



УДК 004.42

ДОСЛІДЖЕННЯ ВПЛИВУ СУЧАСНИХ ТЕНДЕНЦІЙ UI/UX ДИЗАЙНУ МОБІЛЬНИХ ЗАСТОСУНКІВ НА НАСТРІЙ КОРИСТУВАЧА

RESEARCH OF THE INFLUENCE OF MODERN TRENDS IN UI/ UX DESIGN OF MOBILE APPLICATIONS ON USER'S MOOD

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DOI:

Abstract: The research explores the impact of modern trends in UI/UX design on the mood of users interacting with mobile applications. Through an analysis of literature and a survey of IT students, the study evaluates the emotional resonance of seven contemporary UI/UX styles: brutalism, neubrutalism, Bauhaus, neumorphism, retrofuturism, cyberpunk, and glassmorphism. Each design trend is characterized by unique visual and functional elements that influence user experiences.

The methodology involved presenting survey participants with interface examples representing each trend. They assessed these designs based on visual appeal, usability, engagement, and emotional impact. Key findings reveal distinct emotional responses to each trend: cyberpunk and retrofuturism evoked excitement, Bauhaus and flat design inspired calmness, while neumorphism and glassmorphism were appreciated for aesthetics but raised usability concerns. Generational differences were also noted, with younger users favoring experimental styles and older users preferring minimalist designs.

The study emphasizes the importance of balancing aesthetics and functionality, tailoring designs to target demographics, and ensuring accessibility for diverse users. It highlights how thoughtful design choices can evoke positive emotions, enhancing user satisfaction. These insights contribute to the growing understanding of the psychological impact of UI/UX design and its role in creating emotionally engaging digital experiences.

Анотація. Дослідження розглядає вплив сучасних трендів дизайну UI/UX на настрій користувачів мобільних застосунків. Проводячи аналіз літератури та опитування студентів іт-спеціальностей, дослідження оцінює емоційний резонанс семи сучасних UI/UX стилів: бруталізм, необруталізм, Баухаус, неуморфізм, ретрофутуризм, кіберпанк та гласморфізм. Кожний дизайнерський тренд характеризується унікальними візуальними та функціональними елементами, що впливають на користувацький досвід.

Методологія включала представлення учасникам опитування прикладів інтерфейсів, що відповідають кожному тренду. Вони оцінювали ці дизайни за візуальною привабливістю, зручністю, рівнем залучення та емоційним впливом. Ключові результати виявили різниці емоційних реакцій на кожен тренд: кіберпанк та ретрофутуризм викликали збудження, Баухаус та плоский дизайн вносили відчуття спокою, а неуморфізм та гласморфізм оцінювалися щодо естетики, але викликали застереження щодо зручності. Було відмічено генераційні відмінності: молодші користувачі віддавали перевагу експериментальним стилям, а старші обирали мінімалістичні дизайни.

Дослідження наголошує на важливості збалансування естетики та функціональності, адаптації дизайну до цільових аудиторій та забезпечення доступності для різноманітних користувачів. Воно показує, як уважний вибір дизайнерських рішень може викликати позитивні емоції та підвищувати задоволеність користувачів. Ці знахідки сприяють розширенню розуміння психологічного впливу UI/UX-дизайну та його ролі у створенні емоційно захоплюючого цифрового досвіду.

Keywords: ui, gui, ux, user's mood, brutalism, neubrutalism, neobrutalism, bauhaus, neumorphism, retro futurism, cyberpunk, glassmorphism, flat.

Ключові слова: ui, gui, ux, настрій користувача, бруталізм, неубруталізм, необруталізм, Баухаус, неуморфізм, ретрофутуризм, кіберпанк, скляний морфізм, плоский дизайн



INTRODUCTION

In the rapidly evolving landscape of mobile applications, the significance of User Interface (UI) and User Experience (UX) design cannot be overstated. This research endeavors to explore the profound impact of contemporary trends in UI/UX design on the emotional state of users. Through a comprehensive analysis of pertinent publications and literature, this study delves into seven distinct modern variations of UI/UX design. By focusing on the visual aspects of design, such as brutalism, neubrutalism, bauhaus, neumorphism, retro futurism, cyberpunk, glassmorphism, and flat design, we aim to discern their influence on users' mood.

