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	iOS 14 and above
Connectivity	Partial offline support (tasks & focus timer work offline; sync on reconnect)
UI	Follows iOS Human Interface Guidelines for tap zones and safe areas
Accessibility	Color-blind friendly, large icons, dynamic type compatibility
Storage	Lightweight (<50MB initial install)
User Base	High school & college students, especially in hybrid or asynchronous setups

Development Tool

- **Prototyped in:** Figma (Frame size: iPhone 13 390×844)
- **Supports:** Smart Animate transitions, mobile click-through flow
- **Design Philosophy:** Minimalist, student-friendly, gamified optional

PACE Figma Link:

https://www.figma.com/proto/oMZp5gSoR5VXaSlG7dK7p2/Prototype?node-id=1-2&t=W8Vxpz8TWOEK2OHh-1&scaling=scale-down&content-scaling=fixed&page-id=0%3A1

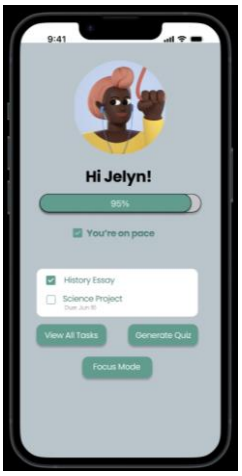
User Scenario

Joven, a senior high school student, often gets overwhelmed by piling deadlines. With PACE, he logs tasks quickly, completes a quiz generated from his own notes, and activates Focus Mode with ambient

rain sounds. After a session, his virtual avatar cheers him on with an XP boost and a reminder: ‘You’re on pace!

