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Opportunities and prospects for personalizing the user interface of the educational platform in accordance with the personality psychotypes

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Abstract. The article is devoted to the actual problem of studying the possibilities of implementing personalization of the user interface in accordance with the personality psychotypes. The psychological aspect of user interface design tools is studied and the correspondence of their application to the manifestations of personality psychotypes is established. The results of the distribu-tion of attention of users of these categories on the course page of the educational platform are presented and the distribution of attention in accordance with the focus on educational material is analyzed. Individual features and personal preferences regarding the used design tools are described, namely the use of accent colors in interface design, the application of the prin-ciples of typographic hierarchy, and so on. In accordance with this, the prospects for implementing personalization of the user interface of the educational platform are described. The results of the study allow us to state the relevance of developing and applying personalization of the user interface of an educational platform to improve learning outcomes in accordance with the psychological impact of individual design tools, and taking into account certain features of user categories. The research is devoted to the study of user attention concentration using heatmaps, in particular based on eyetreking technology, we will investigate the distribution of user attention on the course page of an educational platform та redistribution of atten-tion in accordance with certain categories of personality psychotypes. The results of the study can be used to rearrange the LMS Moodle interface according to the user's psychotype to achieve the best concentration on the training material. The obtained data are the basis for developing effective user interfaces for personalizing educational platforms to improve the quality of the education.

Keywords: eye tracking technology; psychological types; user-oriented design

1. Introduction

The issue of adaptation in the field of design occupies a prominent place in the scientific research of a large number of scientists in various fields (Abdelaziz *et al*. 2017, Chemerys *et al*. 2021, Dyagileva *et al*. 2021, Kiv *et al*. 2021, Krouska *et al*. 2020, Kaveh and Bakhshpoori 2016,

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Kim and Lee 2017, Pham 2016, Papakostas *et al*. 2021, Sandoval *et al*. 2018, Sharov *et al*. 2021, Troussas *et al*. 2020). However the issue of developing personalized educational system not covered enough. As a type of adaptive personalization of user interface design numerous studies reflect the principle of a context sensitive user interface, Vanderdonckt *et al*. (2005), Zheng *et al*. (2015), Campos and Martins (1996), Glinert (2008), Dix *et al*. (2006), in other words, the user interface adapts and changes the location and content of elements according to the user's needs or context. This type of personalization is used in video games, and most often artificial intelligence is used for this type of user interface adaptation. In particular, it is advisable to pay special attention to research aimed at developing interpretive user interfaces that are sensitive to user emotions (Denecke *et al*. 2019, Polzin and Waibel 2000, Sutcliffe 2017), but implementation in accordance with human emotions is currently being studied only in the direction of use for verbal dialog assistants.

However, the study of the problem of personalization of the interface of educational platforms in accordance with the characteristics of personality psychotypes, was not subject to thorough scientific consideration. The scientific novelty is the study of user attention concentration using heatmaps, in particular based on eyetreking technology, we will investigate the distribution of user attention on the course page of an educational platform and redistribution of attention in accordance with certain categories of personality psychotypes. The results of the study can be used to rearrange the LMS Moodle interface according to the user's psychotype to achieve the best concentration on the training material.

The purpose of the article is to describe the possibilities of personalizing the interface of the educational platform in accordance with the characteristics of personality's psychotypes.

2. Presentation of the main research material

2.1 Research methodology

To study the possibilities of personalization of the user interface according to personality psychotypes, research and experimental work was divided into four stages: ascertaining, search-analytical, formative and generalizing. The hypothesis of the study was that personalization of the interface of educational platforms in accordance with the characteristics of personality psychotypes will have a positive impact on the quality of learning and the user's attention to the learning material. During the ascertaining phase, a scale was formed for a quick assessment of ergonomics. Using the proposed scale, ergonomics were assessed on two aspects: ease of use and engagement. The proposed scale was tested by interviewing 253 people. The sample is homogeneous, i.e., it was shown that the indicators of demographic characteristics do not have a significant impact on the results of the study. Based on the results of the survey, a factor analysis was carried out. The reliability was assessed by calculating the Cronbach coefficient α, the results of which testified the reliability of the entire scale as a whole, as well as the reliability of the two factors, can be qualified as insufficient. The sensitivity was also assessed using the analysis of variance.

