



Развитие эмоционального интеллекта будущих специалистов по рекламе при работе с нейросетями для генерации изображений

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АННОТАЦИЯ

Проблема и цель. Модернизация высшего образования открывает новые перспективы использования технологий искусственного интеллекта для повышения качества подготовки высококвалифицированных кадров для цифровой экономики. Применение нейросетей для генерации контента в разных форматах, удовлетворяет как требованиям к программам подготовки конкурентных специалистов в сфере рекламы и связей с общественностью, так и требованиям к уровню развития навыков, составляющих основу эмоционального интеллекта личности.

Цель исследования – выявить возможности использования нейросетей для генерации изображений в обучении специалистов по рекламе для развития их эмоционального интеллекта.

Методы исследования. Для генерирования изображений и создания логотипов применяются сервисы «Шедеврум», Kandinsky, Turbologo. Опытно-поисковая работа проведена на базе Вятского государственного университета (Российская Федерация), в рамках изучения дисциплины «Цифровые технологии в профессиональной деятельности». В эксперименте задействовано 62 студента второго курса, обучающихся на факультете филологии и медиакоммуникаций, направление подготовки – 42.03.01 «Реклама и связи с общественностью». Для диагностики и оценки сформированности эмоционального интеллекта применён тест Н. Холла. При статистической обработке данных использован критерий χ^2 -Пирсона.

Результаты. Особенность представленного формата работы: с одной стороны, нейросети для генерации изображений являются объектом изучения. С другой стороны, применение цифровых сервисов в деятельности специалистов по рекламе – это дополнительный ресурс для коммуникации с целевой аудиторией. Работа с нейросетями для генерации изображений в экспериментальной группе была организована по следующим этапам: объяснение теоретического материала, изучение и реализация способов использования ИИ-инструментов на всех этапах создания деловой графики, генерация изображения по ключевым принципам, создание логотипа. Выявлены статистически достоверные различия в качественных изменениях, произошедших в педагогической системе ($\chi^2 = 6.589$; $p < 0,05$).

Заключение. Определены факторы, влияющие на уровень развития эмоционального интеллекта студентов при работе с нейросетями для генерации изображений: предвзятость/недостаточность исходных данных, неточности в формулировках для промпта, сложность интерпретации эмоций, сохранение авторского права, ограниченность бесплатных сервисов и их функционала.

КЛЮЧЕВЫЕ СЛОВА

цифровая экономика, образовательная технология, искусственный интеллект, эмоциональная составляющая, информационное взаимодействие, промпт

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Лицензия «С указанием авторства — С сохранением условий». Позволяет перерабатывать, исправлять и развивать произведения при условии указания авторства и лицензирования производных работ на аналогичных условиях.



Developing the Emotional Intelligence of Future Advertising Professionals Using Neural Networks for Image Generation

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ABSTRACT

Introduction. The problem and the purpose. The modernization of higher education opens up new prospects for using artificial intelligence technologies to improve the quality of training highly qualified personnel for the digital economy. The use of neural networks to generate content in various formats meets both the requirements of training programs for competitive advertising and public relations professionals and the development of skills that form the basis of an individual's emotional intelligence.

The objective of the study is to identify the potential of using neural networks for image generation in training advertising professionals to develop their emotional intelligence.

Research methods. The Shedevroom, Kandinsky, and Turbologo services were used to generate images and create logos. The experimental research was conducted at Vyatka State University (Russian Federation) as part of the course "Digital Technologies in Professional Activity." The experiment involved 62 second-year students studying in the Faculty of Philology and Media Communications, majoring in 42.03.01 Advertising and Public Relations. The Hall test was used to assess and evaluate emotional intelligence. The Pearson's chi-squared test was used for statistical data processing.

Results. A key feature of the presented study format is that, on the one hand, neural networks for generating images are the object of study. On the other hand, the use of digital services in advertising professionals' activities provides an additional resource for communicating with the target audience. The experimental group's work with neural networks for generating images was organized in the following stages: explanation of the theoretical material, study and implementation of methods for using AI tools at all stages of business graphics creation, image generation based on key principles, and logo creation. Statistically significant differences in the qualitative changes that occurred in the pedagogical system were identified ($\chi^2 = 6.589$; $p < 0.05$).

