You can change these details later from your profile in the workspace.

4. Join your organization

Skip this step if you are learning on your own.

1. **Use the invitation link or code**

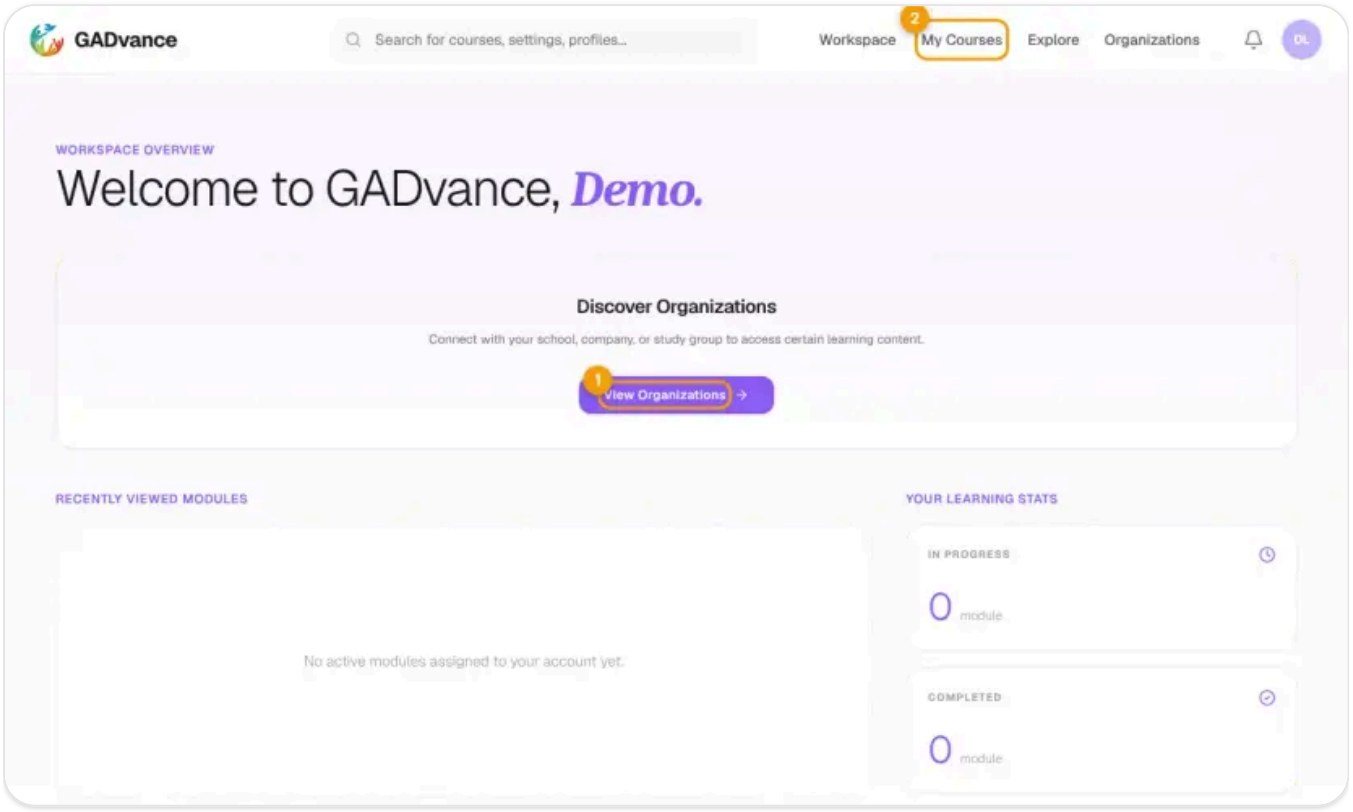
   Open the invitation link from your administrator, or go to **Organizations** in your workspace and choose **Enter Code Manually**.

