

AI for Personalized Learning and Content Creation

Sajid Ali Anjum
CTO, Knowledge Platform



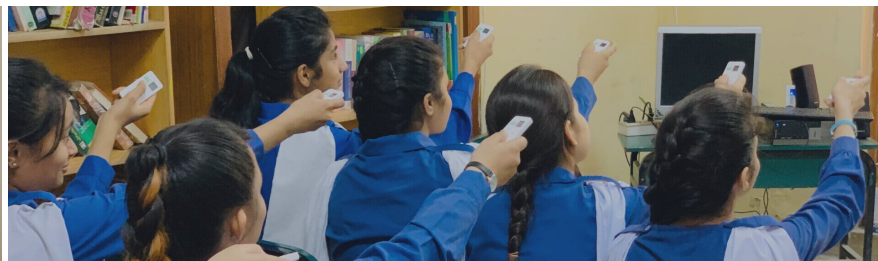
Knowledge Platform

- Knowledge Platform is a Singapore-based EdTech company with offices in Singapore and Pakistan, and plans to expand to Africa soon.
- We are serving millions of learners and educators across Asia.
- We provide educational content, games, learning technologies, teacher training, and school support for schools, teachers, and students across the Asia-Pacific region.



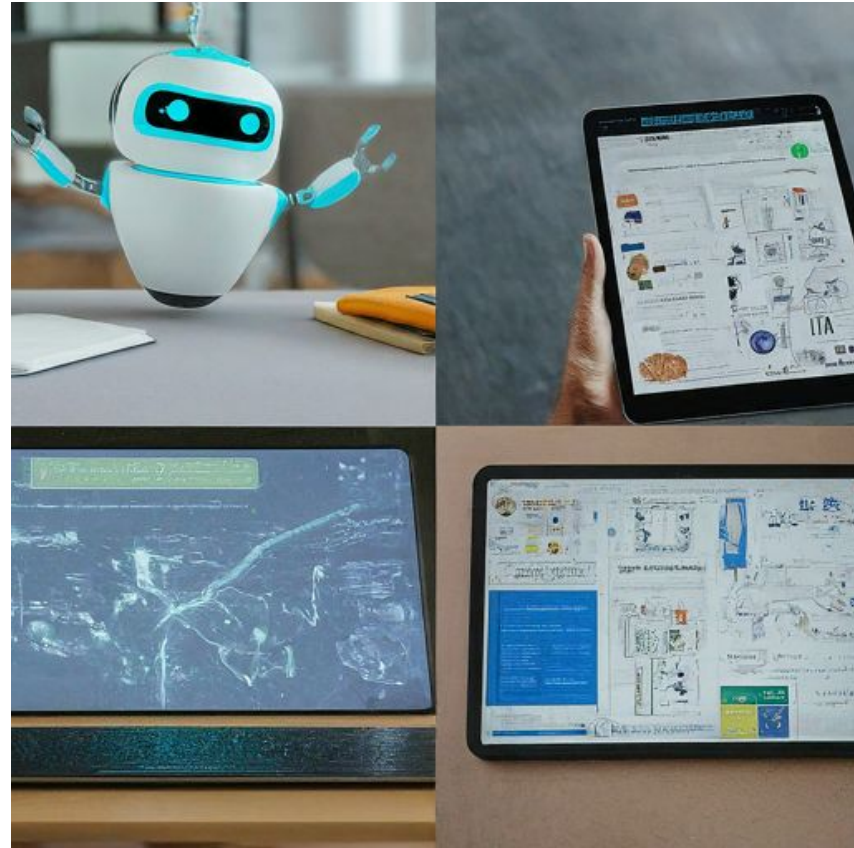
Equitable Access to Education -Our top use cases

- **Offline Access:** Our solution enable users to download content, structure lessons, and take videos and activities offline, ensuring learning continues even without internet connectivity.
- **Multilingual Content Creation (AI):** Our CMS supports content creation in various languages, including RTL and LTR, catering to diverse learner needs.
- **Personalized Learning through AI:** Our solution empowers learners to study independently, without teacher assistance, promoting self-paced learning and equal opportunities for all.