Conclusion. The authors identify the factors influencing the development of students' emotional intelligence when working with neural networks for image generation: bias/insufficiency of initial data, inaccuracies in prompt wording, difficulty interpreting emotions, copyright protection, and the limitations of free services and their functionality.

KEYWORDS

digital economy, educational technology, artificial intelligence, emotional component, information interaction, prompt

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INTRODUCTION

Emotional intelligence, according to experts from the UNESCO International Research Institute, is one of the key skills that determines a person's success in an increasingly uncertain and globalized society [1]. This is consistent with the findings presented in the World Economic Forum's Future of Jobs 2025 report on the key requirements for highly qualified specialists in the digital economy [2]. This includes advertising specialists. E. T. P. Saratian, M. Efendi, and M. Utami demonstrate that advertising specialists must possess well-developed emotional intelligence to support and grow their businesses [3]. Furthermore, as M. Alegría, M. Sierra, and A. Rosal convincingly demonstrate, there is a direct correlation (interaction) between the learning process using innovative tools (including those based on AI) and the level of emotional intelligence of students, academic performance, social satisfaction, and behavior [4].

At the 2025 Moscow Economic Forum, leading economists and entrepreneurs discussed the country's development strategy in the Digital Business Space, addressing the widespread adoption of AI (including content generation services) [5]. General international recommendations on the ethical aspects of AI use were formulated at the 41st session of the UN General Conference [6]. In light of these recommendations, innovative educators are developing ways to incorporate AI (including generative neural networks) to improve the quality of education.

However, according to L. Hollebeek et al., issues such as how to train advertising professionals to effectively use new AI-based technologies to minimize reputational costs and promote a company's brand remain understudied [7]. Emotional intelligence plays a key role in achieving these objectives, enabling marketers to understand the preferences and customer feelings and accurately identify the target audience for a product or service. Talking about training young specialists, M. Malarvellze, A. A. Shailaja, and K. G. Akshay emphasize that the introduction of relevant courses (disciplines) into training programs for university graduates is a necessary condition for the quality of education [8].

A. E. Samarina and D. A. Boyarinov examine the use of neural networks in various pedagogical applications [9]. Specifically, the authors identify the didactic potential of generative neural networks for image creation. They evaluate the application of AI services to address issues relevant to modern pedagogy; analyze the students' readiness and attitudes toward relevant information interactions; identify potential challenges; identify the most accessible and convenient neural networks in a didactic context; and substantiate the need to incorporate new services into educational programs to prepare highly qualified specialists in demand. In general, as C. Lim and H. Park note, AI-based technologies are becoming widespread in the advertising industry, offering both new opportunities and posing significant challenges [10]. Understanding the emerging risks and potential requires changes in the system of training personnel for the advertising and public relations sector.

The research hypothesis is that including organized work on the use of neural networks for image generation in the training program for future advertising specialists will provide additional resources for developing their emotional intelligence.

The goal of the study is to identify the potential of using neural networks for image generation in training advertising specialists to develop their emotional intelligence.

Research objectives: to clarify the challenges and potential of using neural networks for image generation in training advertising specialists; to describe possible applications of neural networks for image generation in the work of advertising specialists, taking into account the specifics of their training; to identify factors influencing the development of advertising specialists' emotional intelligence during their interactions with neural networks for image generation; to experimentally test the effectiveness of the proposed practical activity organization in student training.

MATERIALS AND METHODS

The advertising specialist in this study is a university graduate capable of, firstly, designing and implementing advertising and communications products in various formats (video, photo, audio, design, text, events, etc.) at a high professional level. Secondly, they are capable of handling the communication aspects of advertising production. The image-generating neural network is an

information model created by an artificial intelligence program. Its output is visual images based on a text description (prompt) or other input data. The Shedeovroom and Kandinsky neural networks were used for image generation in this study. Logo creation was carried out using the Turbologo service (<https://turbologo.ru/>). The service's tools allow for the generation of dozens of logo variants in just a few minutes, taking into account user requests and preferences for themes and color schemes. Paid plans allow you to create, in addition to a logo, other corporate identity elements, such as a business card, letterhead, and more.