PACE/Mock-up/Prototype

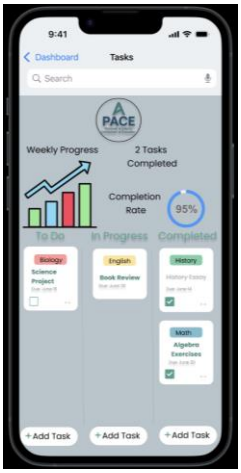
Splash



Dashboard

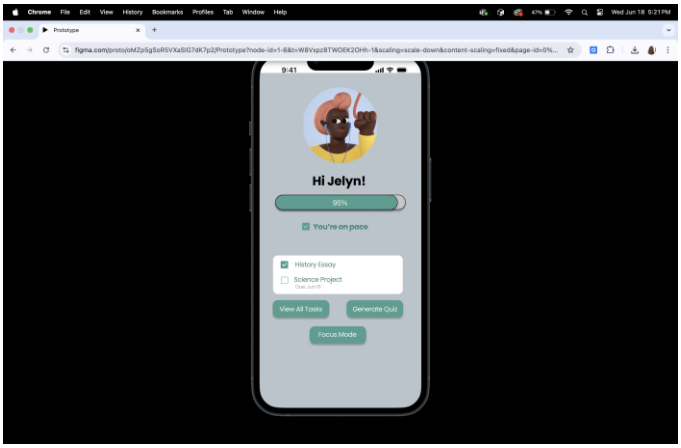
Quiz Generator

Focus Mode

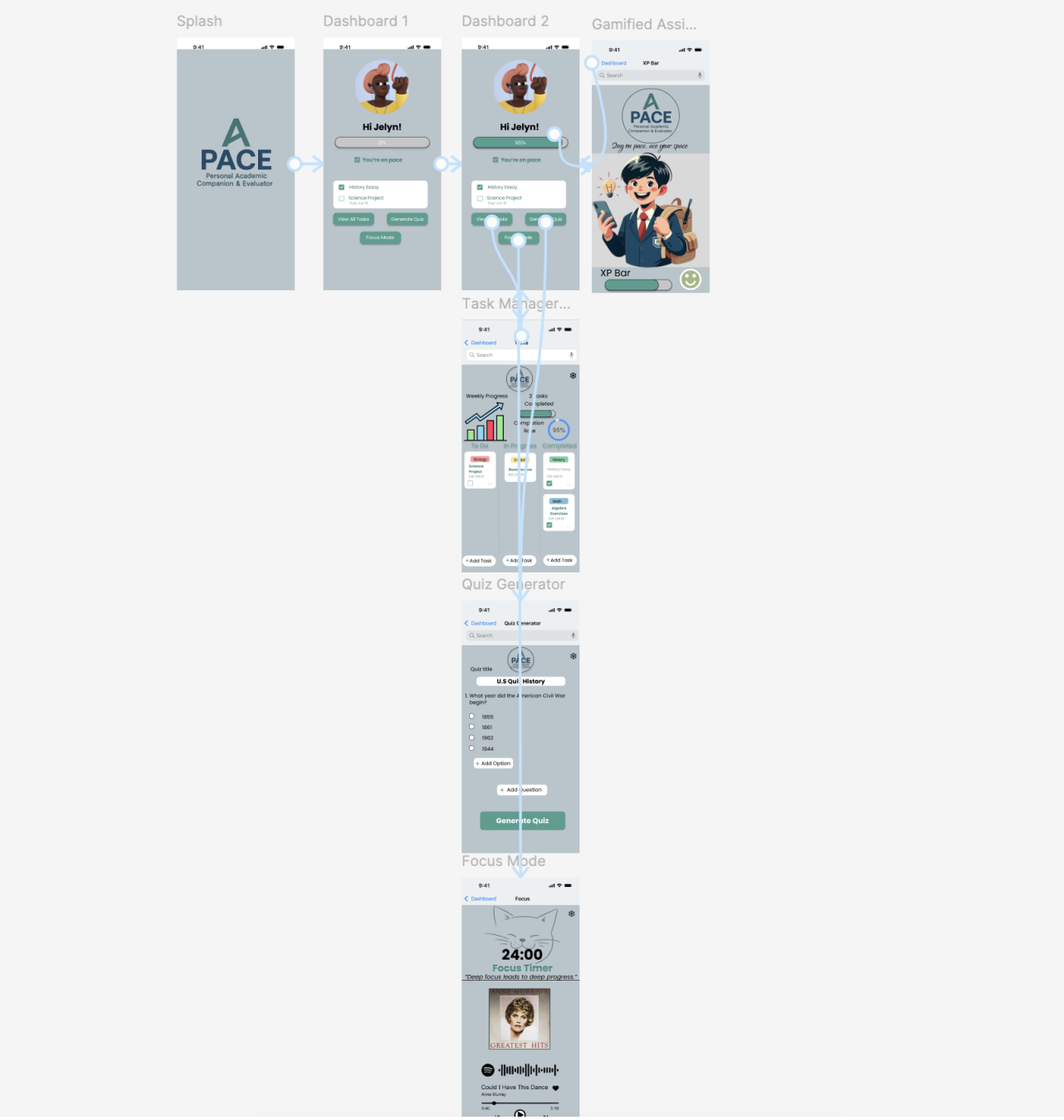


Task with Analythics (Kanban)

Gamified Assistant



Prototype in Laptop/Wider screen



This visual shows the complete screen navigation and interaction flow within the PACE app as prototyped in Figma for iPhone. Each screen is connected with Smart Animate and optimized for intuitive user experience.

Prototype Flow

The user begins at the splash screen and enters the home dashboard. From there, they can access key modules:
- Task Manager - Manage academic workload visually.
- Quiz Generator - Turn notes into test questions.
- Focus Mode - Launch a distraction-free timer.
- Avatar - Get feedback on pacing and encouragement.
- Analytics - View trends and study history.

Rationale

Figma was selected for its real-time collaborative functionality, mobile-friendly layout support, and easy link sharing for remote usability testing. While highly accessible, its dependence on stable internet and small-button layouts on large screens pose minor limitations. Nonetheless, it allowed rapid iterations based on student feedback.

Changes to the Requirements

While the system requirements remained constant, the usability criteria evolved:
- Refined gamification logic with a toggle feature.
- Removed strict calendar syncing to avoid overlap with LMS platforms.
- Added XP tracking and pacing analytics due to strong user interest.

I**nitial Evaluation Plan**:
Due to hybrid learning setups and the accessibility of online tools, the evaluation of the PACE prototype will be conducted through peer-based usability testing with classmates. The process will be facilitated both in person and via platforms such as Discord or Microsoft Teams, ensuring testers can interact with the prototype while allowing the team to observe their usage in real time.

The evaluation is divided into three parts: Usability Specifications, Heuristics Evaluation, and Participant Survey and Feedback.

Usability Specifications:
The prototype aims to meet the following usability metrics:
- Effectiveness: Can users complete tasks such as managing assignments, generating quizzes, and using focus mode without external help?
- Efficiency: How quickly can tasks be completed?
- Utility: Do the features support actual student needs (e.g., quiz prep, pacing)?
- Learnability: Can first-time users navigate without instructions?
- Memorability: Will users remember the steps when returning later?

Population:
6 college-level students will interact with the PACE prototype on their phones or laptops. They will complete tasks based on the core functions observed in the Figma mockup, such as XP tracking, avatar feedback, task handling, and quiz generation.

Prototype Tasks:
Tasks are grouped based on the PACE main features:
- Main Dashboard: Launch and explore current progress, avatar status, and task pacing.
- Task Manager: Create, edit, and complete academic tasks in the kanban view.
- Focus Mode: Start a timed session and complete it with a break.
- Quiz Generator: Upload notes and generate a quiz.
- XP & Avatar: Observe avatar change or XP bar animation upon task completion.

