

UI/UX Design Analysis

*Identifying Good and Bad Design Patterns from an HCI
Perspective*

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Introduction

Analyzed Interfaces:

- Bahria University Website
- Microwave oven

HCI Principles Evaluated:

- Visibility
- Feedback
- Affordance
- Consistency
- Readability
- User-Centered Design

Software Design Evaluation

Bahria University Website

BAD DESIGN ELEMENTS

✗ Bad Design #1: Poor Text Contrast on Navigation

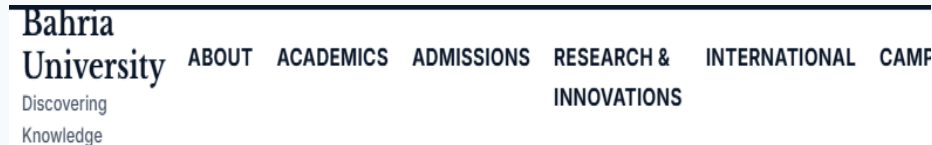


Problem:

Dark blue text on semi-transparent background over photos creates severe readability issues. Text blends with varying image brightness.

HCI Violations:

- Readability - difficult
- Visibility - Not clear to all users



Solution: Solid white background with clear hover states

✗ Bad Design #2: Unclear Visual Hierarchy



Problem:

"DISCOVER BAHRIA UNIVERSITY" banner is oddly positioned, partially covering students. Users can't tell if it's a heading, button, or decoration.

HCI Violations:

- Visual Hierarchy - Unclear importance
- Affordance - No interaction cues
- Clarity - Ambiguous purpose



Solution: Dedicated hero section with headline → description → CTA button

✗ Bad Design #3: Text Lost on Busy Backgrounds

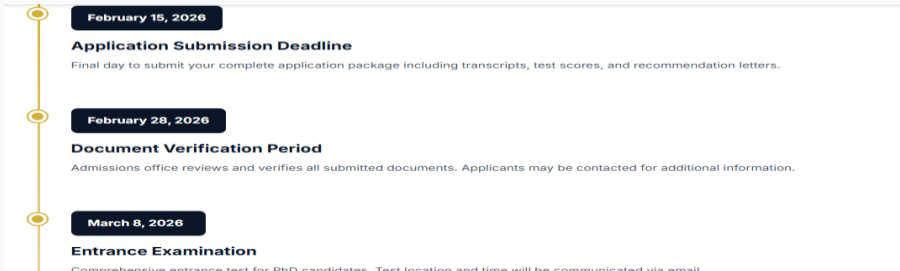


Problem:

Critical admission info placed over colorful blurred backgrounds. White text gets lost against bright areas, making deadlines difficult to read.

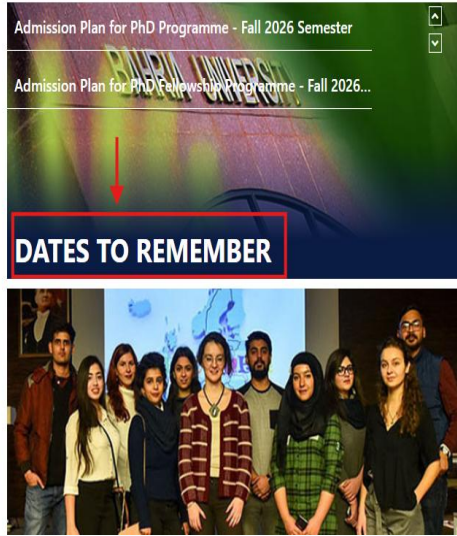
HCI Violations:

- Readability - Inconsistent contrast
- User-Centered - Fails core user goal
- Accessibility - Significant barriers



Solution: Make separate section with proper background

✗ Bad Design #4: Vague Headings



Problem:

Generic heading doesn't specify what dates users need. Application deadlines? Exams? Semester start? Forces unnecessary investigation.

HCI Violations:

- Information Scent - Poor findability
- Scannability - Can't quickly assess
- Efficiency - Increases time-on-task

SPRING 2026 SEMESTER

Important Admission Deadlines

Mark your calendar with these critical dates for PhD and graduate program applications. Missing a deadline could delay your admission by a full semester.

Solution: Change heading to "Important Admission Deadlines" with context

✗ Bad Design #5: Unclear Button Actions

At Bahria University, our vision is to nurture future leaders through quality education, impactful research, and a strong commitment to character building. As a leading national institution with multiple campuses, colleges, and research initiatives across Pakistan, we are dedicated to providing students with an environment where they can learn, innovate, and excel with confidence.

Over the years, we have strengthened our academic programs, expanded our research footprint, and created learning environment that encourages curiosity, collaboration, and critical thinking. Our diverse and talented faculty remains central to this progress, guiding students, inspiring new ideas, and contributing to a vibrant academic community.

