Some perspectives on the application of artificial intelligence in encyclopedias

Mykola Zhelezniak
Institute of Encyclopedic Research, National Academy of Sciences of Ukraine, Kyiv, Ukraine
ORCID: 0000-0002-8290-6345
Email: mykola@esu.com.ua

Oleksandr Ishchenko
Institute of Encyclopedic Research, National Academy of Sciences of Ukraine, Kyiv, Ukraine
ORCID: 0000-0002-8910-111X
Email: ishchenko@nas.gov.ua

Abstract

The article explores potential directions for employing generative artificial intelligence to enhance encyclopedia articles. Specifically, it proposes the idea of building additional knowledge-based content on encyclopedia platforms designed to summarize the information contained within articles (e.g., generating highlights, annotations, summaries, etc., through AI tools). According to the authors, such supplementary text blocks would be both interesting and beneficial for readers, aiming to improve article comprehension and retention of information while enabling them to quickly grasp the essence of extensive articles. A case study using selected articles from the *Encyclopedia of Modern Ukraine* demonstrates that virtual assistants like ChatGPT and Gemini exhibit a satisfactory level of proficiency in generating this type of supplementary content. However, the authors also emphasize the risks of editorial misuse of artificial intelligence, as it could be employed to generate primary content of articles replacing human authors. This raises concerns regarding the accuracy, reliability, and overall value of such content. Finally, the article underscores the need for scholarly discourse on ethical standards for the use of artificial intelligence by encyclopedia editorial officers.

Keywords

encyclopedias, generative artificial intelligence in encyclopedias, ChatGPT, Gemini, encyclopedia publishing ethics, encyclopedic content.

INTRODUCTION

The pervasive influence of modern technologies on all aspects of life is gradually transforming society, promoting educational attainment and prioritizing knowledge as key factors in social differentiation and personal well-being (Andriievska, 2018, 3). Among these technologies is generative artificial intelligence (GAI), powered by large language models and the deep machine learning of artificial neural networks, which is unlocking new possibilities in science, business, culture, and society.

Key capabilities of GAI currently include the generation of written and spoken language, whose form and content demonstrate cognitive-like abilities, as well as the creation of graphic, photographic, and video content (Jovanović, Campbell, 2022). This article focuses solely on GAI's ability to produce text.

At the outset, it is important to note that we do not view using tools to generate encyclopedia articles as a viable alternative to original author-created content (for more details, see the forthcoming article by the authors, "Online encyclopedias and generative artificial intelligence: challenges and opportunities (case of the Encyclopedia of Modern Ukraine)", to be published in *Science and Innovation*). However, in many other domains, this function of artificial intelligence — popularized by virtual assistants such as ChatGPT (OpenAI), Gemini (Google LLC), Copilot (Microsoft Corporation), and others — has become the norm.

For example, in e-commerce, many companies have significantly reduced or even abandoned copywriters who were responsible for creating content for online stores — the task of describing products is now entrusted to GAI technologies, which perform this task automatically. According to some studies, despite their shortcomings, virtual assistants are capable, for many online stores, not only of replacing copywriters but even of improving the quality of product descriptions, which increases sales (Serbin, 2023).

We believe that if the texts of encyclopedia articles begin to be generated using artificial intelligence tools, this will not only trivialize the corresponding publications or online resources but also devalue the field as a whole, having a detrimental impact on the development of encyclopedism (the preservation, multiplication, and dissemination of reliable knowledge in a reference format). In the current context of a vast amount of information sources, the value of encyclopedias lies primarily in their authors, who possess high professional authority and not only the relevant knowledge but also experience, and many possess wisdom. At the same time, we consider the potential of artificial text generation at the level of other possible directions of its application, improving the processes of preparing encyclopedic literature and disseminating encyclopedic knowledge in society.

Therefore, **the aim of this research** is to demonstrate the quality of texts synthesized by artificial intelligence, which can serve as supplementary knowledge-based content alongside the main, author-created content of an encyclopedia article.