2 Enter the 6-digit join code

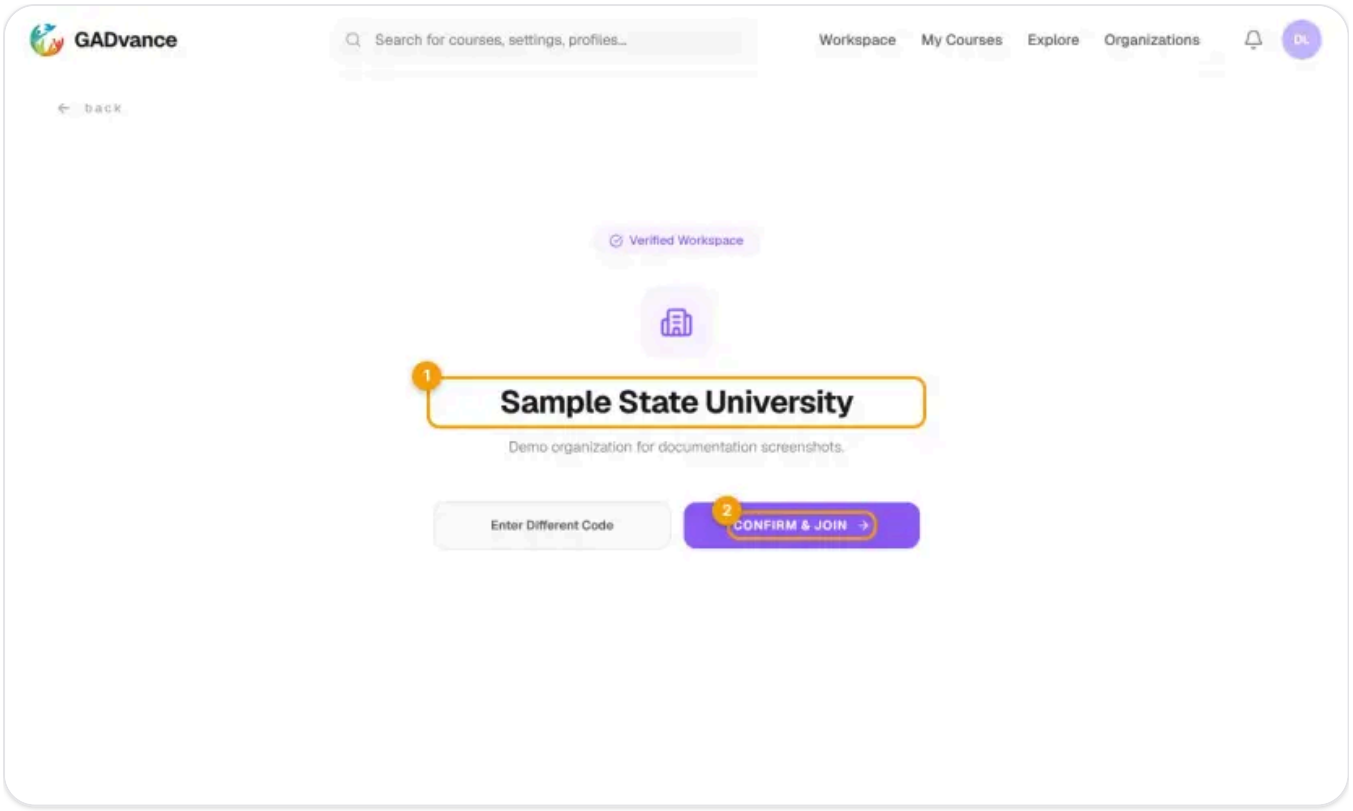
GADvance shows the organization so you can confirm it before joining.

3 Select Confirm & Join

The organization's learning plans now appear for you.



Your workspace. (1) View Organizations to join one. (2) My Courses lists the courses you are enrolled in.



After you enter a code, (1) check the organization name, then (2) select Confirm & Join. Sample data shown.