Research at the search-analytical stage was aimed at increasing the level of usability of the interface of the educational platform. An analysis on the relationship between design and personality psychology and psychological aspects of using design tools to create user interfaces was performed for this purpose. At this stage we investigated the distribution of user attention on the course page of an educational platform by the study of user attention concentration using heatmaps, in particular based on eyetreking technology and segmenting the target audience by personality psychotypes developed by Professor D. Keirsey.

At the formative stage, the study was envisaged to build an effective user interface for personalizing

educational platforms in accordance with certain psychotypes, namely for groups of users that show signs of the categories hedonists, rationalists, idealists and traditionalists. In the process of the generalizing stage it is planned to carry out experimental verification of the effectiveness of their use to reduce the lack of attention directly on the training material by calculating the Cronbach coefficient α and compare with the results of the ascertaining stage of the study.

2.2 Analysis of ergonomic indicators of the LMS Moodle

To determine the relevance of the study devoted to the possibilities and prospects of personalizing the user interface of the educational platform in accordance with personality psychotypes, we will analyze the ergonomic indicators of the LMS Moodle platform.

Currently, there are a number of ergonomic scales that are widely used in practice, which are questionnaires. First of all, this is the so-called System Usability Scale (SUS) (Brooke 1996), which is perhaps the most frequently used and well researched (see, for example, Bangor *et al*. 2008, Lewis and Sauro 2009). It consists of 10 items and measures the usability and the ability to learn how to work with the system. Other similar scales include: After Scenario Questionnaire (ASQ) (Lewis 1995), designed to measure user satisfaction from the ergonomics of the system and consisting of three points. Computer System Usability Questionnaire (CSSUQ) and Post-Study System Usability Questionnaire (PSSUQ) (Lewis 1995), designed to measure user satisfaction with the quality of information, the degree of usefulness of the system, etc. Each of these scales consists of 19 items. Questionnaire for User Interface Satisfaction (QUIS) (Chin *et al*. 1988), designed to measure various parameters related to the degree of user interface satisfaction. Consists of 27 items. Software Usability Measurement Inventory (SUMI) (Kirakowski and Corbett 1993), designed to measure various parameters of the ergonomics of the system as a whole, including usability, the ability to quickly study the operation of the system, emotions caused by working with the system, etc. Consists of 50 points. Unfortunately, these scales have some drawbacks, namely: they are designed to assess the ergonomic characteristics of the system as a whole, and not the way information is displayed, they do not allow evaluating such an important parameter as engagement, most of the scales mentioned contain a large number of items, which creates a great inconvenience for the respondents.

Based on the above, as well as taking into account the educational specifics of the educational platform LMS Moodle, we used indicators' characteristics of usability, ergonomics and the pedagogical design (Chemerys *et al*. 2020). Analyzing the usability of the user interfaces of the developed education courses in adaptive learning systems, we followed the recommendations given in J. Nielsen's classic book "Designing Web Usability" (Nielsen 2000), in order to analyze the offered ergonomic indicators. Such features as design, especially taking into account its "flexibility" or "rigidity", page length, availability and interface of search tools, the nature and the means of the navigation procedure realization were analyzed. The proposed list of indicators and characteristics for the formation of criteria, by which the ergonomic quality of the interface was analyzed, has also been expanded with the indicators that are important due to the principles of the pedagogical design of educational materials. The particular attention was paid to the possibility of integration of various multimedia fragments (video and audio accompaniment, integration of presentation material, integration of interactive elements, etc.) and to the functionality of testing elements (providing an individualized interpretation of false answers, cards, etc.). Equal emphasis was placed on the possibility of individualization and the design branding of educational materials, which would help to create a positive image of the educational institution, on the basis of which the system of adaptive learning is implemented.