In recent times, numerous online encyclopedias worldwide have been developed as multifunctional (interactive) information resources. This implies that they serve not only as a platform of reference information but also as a didactic portal that can be beneficial in the educational process (Zhelezniak & Ishchenko 2021). It is crucial for Ukrainian specialists to adopt this encyclopedic practice, as the construction of effective information systems in education, taking into account global experience, the specifics, and realities of the state of domestic education, is an issue that deserves special attention in modern scientific theory and practice (Blyzniuk 2017, 69). Didactic literature (textbooks, manuals, etc.) typically combines a theoretical component with a practical one aimed at mastering the learning

material. A practical component of information accompanying articles would be appropriate in any online encyclopedia, as it would undoubtedly increase its heuristic potential.

Our idea is that this (AI-generated) information panel can present key theses from encyclopedia articles (highlights of encyclopedia articles), contributing to a deeper understanding of the article content and better knowledge acquisition. Such a block of compressed information is particularly important in lengthy articles, as not every average encyclopedia user preffers longreads, while abbreviated versions of large articles in the form of the most important fragments would be useful. Thus, key theses in encyclopedia articles would be beneficial both in terms of material assimilation (e.g., in the educational process) and for quick familiarization with reference information (similar to an article summary or outline).

MATERIALS AND METHODS

The creation of an additional information block based on an encyclopedia article using artificial intelligence involves processing the article's text via a virtual assistant (through API access to the encyclopedia's website or database) and generating a result based on its content. To test the potential of generative AI for this task, we conducted a small experiment. For this purpose, we used two AI assistants — ChatGPT and Gemini. This choice was motivated by the desire to compare their performance on the given task. Using their respective chat interfaces, we provided the following instruction: "Write the key theses of this article (no more than five theses):" and supplied the copied text of the article. The material for the experiment was taken from the *Encyclopedia of Modern Ukraine*, specifically the articles "Bourgeois Nationalism"[1] [in Ukrainian] and "Nationalism"[2] [in Ukrainian]. These articles were selected because they are frequently accessed by internet users. The AI models were provided only with the article texts; details such as the list of recommended literature and the authors' names and initials were omitted. It is also worth noting that the article "Nationalism" consists of two parts: the first written by Volodymyr Kulyk and the second by Vasyl Lisovyi. For the purpose of this experiment, only the section authored by V. Kulyk was used.

EXPERIMENT 1

BURZHUÁZNYI NATSIONALÍZM – termin, rozroblenyi marksystsko-leninskymy ideolohamy, yakyi mav oznachaty natsionalizm yak uchennia u vykladi nebilshovytskykh ideolohiv. Istorychno tsei termin pryishov na zminu terminovi «burzhua-natsionalist», poshyrenomu v Nimechchyni ta Italii 2-yi chv. 19 st. Pershyi skladnyk termina («burzhuaznyi») buv poviazanyi iz kharakterystykoiu prosharkovykh interesiv meshkantsiv serednovichnykh mistechok abo velykykh zamkiv chy mistechok iz zamkamy. Druhyi skladnyk («natsionalizm») – z uchenniamy pro mesianizm monoetnichnoi derzhavy (vytoky prostezhuiut vid davnoho yudaizmu y tezy pro bohoobranyi narod). U Radianskii Ukraini naichastishe vykorystovuvaly termin «ukrainskyi burzhuaznyi natsionalizm», zasnovnykom yakoho oholosyly M. Hrushevskoho. Oskilky, na dumku bilshovykiv-lenintsiv, klasovi peredumovy dlia poshyrennia ukrainskoho B. n. iz

---

[1] https://esu.com.ua/article-38057
[2] https://esu.com.ua/article-71080

rozghromom natsionalno-vyzvolnoho rukhu i natsionalnoi tserkvy znyshcheno, to vin vyiavliavsia perevazhno v antykomunistychnii diialnosti diaspory ta yii ahentury.

