**Part 2. Design Altervatives**

*Project Description*

**PACE** (Personal Academic Companion & Evaluator) is a mobile application designed to support high school and college students in managing their academic responsibilities. The app centralizes task tracking, personalized quiz generation, summarization tools, and ambient focus features. It aims to reduce stress caused by fragmented digital tools, encourage pacing, and support diverse learning styles.

**Requirements Summary**

Table 1. System Requirements

| CATEGORY | DESCRIPTION |
|---|---|
| OS | Android 8.0 and above |
| Connectivity | Partial offline support; sync on low-bandwidth |
| UI | Optimized for small screens; tap-friendly |
| Accessibility | Color-blind support, minimal clutter, large icons |
| Storage | Lightweight (<50MB initial install) |
| User Base | High school & college students, especially in hybrid or asynchronous setups |

Feature Requirements

- Visual task progress tracker
- Smart, gentle pacing reminders
- Custom quiz generation from uploaded notes
- Summary tool for readings and slides
- Ambient sound modes (with toggle)
- Focus timer with break alerts
- Multi-device sync

Color Palette Used:

The PACE app uses calming, professional tones to promote focus:

- Dark Teal (#1D5C63)
- Sea Green (#4B9E8F)
- Navy Blue (#183153)
- Accent Grey (#B8C4CC)
These colors support readability, accessibility, and modern minimalism.

Design Space

What requirements may be difficult to realize?

- Auto-generation of quizzes and summaries from heterogeneous content formats
- Delivering non-intrusive pacing feedback that feels supportive, not nagging

What tradeoffs did we explore?

- **Gamification vs. Professionalism**: Gamified avatars can motivate, but risk alienating mature students.
- **Minimalism vs. Feature Richness**: Clean UI is easier to use but limits quick access to multiple tools.

Which tasks will be easiest/hardest?

- **Easiest**: Task status tagging, focus timer, note-to-summary
- **Hardest**: Real-time pacing detection, offline quiz features, analytics dashboard

**Design Summary**

We began with a brainstorming session and whiteboard sketches. Our goal was to create **three fundamentally different approaches**:

1. A **Classic Dashboard UI** (inspired by apps like Todoist or Notion)
2. A **Kanban Visual Flow** (task cards with analytics)
3. A **Gamified Study Buddy** (engagement through avatar and rewards)

We discarded concepts such as:

- AI chatbot interface (deemed too complex for now)
- Full calendar integration (overlapping with LMS systems)

Our **selected alternatives** balance engagement, clarity, and functionality.

**The Design**

**Design 1: Minimalist Dashboard**

*Overview*

A linear list interface showing today's tasks, upcoming reviews, and a floating quick-add button. Designed for speed and clarity.

**Mimimalist Dashbard**

PACE

Today: Apr 24

History Essay
○ Gren

Math Homework
○ Gcvow

English Reading
○ Read

**Focus Modes**

← Review Quizzes

Math Quiz

Generate Quiz

What is the derivative of $x^2$?
○ $x^2$
○ $2x$
○ $2x$

Submit

**Focus Modes**

Focus Timer
25:00
♫ Pain

**Gamified Study Buddy**

You're on pace!

View Tasks

Alyssa opens PACE during her 10-minute break. She sees 3 tasks under "Today." She taps one, reviews her notes, and generates a 3-question quiz. After submitting, she gets a pacing nudge: "You're on track today!"

Assessment

**Advantages**:

- Fast and intuitive
- Focused on essentials
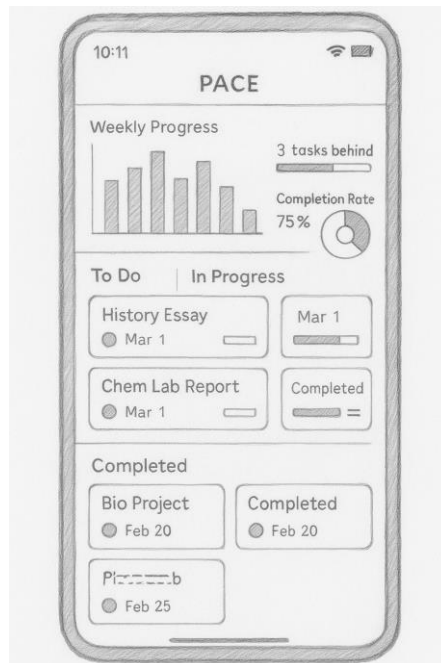- Low resource use

**Disadvantages**:

- Less motivation/engagement
- Lacks personalization

**Feedback**: Students liked the speed, but wanted more interaction and visuals.

**Design 2: Kanban View with Analytics**

*Overview*

A modular interface with task cards under columns (To-Do, In Progress, Done). Includes weekly progress charts and a pacing bar.



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Assessment

**Advantages**:

- Visual, motivating layout

- Analytics help self-monitoring
- Filter by subject or urgency

**Disadvantages**:

- Can overwhelm new users
- Requires more screen space

**Feedback**: Visual learners loved it; others found it too busy.

Design 3: Gamified Assistant

Overview

A playful design where progress boosts your avatar's energy and mood. Tasks earn XP; focus sessions give bonuses. Optional for those who like gamification.



Princess logs in and her avatar looks sleepy. A message pops: "Let's catch up on Math together!" She completes two quizzes and earns enough XP to unlock a background upgrade. Her buddy cheers.

Assessment

**Advantages**:

- High engagement
- Motivates streaks and consistency
- Friendly tone

**Disadvantages**:

- Not suitable for all user types
- Some felt it was too playful

**Feedback**: Highly praised by students who struggle with consistency. Some prefer to toggle off avatar interactions.

Requirements Changes

- **Added**:
    - Gamification toggle after feedback
    - Progress charting for weekly pacing
- **Modified**:
    - Music feature expanded: import music or use ambient presets
- **Dropped**:
    - Strict calendar sync integration (users preferred external LMS for this)