The experiment involved 62 second-year students studying in the Faculty of Philology and Media Communications at Vyatka State University (Russian Federation). They were majoring in 42.03.01 Advertising and Public Relations. The average age of the students was 20 years old (55% female, 45% male). Involving future marketing and advertising specialists in generating images and creating logos was implemented in the course "Digital Technologies in Professional Activity". To assess the level of emotional intelligence development, the N. Hall test was used. Based on the results of the authors' analytical work, it was chosen as the primary method for assessing the effectiveness of the proposed system. The selected diagnostic tool allows us to track the characteristic it is designed to measure—the level of development of an individual's emotional intelligence.

To formulate a conclusion about the development of emotional intelligence, the level was calculated as follows: 70 or more is "high," 40-69 is "average," and 39 or less is "low". The full methodology and interpretation are in the study results. A control group (31 advertising specialists) and an experimental group (31 advertising specialists) were formed. The Pearson's chi-squared test was used for statistical processing of the data.

LITERATURE REVIEW

M. Savastano et al. note that AI is one of the most rapidly developing technologies in modern society and the digital economy [11]. The authors note that many marketing stakeholders fear being replaced by cyber-physical systems. Moreover, these concerns arise even in cases where specialists possess a high level of emotional intelligence. H. Azouaoui and I. Ouazzani Touhami explore whether it is possible to replace a human salesperson with developed emotional intelligence with a robot (or AI) [12]. The results of their study showed that Moroccan companies are quite successfully using artificial intelligence to automate some advertising tasks. However, they also identified the need to adhere to key ethical principles when using chatbots and neural networks.

T. Aziz et al. present a user-controlled expert system that takes into account user emotions [13]. Their research contributes to the development of cyber-physical systems focused on modeling human-AI interactions, thereby providing the ability to create an emotionally adaptive consumer profile for the development of digital marketing strategies tailored to human interests. A. Khandelwal, Aditi et al. highlight the transformative potential of AI and digital marketing in shaping consumer behavior and stimulating purchases [14]. The authors note that the information overload of the digital society hinders the perception of advertising as it once was. A. Khandelwal, Aditi et al. attempt to assess how this situation impacts the industry, and what tools will help to successfully operate in the advertising services market.

A. Mitra and S. Paul note that in the competitive digital labor market, where customer loyalty and retention are crucial, AI-based personalization is becoming a key factor in building effective and trusting relationships with customers [15]. This study explores the integration of emotional intelligence into AI-based strategies to enhance brand loyalty. L. Hollebeek et al. rightly note that the use of AI to engage consumers is increasingly prominent in international research [7]. H. Moskowitz et al. examine the potential of AI for generating healthy lifestyle and weight loss recommendations [16]. M. Agreda and F. Ilaita analyze the negative and positive effects of AI on digital marketing [17]. Key findings include the powerful impact of AI on personalizing consumer experiences and analyzing customer behavior and preference data. Challenges include maintaining data privacy, transparency, and ethical relationships. M. Talele and R. Jain evaluate the capabilities of convolutional neural networks for recognizing complex emotions [18].

C. Ziakis and M. Vlachopoulou note the undeniable fact that AI has become a transformative force across many sectors of the digital economy [19]. In their study, the authors attempt to answer the

key question: "How can AI applications be used to optimize digital marketing strategies?". C. Ziakis and M. Vlachopoulou thoroughly analyze the potential of machine learning, social media, generative neural networks, and e-commerce chatbots to interpret consumer behavior, improve the effectiveness and appeal of digital advertising, optimize budgets, and develop competitive strategies. Each cluster provides insight into how AI applications can be used to enhance digital marketing effectiveness. The authors emphasize the need for advertising professionals to understand the changing role of AI in digital marketing strategies and learn how to apply it in practice. S. Vadivelu, M. Thangavel, and L. Laksana find that with the development of digital tools, consumers naturally adopt new purchasing habits [20]. The authors note that customers often rely on their emotions (initial preferences, visual appeal) when evaluating products during their purchasing decisions. Therefore, marketers must understand the emotional factors that influence customer choices when making online purchases. For example, they must not only understand the emotions a product evokes but also how to adapt marketing strategies to the emotional experiences of the target audience. The results of the study showed that customers demonstrate higher levels of brand loyalty if a company takes their emotional needs into account. As a logical conclusion, the study by S. Vadivelu, M. Thangavel, and L. Laksana suggests that only by analyzing customer data should customized digital marketing strategies aimed at improving consumer engagement be developed [20]. Furthermore, the use of AI technologies facilitates a deeper interpretation and understanding of consumer experiences.