Ukrainskyi B. n. (inodi v poiednanni z sionizmom chy z neofashyzmom) fihuruvav yak ideol. vypravdannia represii 60–70-kh rr. v Ukraini, a takozh yak obgruntuvannia borotby z diasporoiu. Teoretychni rekomendatsii shchodo kharakterystyky ukrainskoho B. n. ta metodiv borotby z nym rozroblialy pid provodom KPU, spetssluzhb ta riznykh naukovykh instytutiv. Pratsi tsykh «biitsiv ideolohichnoho frontu» mistyly yak pravdyvi materialy z ukrainskoi istorii, tak i falsyfikaty. Za radianskoho rezhymu yak dzherela, tak i bilshist prats u tsii haluzi maly sekretnyi abo napivsekretnyi kharakter, osoblyvo yakshcho yshlosia pro borotbu z natsionalnoiu tserkvoiu, zarubizhnymy orhanizatsiiamy toshcho. Borotba z ukrainskym B. n. bula odnym z osnovnykh napriamiv ideolohichnoi roboty KPU. V Ukraini istoriia bilshovytskoi borotby z ukrainskym B. n. dosi ne vyvchena.

THE RESULTS OF THE EXPERIMENT 1

Key theses from the article "Bourgeois Nationalism" (by Gemini) [in Ukrainian]:

1. **Vyznachennia ta pokhodzhennia terminu:** "Burzhuaznyi natsionalizm" buv ideolohichnym shtampom, rozroblenym marksystamy-leninistamy dlia dyskredytatsii bud-yakoho natsionalnoho rukhu, yakyi ne pidtrymuvav yikhniu ideolohiiu.
2. **Zastosuvannia v Ukraini:** V Ukraini tsei termin naichastishe vykorystovuvavsia dlia dyskredytatsii ukrainskoho natsionalnoho rukhu, zokrema, yoho lidera Mykhaila Hrushevskoho.
3. **Meta vykorystannia:** Metoiu vykorystannia tsoho termina bulo vypravdannia represii proty ukrainskykh natsionalistiv, a takozh obgruntuvannia borotby z ukrainskoiu diasporoiu.
4. **Kharakterystyka doslidzhen:** Doslidzhennia na temu "burzhuaznoho natsionalizmu" v radianskyi period chasto buly falsyfikovanymy i vykorystovuvalysia dlia ideolohichnoi borotby.
5. **Nevyvchenist temy:** Istoriia borotby z ukrainskym "burzhuaznym natsionalizmom" v Ukraini dosi zalyshaietsia nedostatno doslidzhenoiu.

Key theses from the article "Bourgeois Nationalism" (by ChatGPT) [in Ukrainian]:

1. **Pokhodzhennia terminu**: "Burzhuaznyi natsionalizm" buv stvorenyi marksystsko-leninskymy ideolohamy dlia poznachennia nebilshovytskykh natsionalistychnykh idei, poviazanykh iz prosharkovymy interesamy miskoho naselennia ta ideiamy monoetnichnoi derzhavy.
2. **Ukrainskyi burzhuaznyi natsionalizm**: Radianska propahanda vvazhala Mykhaila Hrushevskoho zasnovnykom ukrainskoho burzhuaznoho natsionalizmu i vykorystovuvala tsei termin dlia dyskredytatsii natsionalno-vyzvolnoho rukhu ta diialnosti ukrainskoi diaspory.
3. **Ideolohichni represii**: Termin aktyvno zastosovuvavsia radianskoiu vladoiu dlia vypravdannia represii u 1960-70-kh rokakh proty intelihentsii, natsionalnykh diiachiv ta tserkvy v Ukraini.

4. **Sekretnist doslidzhen**: Bilshist prats, shcho doslidzhuvaly ukrainskyi burzhuaznyi natsionalizm, zalyshalys sekretnymy abo napivsekretnymy za radianskykh chasiv, osoblyvo ti, shcho stosuvalysia borotby z natsionalnoiu tserkvoiu i diasporoiu.