A pivotal component of this research involves gauging the emotional responses of individuals, particularly IT students, to each design variation. This evaluation, derived from a survey, forms the bedrock upon which our study's conclusions are constructed. The chosen keywords—ui, gui, ux, user's mood, brutalism, neubrutalism, bauhaus, neumorphism, retro futurism, cyberpunk, glassmorphism, and flat—underscore the diverse elements explored within the realm of UI/UX design.

The relevance of this investigation is underscored by the pervasive integration of mobile applications in daily life. As technology continues to advance, people increasingly engage with these applications for various purposes, from entertainment to essential work and research activities. Acknowledging the undeniable influence of design on user behavior, our research aims to contribute insights that can enhance the creation of mobile applications, particularly in terms of eliciting positive emotional responses.

This study's objective is to scrutinize the impact of color schemes on the users of mobile applications, seeking to identify optimal approaches for design. The object of our research is the challenge of utilizing colors in UI/UX design to heighten user appeal, while the subject involves a comparative analysis of potential color schemes to pinpoint the most attractive option. Employing a systematic analysis, we delve into the existing literature, explore similar approaches to web design, and establish criteria for our research.

The methodology encompasses a systematic analysis of the subject area, examining color usage in design, studying analogous approaches to web design, and identifying criteria for our research. Through the use of control groups and surveys, we analyze two distinct approaches to forming a color scheme, evaluating their qualitative impact on attractiveness. The scientific novelty of this research lies in affirming and strengthening existing data on the influence of color on user attraction to web resources/applications. Additionally, this study lays the groundwork for future research on alternative color schemes and design element combinations.

The practical significance of this research is evident in its potential to enhance the efficiency of creating mobile applications. By understanding the impact of design on users and society, this study aims to contribute valuable insights for designers and developers, ultimately leading to more user-friendly and appealing mobile applications.

LITERATURE ANALYSIS

Based on the data from the articles "A Comparative Study of Skeuomorphic and Flat Design from a UX Perspective" [1], "From Skeuomorphism to Flat Design: Age-related Differences in Performance and Aesthetic Perceptions" [2], and "The Evolution of the Graphical User Interface: From Skeuomorphism to Material Design" [3], a comprehensive literature analysis reveals valuable insights into the evolution of design styles and their impact on user experience (UX).

The first article [1] explores the user experience aspects of skeuomorphic and flat design. Skeuomorphic design imitates real-world objects, incorporating their visual and tactile attributes into the digital interface, while flat design simplifies elements, focusing on minimalism and functionality. The study suggests that user preferences may vary between these design styles, and it emphasizes the importance of considering user experience in design decisions.

Building upon the insights from [1], the second article [2] delves into age-related differences in performance and aesthetic perceptions of skeuomorphic and flat design. The findings suggest that different age groups may respond differently to these design styles, impacting both usability and aesthetic preferences. This highlights the need for designers to consider the target audience's age when choosing between skeuomorphic and flat design elements.

The third article [3] provides a historical perspective on the evolution of graphical user interfaces (GUIs) from skeuomorphism to material design. It traces the development of design principles and their impact on user interaction. The article emphasizes the shift towards material design, characterized by a focus on realistic motion and interaction, suggesting a continuous evolution in design trends.

Synthesizing information from these articles, it becomes evident that the design choices in graphical user interfaces significantly influence user engagement and satisfaction. The debate between skeuomorphic and flat design extends beyond aesthetics, encompassing considerations of usability, age-related preferences, and the historical evolution of design paradigms. The user's interaction with digital interfaces is a complex interplay of visual appeal, functionality, and responsiveness.