The AI Education Landscape

- AI applications in education are growing
- Used for personalized learning, content creation, and intelligent tutoring systems
- Potential to improve learning efficiency and adapt to individual student needs



Content Creation for Equitable Access



◀ Back

sanjum 98
Content Developer



Dashboard



Skills



Content

Add a New Content Object



MCQ

Tutorial

Demo



Comprehension

Tutorial

Demo



Fill in the blank

Tutorial

Demo



Video

Tutorial

Demo



Document

Tutorial

Demo



eBook

Tutorial

Demo



Link

Tutorial

Demo



Assignment

Tutorial

Demo



HTML content (ZIP)

Tutorial

Demo

Add a New Game



Crossword

Tutorial

Demo



Rumble in the Jungle

Tutorial

Demo



Timor the Turtle

Tutorial

Demo



Kampong

Tutorial

Demo

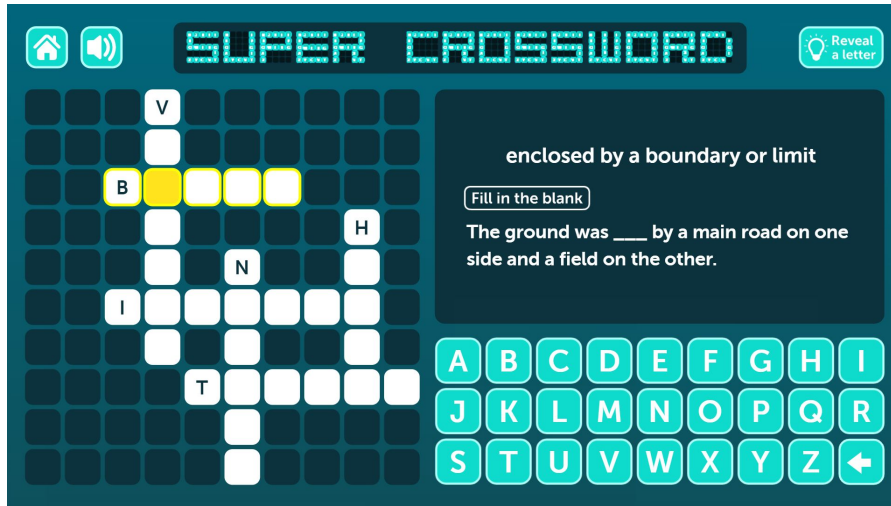


Jungle Gym Primary

Tutorial

Demo

Games - Generative AI for Content Creation



Creating a Crossword Game

- Integration of Generative AI APIs with our CMS to create assessments, crosswords and other games like drag & drop, card matching etc.

The screenshot shows a web interface for generating a crossword puzzle. At the top, there's a CMS logo and a 'Back' button. The user is identified as 'sanjum 98' with the role 'Content Developer'. A sidebar on the left contains icons for 'Dashboard', 'Skills', and 'Content'. The main area is titled 'Generate Crossword through AI'. It features two radio buttons: 'Topic' (selected) and 'Words'. Below these are three input fields: 'Topic' with the value 'Fruits of Kenya', 'Target Audience' with 'Grade 1 students', and 'Number of words' with a value of 5 and increment/decrement buttons. A disclaimer states 'Generative AI can make mistakes. Consider reviewing all generated content.' At the bottom, there's an 'Advanced AI' toggle (currently off), 'Cancel' and 'Generate' buttons, and a 'Credits Used: 116/10000' indicator.

CMS

Back

sanjum 98
Content Developer

Dashboard

Skills

Content

Generate Crossword through AI

☒ Topic ☐ Words

Topic

Fruits of Kenya

Target Audience

Grade 1 students

Number of words

5

Generative AI can make mistakes. Consider reviewing all generated content.