Table 1 Demographic characteristics of respondents

Characteristic		
Sex	Male	49,1%
	Female	50,9%
Average age		28,3 years
Education:	Second high education	0,6%
	High education	27,3%
	Incomplete high education	5,1%
	Secondary education	36,7%
	Below the secondary education	30,3%

Table 2 Results of factor analysis

		Factor 1	Factor 2	Factor 2
Design	Moderate colour scale	0,40	0,20	0,20
	Minimalistic design	0,55	0,46	0,46
	Adaptation to mobile devices	**0,72**	0,68	0,68
	Course branding	0,53	0,40	0,40
Navigation	The User Controls Navigation	0,61	0,55	0,55
	Search Capabilities	0,55	**0,76**	0,76
	User-Contributed Content	**0,77**	0,69	0,69
	Applet Navigation	0,63	0,49	0,49
	Topic hierarchy	0,45	0,60	0,60
	Skill system	0,47	0,50	0,50
Progress statistics	Progress Bar	0,36	0,43	0,43
	Achievement detailing	0,44	0,66	0,66
Educational content	Books Management	**0,72**	0,50	0,50
	Curriculum / syllabys Management	**0,71**	0,46	0,46
	Library Management	0,53	0,50	0,50
	Image support	**0,70**	**0,72**	0,72
	Video support	0,61	**0,80**	0,80
	Audio support	0,33	0,21	0,21
	Presentation support	0,62	**0,76**	0,76
	Interactive elements	0,31	0,30	0,30
	Testing functional	**0,70**	0,42	0,42
	Storyboarding	0,41	0,20	0,20
	Educational gamification	0,29	0,30	0,30

The proposed scale was tested by interviewing 253 people. The demographic characteristics of the respondents are shown in Table 1.

Based on the results of the survey, a factor analysis was carried out (Kim *et al*. 1989). Its results are shown in Table 2. In total, two factors were identified. We define the first factor as

"Usability", the second factor as "Engagement". From Table 2 it is obvious that questions 1, 2 and 3 are the filling of the first factor, and questions 4, 5 and 6 are the filling of the second factor.

The reliability was assessed by calculating the Cronbach coefficient α (Cronbach 1951, Schmitt 1996), according to the following Eq. (1):

$$\alpha = \frac{N}{N-1}\left(\frac{\sigma_X^2 - \sum_{i=1}^{N}\sigma_{Y_i}^2}{\sigma_X^2}\right) \quad (1)$$

where N – the number of components under study, σX_2 – the standard deviation of all studied sets, σY_{i2} – the standard deviation of the Y_i component, and $X=\Sigma Yi$.

For the proposed scale, the Cronbach coefficient was 0,45, for the first factor - 0,49, for the second - 0,41. Thus, the reliability of the entire scale as a whole, as well as the reliability of the two factors, can be qualified as insufficient.

The sensitivity was also assessed using the analysis of variance (Nasledov 2004). In accordance with the results of this analysis, it can be concluded that there is a significant sensitivity of the entire scale ($F=3,919$, $p<0,001$) and the first factor: ($F=8,3$, $p<0,001$), as well as sufficient sensitivity indicators of the second factor: ($F=2,3$, $p<0,01$).

Based on the fact that the analysis of the usability and student engagement when using the LMS Moodle educational platform has shown an insufficient level, we conclude that it is advisable to conduct research aimed at increasing the level of usability of the interface of the educational platform. As a promising direction, we consider the use of personality psychology features and their relationship with design. To do this, we will study the connection between design and personality psychology.

2.3 Research on the relationship between design and personality psychology

Today, an important role belongs to the peculiarities of human psychology in design. It is a well-known fact that the developers are guided by research on the psychology of color in the design of any product (Mahnke 1996).

Nowadays, studies based on the manifestation of personal preferences depending on the psychotypes of the personality are actively used in interior design (Rodemann 1999), are reflected in musical preferences (Swami *et al*. 2013) and in the style of clothing (Roy *et al*. 2016, Compton 1962) etc. Among the studies that have been devoted to modifications of educational software, the work of Papakostas deserves attention (Papakostas *et al*. 2021). It is devoted to a personalized brain-based quiz game which was developed applying the principles of brain-based learning and Marzano Taxonomy for promoting meaningful learning and improving students' higher order cognitive functions. It is worth noting the design of a personalized mobile augmented reality training system considering user experience, usability and interactivity (Krouska *et al*. 2020) and collaboration and fuzzy-modeled personalization for mobile game-based learning in higher education (Troussas *et al*. 2020). Through the trends of user-oriented design, experts began to review approaches to design, trying to better understand users (for example, a deep analysis of the target audience is carried out, for example, by the method of persons and the construction of an empathy map (Chemerys 2021), so empathy and reflection have become important qualities of user interface designers (Chemerys 2019). To better understand users and their requirements, designers turn to psychological principles that shape human behavior, aspirations and motivation. Applying psychological principles when creating a design, you can improve the result, because the product becomes much closer to the actual requirements of its users.

