



Project



Presentation

SUTRA

Sutra is the guiding thread that helps users stay aligned with their original intent in a distraction-driven digital environment.

SUTRA is a context-aware, non-blocking mobile application designed to help students remain aligned with their self-declared study intentions by gently addressing unintentional digital distractions.

Overview:

Students often begin study sessions with a clear intention, yet unknowingly drift into non-academic applications.

SUTRA works by detecting intent drift in real time and providing subtle, awareness-based interventions instead of forceful restrictions.

SUTRA — “Re-threading Intent and Action”

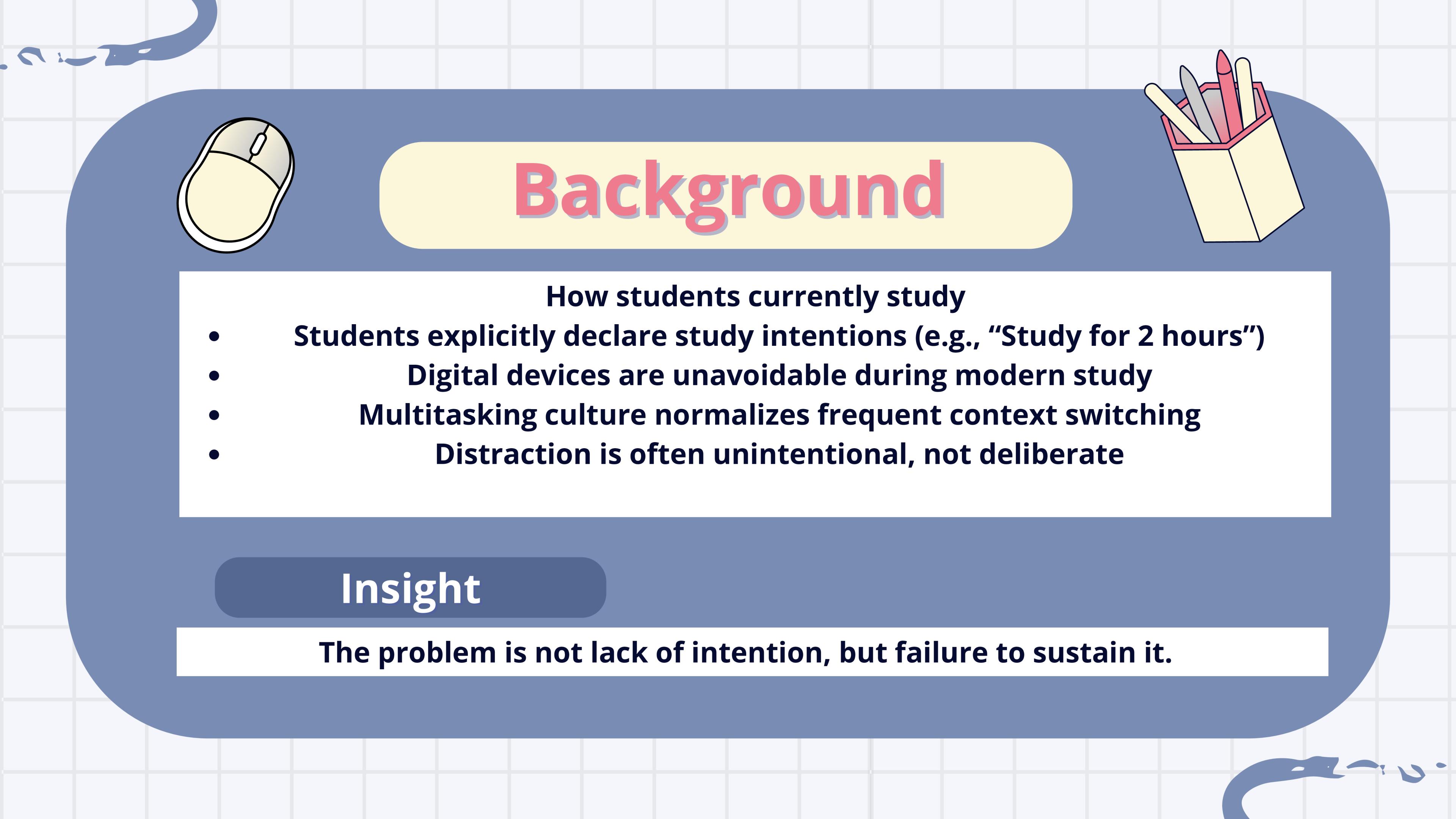
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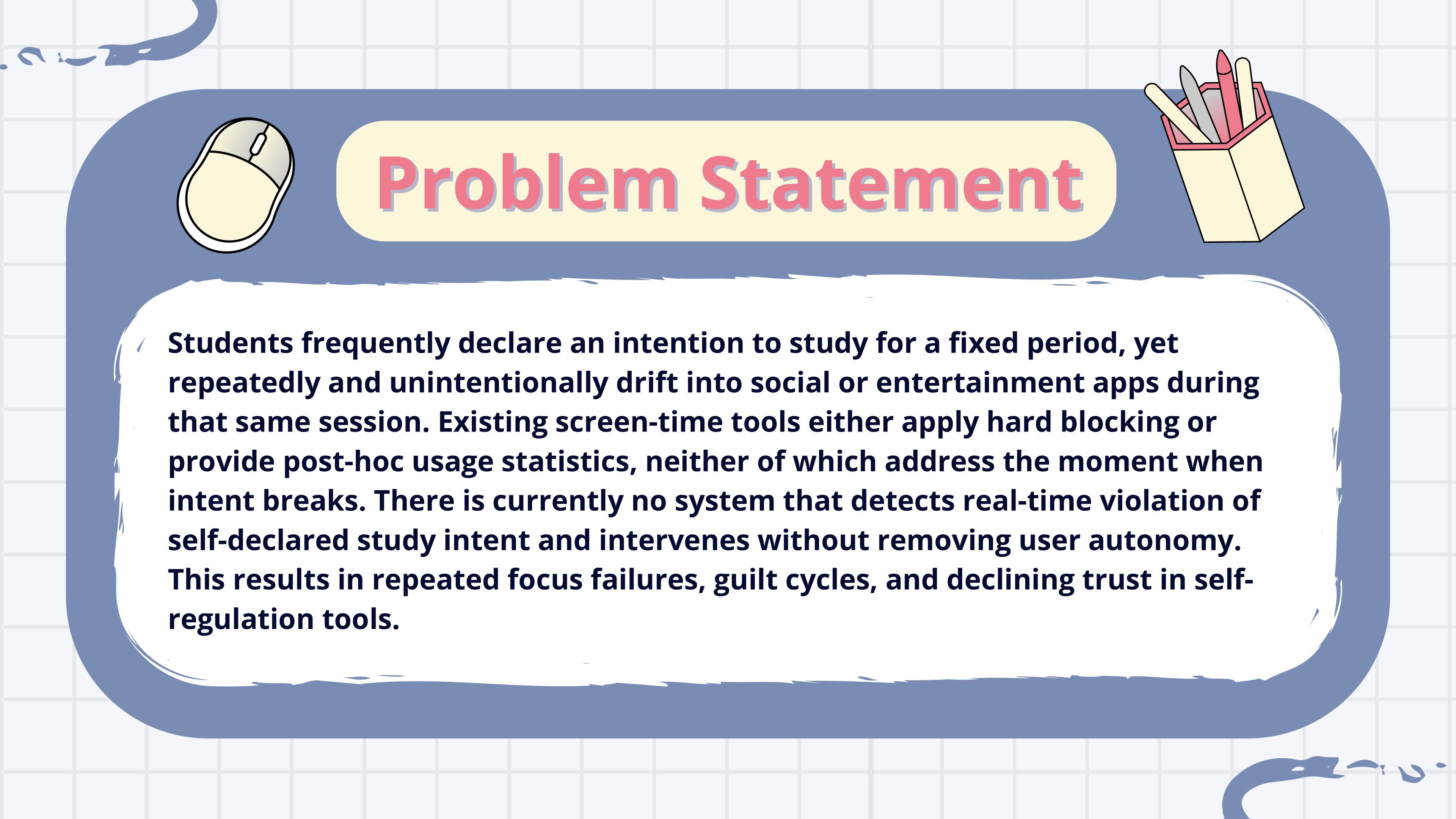
Background

How students currently study

- Students explicitly declare study intentions (e.g., "Study for 2 hours")
- Digital devices are unavoidable during modern study
- Multitasking culture normalizes frequent context switching
- Distraction is often unintentional, not deliberate

Insight

The problem is not lack of intention, but failure to sustain it.