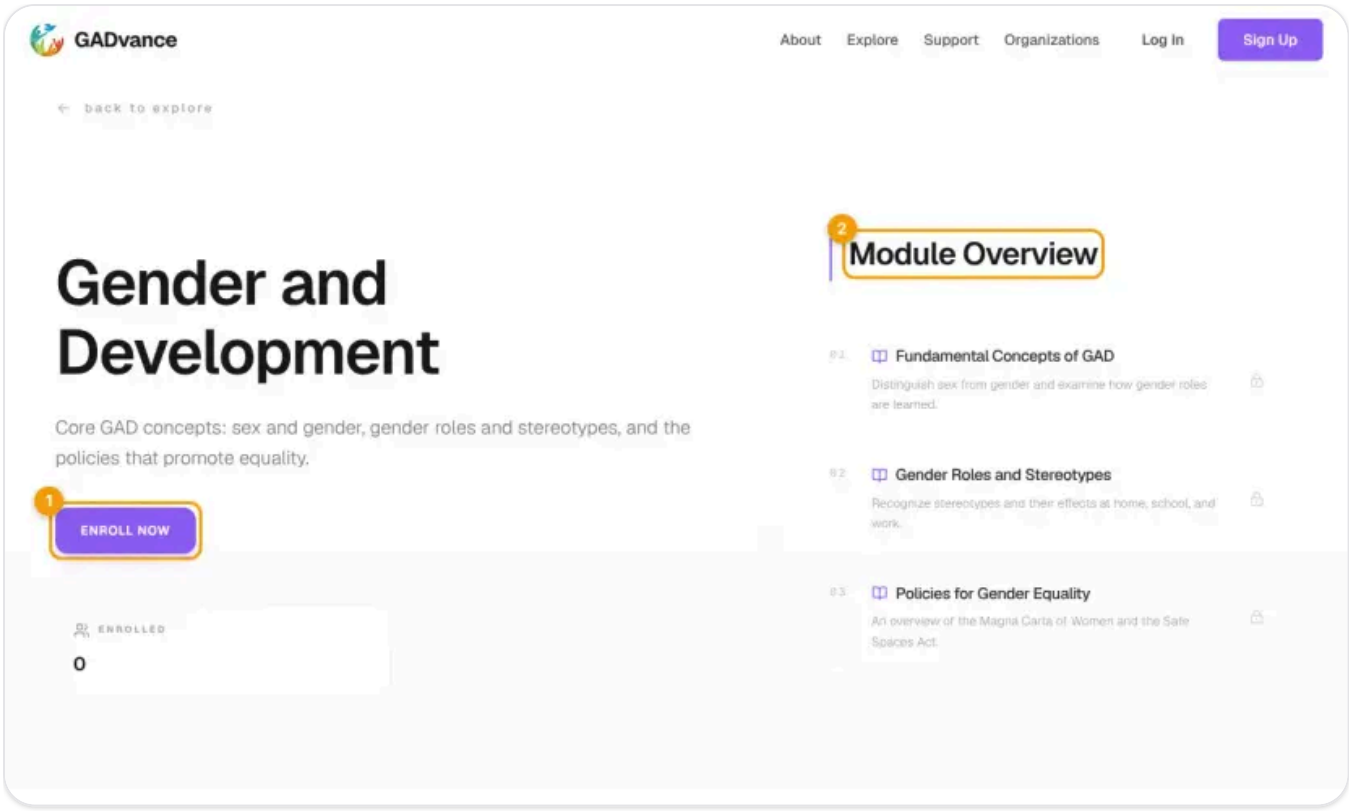
5. Find a course and enroll

1 **Open Explore**

Browse the available learning plans (courses) and open one to see its modules.

2 **Enroll**

Select **Enroll now** and confirm. Enrolled courses appear under **My Courses**.



A course page. (1) Enroll now to start. (2) The module overview shows what the course covers. Sample data shown.

6. Start learning

Open a module to begin. Most modules start with a pre-test, then lessons and checkpoint quizzes, and end with a post-test. Your place is saved as you go, so you can leave and resume later. See Assessments and results for what to expect from each assessment.

Need a hand?

Email projectgadvance@gmail.com with the subject "GADvance Account Assistance".

3. START HERE

Project overview

Background, objectives, SDG alignment, and the high-level architecture of GADvance.

Background

Gender and Development (GAD) is the Philippine government's framework for making gender equality part of how institutions plan, budget, and deliver services. Building gender sensitivity takes education that reaches people with very different starting points. A single fixed quiz is too hard for some learners and too easy for others.

