

Pedagogy Evidence Report

Btech CS AY-2022-23

Course Name: Human-Computer Interaction

Topic: Future of HCI

Date:- 16/12/2022

Objectives of the Pedagogy

- Address course outcomes related to understanding advancements in HCI technologies.
- Enable students to explore futuristic trends like brain-computer interfaces, AR/VR, and AI in HCI.
- Encourage critical thinking, communication skills, and teamwork through discussions and activities.

Pedagogy Name: Think-Pair-Share with Scenario Analysis

Implementation Plan

Teacher Activity

1. Introduction

- Brief overview of the evolution of HCI.
- Discuss emerging trends, including voice interfaces, AI-driven personalization, and non-traditional input methods (e.g., neural interfaces).
- Present key challenges and opportunities in the future of HCI.

Student Activity

2. Think (10 minutes)

- Reflect individually on potential HCI applications in the next 10 years.
- Questions to consider:
 - What new technologies might emerge in HCI?
 - How can HCI address accessibility and inclusivity?

Student Activity

3. Pair (10 minutes)

- Collaborate in pairs to discuss ideas and compare insights.
- Develop a short scenario showcasing a futuristic HCI application (e.g., using AR for remote education or neural interfaces for healthcare).

Student Activity

4. Share (10 minutes)

- Present scenarios to the class.
- Each pair explains how their futuristic HCI system works and its societal impact.

Teacher Activity

5. Clarify and Summarize (5 minutes)

- Provide feedback on student presentations.
- Summarize key concepts and trends discussed, highlighting critical factors shaping the future of HCI.

Student Activity

6. Application (10 minutes)

- Analyze a real-world futuristic HCI concept or prototype (e.g., Meta's AR Glasses, Neuralink).
- Evaluate its feasibility and potential adoption challenges.

Materials Needed

- Smartboard/Projector
- Internet-enabled devices (laptops, smartphones)
- Case studies or videos on futuristic HCI applications

Topics Discussed Among students:

1. AR and VR in the Future(roll nos B204 ,207 213 217)

Students analyzed the potential of AR and VR in various fields such as education, healthcare, and gaming. Key insights include:

- **Education:** AR/VR can create immersive learning experiences, making subjects more interactive and engaging.
- **Healthcare:** VR is being used for surgical simulations, therapy, and pain management.
- **Gaming and Entertainment:** The future of gaming is expected to be dominated by VR, with more realistic and immersive experiences.
- **Challenges:** High costs, hardware limitations, and motion sickness remain major hurdles for mass adoption.

2. AI and Human-Computer Interaction (HCI) (B226,B229,B333,B235)

The integration of AI into HCI has revolutionized the way humans interact with machines. Key discussions included:

- **Natural Language Processing (NLP):** AI-driven chatbots and voice assistants improving user interaction.
- **Personalization:** AI adapts interfaces based on user behavior and preferences.
- **Ethical Concerns:** Issues related to data privacy and biases in AI systems.

- **Future Scope:** AI-powered interfaces that predict user needs and enhance accessibility.

3. IoT-Based Home Appliances(B237-to B242)

IoT is transforming smart homes, making daily tasks more efficient. Insights from discussions:

- **Smart Home Automation:** Devices like smart thermostats, lighting, and security systems that can be controlled remotely.
- **Energy Efficiency:** IoT devices help optimize energy consumption by monitoring usage patterns.
- **Security Concerns:** Potential risks of hacking and data breaches in interconnected devices.
- **Future Developments:** Integration of AI for predictive maintenance and self-learning home systems.

4. HCI for Disabled People(B244-54)

HCI has been instrumental in improving accessibility for disabled individuals. Key insights:

- **Assistive Technologies:** Voice-controlled interfaces, eye-tracking systems, and brain-computer interfaces enhancing accessibility.
- **Adaptive UI:** Customizable interfaces tailored to users with different disabilities.
- **Challenges:** High costs of assistive technologies and lack of standardization.
- **Future Possibilities:** AI-driven assistive tools with improved real-time responsiveness.

5. Robotics and UI(B254-B270)

The role of robotics in UI design and automation was another focal point. Discussions highlighted:

- **Human-Robot Interaction (HRI):** Advanced UI for smoother interaction between humans and robots.
- **Industries Benefiting from Robotics:** Healthcare (surgical robots), manufacturing (automation), and service industries (AI-driven assistants).
- **Challenges:** Ethical concerns, job displacement, and need for more intuitive UI designs.
- **Future Trends:** AI-driven robots capable of real-time decision-making and adaptive learning.

Students Present:

B204	70022000121	TALAVIYA, KHUSHI	<i>Kushi</i>
B207	70022000129	SHARMA, HRIDAYANK	
B213	70022000152	PAREKH, ADITYA	<i>Aditya</i>
B217	70022000170	BAKSHI, JASJOT	<i>Jasjot</i>
B226	70022000209	KAUSHAL, PRIYANSHU	
B229	70022000212	TRIPATHI, SWASTI	<i>Swasti</i>
B233	70022000221	RAWKA, TANISHK	<i>Tanishk</i>
B235	70022000223	MANANI, HIREN	<i>Hiren</i>
B237	70022000227	INAMDAR, ARYAN	<i>Aryan</i>
B239	70022000230	JAIN, DEVANSH	<i>Devansh</i>
B240	70022000231	PATIL, JAY	<i>Jay</i>
B242	70022000233	KHANDELWAL, SPARSH	<i>Spارش</i>
B244	70022000236	AGRAWAL, TAPAN	<i>Tapan</i>
B246	70022000244	JAIN, NAITIK	<i>Naitik</i>
B249	70022000250	DEVARU, ADITHYA	<i>Adithya</i>
B251	70022000258	DUBEY, SANIDDHYA	
B252	70022000260	GOLANI, SHIVAM	<i>Shivam</i>
B253	70022000261	WADHWANI, MITANSH	
B254	70022000262	SINDHI, UMESH	<i>Umesh</i>
B256	70022000266	SINGH, RAHUL	<i>Rahul</i>
B260	70022000269	KUMARI, SAROJ	
B261	70022000271	SINGH, SAURAV KUMAR	
B265	70022000274	JOSHI, ATHARVA	<i>Atharva</i>
B267	70022000276	MANTRI, ADITYA	<i>Aditya</i>
B270	70022000279	SINGH, SAHIL	<i>Sahil</i>

Deepti Barhate
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Subject Incharge

HCI

BTECH CS Sem-VI