Problem Statement



Students frequently declare an intention to study for a fixed period, yet repeatedly and unintentionally drift into social or entertainment apps during that same session. Existing screen-time tools either apply hard blocking or provide post-hoc usage statistics, neither of which address the moment when intent breaks. There is currently no system that detects real-time violation of self-declared study intent and intervenes without removing user autonomy. This results in repeated focus failures, guilt cycles, and declining trust in self-regulation tools.

Core Problem

- Students begin with a clear study goal
- During the same session, attention shifts to:
 - Social media
 - Entertainment apps
 - Messaging platforms
- Drift happens automatically and repeatedly
- Awareness usually comes after significant time loss

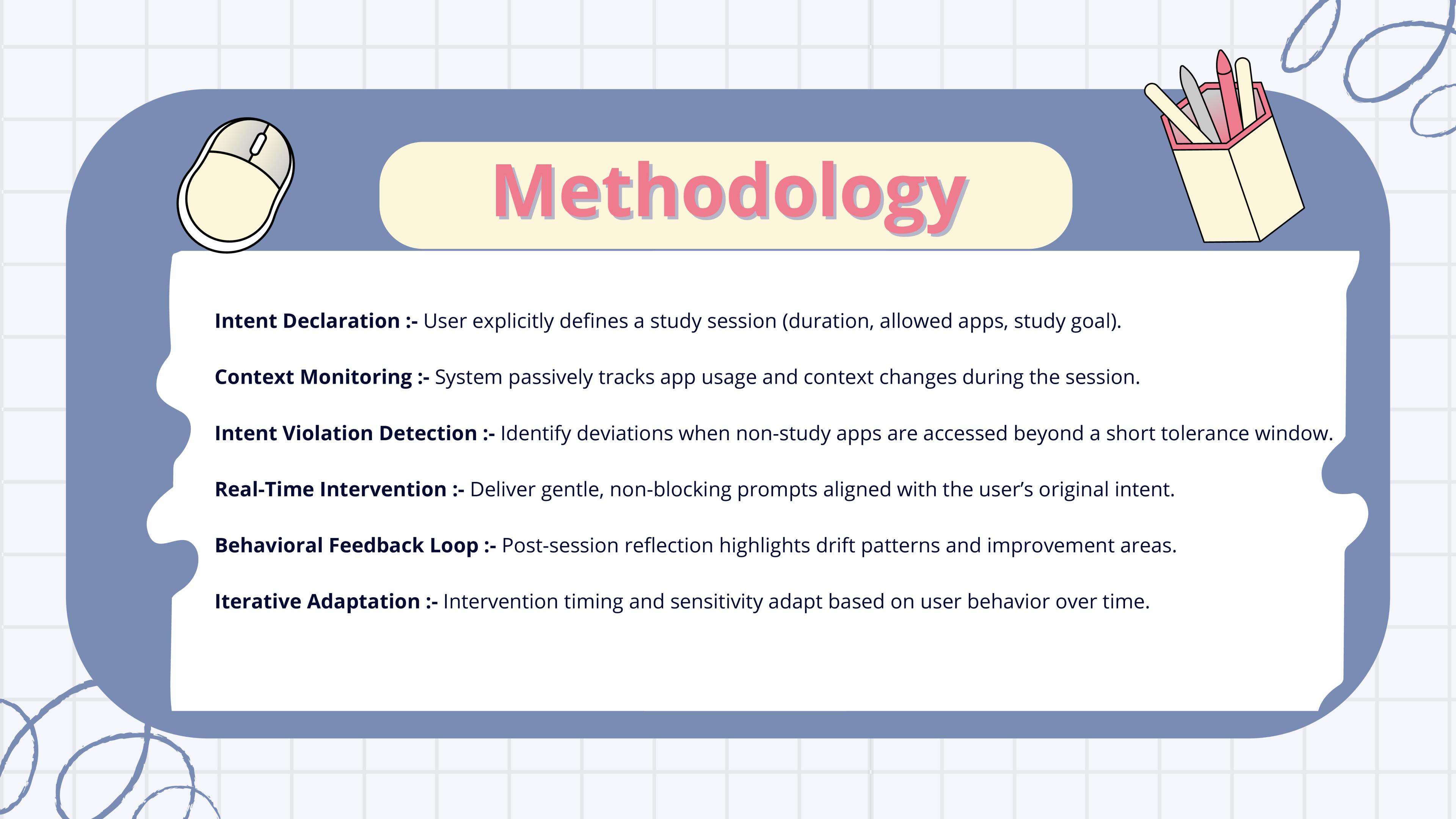
Limitations of Existing Solutions

- Hard blockers
 - Remove autonomy
 - Users disable or uninstall them
- Screen-time analytics
 - Post-hoc feedback
 - No help at the moment of distraction
- Pomodoro / timers
 - Assume discipline, don't detect violations

Gap

:-

No system acts when intent is violated



Methodology

Intent Declaration :- User explicitly defines a study session (duration, allowed apps, study goal).

Context Monitoring :- System passively tracks app usage and context changes during the session.