GADvance began as an undergraduate research project at the College of Computer Studies, Laguna State Polytechnic University – San Pablo City Campus. The project studied whether adaptive assessment, powered by Bayesian Knowledge Tracing, supports GAD learning. That study has concluded, and every learner now receives the adaptive experience.

Core objectives

- Deliver structured, self-paced GAD lessons that anyone with a browser can take.
- Personalize assessment difficulty from each learner's estimated mastery.
- Point learners to the specific lesson content they should review.
- Let organizations provide learning plans to their members and follow aggregate progress.

SDG 4 and SDG 5 alignment

SDG 4

Quality Education

SDG 5

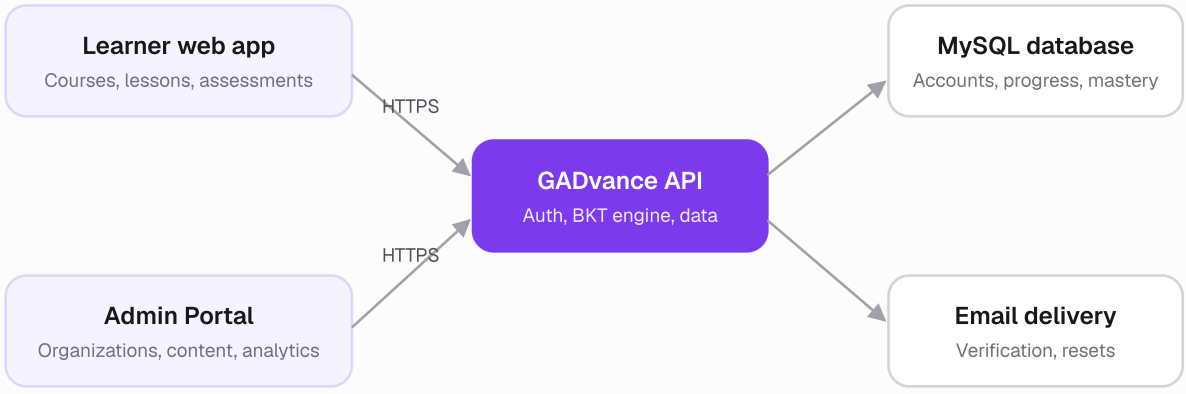
Gender Equality

Accessible online learning that adapts to what each learner already knows.

Course content on gender concepts, roles, and the policies that promote equality.

High-level architecture

GADvance is made of three parts that work together:



Learners and administrators use separate web apps. Both talk to one API, which holds the BKT engine and stores data in a MySQL database.

- **Learner web app**: this site, where you browse courses, learn, and take assessments.
- **Admin Portal**: where organization administrators manage learning plans, modules, assessments, and analytics.
- **GADvance API**: handles accounts and sign-in, records your answers, and runs the BKT mastery updates.

Development team

GADvance was designed and built by student researchers of the College of Computer Studies, LSPU – San Pablo City Campus, as part of their undergraduate thesis.

Research data

Data collected during the study is kept for research analysis. Learners who joined after the study are not assigned to any research group.

4. USING GADVANCE

Platform features

A tour of everything available to learners: dashboard, organizations, courses, lessons, assessments, progress, and certificates.

Accounts and sign-in

- Sign up with an email and password, or with Google.
- Email sign-ups are confirmed with a verification link that expires after 30 minutes.
- Forgot your password? Request a reset link from the sign-in page. Each link expires after 30 minutes, and requesting a new one cancels the previous link.

Your workspace

After you sign in, your workspace is the starting point. From there you can:

- See your enrolled courses under **My Courses** and continue where you left off.
- Browse **Explore** for other learning plans.
- Manage your **Organizations**.
- Update your profile, photo, and location.
- Search across courses from the header.

Organizations

Organizations are schools, offices, or agencies that use GADvance with their members. Joining one gives you access to the learning plans it provides. Join with an invitation link or a 6-digit code, and leave at any time from the Organizations page.

Courses, modules, and lessons

- **Learning plans (courses)** group one or more modules.
- **Modules** are divided into sections that contain lessons and assessments.
- **Lessons** are pages of reading and media. Your progress through each page is saved.