Psychology strongly influences the user interface and UX design. In addition, knowledge of psychology helps you create a product design that encourages people to take actions that are expected of them, such as buying a product or contacting a company. D. Norman in his book "The design of familiar things" (Nahuis *et al*. 2012) defined the concept of design as an act of communication that involves a deep understanding of the person who communication is carried out with. He noted that there is a conceptual model of the designer – his understanding of the result and the user model is a model that is created as a result of interaction with the system, the embodied result (Gorelova and Arpentieva 2018). For a positive result, it is important to follow the basic principles that affect interaction indicators. Thus, when creating UX/UI design, they are already habitually guided by such psychological principles of Gestalt as Hick's law, the law of proximity, Jacob's law, Von Restorff effect, etc (Kompaniets and Chemerys 2019).

Psychological principles for UI/UX design are quite widely applied. In particular, S. Anderson, the author of the book "Seductive Interaction Design: Creating Playful, Fun, and Effective User Experiences" (Anderson 2011) developed the author's mental notes deck (Mental Notes), which consisted of 53 cards describing the psychophysiological models of human behavior that underlie the principles of web design. This deck combines ideas from psychology into a reference book and a brainstorming tool. Each map describes one understanding of people's behavior and suggests ways to apply it to the design of websites, web applications, and software applications. The cards help designers better understand user behavior and find effective solutions when creating interface design, providing ideas on how to attract, retain, and direct users' attention. By understanding how people perceive the user interface, it is possible to create more effective applications that help users achieve their goals. However, there is a problem of developing the design of user interfaces of systems designed for use by a large number of users, and therefore a wide variety of psychotypes of users who make up the target audience.

2.4 Psychological aspects of using design tools to create user interfaces

In order to study the possibilities of personalizing the user interface of an educational platform, we will consider the principles of applying psychological aspects in design. Considering design in general and user interface design in particular from the point of view of perception psychology, they distinguish perception by color, saturation, shape, volume, depth, style, composition and typical association.

Perception by color. One of the most famous researchers of the emotional impact of color on a person was the Swiss psychologist M. Lusher. He found that color can cause very specific emotions in a person: for example, yellow-red tones create a feeling of excitement, and blue and gray – on the contrary: they have a calming effect. According to this concept, a person's perception of color was formed as a result of their lifestyle and interaction with the environment over a long period of development. As a result of research, M. Lusher found that the attitude to color has always been emotional. In addition, he made another important conclusion for the design industry: the color does not only cause a person's response depending on their emotional state, but it can also shape their emotions. It is this aspect of color psychology that, in our opinion, is the most promising in terms of using the user interface of an educational platform in the design, forming a positive attitude of students to the educational material through psychological impact.

Perception by saturation. The strength of color perception depends on the degree of its saturation: the richer the color, the stronger the perception. If the design needs to be made more emotional, "lively", memorable, then increase the degree of color saturation, if on the contrary – it is better to stick to slightly saturated tones.

Perception by form. In this context, a shape is defined as the outline or contours of an object or shape. The form is directly related to the interface theme. For example, in order to visually create a sense of security, reliability, and confidence, it is advisable to use smooth rounded shapes and elements with smoothed corners that evoke associations with safety. The use of sharp corners, sharp bevels, is considered a traditional sign of aggression and causes a sense of alertness.

Perception by volume. If you need to convey a sense of stability, focus the entire amount of visualization in the middle of the workspace. If your goal is to surprise, interest, or implement non-standard solutions, then it is better to focus most of the visual material in the center in the user interface design, and distribute other elements that complement it evenly in other areas of the page.