We continue to transform in response to the rapidly evolving information ecosystem that are mainly AI driven, ensuring that our students are equipped with the knowledge, skills, and values needed to thrive in an interconnected world. Our focus on digital readiness, industry engagement, and practical exposure reflects our commitment to offering meaningful opportunities. We greatly value entrepreneurial skills of our students to meet the challenging and modern dynamic job market.

We also take pride in our dedicated and successful alumni across the world, who are connected to the university and contribute to its mission of innovation and education.

As we move forward, we remain committed to enhancing academic standards, promoting high-impact research, and fostering an atmosphere that encourages personal growth, responsible leadership, and lifelong learning. We aim to continue shaping individuals who contribute positively to society and lead with integrity.

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OFFICES & RESOURCES

Registrar

Treasurer

Director Human Resource

Director Quality Assurance

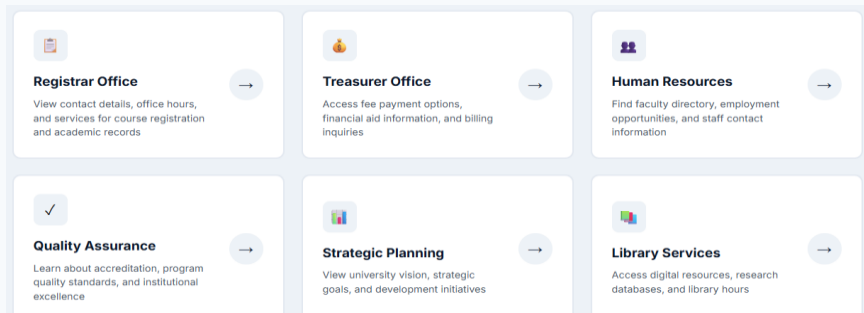
Director Strategic
Management Plan

Problem:

Buttons show only office titles with no indication of what happens when clicked. Contact info? Forms? Navigation? Users can't predict outcome.

HCI Violations:

- Affordance - No cues about function
- Feedback - No outcome preview
- User Confidence - Creates hesitation



Solution: Cards with descriptive text, icons, arrows, and hover effects

GOOD DESIGN ELEMENTS

✓ Good Design #1: Card-Based News Layout

Why It Works:

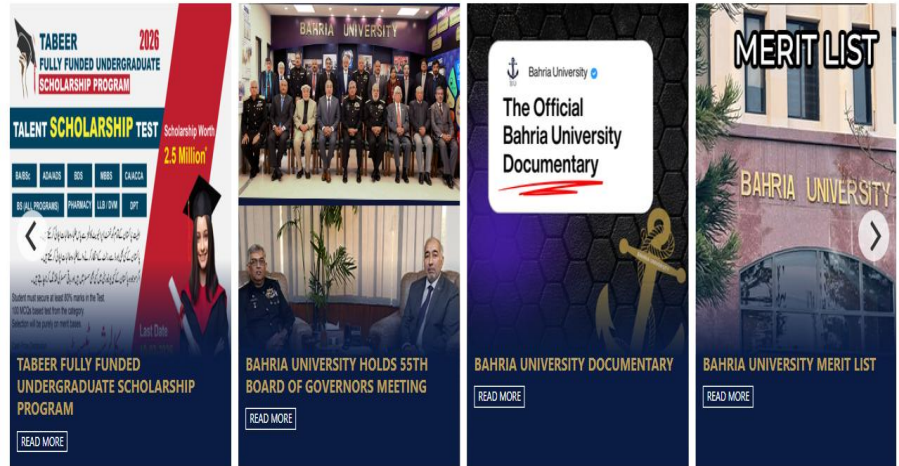
Clean, consistent card layout with image, headline, and 'Read More' button. Each card is visually distinct and separated for easy scanning.

HCI Principles:

- ✓ Consistency - Predictable pattern
- ✓ Scannability - Quick topic identification
- ✓ Visual Hierarchy - Clear content flow

STAY UPDATED

University Pulse: Stay Updated with Bahria News!



✓ Good Design #2: Statistics Visualization

Why It Works:

Icons paired with large numbers and brief text creates impactful, scannable layout. Grid enables quick absorption of achievements.

HCI Principles:

- ✓ Scannability - Process data efficiently
- ✓ Visual Hierarchy - Numbers draw attention
- ✓ Memorability - Icons aid retention



✓ Good Design #3: Campus Gallery with Labels

Why It Works:

Each campus presented with photo and clear label. Consistent visual treatment creates unified browsing experience.

HCI Principles:

- ✓ Clarity - Eliminates ambiguity
- ✓ Consistency - Predictable structure
- ✓ Efficiency - Quick campus identification



✓ Good Design #4: Prominent Date Display

Why It Works:

Event dates displayed in large, distinct format next to titles. Makes timing immediately visible without reading descriptions.