V. V. Gerasimenko, D. N. Kurkova, and A. Kurbatskii convincingly argue that sentiment analysis is a crucial tool for solving management problems related to maintaining a company's reputation and predicting customer intentions [21]. K. S. Khachaturyan, S. V. Ponomareva, and N. V. Koriushov analyze the concepts of applying AI in marketing, highlighting key elements and promising research areas [22]. For example, the use of neural networks for analyzing big data, identifying patterns, automating routine tasks, and generating personalized content. Regarding the latter area, the authors note that the level of emotional intelligence of a company's employees is an important factor. The results of K. S. Khachaturyan, S. V. Ponomareva, and N. V. Koriushov are in many ways similar to the findings presented in the study by H. N. Durmuş Şenyapar. The author also conducts a comprehensive analysis of the integration and impact of AI on marketing communications [23].

A. Koswara also points out that AI-powered chatbots have become essential tools for improving customer communication [24]. These new digital tools make it possible to attract new customers amid the risks and uncertainties of digital marketing. Chatbots enable the rapid collection and processing of information about customer preferences and intentions, helping companies improve their marketing strategies. However, chatbots have some limitations. For example, they lack the speed of communication and the ability to redirect queries to a human operator. A. Koswara also offers insights on how best to use chatbots in various types of communications, and how they can help companies retain customers and grow their business in the long term.

F. Saputra and Y. Sutarso describe the functions of a chatbot in e-commerce [25]. A virtual assistant is used to understand customer satisfaction, consumer purchase intentions, and maximum purchase value. Key functions of a virtual assistant include providing answers to frequently asked questions and gift suggestions. The authors also evaluate the impact of chatbots on marketing practices and consumer interactions. F. Saputra and Y. Sutarso point out that interactivity, a friendly communication style, responsiveness, and ease of use play a significant role in influencing consumer satisfaction.

Ye. Kosova, K. Redkokosh, and P. Mikheyev describe a methodological approach to training digital content authors to create informative and concise text descriptions for image generation using a neural network [26]. E. T. P. Saratian, M. Efendi, and M. Utami study the relationship between emotional intelligence, brand strategy success, consumer brand perception, and customer loyalty [3]. The results show that higher levels of emotional intelligence among marketing staff and effective advertising strategies positively impact consumer brand perception, which subsequently leads to increased customer loyalty.

K. Berest suggests that AI is becoming a transformative force for business in many areas [27]. However, as the author notes, despite the rapid adoption of new digital technologies, assessing the impact of AI on organizational performance remains challenging. To a certain extent, AI influences both macro-level metrics (such as ROI or employee productivity) and specific key performance indicators. Among the latter, he includes employee satisfaction and turnover, customer satisfaction, marketing effectiveness, and so on. M. Malarvellze, A. A. Shailaja, and K. G. Akshay note that

employees' ability to demonstrate emotional intelligence is a critical factor determining service quality in customer service organizations [8]. This factor determines customer satisfaction and supports long-term loyalty. According to the study, employees with developed emotional intelligence are perceived by customers as more qualified, which increases trust and satisfaction with service. The authors point out that developing emotional intelligence in advertising employees is an important way to enhance a company's customer focus.

M. Argan et al. point out that information technology is currently not only widely used in all spheres of life but is also fully utilized for marketing and advertising promotion [4]. In particular, AI tools are increasingly being used in advertising and e-commerce (chatbots, neural networks). However, how exactly social media users respond to AI-based advertising – that is, the mechanisms of influence—remains unclear. A. Devi analyzes international research in the field of AI-based advertising and identifies future directions for researchers in India [28].

T. V. Lyagoshina analyzes the range of modern software supporting natural language processing. She notes the significant evolution of technology and the importance of the emergence of LLM. The author points out that LLM is essentially a mathematical model (a method of information processing) implemented on an artificial neural network with multiple parameters. T. V. Lyagoshina identifies and attempts to address issues related to understanding the nature of these models and services that enable their recognition of human language [29]. A. Todorova and I. Kostadinova note that the rapid development of AI technologies has led to the development of a new, constantly changing digital economic environment in Bulgaria [30]. However, digitalization has also increased the importance of soft skills such as emotional and social intelligence. The authors analyze the relationship between these skills and the success of digital entrepreneurs. The researchers conclude that, despite the specific requirements of digital business, the basic profile of a successful entrepreneur remains universal and is characterized by a high level of emotional and social intelligence. Consequently, there is a need to improve training programs for relevant specialists to develop their emotional and social intelligence using new digital technologies.