Intent Violation Detection :- Identify deviations when non-study apps are accessed beyond a short tolerance window.

Real-Time Intervention :- Deliver gentle, non-blocking prompts aligned with the user's original intent.

Behavioral Feedback Loop :- Post-session reflection highlights drift patterns and improvement areas.

Iterative Adaptation :- Intervention timing and sensitivity adapt based on user behavior over time.

Technology Stack

1.

Frontend

Kotlin, Jetpack Compose

2.

Backend

Android SDK, Kotlin

3.

Tools

**Android Studio, Android Emulator
(AVD), Gradle**

Timeline

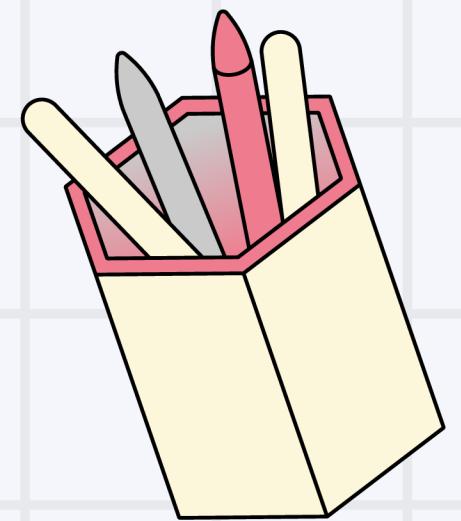
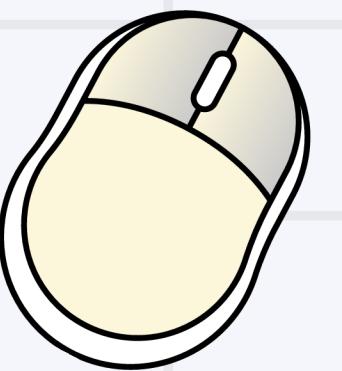


Future Scope

- **Personalized Intervention Models** :- Adapt intervention style and timing based on individual focus patterns.
- **Academic Context Awareness** :- Differentiate study types (reading, coding, problem-solving) for smarter intent detection.
- **Cross-Platform Expansion** :- Extend beyond mobile to tablets, laptops, and browser-based study environments.
- **AI-Driven Intent Prediction** :- Anticipate potential intent drift before it fully occurs using behavioral signals.
- **Integration with Learning Tools** :- Sync with calendars, LMS platforms, and note-taking apps for holistic study support.
- **Long-Term Behavioral Insights** :- Provide trend analysis to improve self-regulation skills over time.

Questions

Discussion



Thank You