Perception by style. The style direction in the design is set by the color, the nature of the lines, and the overall appearance of the interface. The principle of unity is also relevant here: to create a complete, harmonious image, it is necessary that all visual elements are combined in style, the nature of lines (for example, if straight lines are used, it is better to use them in the entire design) and the color scheme.

Perception by composition. Composition represents the location of elements in the workspace. It can be standard or original. It all depends on what idea and emotion you need to achieve in the interface. The standard placement of elements is designed for a predictable reaction, as a rule, it evokes a sense of stability, call up associations with the classics. The unusual location creates a modern image, reflects a non-standard approach to work, and emphasizes the originality of the idea.

2.5 Opportunities and prospects for personalizing the interface of the educational platform in accordance with the personality's psychotypes

Personalization of the user interface has already proven its effectiveness over the years, as evidenced by numerous studies (Vanderdonckt *et al*. 2005, Sutcliffe 2017, Polzin and Waibel 2000, Campos and Martins 1996, Denecke *et al*. 2019, Papakostas *et al*. 2021, Krouska *et al*. 2020, Troussas *et al*. 2020). But thorough research in the direction of personalization of user interfaces for educational platforms was not reflected in the domestic and foreign literature, which determined the relevance of developing the issue of prospects for personalization of user interfaces of an educational platform in accordance with the psychotype of the individual.

Considering the study of user attention concentration using heatmaps, in particular based on eyetreking technology, we will investigate the distribution of user attention on the course page of an educational platform (using the example of LMS Moodle) Fig. 1.

Thus, there is a lack of attention of the educational platform users to directly educational materials, extending to the navigation block, comments and title, there is a need to modify the user interface of the educational platform to achieve the best and most productive result on the part of users. To achieve this goal, we will pay attention to the peculiarities of information perception in accordance with the psychotypes of users.

Today, there are quite a lot of studies that can be used as a basis for segmenting the target audience by personality psychotypes, namely the Jung method of 12 personality archetypes, the 6W method, BIG 5/OCEAN, the R. Bartle segmentation model, and so on. Our study was based on the method of determining psychotypes developed by Professor D. Keirsey of the University of California (Keirsey). This method is derived from studies of the 12 archetypes method by C. Jung and I. Myers-Briggs. The questionnaire contains four bipolar scales that reflect the content of eight psychological factors of temperament:

Fig. 1 A heatmap showing the distribution of attention of users of the course page of the educational platform (using the example of LMS Moodle)

Table 3 Segmentation of personality psychotypes

		Sensing		Intuition	
		Thinking	Feeling	Feeling	Thinking
Introversion	Judging	ISTJ	ISFJ	INFJ	INTJ
		Hedonists		Idealists	
	Perception	ISTP	ISFP	INFP	INTP
Extraversion	Perception	ESTP	ESFP	ENFP	ENTP
		Rationalists		Traditionalists	
	Judging	ESTJ	ESFJ	ENFJ	ENTJ

1. E-I Scale – orientation of consciousness: E (extraversion) – orientation of consciousness outward, to objects, I (Introversion) – orientation of consciousness inwards, to the subject,

2. S-N Scale – method of orientation in a situation: S (Sensing) – orientation to specific information, N (intuition) – orientation to generalized information,

3. T-F Scale – the basis of Decision-Making: T (Thinking) – rational weighing of alternatives, F (Feeling) – making decisions on an emotional basis,

4. J-P Scale – method of preparing decisions: J (Judging) – preference to plan and organize information in advance, P (Perception) – preference to act without detailed preliminary preparation, more guided by circumstances.

The combination of scales and the definition of one of the 16 psychotypes allows you to group users into 4 large categories with common characteristics, namely hedonists, rationalists, idealists and traditionalists Table 3.

Such segmentation determines the user's path in interacting with the interface and its communication materials. As a result, it is possible to create a separate user interface design and communication style for each category, which will more clearly fit the thinking style of each individual use. As a result, different categories of users, such as adherents of restrained classics and adherents of modern minimalism, need to develop their own approach in the design of the user

interface and communication materials. Let's look at the features of design principles for each user group.