Assessments

- Pre-tests and post-tests measure what you know before and after a module.
- Adaptive checkpoint quizzes adjust question difficulty using Bayesian Knowledge Tracing.
- Polls and surveys collect your opinions. They are not graded.

Progress and results

GADvance tracks completed lessons and assessments in each module, and shows your assessment scores and whether you passed. It also keeps a mastery estimate for each topic. The estimate is not shown on screen; it is used to choose checkpoint question difficulty and to suggest lessons to review after an assessment.

Certificates

Some learning plans award a certificate when you complete them. If yours does, the certificate is generated with your name, and each one carries a verification code. Anyone can check a code on the certificate verification page.

5. USING GADVANCE

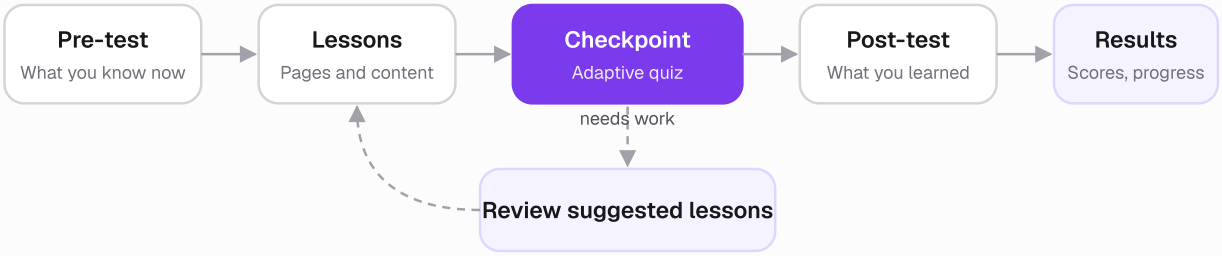
Assessments and results

Pre-tests, post-tests, adaptive checkpoint quizzes, passing scores, retakes, and remedial review.

Types of assessments

ASSESSMENT	PURPOSE	ADAPTIVE?
Pre-test	Records what you know before the module.	No, fixed questions
Checkpoint quiz	Checks understanding during the module.	Yes, when the course enables it
Post-test	Measures what you learned.	No, fixed questions
Poll or survey	Collects your opinion or feedback.	Not graded

How a module flows



Pre-test, lessons with adaptive checkpoints, then a post-test. When a checkpoint shows a topic needs work, you are pointed to lessons to review.

Adaptive checkpoint quizzes

Adaptive checkpoints are different from a regular quiz in three ways:

- **One question at a time.** Each answer is recorded before the next question is chosen.
- **Difficulty follows your mastery.** Questions come from the Bloom's Taxonomy level that fits your current estimate.
- **Length can vary.** If your mastery is already high you may get fewer questions; if it is low you get more practice, within limits set by the course.

The details are in How BKT works.

Passing scores and moving on

Every graded assessment has a passing score, set as a percentage by the course. Your score is the share of points you earned. Some assessments must be passed before you can continue to the next part of the module; the assessment tells you when that is the case.

> **Score and mastery are separate**
>
> Your score says how many questions you got right in this attempt. Your mastery estimate is GADvance's running estimate of how well you know the topic, built from all your answers. You can pass with a modest mastery estimate, and the estimate keeps improving as you practice.

Remedial review

After a checkpoint, GADvance looks at the questions you missed and the topics with the lowest mastery estimates, and suggests the related lesson pages to review. Reviewing them before a retake or the post-test is the fastest way to improve.

Retakes and saved progress

- Your answers are saved as you go. If you close the page, you can resume an assessment that is still in progress.
- Where the course allows it, you can retake an assessment. Retakes start a new attempt and keep your earlier attempts on record.
- Each answer in an adaptive checkpoint is counted once, even if you double-click or your connection drops and the answer is sent again.

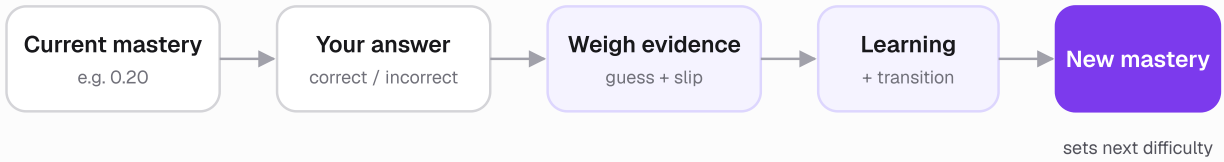
6. ADAPTIVE LEARNING

How BKT works

How Bayesian Knowledge Tracing estimates your mastery after each answer and chooses question difficulty.