HCI Principles:

- ✓ Visibility - Most important info upfront
- ✓ Scannability - Quick timeline assessment
- ✓ Efficiency - Respects users' time

UPCOMING
Mark your Calendar: Whats Next at Bahria!

 Leadership & Professional Development Center	 Leadership & Professional Development Center	 15 th & 16 th Feb' 2026 28th CONVOCATION E-8 & H-11 Islamabad Campuses	 ENGINEERING PROGRAM ADMISSIONS
08-FEB LPDC TRAINING - INSTRUCTIONAL DESIGN AND HANDS-ON DELIVERY PRACTICE READ MORE	08-FEB LPDC TRAINING - MANAGEMENT BY OBJECTIVE READ MORE	16-FEB 28TH CONVOCATION E-8 & H-11 CAMPUSES ISLAMABAD READ MORE	02-APR ENGINEERING PROGRAMS ADMISSIONS READ MORE

✓ Good Design #5: Facilities Visual Communication

FACILITIES

Thrive Beyond the Classroom and Experience Bahria's Vibrant Student Life with Exceptional Campus Facilities!



Why It Works:

Three-card layout with contextual photos and high-contrast labels. Authentic images instantly communicate facility purpose.

HCI Principles:

- ✓ Visual Communication - Faster than text
- ✓ Consistency - Predictable card structure
- ✓ Clarity - High-contrast overlays ensure readability

Hardware Design Evaluation

The Microwave Oven Interface

BAD DESIGN

ELEMENTS

BAD DESIGN #1: BUTTON OVERLOAD

PROBLEM: CLUTTERED INTERFACE

Advanced ovens pack 30+ buttons. Most users only need 3-5 core functions (time, power, start/stop).

HCI Violations:

- **Simplicity:** Overwhelming visual noise.
- **Efficiency:** Harder to find needed functions.
- **Cognitive Load:** Excessive choices.



SOLUTION: SIMPLIFIED INTERFACE



RECOMMENDED IMPROVEMENTS

- Large, clear number pad (0-9).
- Three primary buttons: Power, Timer, Start.
- Prominent '**Quick Start**' (+30s).
- Hide advanced features in secondary menus.

Reduces cognitive load by 60%.

BAD DESIGN #2: INCONSISTENT NAMING



The Inconsistency

Multiple buttons serve similar functions but have different names:

- 'Quick Start' vs 'Express Cook'
- 'Reheat' vs 'Warm'
- 'Defrost by Weight' vs 'Auto Defrost'



The Solution

Establish a **Consistent Naming Convention**:

- Use ONE term per function type.
- Stick to common industry terms.
- Ensure 100% term-to-action mapping.

BAD DESIGN #3: TINY LABELS

PROBLEM: ACCESSIBILITY GAP

Button labels are too small for elderly users or those with low vision.

RECOMMENDED IMPROVEMENTS

- Minimum **12pt font** for all labels.
- High contrast (Black on White).
- Backlit display with adjustable brightness.



BAD DESIGN #4: POOR GROUPING

Random Placement

Functions scattered across the panel. Start/Stop not prominently placed. No visual separation.

Logical Strategy

Top: Number Pad (Input)

Middle: Time/Power (Control)

Bottom: Large START/STOP (Action)

Use spacing and dividers to define visual relationship.

BAD DESIGN #5: ABSTRACT ICONS

PROBLEM: UNCLEAR AFFORDANCE

Generic icons (Wave symbols, generic food icons) lead to guessing and manual-reading.

RECOMMENDED IMPROVEMENTS

- Always pair **Icons + Text Labels**.
- Use universally understood symbols.
- Example: Clock Icon + "TIMER" text.



GOOD DESIGN ELEMENTS

EFFICIENCY & INTUITIVE MAPPING

PATTERN 1



Quick Start (+30s)

One-touch heating for the most frequent user task. Reduces steps from five button-presses to one, optimizing efficiency and recall.

PATTERN 2



Natural Mapping

Tactile rotary dials provide a superior mental model for time/temp increments compared to digital step-buttons.

PATTERN 3



Multimodal Feedback

Simultaneous interior lighting (Visual) and distinct "End" tones (Auditory) provide immediate confirmation of system status.

ZONING & UNIVERSAL DESIGN

PATTERN 4

Logical Grouping (Zoning)

Functional separation between input (number pad), controls (power/timer), and actions (START/STOP) through spacing and color cues.

PATTERN 5

Universal Typography

Implementation of large, high-contrast sans-serif fonts (12pt+) and backlit buttons ensure accessibility for all age groups and lighting conditions.



Thank You

Questions & Discussion