Moreover, the analysis highlights the dynamic nature of design trends, emphasizing the importance of staying attuned to evolving user preferences and technological advancements. The transition from skeuomorphic to flat design and, subsequently, to material design reflects a continual quest for improved user experiences in the digital realm.

In conclusion, the literature analysis underscores the multifaceted impact of design styles on user experience and the necessity for designers to consider factors such as user preferences, age-related differences, and the historical context of design evolution. This understanding is crucial for developing user-centric interfaces that not only meet functional requirements but also resonate with users on both aesthetic and experiential levels. Future research may further explore the nuanced relationships between design choices and user engagement, contributing to the ongoing refinement of digital interfaces.



OBJECT, SUBJECT AND METHODS OF RESEARCH

In contemporary society, where mobile applications play an integral role in our daily lives, the significance of User Interface (UI) and User Experience (UX) design cannot be overstated. This research delves into the profound impact of modern UI/UX design trends on the user's mood. Through a meticulous examination of existing publications and literature on the subject, the study aims to unravel the emotional responses evoked by seven distinct variations of UI/UX designs.

The object of this research is the diverse landscape of UI/UX design in mobile applications. The study concentrates on seven modern design variations: brutalism, neubrutalism, bauhaus, neumorphism, retro futurism, cyberpunk, and glassmorphism.

The subject under scrutiny is the influence of these UI/UX design variations on the user's mood. To comprehensively understand this impact, a survey was conducted among IT students, eliciting their emotional responses to each design variation. The resulting assessments from the survey participants form the foundation for the study's conclusions.

The research methodology involves a multi-faceted approach. First, a thorough analysis of existing publications and literature on UI/UX design trends was conducted to identify the chosen variations. Subsequently, mock-ups of mobile applications were created, each embodying one of the seven design variations.

To gauge the emotional impact on users, a survey was administered to IT students. The survey involved presenting each design variation sequentially and collecting respondents' feedback on the emotions elicited. The diversity of responses from the survey participants, who serve as representative samples of the user population, contributes to the robustness of the study's findings.

The chosen keywords - ui, gui, ux, user's mood, brutalism, neubrutalism, bauhaus, neumorphism, retro futurism, cyberpunk, glassmorphism, flat - highlight the key elements explored in this research, encompassing both the technical aspects of UI/UX design and the emotional outcomes experienced by users. This research seeks to bridge the gap between design theory and user psychology, shedding light on the intricate relationship between modern UI/UX design trends and the user's emotional state.

RESULT

During the survey, the following designs were presented to the respondents, which include 7 current trends in UI/UX design - neubrutalism, bauhaus, neumorphism, retro futurism, cyberpunk, glassmorphism, flat [4].

The proposed designs are presented in Fig. 1.:

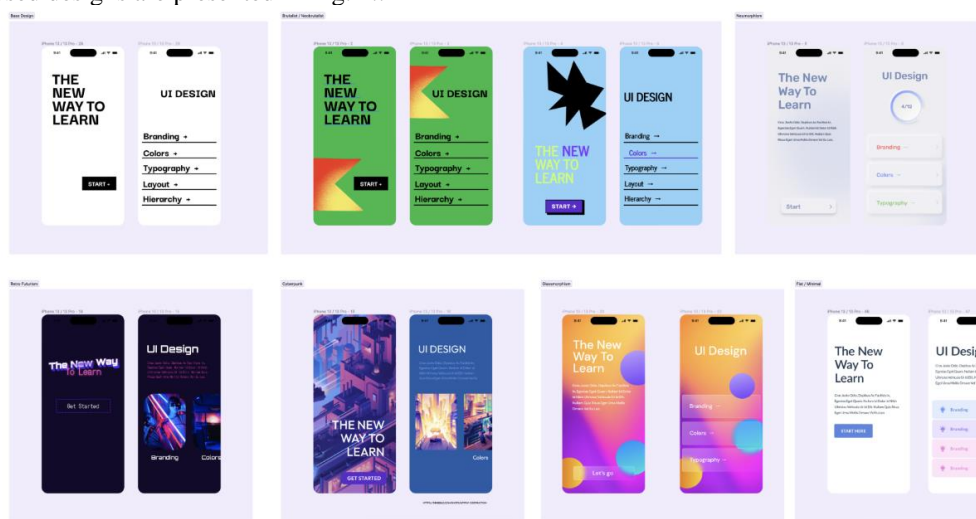


Fig. 1. Presented designs

For the frequency of the experiment, the respondents are not aware of the name of a particular design. This will allow respondents to focus on feelings and emotions.