The idea in one minute

Bayesian Knowledge Tracing treats "has this learner mastered the topic?" as a probability between 0 and 1. Every time you answer a question on a topic, GADvance updates that probability. A correct answer usually raises it and an incorrect answer usually lowers it, but not by a fixed amount. BKT accounts for lucky guesses and careless slips, so one answer never decides everything.



Each answer is weighed against the guess and slip probabilities, then a small learning step is applied. The result sets the difficulty of the next question.

The four parameters

Initial Knowledge

$P(L_0) = 0.20$

How likely you are to know a topic before answering anything about it.

Transition Probability

$P(T) = 0.10$

The chance you learn the topic from each opportunity to practice it.

Guess Probability

$P(G) = 0.25$

Slip Probability

$P(S) = 0.10$

The chance of answering correctly without knowing the topic.

The chance of answering incorrectly even though you know the topic.

These are the values GADvance currently uses for every topic.

How an answer updates mastery

Each update has two steps. With current mastery L:

Step 1: weigh the evidence

```
If correct: L' = L(1 − S) ÷ [L(1 − S) + (1 − L)G]
If incorrect: L' = L·S ÷ [L·S + (1 − L)(1 − G)]
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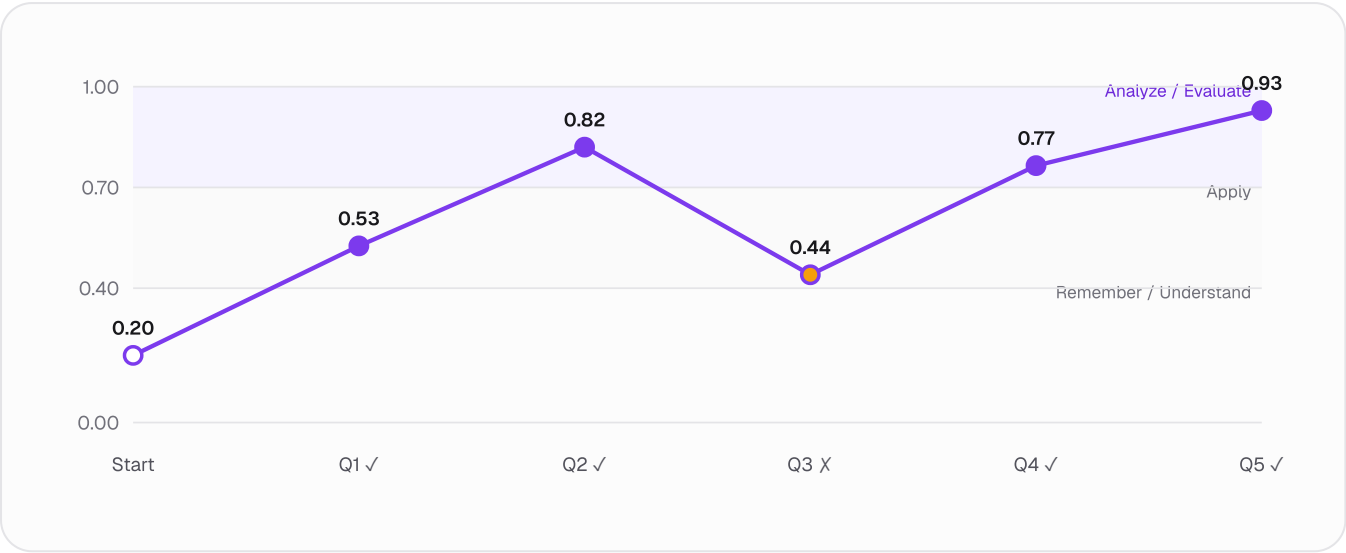
Step 2: allow for learning