5. **Nevyvchenist temy**: Istoriia radianskoi borotby z ukrainskym burzhuaznym natsionalizmom dosi ne otrymala nalezhnoi uvahy u suchasnykh doslidzhenniakh.

EXPERIMENT 2

NATSIONALÍZM – pochuttia, ideolohiia ta politychna diia, shcho sered usikh identyfikatsii liudyny naibilshoho znachennia nadaie yii nalezhnosti do spilnoty, nazvanoi natsiieiu, ta, vidpovidno, vvazhaie tsiu spilnotu vazhlyvoiu vartistiu, a turbotu pro interesy natsii – neporushnym oboviazkom yii chleniv. Zghidno z natsionalistychnym uiavlenniamy, chilne mistse sered tsykh interesiv posidaie zberezhennia samoi natsii, yii movy, kultury y tradytsiinoi terytorii, utverdzhennia nalezhnoho mistsia u sviti, a takozh tvorennia y podalshe pidtrymannia vlasnoi derzhavy, yaka svoim holovnym oboviazkom povynna vvazhaty zabezpechennia dobrobutu natsii. Prahnennia utverdyty interesy svoiei natsii vede natsionalistiv do bilsh chy mensh aktyvnoi borotby proty inshykh, nasampered susidnikh natsii (ta yikhnikh natsionalistiv), yaki spryimaiutsia yak zahroza tsym interesam. Tomu zghidno z poshyrenym sered zahalu y chastyny naukovtsiv tlumachenniam, pytomoiu rysoiu N. vvazhaiut ahresyvnist i zverkhnist shchodo inshykh natsii i vvazhaiut yoho totozhnym shovinizmovi. U naukovii literaturi perevazhaie tlumachennia, vidpovidno do yakoho ahresyvnoiu ye lyshe krainia forma N., a pomirkovanishi obstoiuiut mistse svoiei natsii yak rivnoi sered inshykh ta zakhyshchaiut yii vid zazikhan na isnuvannia y dobrobut. Takym chynom, shyroko tlumachenyi N. staie synonimom patriotyzmu.

Rizni avtory, vidpovidno do aktsentiv v oznachenniakh kozhnoho z tsykh poniat, po-riznomu okresliuiut spivvidnoshennia N. i patriotyzmu. Deiaki teoretyky vvazhaiut providnoiu rysoiu N. prahnennia do natsionalnoi derzhavnosti. Tak, brytanskyi filosof i sotsialnyi antropoloh E. Gellner vyznachyv yoho yak politychnyi pryntsyp, zghidno z yakym politychna odynytsia maie zbihatysia z natsionalnoiu, tobto kozhnii natsii maie vidpovidaty derzhava. Vodnochas sam tsei pryntsyp spyraietsia na uiavlennia pro isnuvannia y tsinnist natsii ta spilnist kliuchovykh interesiv yikhnikh chleniv. Usvidomlennia tsoho zviazku pryvelo dekoho z naukovtsiv do shche bilshoho rozshyrennia mezh zastosuvannia termina «natsionalizm»: vony nazyvaiut tak ne lyshe rishuche obstoiuvannia interesiv natsii, a y vtilennia uiavlen pro yii isnuvannia, tiahlist i tsinnist. Brytanskyi sotsioloh M. Billig nazyvaie take vprovadzhennia banalnym N., protystavliaiuchy yoho yavnomu, a tym pache ahresyvnomu. U period borotby za natsionalnu derzhavnist N. zazvychai deklaruiut v ideolohichnykh traktatakh ta politychnykh prohramakh, a pislia stvorennia y ustalennia derzhavy, vin, staiuchy dedali bilshoiu miroiu neiavnym, utiliuietsia u derzhavnykh i suspilnykh instytutsiiakh.