☐ Advanced AI

Cancel

Generate

Credits Used: 116/10000

Creating a Crossword Game



◀ Back

sanjum 98
Content Developer



Crossword

▼ More

🕒 History

🔗 Share

📄 Guideline

💾 Save

🗑 Delete

▶ Preview

🌟 AI Generation

⬆ Submit

Saved

Last activity: 04:13 pm, Today

Crossword

Mango



A juicy fruit with a large seed

Banana



A long, curved fruit that is yellow when ripe

Papaya



A sweet fruit with orange flesh and black seeds

Avocado



A creamy fruit with a large pit inside

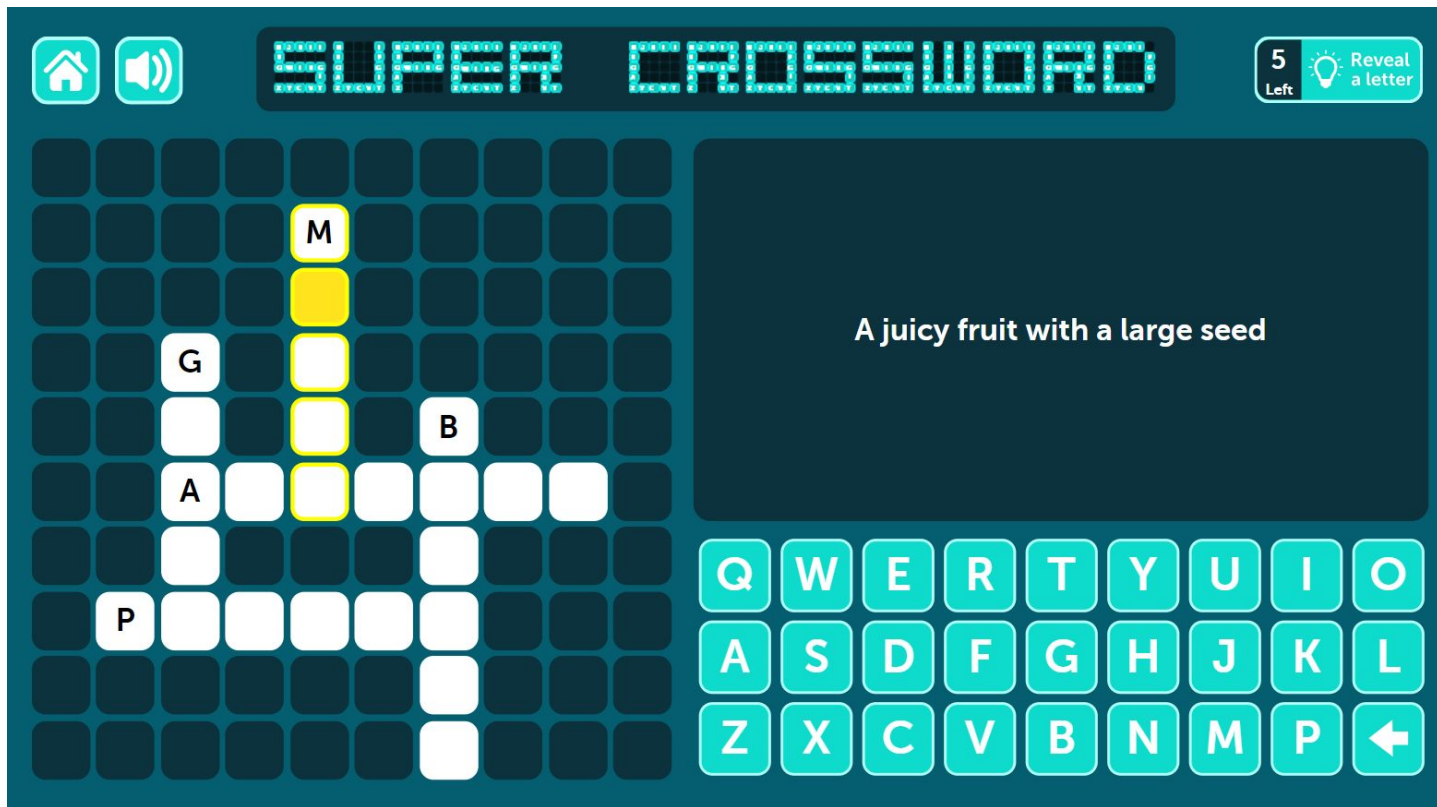
Guava



A round or pear-shaped fruit with pink flesh



Crossword Game



The interface features a dark teal background. At the top left are icons for a home screen and a speaker. The top center displays two crossword grids with the words "SURF" and "PASSION" in yellow. The top right shows a counter "5 Left" and a "Reveal a letter" button with a lightbulb icon. The main area on the left is a crossword grid with some letters filled in: 'M' in the second row, fifth column; 'G' in the fifth row, third column; 'A' in the sixth row, third column; 'P' in the seventh row, second column; and 'B' in the fifth row, seventh column. The right side contains a dark teal box with the clue "A juicy fruit with a large seed". At the bottom right is a keyboard with letters Q through P and a backspace arrow.