Thus we have the following correspondence:

- Option 1 - Neubrutalism.
- Option 2 - Bauhaus.
- Option 3 - Neumorphism.
- Option 4 - Retro Futurism.
- Option 5 - Cyberpunk.
- Option 6 - Glassmorphism.
- Option 7 - Flat.

The survey includes 8 clear polls. More than 30 respondents answered each question.

Below is their wording as well as the results of the survey.

Question 1. Which of the designs evokes positive emotions in terms of your overall perception?

Results of answers to the Question 1 are presented in Fig. 2.:

Based on the information obtained, it can be concluded that the following designs evoke positive emotions for respondents - Cyberpank.

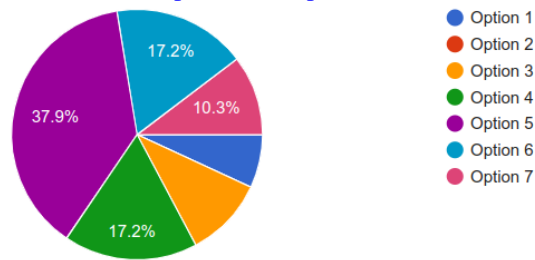


Fig. 2. Results of answers to the Question 1

Cyberpunk is a futuristic design style that emerged in the 1980s and 1990s, influenced by cyberpunk literature and movies. It features neon colors, futuristic typography, glitch effects, and dystopian elements. Unlike retro futurism, cyberpunk has a cleaner, more modern aesthetic, often incorporating dark designs, neon colors, and jewel tones. In UI design, cyberpunk utilizes vibrant neon colors, complex interfaces, geometric shapes, and grids to create a sense of order. Gritty and dystopian imagery, futuristic typography, and a strong presence in gaming and entertainment are key characteristics of cyberpunk design. It is closely tied to AI-generated art, such as Midjourney, and has gained prominence in various media like video games, movie posters, and album covers. Notable designers contributing to the cyberpunk aesthetic include Elizabeth Alli, DesignerUp, Yegor Shustov, Toma, and Alex Arutuynov [4].

Question 2. Which of the designs evokes negative emotions in terms of your overall perception?

Results of answers to the Question 2 are presented in Fig. 3.:

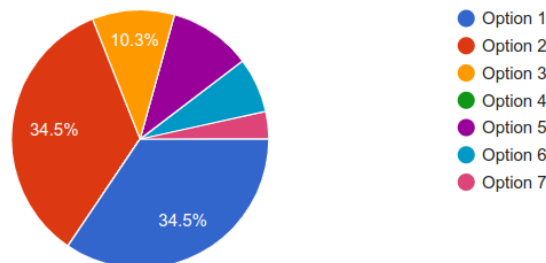


Fig. 3. Results of answers to the Question 2

Based on the information obtained, we can conclude that the following designs evoke the following emotions for respondents - Neubrutalism and Bauhaus. .

Brutalism, a design style originating in the mid-20th century, characterized by raw aesthetics and exposed concrete, has evolved into Neubrutalism or Neobrutalism in graphic and UI design. Neubrutalism embraces simplistic forms, functionality, bold typography, clashing colors, heavy black outlines, unconventional layouts, and rough, raw aesthetics. Examples can be found in websites like Figma and Gumroad, employing larger-than-life, unapologetically bold styles that may be polarizing.