Nezvazhaiuchy na deiaki rozbizhnosti shchodo chasu vynyknennia N., bilshist doslidnykiv poviazuie yoho pochatky z perekhodom vid ahrarnoho do industrialnoho suspilstva y zumovlenoiu nym kryzoiu tradytsiinykh sotsialnykh zviazkiv ta identychnostei, vidpoviddiu na shcho stala poiava novykh idei sotsialnoi orhanizatsii. Vodnochas shvydke poshyrennia N. naukovtsi zdebilshoho datuiut kin. 18 – poch. 19 st. i vbachaiut u tsomu vplyv Amerykanskoi revoliutsii, a osoblyvo Velykoi frantsuzkoi revoliutsii, shcho praktychno vtilyly zasady suverenitetu narodu y zaproponuvaly novu respublikansku model derzhavnoho ladu, a tse zi svoho boku pryzvelo do dokorinnoi zminy sposobiv lehitymizatsii ta sotsializatsii, shcho vyiavylosia, zokrema, v postupovomu perekhodi do zahalnoi osvity y

vyborchoho prava, rozpovsiudzhenni pysmennosti ta hazet, poiavi masovykh partii i hromadskykh orhanizatsii, doluchenni zahalu do vysokoi kultury y vodnochas demokratyzatsii ostannoi.

Tsi kanaly rozpovsiudzhennia natsionalnykh idei umozhlyvyly pryshcheplennia suspilnym «nyzam», yaki doty poviazuvaly sebe lyshe z pevnoiu mistsevistiu y relihiieiu, uiavlennia pro realnist isnuvannia natsii ta svoiu nalezhnist do odniiei z nykh, shcho y oznachalo tvorennia natsii yak «uiavlenykh spilnot» (termin amerykanskoho politoloha B. Andersona). Zghidno z tsiieiu konstruktyvistskoiu kontseptsiieiu N., yakyi prezentuie sebe zakhysnykom uzhe chynnoi natsii, naspravdi yii tvoryt. U riznykh krainakh svitu N. rozvyvavsia po-riznomu, vidpovidno do konkretnoi politychnoi, ekonomichnoi i kulturnoi sytuatsii. V atlantychnomu rehioni yevropeiskoho kontynentu, de na chas poiavy natsionalistychnykh idei derzhavni mezhi zahalom zbihalysia z movno-etnichnymy, elitam dosyt bulo reorhanizuvaty dynastiini derzhavy v natsionalni ta cherez yikhni instytutsii postupovo vprovadzhuvaty natsionalnu identychnist u masy. A vtim, dosiahnuty povnoi odnoridnosti identychnostei tsym derzhavam ne vdalosia, i piznishe vony zishtovkhnulysia z nyzkoiu vyklykiv z boku N. peryferiinykh hrup, nevdovolenykh svoim ekonomichnym stanovyshchem ta marhinalizatsiieiu vlasnykh mov i kultur. U tsentralnii i skhidnii Yevropi natsionalisty musyly tvoryty na mistsi bahatoetnichnykh imperii novi derzhavy dlia svoikh etnokulturnykh natsii, yaki vodnochas tezh treba bulo chastkovo stvoryty ne lyshe na masovomu, a y na elitnomu rivni, oskilky elity buly znachnoiu miroiu inkorporovani v imperski struktury. Utverdzhennia natsionalistychnoho svitohliadu tam zazvychai pochynalosia iz «vynaidennia» tradytsii natsionalnoho isnuvannia, shcho mala vypravdaty pravo na politychnu subiektnist, a otzhe, derzhavnu nezalezhnist. Amerykanski kolonisty, yaki ranishe pozytsionuvaly sebe yak chastynu zahalnoimperskoi spilnoty, u vidpovid na nebazhannia metropolii nadaty yim bilshe vlady pereosmyslyly sebe yak okremi natsionalni hrupy y zazhadaly nezalezhnosti. Natomist u koloniiakh Azii y Afryky tvortsiamy y propahandystamy N. buly nasampered osvicheni vykhidtsi z tubilnoho naselennia, yaki cherez obmezheni mozhlyvosti uspishnoi kariery v kolonialnii administratsii zmobilizuvaly proty nei chleniv svoikh dyskryminovanykh etnokulturnykh hrup. U bilshosti tsykh krain zdobuttia nezalezhnosti stalo ne naslidkom, a peredumovoiu tvorennia z movno y navit rasovo riznoridnykh plemen modernykh natsii. U SRSR vtilennia natsionalistychnykh zasad suspilnoi orhanizatsii v natsionalno-terytorialnykh avtonomiiakh i fiksatsiiu etnichnoi nalezhnosti hromadian poiednuvaly iz zaboronoiu politychnoho i navit kulturnoho N. nerosiiskykh narodiv, yakyi, odnak, iz poslablenniam totalitarnykh rezhymiv stav dosyt potuzhnoiu politychnoiu syloiu, shcho domohlasia podilu bahatonatsionalnoi derzhavy vidpovidno do ustalenykh natsionalnykh mezh.