U. E. Çubukçu, M. Akbolat, and B. Uysal note that in the modern world, understanding how personal competencies of employees, such as emotional intelligence, can contribute to increased productivity and reduced professional stress is particularly important [31]. E. V. Soboleva et al. substantiate the importance of developing the emotional intelligence of university graduates in the modern information space. The authors propose using digital services and gamification resources as a tool to support relevant didactic activities [32]. A. Kaleel and M. Alomari identify the integration of AI methods into the work of advertising and media professionals as a new interdisciplinary area of research [33]. The authors recommend that for the inclusion of AI in these areas to be effective, it is necessary to ensure broader stakeholder participation, including university faculty and future graduates planning to work in the field. I. V. Utkina et al. describe the capabilities and characteristics of various neural networks [34]. The authors compare the results of image generation based on given prompts. It was found that neural networks have didactic potential for improving the quality of design student training. For example, this can be used to help students find original ideas and develop their own creative concepts. The authors also examine some neural networks in relation to project-based activities to support the solution of routine problems. I. V. Utkina et al. propose a specific algorithm for using neural networks in teaching design students [34].

The literature review allows us to conclude that: the role and influence of AI technologies on the development of the digital economy in general, and the work of advertising specialists in particular, is increasing; educational programs for training advertising specialists need to be adapted to reflect new trends in the modernization of society, the economy, and education; new digital tools (chatbots, neural networks for generating various content), incorporated into didactic information interaction, make it possible to create additional conditions for the development of emotional intelligence in digital economy specialists.

RESEARCH PROGRAM

The first stage involved a literature review on the development of emotional intelligence in digital economy specialists and the impact of AI technologies on the quality of training for future professionals. The authors identified the didactic potential of neural networks for image generation

and their potential applications for solving professional problems. The experience of using neural networks for image generation in training highly qualified digital economy specialists was studied.

It was found that AI systems today are capable of independently suggesting optimal data presentation methods and generating contextual headings and annotations. Furthermore, new digital resources allow the identification and explanation of key trends and anomalies in data, perform forecasting, and provide recommendations. These capabilities are primarily implemented in large BI (Business Intelligence) platforms such as Microsoft Power BI, Tableau, Oracle Analytics Cloud, and others. However, to solve basic marketing tasks, users often need to access the neural network through a simple text-based chatbot interface or use the resources of a specialized website with an accessible subscription.

For the logo, it was decided to use Turbologo. This service allows you to generate a professional logo using AI. This feature is ideal for websites, social media, and print. It features a large image database, updated daily by designers from around the world. It also features a collection of high-quality Cyrillic fonts and instant downloads. A distinctive feature: no templates are used. All logos are generated upon request with specific parameters.

When selecting a methodology for assessing the abilities that form the basis of emotional intelligence in digital economy specialists, the following tools were analyzed: the WLEIS test for the emotional intelligence model of J. Mayer, P. Salovey, and D. Caruso, the online "Emotional Intelligence Test" method, D. V. Lyusin's "EmIn" questionnaire, and N. Hall's test. The latter was chosen for processing the results of the presented study. The reason for this choice was the method's validity and reliability. The method is a questionnaire containing 30 situational questions. By analyzing respondents' responses, it is possible to assess the level of development of emotional awareness, emotional management, self-motivation, empathy, and recognition of others' emotions. The integrated indicator (the sum of all scales) for formulating a conclusion about the development of emotional intelligence was calculated as follows: 70 or more is "high," 40-69 is "average," and 39 or less is "low." This methodology was used both before and after the teachers' work with the chatbots. A control and experimental group were formed, each consisting of 31 future digital economy specialists.

In the second stage of the study, students explored the interface and capabilities of the Shedevroom and Kandinsky neural networks. They also designed and developed their own logo using the Turbologo service (<https://turbologo.ru/>). They then used the resulting images and logo in classes on "Fundamentals of Composition, Drawing, and Painting in Advertising" and "Internet Communications".

