

## CASE STUDY

# Scholars Tutorial

## Enhances Personalized Learning Using AI-Powered Educational Assistants on AWS

### Executive summary

Scholars Tutorial is a UK-based educational platform specializing in 11+, KS2, KS3, GCSE, and A-Level preparation. With thousands of practice questions, topic-based assessments, performance analytics, and learning resources, the platform helps students prepare effectively for competitive examinations.

As student engagement and content volume continued to grow, Scholars Tutorial sought to introduce AI-powered learning capabilities that could provide personalized academic support, automate question explanations, improve parent communication, and help students focus on weak areas through intelligent recommendations.

To achieve these objectives, Scholars Tutorial partnered with Shri Sai Tech LLC DBA SST to design and implement an AI-powered educational platform on Amazon Web Services (AWS). Leveraging Amazon Bedrock, BM25-based Retrieval-Augmented Generation (RAG), analytics-driven recommendations, and cloud-native architecture, SST delivered a scalable solution that enhances learning outcomes and student engagement.

### The challenges

- **Challenge 1 – Limited Personalized Learning Guidance**  
Students received performance analytics but lacked intelligent recommendations on what to study next and how to improve weak areas.
- **Challenge 2 – Difficulty Understanding Incorrect Answers**  
Students often struggled to understand why answers were incorrect and required additional explanation beyond traditional answer keys.
- **Challenge 3 – Manual Parent Performance Interpretation**  
Parents had access to reports and analytics but required simplified summaries and actionable recommendations.
- **Challenge 4 – Lack of Intelligent Learning Assistance**  
Students needed an interactive AI assistant capable of answering academic questions and providing topic-specific guidance.
- **Challenge 5 – Vocabulary and Reading Comprehension Support**  
Students preparing for verbal reasoning and comprehension exams required contextual vocabulary assistance and language support.



### About Scholars Tutorial

**Scholars Tutorial** is a UK-based tuition centre founded in 2003 by Swapna Awar in Harrow, specialising in 11+, 12+, 13+ entrance exam prep and KS2/KS3 English and Maths support, both in-person and online, with a smart analytics platform offering 1,200+ practice papers and 60,000+ questions.

### Sachin Awar Director, Scholars Tutorial

Sachin Awar is a technology executive and education innovator with deep expertise in enterprise architecture, cloud technologies, and digital transformation. At Scholars Tutorial, he leads technology strategy and platform evolution, driving AI-powered educational solutions for personalized learning and data-driven academic support.



## Simplify Digital Transformation with AWS

Amazon Web Services (AWS) provided Scholars Tutorial with a scalable and secure cloud platform capable of supporting AI-powered educational experiences.

By leveraging managed AWS services, Scholars Tutorial avoided the complexity of building AI infrastructure while gaining access to advanced foundation models, cloud-native services, recommendation systems, and intelligent educational assistants.

## Why Shri Sai Tech?

Scholars Tutorial selected SST because of its expertise in:

- Educational technology solutions
- AWS cloud architecture
- Generative AI implementation
- Analytics-driven recommendation systems
- Cloud-native application development
- Agile delivery methodology
- Rapid MVP development and deployment

## The Solution

SST designed and implemented a comprehensive AI-powered learning ecosystem using AWS managed services and foundation models.

### ➤ AI Question Explanation Engine

The system automatically generates detailed explanations, formulas, and topic-based learning guidance for incorrectly answered questions, helping students understand concepts more effectively.

### ➤ Personalized Study Plan Generator

Using student performance analytics, the AI identifies weak areas and generates personalized study schedules, topic recommendations, revision priorities, and suggested tests.

### ➤ Parent Report Intelligence

AI-generated summaries transform complex student analytics into easy-to-understand progress reports and actionable recommendations for parents.

### ➤ FAQ Chatbot

An AI-powered educational assistant capable of answering questions related to exams, subjects, learning strategies, practice tests, worksheets, and Scholars Tutorial services.

### ➤ Vocabulary Assistance System

Students can access contextual word meanings, synonyms, and explanations directly within reading comprehension and language-based exercises.

## AWS Services

### Foundation Models

#### ➤ Anthropic Claude

- Question explanation generation
- Personalized study plan generation
- Parent report summarization
- Educational chatbot responses
- Topic-based learning assistance



### ➤ **BM25 Retrieval Engine**

- Knowledge base indexing
- Educational content retrieval
- FAQ search
- Context generation for RAG workflows
- Subject and exam content discovery

### ➤ **AWS Cloud Services**

- Amazon Bedrock
- Amazon S3
- AWS Lambda
- Amazon API Gateway
- Amazon ElastiCache (Redis)
- AWS IAM

## Results

### ➤ **AI Learning Assistance**

- Improved student access to topic-specific explanations and learning guidance.
- Reduced dependency on manual tutor intervention for common academic questions.

### ➤ **Personalized Study Planning**

- Automated identification of weak topics and learning gaps.
- Personalized revision schedules generated based on student performance.

### ➤ **Parent Communication**

- Simplified progress reporting.
- Improved visibility into student strengths, weaknesses, and improvement areas.

### ➤ **Student Engagement**

- Increased interaction with educational content through AI-powered learning assistance.
- Faster access to explanations, recommendations, and learning resources.

### ➤ **Platform Scalability**

- Cloud-native architecture capable of supporting future AI-powered educational initiatives.

## Benefits

- Personalized AI-powered learning experience
- Automated question explanation generation
- Analytics-driven study recommendations
- Enhanced parent engagement
- Improved student learning outcomes
- Reduced manual support effort
- Intelligent BM25-based knowledge retrieval
- Scalable AWS-based architecture
- Future-ready AI education platform



## Next steps

- Expand AI support across additional subjects.
- Introduce advanced learning analytics.
- Add adaptive learning recommendations.
- Enhance parent reporting intelligence.
- Expand AI-powered assessment analysis.
- Introduce predictive performance insights.
- Expand AI learning assistance across additional educational programs.

## Benefits

- Expanded AI learning capabilities
- Personalized adaptive education
- Advanced academic insights
- Improved parent engagement
- Predictive performance intelligence
- Enhanced assessment analysis
- Increased student success rates

## About Shri Sai Tech LLC DBA SST

SST is an AWS Partner specializing in AI-driven, cloud-native architecture and secure, compliant solutions across a wide range of industries — including healthcare, finance, education, retail, manufacturing, logistics, energy, government and public sector, telecommunications, and media and entertainment. Partnering closely with our clients, SST rapidly designs and deploys production-ready AI platforms on AWS, bringing AI-powered capabilities to market with speed and confidence.