Ukrainskyi N. tryvalyi chas formuvavsia okremo v riznykh derzhavakh, do yakykh nalezhaly zemli z etnichno ukrainskoiu bilshistiu. Liberalnishyi politychnyi ustrii i bahatokulturna reorhanizatsiia Avstro-Uhorskoi imperii umozhlyvyly protiahom 19 – poch. 20 st. ne lyshe aktyvnu kulturnytsku diialnist halytskykh ukrainskykh elit i, dedali bilshoiu miroiu, mas, a y tvorennia etnichno okremishnikh hromad. orhanizatsii ta, zreshtoiu, politychnykh partii, prohramy yakykh mistyly bilsh chy mensh radykalnyi nabir natsionalistychnykh idei. U mizhvoiennyi period kulturna y ekonomichna dyskryminatsiia ukraintsiv u vidrodzhenii Polshchi pryzvela do radykalizatsii chastyny halytskykh natsionalistiv i stvorennia OUN dlia borotby z polskoiu vladoiu ta pomirkovanymy ukrainskymy diiachamy, yaki z neiu spivpratsiuvaly. Samookreslennia OUN yak natsionalistychnoi syly spryialo poshyrenniu sered ukraintsiv partiinoho tlumachennia N., za yakoho diialnist inshykh partii ne spry-ymaly yak natsionalistychnu. Pid chas Druhoi svitovoi viiny OUN ocholyla sprotyv natsystskomu okupatsiinomu rezhymovi, shcho

uvinchavsia formuvanniam masovoi zbroi. syly – UPA, yaka pislia zvilnennia vid natsystiv maizhe desiatylittia vela borotbu proty radianskoi vlady. Natomist tsarskyi rezhym Rosiiskoi imperii uprodovzh usoho 19 st. zaboroniav maizhe bud-yaku spetsyfichno ukrainsku kulturnu y tym bilshe politychnu diialnist i namahavsia zrobyty ukraintsiv chastynoiu rosiiskoi natsii, shcho formuvalasia. Tilky pislia Liutnevoi revoliutsii 1917 vynykly masovi ukrainski politychni partii, shcho maly vyrazno natsionalistychnu oriientatsiiu, khocha spochatku hotovi buly zadovolnytysia federalizatsiieiu Rosii. Pislia porazky stvorenoi tsymy partiiamy UNR u viini z Radianskoiu Rosiieiu ukrainskyi N. protiahom 1920-kh rr. dosyt aktyvno rozvyvavsia vseredyni bilshovytskoi partii yak domahannia ukrainskoi kulturnoi i politychnoi samostiinosti u mezhakh SRSR, shcho staly vidomi yak ukrainskyi natsional-komunizm.

