

## Problem-Solution Fit Canvas

### Project Design Phase

**Date:** 15 February 2025

**Team ID:** LTVIP2025TMID24661

**Project Name:** SmartTeach AI

**Maximum Marks:** 2 Marks

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#### 1. CUSTOMER SEGMENT(S)

**Who is your customer?**

- **Primary:** Students (K-12 and higher education) seeking personalized learning assistance
- **Secondary:** Educators looking for teaching support tools
- **Tertiary:** Educational institutions wanting to enhance their digital learning offerings
- **Geographic:** Global reach with initial focus on English-speaking markets
- **Demographics:** Tech-savvy learners aged 13-25, students in remote areas with limited access to tutors

#### 2. JOBS-TO-BE-DONE / PROBLEMS

**Which jobs-to-be-done (or problems) do you address for your customers?**

- **Primary Jobs:**
  - Get immediate help with homework and academic concepts
  - Practice and assess knowledge through quizzes
  - Access educational assistance 24/7
  - Understand complex topics through personalized explanations
- **Secondary Jobs:**
  - Track learning progress and identify knowledge gaps
  - Organize and contextualize study materials
  - Prepare for exams with adaptive practice tests

#### 3. TRIGGERS

**What triggers customers to act?**

- Struggling with homework assignments late at night
- Upcoming exams or deadlines creating urgency
- Difficulty understanding concepts from textbooks

- Lack of immediate teacher availability
- Peer recommendations about AI learning tools
- Frustration with one-size-fits-all educational approaches
- Seeing others succeed with personalized learning tools

#### **4. EMOTIONS: BEFORE / AFTER**

**How do customers feel when they face a problem and afterwards?**

##### **BEFORE (Problem State):**

- Frustrated and confused when concepts are unclear
- Anxious about academic performance
- Isolated when struggling alone with difficult materials
- Overwhelmed by large amounts of information
- Stressed about limited access to help

##### **AFTER (Solution State):**

- Confident and empowered with understanding
- Motivated by immediate feedback and progress
- Engaged through interactive learning experiences
- Relieved having 24/7 access to assistance
- Accomplished seeing measurable progress

#### **5. AVAILABLE SOLUTIONS**

**Which solutions are available to customers when they face the problem?**

##### **Current Alternatives:**

- **Traditional Tutoring:** High cost, limited availability, scheduling constraints
- **Khan Academy/Coursera:** Generic content, no personalization, limited interaction
- **Study Groups:** Peer dependency, scheduling conflicts, varying expertise levels
- **Google Search:** Information overload, lack of context, no personalized guidance
- **Textbooks:** Static content, no interaction, limited engagement

##### **Pros & Cons:**

- Traditional solutions lack personalization and 24/7 availability
- Online platforms offer scale but miss individual learning needs
- Our solution combines AI personalization with comprehensive features

## 6. CUSTOMER CONSTRAINTS

**What constraints prevent your customers from taking action?**

- **Financial:** Limited budget for premium educational tools
- **Technical:** Reliable internet connection required
- **Geographical:** Access to quality education varies by location
- **Time:** Students have busy schedules with multiple commitments
- **Device Limitations:** Need compatible devices for platform access
- **Language Barriers:** Currently limited to English content
- **Learning Curve:** Resistance to adopting new technology

## 7. BEHAVIOUR

**What does your customer do to address the problem?**

**Direct Actions:**

- Search online for educational content and explanations
- Use various learning apps and educational platforms
- Form virtual and physical study groups
- Watch educational YouTube videos
- Seek help from teachers during office hours

**Indirect Actions:**

- Join online forums and communities for academic help
- Purchase multiple educational apps and subscriptions
- Spend time organizing and managing study materials
- Create personal notes and summaries

## 8. CHANNELS of BEHAVIOUR

### 8.1 ONLINE

**What kind of actions do customers take online?**

- Browse educational websites and platforms
- Watch tutorial videos on YouTube and educational channels
- Participate in online study forums (Reddit, Discord study groups)
- Use educational apps on mobile devices
- Search for specific academic help on Google

- Access digital textbooks and resources
- Join virtual study sessions and webinars

## 8.2 OFFLINE

### What kind of actions do customers take offline?

- Attend physical classes and lectures
- Form study groups with classmates
- Visit libraries for research and quiet study
- Meet with tutors and teaching assistants
- Participate in school-organized study sessions
- Use physical textbooks and printed materials
- Take handwritten notes during classes

## 9. PROBLEM ROOT CAUSE

### What is the real reason that this problem exists?

- **Educational System Limitations:** Traditional one-size-fits-all approach doesn't accommodate individual learning styles and paces
- **Resource Scarcity:** Limited availability of qualified educators, especially in remote areas
- **Technology Gap:** Slow adoption of AI and personalized learning technologies in education
- **Accessibility Issues:** Quality educational assistance often limited by geographic and economic factors
- **Engagement Crisis:** Traditional methods fail to maintain student interest in digital age
- **Assessment Inadequacy:** Static testing methods don't provide real-time feedback or adaptive learning

## 10. YOUR SOLUTION

### SmartTeach AI Platform Features:

#### Core Solution:

- **AI-Powered Chat Assistant:** Provides personalized, context-aware educational assistance using IBM WatsonX Foundation Models
- **Dynamic Quiz Generation:** Creates adaptive assessments with multiple difficulty levels and real-time feedback
- **Multi-Modal Content Support:** Processes PDFs, images, and text for comprehensive learning context

- **Progress Tracking Dashboard:** Offers detailed analytics and performance insights
- **24/7 Availability:** Web-based platform accessible anytime, anywhere

**Unique Value Proposition:**

- Combines enterprise-grade AI with user-friendly interface
- Adapts to individual learning patterns and preferences
- Integrates multiple learning modalities in one platform
- Provides immediate, contextual assistance based on uploaded materials
- Offers comprehensive progress tracking and analytics

**Solution-Problem Fit Validation:**

- Addresses personalization through AI-powered responses
- Solves accessibility with 24/7 web-based availability
- Increases engagement through interactive quizzes and immediate feedback
- Provides comprehensive assessment with real-time analytics
- Reduces resource constraints through automated AI assistance