In the third stage of the study, factors influencing the emotional intelligence of advertising specialists were identified during their interactions with image-generating neural networks.

RESULTS

The students in the experimental group's interactions with neural networks were organized into the following stages: theoretical study, exploration and implementation of AI tools at all stages of business graphics creation, image generation based on key principles, and logo creation.

Stage I. Study of Theoretical Material. The following important theoretical facts were established: tables, graphs, charts, maps, diagrams, and drawings designed to visually present data in advertising and public relations are examples of so-called business graphics. Their use improves the efficiency of business process analysis, accelerates information comprehension, and reduces the likelihood of interpretation errors; prior to the widespread adoption of AI technologies, most widely used online services and data analysis and visualization platforms relied on pre-designed templates and conditional algorithms, requiring the user to manually select a chart type, configure styles, and adjust display parameters.

Stage II. Study and implement methods for using AI tools at all stages of creating business graphics by an advertising specialist. The key type of information interaction at this stage is searching, selecting, and structuring data to create a diagram on a specific topic. Methodological recommendation. Ask the neural network questions like: "What data should I find to clearly

represent a process/relationship/characteristics/properties... in a graph or diagram?". The neural network provides a detailed and understandable answer, not only listing the data but also indicating possible sources for the search, and suggesting the data structure and preferred graph options for visualization.

Example 1. What data should I find to clearly represent the seasonal variation in acute respiratory viral infection rates in Moscow in a graph or diagram?

Example 2. What data should I find to clearly represent the effectiveness of social media advertising campaigns for small businesses in a graph or diagram? AI can offer tracking of CTR (click-through rate), conversion, and advertising costs, as well as comparisons with periods without advertising.

Example 3: What data should I find to visualize the impact of remote work on employee productivity in IT companies using a graph or chart?

Stage III. Image Generation: Features and Key Principles. The following practical aspects were developed here: modern neural network technologies have radically changed the approach to creating visual content, opening up new opportunities for education, design, and creativity; image generation by artificial intelligence is a process in which algorithms create unique graphic objects based on text descriptions or other input data. This technology emerged in the 2010s with the development of generative adversarial networks (GANs). On July 12, 2022, the Midjourney neural network was launched, capable of generating highly detailed images in a variety of styles, from photorealism to abstraction. Domestic services have also been actively developing in recent years. The most well-known projects include:

1. The Kandinsky neural network from SBER. It specializes in creating images in the styles of Russian painting and contemporary art trends. Generation is implemented on the Fusion Brain platform (<https://fusionbrain.ai>), as well as via chatbots on Telegram (@kandinsky21_bot) and VK (https://vk.me/kandinskiy_bot). The browser version provides users with maximum creative opportunities.

2. Yandex's Shedevroom project. It is available as an online service (<https://shedevrum.ai/>) and a mobile app. The browser version has a limit on the number of generations (70 per day), but the app allows unlimited use. Shedevroom uses the YandexArt neural network to generate images and short videos, and also features a creative mode called "Filtrum" for stylizing images.

Next, the features of image generation prompts were formulated. Image generation in any service begins with formulating a request, and to do this, the key principles of writing effective prompts should be considered: a clear description of the main object, avoiding ambiguity: avoid dialect or slang words, name the object as specifically as possible; additional image details: include plot details, primary colors, describe objects in the background, etc.; set the style: neural networks can imitate artistic movements (realism, impressionism, surrealism, digital painting, etc.).

It should also be taken into account that neural networks were trained on different data – all of them can draw people and various animals, but not all are familiar with, for example, animal breeds, plant varieties, film and cartoon characters, etc. For example, students could be presented with the results of a single request generated by three neural networks ("Oriental cat. Oil painting from the Impressionist era"). During the discussion, the students noted that all three neural networks were familiar with impressionism. However, the Kandinsky 3.1 model was completely unable to depict a specific cat breed. The educational conclusion is that sometimes a perfect prompt is not enough to achieve the desired result; neural networks of different models must also be used.

Several universal image generation prompt templates were discussed and implemented.

1. Template 1 (landscape): [Style] + [Main Object] + [Details] + [Colors/Mood]. Example: A job fair, where each participant is displayed in a format: a fox in a hat, hares with lanterns, bright autumn leaves, a fairytale atmosphere.