Communication through the user interface design with representatives of the "hedonists" category should be carried out using modern design trends, bright and emotional. Their attention is constantly out of focus, their decisions are impulsive and not always logical, which can be used when designing the user interface and communication materials. The design characteristics of communication materials for hedonists include bright colors, modern typographic solutions, high contrasts, active photos, and complex graphic solutions. Bright contrasting colors emphasize the direction, all design elements are attractive, encouraging the hedonist's desire to be at the peak of fashion and get everything new.

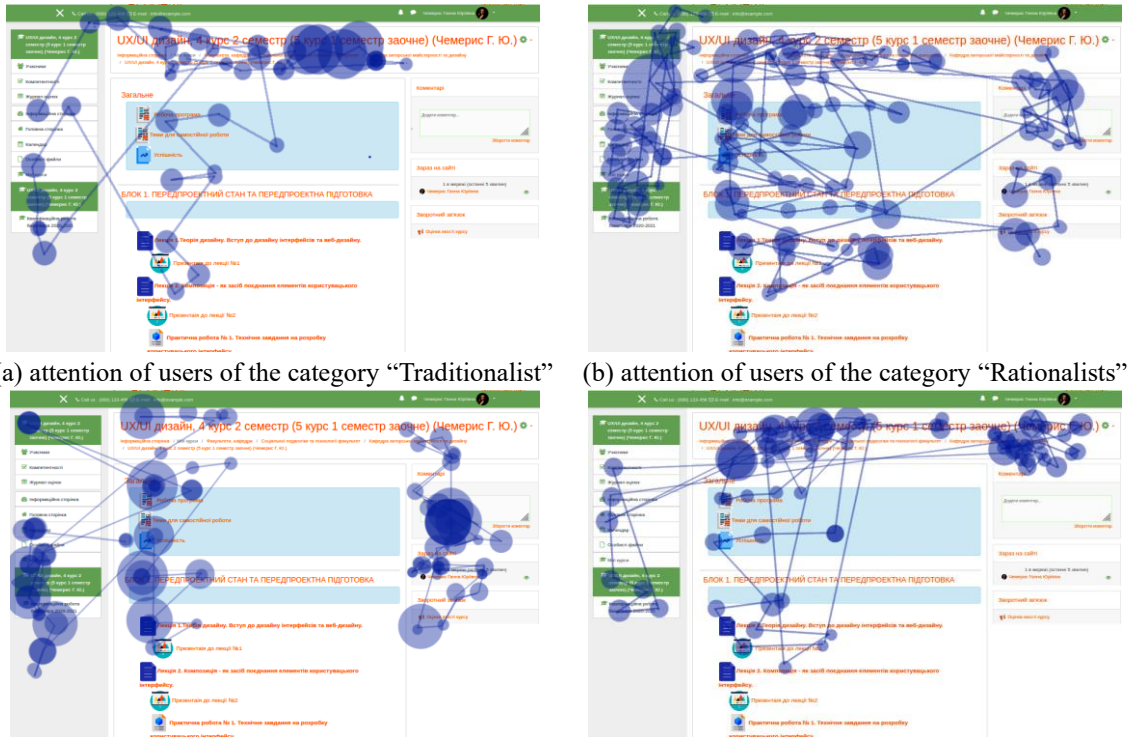
Considering the category of users "rationalists", we conclude that this is an audience of purposeful people with views independent of fashion or other people. They value the practicality and quality of solutions. These are often people who have consciously chosen their path. These people strive to achieve their goals, control the world around them and people. They do not strive like hedonists for new products, but appreciate already more proven solutions. Thus, they began to perceive communications or consume products only after they passed through the hedonist filter and those, in turn, eliminated all uninteresting and unviable solutions of the product or service. Their decisions are independent when getting acquainted with the interface, they pass everything through logic, their own opinion and perception of the world. It is important for them that the design and educational service correspond to their goals and status. Every decision is weighed, and emotions don't work here. To reach out to this category of people through design, when designing a user interface design, you need to take into account the coldness of independent people making their decisions. In the design of the user interface for a group of independents, you need to use elegant complex colors, black, metallic perfectly emphasize the design of the interface for independents complementing the style. Details and textures are important in the design, because they create a pleasant feeling and high cost. There should be concise fonts and font pairs in a manner of perfect simplicity.