Home Speaker

SURF PASSION

5 Left Reveal a letter

A juicy fruit with a large seed

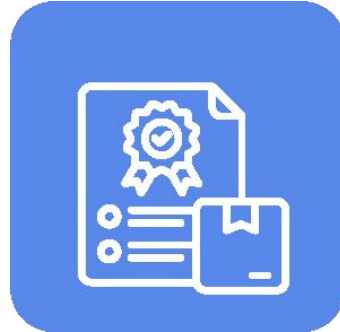
Q W E R T Y U I O
A S D F G H J K L
Z X C V B N M P ←

Challenges - Generative AI for Content Creation


- **Inaccuracy in languages other than English:** A significant challenge facing generative AI models is the limited availability of high-quality text data in languages other than English.
 - For example: If you ask ChatGPT to write a poem by a famous Urdu poet, it may produce Urdu text, but it might not be an actual work by that poet.
- **Potential for mistakes:** While generative AI models are improving quickly, they're not perfect and can make mistakes, especially on complex topics. To ensure accuracy, critically evaluate its output, fact-check, and verify information through reputable sources to minimize the risk of misinformation

Benefits - Generative AI for Content Creation

- We did a pilot with a few schools in Pakistan and found that the content creation pace has gone up four times.
- The reviewers found less mistakes in the content. (Quality has improved)




AI for Personalized Learning



knowledge platform
What will you learn today?

30



 Dashboard

 Classes

 Assignments

 Performance

Dashboard

My Learning Path

 Introduction to Matrices

 Define biology, and differentiate among the major divisions of biology...

 Isotopes

 Describe the importance of physics in science, technology and society

Assignments

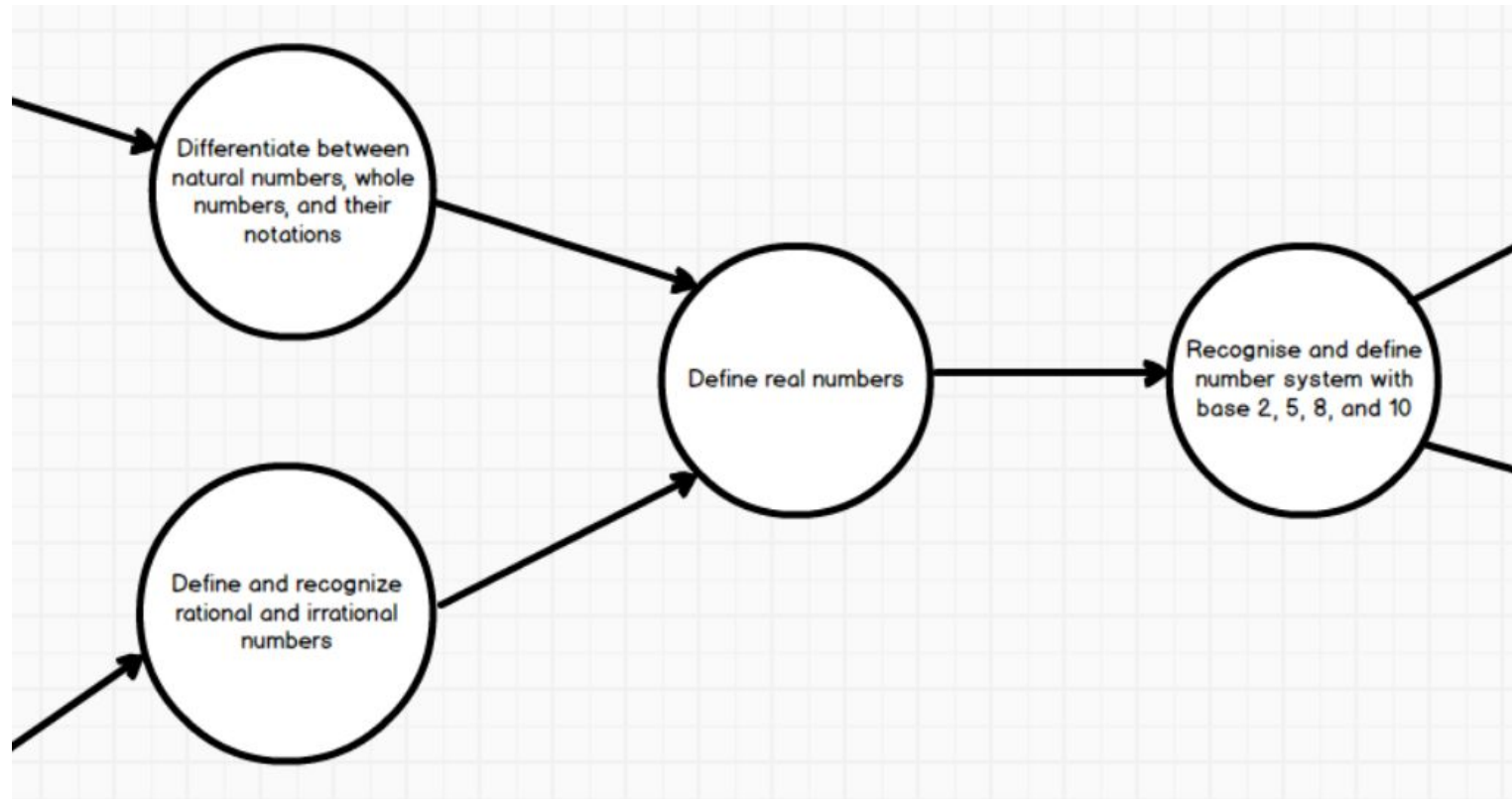
 Test assignment title
Mathematics_9_Blue