2. Template 2 (portrait): [Character Personality] + [Clothing/Accessories] + [Background] + [Style]. Example: A kind company boss in an elegant Russian folk costume, walking through the office on a broom from left to right, against a starry sky, digital painting.

3. Template 3 (abstraction): [Shapes/Textures] + [Colors] + [Emotion]. Example: abstract office building walls with golden highlights, deep blue background, a sense of calm.

4. Template 4 (character). [Object] in a scene from [movie/work] in the style of [art movement]. Example: Advertising executive Stu Shepard, in a scene from the film "Phone Booth," speaks to a client on the phone in a realistic style.

The ability to create a prompt that leads to the desired result is developed by testing various query options, preferably in several services. It is also useful to study the prompts of completed works – this option is available, for example, in Shedevroom (open the image you like).

Stage IV. Logo Creation. A logo is a crucial part of any marketing project, and project-based activities are an integral part of modern educational processes. A logo and other corporate identity elements help differentiate your work and create a memorable image. A logo can be useful for presentations, project reports, startups, competition applications, and videos. A logo is also key when creating a personal brand on social media or in a portfolio.

Creating a logo using neural networks is a simple and accessible way to achieve a high-quality graphic result without design skills. The Russian service Turbologo (<https://turbologo.ru/>) offers the ability to find the right style, fonts, icons, and color combinations for a personal or business logo. Its user-friendly design tool helps you choose a template you'll truly love. Hundreds of design options will allow you to find the perfect one for your company. All this takes just a few clicks and up to ten minutes. The service includes: an online photo maker, ideas, and images. Logo Design in Turbologo.

1. Immediately after registration, click the "Logo" button. Enter the name of your project, company, or website, and optionally add a slogan. Select your industry from the list provided.

2. Select logo examples you like.

3. Select one or more colors for your logo, select several suitable icons in the next window, and click "View Logos". Next, you can select a logo from the suggested ones to save or edit and add to the previously entered parameters. You can also edit and add to the selected logo.

The service also offers options for using your logo for branded items (T-shirts, signs, website design, social media materials, etc.).

Students in the control group created images as part of a study about using modern digital technologies to support professional problem-solving. For example, they used Pixlr. This online photo editor has a simple interface, making it easy to navigate even for those new to similar applications. Pixlr features a modern interface consisting of a sidebar with various functions and buttons for photo editing in the center. Using the app, you can change the brightness, contrast, or size of an image, and, if necessary, select the optimal transparency. The students' work plan included: gaining basic knowledge, working with backgrounds, removing an object, creating an advertising poster from scratch, color substitution, creating a text image, creating an abstract marble effect, layering, collage, and working independently with Pixlr.

Following the informational interaction, the Hall test was conducted again. The students' emotional development levels were also assessed. This technique allows one to diagnose the level of emotional intelligence in its various aspects: emotional awareness, the ability to manage one's emotions, self-motivation (as voluntary management of one's emotions), empathy, and the ability to recognize the emotions of other people (as well as influence their emotional state). Participants were presented with a list of 30 statements across five scales. Next to each statement, they wrote a number indicating their agreement/disagreement with its content (from "-3" to "+3"): completely disagree ("-3"); mostly disagree ("-2"); somewhat disagree ("-1"); somewhat agree ("+1"); mostly agree ("+2"); completely agree ("+3"). To interpret the results, the following levels were introduced: "high," "low," and "average". We will describe the essence of the levels in order to evaluate the results of the experimental work.

Low level – advertising professionals do not possess the necessary set of knowledge, skills, and abilities in creating images to solve professional problems (the digital economy); to understand customer satisfaction, consumer purchase intentions, and their cost.

Average level – students have limited knowledge of the use of modern digital services in advertising and e-commerce, particularly for image creation; To understand customer satisfaction, consumer purchase intentions, and purchase price.

High Level – specialists are fully prepared to independently solve problems in advertising and e-commerce using digital technology tools, particularly image creation.

Students are proactive and emotionally open to dialogue when analyzing resources and engaging in information exchange. They utilize various forms of learning and self-assessment. They demonstrate the ability and willingness to improve on both personal and professional levels. Table 1 presents the learning outcomes.

