### **1. Perceptions and Usage of AI Chatbots in Higher Education**

**Methodology**:

* Surveyed **5,894 students** to assess their perceptions of AI chatbots.
* Used descriptive and inferential statistics to analyze responses.

**Results**:

* **55.9%** of students had a positive attitude toward chatbots.
* **61.9%** believed using chatbots for assignments was cheating.
* Chatbots improved efficiency but had limited impact on academic performance.

**Challenges**:

* Ethical concerns, such as plagiarism and academic integrity, were significant barriers.

**Outcomes**:

* The study called for clear guidelines on the ethical use of AI tools in education.

### **2. Investigating Usability Issues in AI-Enabled Mobile Learning Apps**

**Methodology**:

* Analyzed **445,460 user reviews** from seven AI-enabled mobile apps, including Duolingo, Photomath,etc.
* Used qualitative content analysis to identify usability issues.

**Results**:

* Common complaints included poor interface design, bugs, and inefficiency.
* Users reported difficulty understanding some AI features.

**Challenges**:

* Developers struggled to balance advanced AI features with user-friendly design.

**Outcomes**:

* Recommendations were made to improve user satisfaction and learning outcomes.
* The study emphasized the need for better design and functionality in AI apps.

### **3. Exploring University Students’ Preferences for AI-Assisted Learning Environments**

**Methodology**:

* Conducted **drawing analysis** with over **1,000 students**, asking them to draw their ideal AI-assisted learning environment.
* Analyzed drawings to identify recurring themes.

**Results**:

* Students preferred AI tools that adapt to their needs, provide instant answers, and suggest study plans.
* Many drawings depicted AI as a supportive assistant rather than a replacement for teachers.

**Challenges**:

* A gap was identified between students' expectations of AI tools and the current capabilities of available technologies.

**Outcomes**:

* The study emphasized the need for AI tools to focus on personalization and adaptability.

### **4. Impact of AI-Powered Apps on Learning Autonomy**

**Methodology**:

* Conducted a **two-month study** with **35 university students** using the Mondly app to improve vocabulary and learning autonomy.
* Used pre- and post-treatment questionnaires and semi-structured interviews.

**Results**:

* Students reported improved autonomy, including setting their own learning goals and tracking progress.
* The app’s reward system motivated students to complete modules.

**Challenges**:

* Students initially struggled to transition from teacher-guided to self-directed learning.

**Outcomes**:

* The app successfully fostered learning autonomy.
* Highlighted the potential of AI tools to promote independent learning.

### **5. AI for Self-Regulated Learning in Online Education**

**Methodology**:

* Used the **speed dating method with storyboards** to explore students’ experiences with AI tools.
* Conducted interviews with participants after showing them 10 storyboards of different AI applications.

**Results**:

* Students appreciated AI tools that provided personalized feedback and adaptive learning paths.
* Concerns were raised about the lack of emotional support from AI tools.

**Challenges**:

* Participants without prior experience with AI tools found it difficult to imagine their potential benefits.

**Outcomes**:

* The study highlighted areas where AI could improve self-regulated learning, such as motivation and emotional support.

### **6. Students’ Mindset to Adopt AI Chatbots for Online Learning**

**Methodology**:

* Surveyed **429 university students** from three Malaysian universities.
* Used the **Technology Acceptance Model (TAM)** to measure factors like perceived usefulness, ease of use, and social norms.

**Results**:

* Social norms and perceived usefulness were the strongest predictors of adoption.
* Students appreciated the personalized learning experience provided by chatbots.

**Challenges**:

* Technological barriers, such as low digital literacy, hindered adoption among some students.

**Outcomes**:

* The study emphasized the importance of peer and institutional support in promoting AI adoption.

### **7. Factors Influencing AI Chatbot Adoption in Higher Education**

**Methodology**:

* Surveyed **550 students** using a structured questionnaire.
* Used **Partial Least Squares Structural Equation Modeling (PLS-SEM)** to analyze relationships between variables.

**Results**:

* Perceived usefulness, subjective norms, and technological readiness significantly influenced adoption.
* Tech readiness moderated the effect of perceived usefulness and tech simplicity on adoption.

**Challenges**:

* Students expressed concerns about the long-term impact of AI on traditional learning methods.

**Outcomes**:

* The study recommended improving digital literacy and providing ethical guidelines for AI use.

### **8. IMAN Vocab App: AI for Vocabulary Learning in Children**

**Methodology**:

* Developed the IMAN Vocab App using **Convolutional Neural Networks (CNN)** for real-time object recognition.
* Collected thousands of images for training, validation, and testing.
* The app was tested with children, focusing on vocabulary improvement.

**Results**:

* Achieved over **90% accuracy** in image classification.
* Children showed significant improvement in vocabulary acquisition after using the app.

**Challenges**:

* Ensuring the app was engaging and interactive for young learners.
* Balancing technical complexity with user-friendly design.

**Outcomes**:

* The app successfully combined learning with play, making it an effective tool for early education.
* Recommendations included integrating IoT platforms for broader applications.