Podalsha polityka tsentralizatsii ta rusyfikatsii zrobyla nemozhlyvym bud-yake vidverte obstoiuvannia natsionalnykh idei, tozh yikhnim yedynym vyiavom azh do «perebudovy» 1980-kh rr. bula diialnist dysydentiv (dyv. Dysydentskyi rukh), yaki perevazhno obmezhuvalysia kulturnytskymy y zah.-demokratychnymy aspektamy. Tryvala radianska dyskredytatsiia poniattia N. nalashtuvala proty noho bilshist naselennia, tomu natsionalistychni orhanizatsii ta partii, shcho znovu ziavylysia v Ukraini v ostanni roky isnuvannia SRSR, zdebilshoho nazyvalysia natsionalno-demokratychnymy, a natsionalistamy vyznaly sebe lyshe deiaki radykalni syly, shcho zalyshylysia na marhinesi politychnoho zhyttia. Vodnochas zumovlena radianskoiu politykoiu ambivalentnist natsionalnoi svidomosti ukraintsiv suttievo obmezhyla vplyv navit tykh pomirkovanykh natsionalistychnykh partii, shcho unykaly tsoho okreslennia, zokrema Narodnoho rukhu Ukrainy. Tomu holovnym chynnykom N. ye same isnuvannia nezalezhnoi derzhavy, instytutsii yakoi formuiut i pidtrymuiut natsionalnu identychnist hromadian. Prote navit takyi banalnyi N. vyklykaie sprotyv deiakykh politychnykh syl, shcho prahnut zberehty identychnist ukraintsiv yak chleniv skhidnoslovianskoi kulturnoi spilnoty.

THE RESULTS OF THE EXPERIMENT 2

Key theses from the article "Nationalism" (by Gemini) [in Ukrainian]:

1. **Natsionalizm – tse bahatohranne yavyshche**: Stattia pidkresliuie, shcho natsionalizm – tse ne prosto ahresyvna ideolohiia, a skladne poniattia, yake okhopliuie shyrokyi spektr pohliadiv, vid pomirkovanoho patriotyzmu do krainoho shovinizmu.
2. **Natsionalizm poviazanyi z derzhavotvorchistiu**: Odniieiu z kliuchovykh idei natsionalizmu ye prahnennia do stvorennia natsionalnoi derzhavy, tobto derzhavy, v yakii politychna odynytsia zbihaietsia z natsionalnoiu spilnotoiu.
3. **Natsionalizm – tse sotsialnyi konstrukt**: Natsionalizm ne ye pryrodnym stanom, a formuietsia v protsesi istorychnoho rozvytku. Natsii – tse "uiavleni spilnoty", yaki stvoriuiutsia i pidtrymuiutsia cherez rizni sotsialni instytutsii.
4. **Natsionalizm rozvyvaietsia v riznykh istorychnykh ta kulturnykh kontekstakh**: Shliakhy rozvytku natsionalizmu v riznykh krainakh svitu vidrizniaiutsia zalezhno vid yikhnoi politychnoi, ekonomichnoi ta kulturnoi sytuatsii.
5. **Ukrainskyi natsionalizm maie svoiu spetsyfiku**: Stattia detalno rozghliadaie istoriiu ukrainskoho natsionalizmu, pidkresliuiuchy yoho osoblyvosti, poviazani z bahatonatsionalnym skladom ukrainskykh zemel ta riznymy istorychnymy dosvidamy.

Key theses from the article "Nationalism" (by ChatGPT) [in Ukrainian]:

1. **Sutnist natsionalizmu**: Natsionalizm vyznachaietsia yak pochuttia, ideolohiia ta politychna diia, shcho nadaie naibilshoho znachennia nalezhnosti liudyny do natsii, i priorytetnym zavdanniam ye zberezhennia movy, kultury, terytorii ta stvorennia vlasnoi derzhavy.
2. **Pomirkovanyi ta ahresyvnyi natsionalizm**: Isnuie podil mizh ahresyvnoiu, shovinistychnoiu formoiu natsionalizmu ta pomirkovanym, yakyi zakhyshchaie natsiiu yak rivnu sered inshykh.
3. **Vynyknennia natsionalizmu**: Bilshist doslidnykiv poviazuie natsionalizm iz perekhodom do industrialnoho suspilstva ta kryzoiu tradytsiinykh sotsialnykh zviazkiv, a yoho poshyrenniam – z kintsem 18 – pochatkom 19 stolittia.
4. **Tvorennia natsii yak uiavlenykh spilnot**: Cherez osvitu, media ta inshi sotsialni instytuty natsionalni idei vprovadzhuvalysia v masy, shcho stvorylo novi natsii yak "uiavleni spilnoty".
5. **Riznyi rozvytok natsionalizmu v rehionakh**: U Zakhidnii Yevropi natsionalizm spryiav reorhanizatsii derzhav, u toi chas yak u Tsentralnii ta Skhidnii Yevropi natsionalisty stvoriuvaly novi derzhavy na osnovi etnokulturnykh natsii.