Task Timing Standards:
- Main Dashboard: <= 1 min - Highly Acceptable
- Task Creation or Completion: <= 2 min - Highly Acceptable
- Quiz Generation: <= 3 min - Highly Acceptable
- Focus Mode: Navigation and setup <= 1 min

Roles:
Team members will alternate guiding participants and recording results:
- Jelyn: Tracks time and notes user confusion or smooth interactions
- Miguel : Collects feedback after task completion

Heuristic Evaluation:

Evaluation of the **PACE** prototype utilized the **10 Usability Heuristics by Jakob Nielsen**, adapted for an academic productivity context. These heuristics guided design decisions and served as a basis for structured feedback from student testers.

Visibility of System Status

PACE uses clear indicators such as a visual XP bar, task status columns (To-Do, In Progress, Done), and countdown timers to keep users informed about their progress and current mode (e.g., Focus Mode).

Match Between System and Real World

The app uses familiar academic concepts like tasks, deadlines, focus sessions, and quiz prep. Visual metaphors (kanban board, avatars, XP) are intuitive and reflect student life in hybrid and asynchronous settings.

User Control and Freedom

Users are free to switch between modules at any time. Tasks can be added, edited, or deleted easily. Focus Mode can be paused, reset, or exited, giving users autonomy during sessions.

Consistency and Standards

Interface elements such as buttons, icons, and labels follow a consistent pattern. Terminology remains uniform throughout all features (e.g., “Add Task,” “Mark Complete,” “Take Quiz”).

Error Prevention

PACE prevents user errors by using confirmation pop-ups (e.g., before deleting a task), and graying out actions that require prior inputs (e.g., no quiz generation without uploaded notes).

Recognition Rather Than Recall

All major features are labeled and visible on the Dashboard. The app avoids hidden menus and reduces memory load by making frequently used features accessible in one tap.

Flexibility and Efficiency of Use

PACE supports both novice and experienced users. Features like drag-and-drop task movement and visual XP boosts enhance efficiency without needing tutorials.

Aesthetic and Minimalist Design

The UI avoids clutter and keeps a student-friendly layout. Each screen contains only the essential buttons and feedback, improving readability and reducing distractions.

Help Users Recognize, Diagnose, and Recover from Errors

Error messages use plain, constructive language (e.g., “Please upload notes before generating quiz”) and guide users toward fixing problems instead of just stating them.

Help and Documentation

PACE includes onboarding hints and tooltips within the prototype. While most functions are self-explanatory, in-app guidance helps ensure ease of use during first-time interaction.

Participant Survey and Feedback

Data Gathering Methods

Method	Description
Survey (Quantitative)	Students rated usability and feature quality using a 5-point scale.
Feedback (Qualitative)	Open-ended items collected personal insights, issues, and improvement suggestions.

Survey Questionnaire Breakdown

Section 1: General Experience

Question	Type
How easy was it to navigate the PACE prototype interface?	4-point Scale
Did you understand the purpose of each main screen?	Multiple Choice
How likely are you to use PACE in your real academic routine?	Likert Scale

Section 2: Feature Evaluation

Rated from 1 (Not Useful) to 5 (Highly Useful)

- Dashboard Overview (XP bar, avatar message)
- Task Manager (Kanban-style board)
- Focus Mode (Timer, ambient sounds)
- Quiz Generator (notes to questions)
- Avatar Feedback (XP gain, mood)
- Analytics (weekly progress graphs)

Section 3: Task-Based Reflection

Prompt	Type
Which tasks did you complete? (Task checkboxes)	Multiple Selection
How long did it take to get comfortable using the prototype?	Multiple Choice

Section 4: Open Feedback

Prompt
What did you like most about the prototype?
What did you find confusing, missing, or unnecessary?
Any suggestions to improve the experience?

Likert Scale Interpretation

Score	Meaning	Classification
5	Highly Acceptable	Successful
4	Acceptable	Successful
3	Moderately Acceptable	Neutral
2	Fairly Acceptable	Unsuccessful
1	Not Acceptable	Unsuccessful

Evaluation Conclusion

The PACE prototype was rated Acceptable to Highly Acceptable. Features were easy to use, motivating, and relevant to student needs. Minor areas (e.g., quiz clarity, avatar expressiveness) were noted for future iteration.

Overall, the prototype demonstrated high usability and strong potential for real academic use.

Critique and Summary

Advantages:
- Students adapted quickly with little instruction.
- XP and Focus Mode were positively received.
- Evaluation across devices revealed layout gaps.

Disadvantages:
- Small sample size limited generalizability.
- Internet interruptions affected some test cases.
- Quiz generator was confusing without note upload.

What We'd Do Differently:
- Test initial and revised versions separately.
- Add backend saving for real input storage.
- Broaden testing to SHS students too.

The PACE prototype proved intuitive, useful, and motivational. Next versions will include more personalization and feedback variety based on real student input.