Table 1 The level of emotional intelligence of students before and after working with neural networks

Level	Groups			
	Control (31 student)		Control (31 student)	
	Before the experiment	Before the experiment	Before the experiment	Before the experiment
High	3	4	4	13
Average	20	22	19	15
Low	8	5	9	3

The following hypotheses were accepted: H0: The level of emotional intelligence of students in the experimental group is statistically equal to the level in the control group; H1: The level in the experimental group is higher than the level of the control group. For $\alpha = 0.05$, χ^2_{crit} is equal to 5.991. It was determined that $\chi^2_{obs.1} < \chi^2_{crit}$ ($0.084 < 5.991$), and $\chi^2_{obs.2} > \chi^2_{crit}$ ($6.589 > 5.991$). Therefore, changes in the levels of emotional intelligence of students are not random. Note that the neural network can recommend analyzing the average task completion time, the number of completed projects before and after the transition to remote work, employee satisfaction, and other characteristics. We formulate the following methodological recommendations:

1. Avoid asking the neural network a query like: "Find ice cream sales data in Moscow for the past months of the current year". The neural network does not have direct access to current databases or internal analytics systems, and therefore cannot obtain up-to-date statistics from official sources in real time. The data may be outdated or inaccurate. For example, a neural network might reference data from 2022 (on which it was trained) but miss the fact that the ice cream market changed in 2023 due to new players or prices;
2. Complex queries lead to "hallucinations." The neural network might invent a link to a non-existent report or point to an abstract API that doesn't actually work.

DISCUSSION

The presented research materials are consistent with the current research areas being actively pursued by experts from the UNESCO International Research Institute and the World Economic Forum in the context of formulating key requirements for training highly qualified personnel for the development of the digital economy [2]. These include requirements for developing skills and abilities that form the basis of specialists' emotional intelligence for the current labor market and for the future.

These materials expand on the ideas presented by E. V. Soboleva et al. on the use of innovative digital services for developing the emotional intelligence of students at a humanities university [32]. The findings support the assumptions of M. Alegría, M. Sierra, and A. Rosal regarding the relationship (interaction) between the learning process using AI-based software and students' emotional intelligence, their academic performance, social satisfaction, and behavior [4]. The presented approach to working with students offers a solution to the problem identified in the study by L. Hollebeek et al [7]. Specifically, the study explores the potential of using new AI-based technologies in training advertising specialists to minimize reputational costs and promote a company's brand. The study

clarifies the didactic potential of neural networks for image generation, outlined in the algorithmic form in the article by I. V. Utkina et al., for students interested in a career in advertising [34].

The following options for continuing the work presented can be proposed: adding practical work with neural networks for generating text and presentations to the work on developing the emotional intelligence of future advertising specialists; introducing practical activities in classes that take into account the requests of potential employers. This includes generating images for specific brands, marketing strategies, and customer preferences.

CONCLUSION

Thus, organizing practical activities for future advertising specialists using neural networks for image generation contributed to the development of skills and abilities that form the basis of their emotional intelligence. This was achieved because work with neural networks for image generation was organized in the following stages: studying theoretical material; studying and implementing methods for using AI tools at all stages of business graphics creation; generating images based on key principles; creating a logo. The following are suggested as possible applications of neural networks for image generation in the work of advertising specialists, taking into account the specifics of their training: brand formation and development, a deeper understanding of consumer preferences and emotions, personalization of marketing offers, formulating marketing strategies, improving communications and collaboration, etc.

Key methodological recommendations regarding the rules/principles of formulating prompts for neural networks are identified, which advertising specialists should consider in their professional activities. For example, there is a need for a critical assessment of the obtained generation results. The study found that AI tools are effective at the planning stage, when it is necessary to extract or collect data from existing data that will reflect the properties of phenomena and illustrate the patterns of processes in a specific subject area. A significant limitation is that, to obtain accurate quantitative and qualitative data based on neural network recommendations, traditional search engines and reliable sources should be used.

The following factors were also identified that influence the emotional intelligence of advertising professionals during their interaction with neural networks for image generation: biased or insufficient initial data, inaccurate prompt formulation, the problem of "rare" concepts, difficulty interpreting consumer emotional data, copyright issues, and the limitations of free services and their functionality. The study's results can be used to improve training programs for advertising and public relations professionals to meet the challenges of the digital economy.

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