Bauhaus, originating from the German school of design founded in 1919, blends fine arts and craftsmanship. This design philosophy, led by figures like Walter Gropius, emphasizes functionalism, simplicity, and the use of modern materials. In UI design, Bauhaus is reflected through minimalism, grid systems, simple typography, regular geometric 2D shapes, a primary color palette (red, yellow, blue), and an overall focus on functionality. The movement has had a lasting impact on architecture, industrial design, typography, and visual arts. Examples of Bauhaus-inspired UI design can be seen in contemporary web designs incorporating clean lines, ample white space, and harmonious compositions [4].

Question 3. In your opinion, in which design the information is read better?

Results of answers to the Question 3 are presented in Fig. 4:

Based on the information obtained, we can conclude that the best way for respondents to read information is from the following designs - Flat.

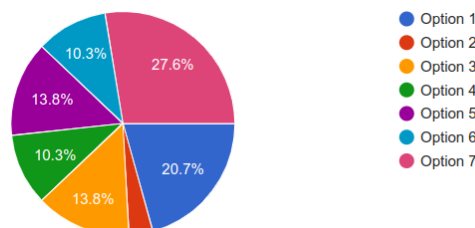


Fig. 4. Results of answers to the Question 3

Flat design is a minimalist style characterized by simple, two-dimensional elements, solid colors, and ample white space. Emerging in reaction to skeuomorphic design, it gained popularity in the early 2010s, influenced by Swiss design principles. Microsoft's Metro design language, introduced in 2010, popularized flat design with its emphasis on clean interfaces, bold colors, and simple typography. Key features include simple and minimalistic interfaces, clean sans-serif



typography, bold and vibrant color palettes, minimalistic iconography, simple buttons with square or rounded corners, and minimalistic illustrations.

Widely adopted in mobile app design, flat design is favored for its simplicity, scalability, and visual appeal, seen across various digital products and industries [4].

Question 4. In your opinion, in which design the information is read the worst?

Results of answers to the Question 4 are presented in Fig. 5.:

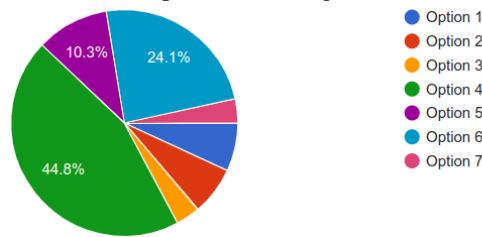


Fig. 5. Results of answers to the Question 4

Based on the information received, we can conclude that for respondents the worst readable information is from the following designs - Retro Futurism.

Retro Futurism design is inspired by past eras, aiming to evoke nostalgia for the imagined future from a historical perspective. It often draws from elements like Tron, 1980s video games, and 16-bit pixel art. The design features bright neon or warm vintage color palettes, with interactive elements resembling retro technology such as analog knobs and vintage buttons for a nostalgic user experience. Typography reflects styles from specific eras, and textured backgrounds simulate aged materials. Vintage illustrations and graphics inspired by old advertising are common, along with user interface elements mimicking retro tech visuals. The overall layout may incorporate vintage print design styles, including asymmetric layouts and collage-like compositions [4].

Question 5. What design would you like to see in the applications you use?

Results of answers to the Question 5 are presented in Fig. 6.:

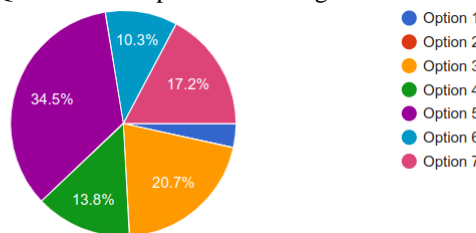


Fig. 6. Results of answers to the Question 5

Based on the information obtained, it can be concluded that respondents would like to see the following designs in the apps they use - Cyberpunk and to some extent Neumorphism.