Users of the third category, "idealists", people of a subtle nature who appreciate comfort and beauty, who consider family values, everyday life and comfort to be important. Their goal setting is weaker and, as a result, their decision-making is more sensual and emotional, not always tied to logic and cold calculation, as could be in case with independents. As a result, their motivation for designing the user interface should be based on the need to protect the comfort zone around them. The user interface design, aimed at idealists, is made in pastel colors using handwritten fonts and the like.

The latter category, "traditionalists", is the broadest. These are people who trust traditions and public opinion, and prefer stability. They do not welcome innovation by questioning it, and they feel trust only after the approval of hedonists, independents, and idealists. To develop a user interface design for a traditionalist audience, it is advisable to use straightforward illustrations, figures and facts, and the use of traditional and classical elements. Extrapolating the research of eyetreking (Bergstrom and Schall 2014) we give an example of the redistribution of attention of users of these personality psychotypes when viewing the course page of an educational platform (using the example of LMS Moodle).

The following view graphs show examples of 4 main categories of user behavior (Fig. 2)

Plot a) shows the attention distribution of the "Traditionalist" category, i.e., the classic user who dominates the search. This user briefly scanned the page and then went straight to the search. This distribution of attention is demonstrated by more than 50% of users. The concentration of attention



(a) attention of users of the category “Traditionalist” (b) attention of users of the category “Rationalists”

(c) attention of users of the category “Idealists” (d) attention of users of the category “Hedonists”

Fig. 2 Redistribution of attention in accordance with certain categories of personality psychotypes

of such users is more active in the course name block, i.e., the use of a pronounced typographic hierarchy in the construction of user interfaces has a decisive impact on users of this category.

Plot b) shows the distribution of attention of users of the category “Rationalists” who dominate navigation. Users in this category view navigation options - both in the center of the page and in the left navigation bar – before clicking on the most promising link. Despite the numerous fixes in the area of the training material, the user’s attention is scattered throughout the page. For users of this category, an important factor in user interfaces is the availability of convenient and understandable Navigation (navigation using side menus, “bread crumbs”, pagination, movement directly in the educational material, etc.).

Plot c) demonstrates the actions of the user of the category “Idealists”, which dominates in the tools, is involved in drop-down menus and input fields many educational platforms do not have such interactive functions, but, if available, attract a significant part of users (for example, search for educational material according to the choice of competence). Users of this category are impressed by the user interface elements where they can communicate (comment blocks, chats, course forums, etc.). In particular, these users dominate the search and have had several fixes in this area. However, the left navigation bar and main content categories were ignored. The attention of users of this particular group was best distributed in the block with educational material.

Plot d) shows the actions of the user of the category “Hedonists”. The distribution of attention of users in this group shows similar features to the distribution of attention of traditionalists, but, in contrast to the previous category, the amount of attention paid to educational material prevailed.

3. Conclusions

So, knowledge of the features of perception psychology in design, modern technologies for user behavior research and the ability to synthesize them into a single whole has a significant potential for creating an effective design of the user interface of a learning platform to improve the quality of learning. According to the results of the study, there is a need to restructure the user interface of the educational platform LMS Moodle in accordance with the identified redistribution of attention of users of such categories as hedonists, rationalists, idealists and traditionalists. Thus, it is necessary to structure the components of the user interface, in accordance with the identified scenarios of reading information by users by reducing a lack of attention of the educational platform users to directly educational materials. It is necessary to reorganize the navigation block, comments and title, there is a need to modify the user interface of the educational platform to achieve the best and most productive result on the part of users. For this it is necessary to develop four personalized user interfaces with a unique design that will take into account the identified features of personality psychotypes.

Prospects for further research are seen in applying the results at the formative stage. The study envisaged to build an effective user interface for personalizing educational platform LMS Moodle in accordance with certain psychotypes, namely for groups of users that show signs of the categories hedonists, rationalists, idealists and traditionalists. In the process of the generalizing stage it is planned to carry out experimental verification of the effectiveness of their use to reduce the lack of attention directly on the training material by calculating the Cronbach coefficient α and compare with the results of the ascertaining stage of the study.

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