```
New mastery = L' + (1 − L') × T
```

The result is kept between 0.01 and 0.99 and rounded to three decimal places.

Worked example

A learner starts a topic at the initial knowledge value of 0.20 and answers five questions: correct, correct, incorrect, correct, correct. These numbers are computed with the same formula GADvance uses.



Mastery after each answer. Shaded bands show which question difficulty the learner would be served next.

QUESTION	ANSWER	MASTERY AFTER
Q1	Correct	`0.200 → 0.526`
Q2	Correct	`0.526 → 0.820`
Q3	Incorrect	`0.820 → 0.440`
Q4	Correct	`0.440 → 0.765`
Q5	Correct	`0.765 → 0.929`

Notice that the incorrect answer on Q3 lowers mastery a lot but does not reset it, and two more correct answers bring it back up.

Choosing question difficulty

Checkpoint questions are tagged with a Bloom's Taxonomy level. Your current mastery decides which level you see next:

BUILDING

Mastery below 0.40

DEVELOPING

Mastery 0.40 to below 0.70

Apply

PROFICIENT

Mastery 0.70 and above

Analyze / Evaluate

Remember / Understand		

How long a checkpoint is

Each adaptive checkpoint has a minimum and maximum number of questions, set by the course. GADvance picks a length between them from your average mastery across the topics the checkpoint covers:

- Average mastery of 0.50 or lower: the maximum number of questions, for more practice.
- Average mastery of 0.90 or higher: the minimum number of questions.
- In between: proportionally fewer questions as your mastery rises.

Mastery is not your score

> **Two different numbers**
>
> Your **score** is the percentage of points you earned in one attempt, and it decides whether you pass. Your **mastery estimate** is a probability that GADvance keeps updating across all your answers on a topic. It decides question difficulty and review suggestions, not whether you pass.

7. HELP

FAQs and troubleshooting

Answers to common questions about accounts, adaptive learning, assessments, organizations, and mobile access.

Account access

I did not receive the verification email.

Check your spam and promotions folders, and make sure you typed your email correctly. Verification links expire after 30 minutes; choose resend on the verification page or sign up again to get a new one.

I forgot my password.

Choose **Forgot password** on the sign-in page and enter your email. The reset link expires after 30 minutes, and only the newest link works. For security you can request up to three reset emails every 15 minutes.

I signed up with Google. Do I need a password?

No. Continue signing in with the same Google account. If you also want to sign in with a password, use Forgot password to set one.

Sign-in says my account is not allowed here.

The learner site is for learner accounts. Administrator accounts sign in through the GADvance Admin Portal.

Adaptive learning

Why did I get different questions than my classmate?

Checkpoint quizzes choose questions from your own mastery estimate, so two learners rarely see the same set. See How BKT works.

Why did one wrong answer drop my mastery so much?

When your estimate is still low, each answer carries a lot of weight. As you answer more questions the estimate becomes steadier, and correct answers quickly bring it back up.

Can I see my mastery estimate?

Not as a number. GADvance uses your mastery estimate behind the scenes to choose question difficulty and to suggest lessons to review. What you see are your assessment scores, whether you passed, and your module progress.

Assessments

I lost my connection during a quiz. Is my work lost?

No. Answers are saved as you go. Reopen the assessment to continue the attempt that is in progress.

Can I retake an assessment?

Where the course allows retakes, a retake option appears on the result screen. Your earlier attempts stay on record.

Why can I not open the next part of the module?

Some assessments must be passed before you can continue. Review the suggested lessons and try again.

Organizations

My join code does not work.

Join codes are 6 characters and are not case-sensitive. Check that you copied the whole code, then ask your administrator to confirm it; administrators can change a code, which makes the old one stop working.

How do I leave an organization?

Open **Organizations** in your workspace and choose leave on the organization. You lose access to learning plans that are only available through it.

Mobile access

Can I use GADvance on my phone?

Yes. GADvance runs in the browser and adapts to phone and tablet screens. There is no separate app to install.

Still need help?

Email projectgadvance@gmail.com. For a faster answer, use a subject line such as "GADvance Bug Report" or "GADvance Account Assistance" and include what you were

doing, what you expected, and your device and browser. Never send your password.