Due Date
29/05/2024, 11:59 PM

[View All](#)

 Sajid Ali
LEARNER

Knowledge Graph - AI for Personalized Learning



Data we capture - AI for Personalized Learning

Content Structure

- Lesson Plan
- Chapters
- Lessons
- Content Objects
- Skills
- Estimated time
- Skill Difficulty
- Questions
- Mastery
- Category
- Questions Difficulty

General

- Session Duration
- In Active time
- Knowledge Graph
- Learning Path
- Recommended Skill
- Page Views
- Profile Completed
- Enrolments
- Grade

User Performance

- Attempts
- Score
- Total Questions
- Correct Questions
- Proficiency
- Coverage
- Accuracy
- Time Spent
- Visits
- Stuck
- Feedback revealed
- Game & Skill Level

Context & Behavior

- Class Info
- Current Subject/Topic
- Attempted Modules
- Non Attempted modules
- Repetition

Benefits - AI for Personalized Learning

Our Jazz Smart School Project observed up to **60% results improvement** in public schools in Pakistan.


Students
26,000


Grades
9 & 10

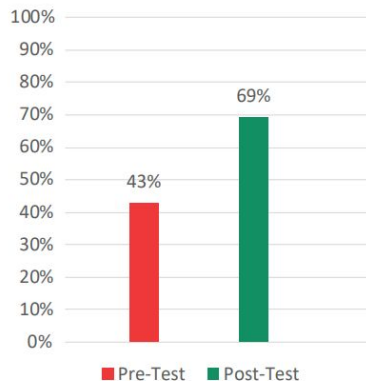

Schools
75


Intervention period
1.5 years



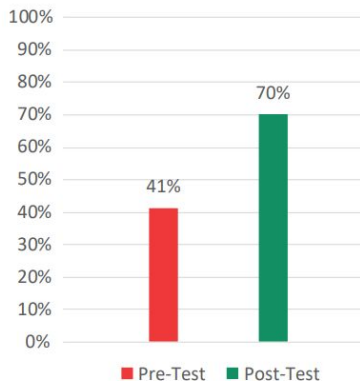
Overall comparison

Improvement: **60%**



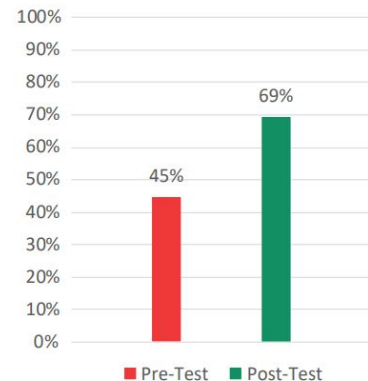
Math

Improvement: **71%**



English

Improvement: **53%**





Learnings - AI Personalized Learning

- Having only 10-15 questions per skill is not sufficient.
- If a user gets stuck, there should be a mechanism in place that allows them to request clarification from either a bot or a teacher.
- To keep the learner motivated, the questions within an assessment should be ordered in a way that reflects a gradual increase in difficulty.

Thank You!