Neumorphism, a recent design style emerging in the early 2020s, combines skeuomorphism and flat design by incorporating soft shadows and highlights for a realistic, three-dimensional look. The term itself is a blend of "new" and "skeuomorphism." Neumorphic design features realistic buttons with a soft, tactile appearance, often with a convex or concave effect. Display cards showcase information with lifted, floating appearances, utilizing shadows and gradients. Input fields mimic physical forms with subtle embossing and shadows. Neumorphic icons have a raised appearance, striking a balance between simplicity and realism. Tactile graphical elements, like progress bars and sliders, adopt a soft, pillowy appearance with shadows and highlights indicating interactivity. The overall aim is to achieve a harmonious blend of realism and simplicity in user interfaces [4].

Question 6. What design would you definitely NOT want to see in the applications you use?

Results of answers to the Question 6 are presented in Fig. 7.:

Based on the information obtained, we can conclude that respondents would not like to see the following designs in the apps they use - Neobrutalism, Bauhaus.

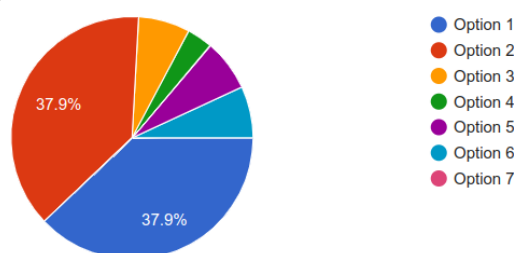


Fig. 7. Results of answers to the Question 6

Question 7. What design would you like to use in your startup or thesis?

Results of answers to the Question 7 are presented in Fig. 8.:

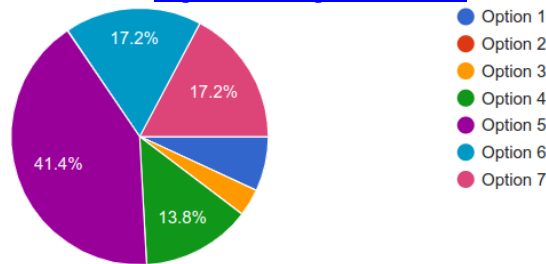


Fig. 8. Results of answers to the Question 7

Based on the information obtained, it can be concluded that respondents would like to use the following designs in their startup or thesis - Cyberpunk.

Question 8. What design would you definitely NOT want to use in your startup or graduation thesis?

Results of answers to the Question 8 are presented in Fig. 9.:

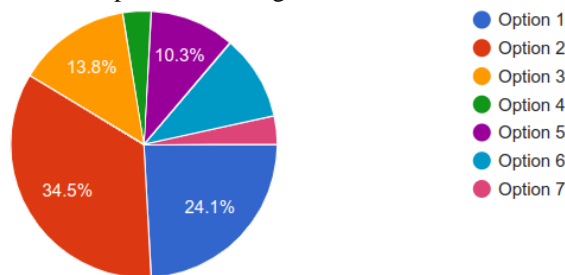


Fig. 9. Results of answers to the Question 8

Based on the information obtained, it can be concluded that the respondents would not like to use the following designs in their startup or thesis - Neobrutalism, Bauhaus.

CONCLUSION

At the end of this study, we can draw several key conclusions based on the analysis of current trends in UI/UX design of mobile applications and the results of the survey of IT students.

Firstly, we note that based on existing articles and trends in design, the boundaries between minimalism and skeuomorphism in design are now becoming increasingly blurred. Elements of both approaches are successfully combined, which reflects modern user preferences and requirements.

Secondly, based on the survey results, it can be concluded that cyberpunk inspired design is rated by users as particularly user friendly. This is probably due to the unique combination of clean and modernity, as well as the use of bright colours and neon hues, which gives the interface an energetic and attractive character.

Finally, it is important to note that the research data indicates that users are cautious about new design trends such as glasmorphism. However, neuromorphism, which is a combination of squamorphic elements and minimalist principles, elicited positive responses from a certain group of respondents. This indicates that users are willing to embrace innovation but prefer to maintain a balance between novelty and usability.

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