DISCUSSION OF RESULTS

Generative AI, a product of advances in natural language processing, is capable not only of generating text — logically and semantically combining words into sentences, sentences into phrases, and larger linguistic units — but also of presenting facts, expressing arguments, manipulating data, and processing information in diverse ways. This demonstrates an analogue to the interplay of human language and thought. However, this capability is far from perfect. Numerous observations, case studies have shown that information obtained using ChatGPT or similar tools is not always accurate, and trust in such outputs remains understandably low at present (Jung et al., 2024).

The primary function of AI — generating text — is where it excels most, and it is successfully applied across various fields. We have already noted its widespread use in internet marketing (e-commerce). Notably, AI is also actively employed in journalism, not only for content creation but also for fact-checking, data processing, image generation, and translation. These applications reduce the human workload and enhance the efficiency of journalistic practices (Shi & Sun, 2024). For certain types of reports, AI is a true asset. For instance, some researchers analyzing sports articles based on statistical data have found that readers often cannot distinguish between human-written and AI-generated reports about football matches (Rossner et al., 2024).

However, in many other cases, AI-generated news reports raise concerns about the accuracy of information — a fundamental journalistic standard — as well as journalistic ethics in general. As Peña-Fernández et al. aptly note, "journalism cannot exist without journalists" (2023).

Encyclopedism shares some similarities with journalism. However, while the issue of AI in journalism is widely discussed in academic literature, there is a notable lack of studies on AI's role in encyclopedic work, apart from those focusing on Wikipedia (e.g., Petroni et al., 2023). Lexicography, which has long dreamed of the advent of e-lexicography (de Schryver, 2003), is even more closely related to encyclopediography (encyclopedism) than journalism. Scholars hold differing views on the future of modern lexicography. Some argue that the

field may no longer have a future, as AI now enables the building the dictionary entries without human involvement and allows for the generation of entire dictionaries online without large editorial teams or lengthy production times. Others, however, see AI as a source of new opportunities and prospects for advancing lexicography (de Schryver, 2003).

While initial tests of large language models (LLMs) for automated lexicographic tasks (expanding corpora, searching for phrases and word forms, creating definitions and examples) reveal numerous errors, including the occasional generation of hallucinations (i.e., the AI fabricating non-existent but plausible information), requiring additional oversight to identify and correct mistakes (McKean & Fitzgerald, 2024), other research highlights the LLM's potential to rival human lexicographers. Consequently, the focus has shifted towards exploring effective implementation strategies. For instance, one study compared the effectiveness of ChatGPT-generated definitions with those from a traditional medical dictionary in assisting medical students with hard to undestand terminology. Results indicated that students provided with ChatGPT-generated definitions performed as well as those given traditional definitions, suggesting that LLMs can generate definitions as effectively as humans (Rees & Lew, 2023).

As aptly noted by some lexicographers, the best way to determine whether ChatGPT or another text generator is useful for a particular field is to test it directly (de Schryver, 2023). This recommendation aligns with findings from other researchers who argue that generative AI requires extensive research across diverse domains to assess its effectiveness and identify key implementation areas (Gupta et al., 2024). In this context, our study is among the first to explore the feasibility of using generative AI as a tool for content preparation in encyclopedic work.

We now turn to the results of our experiment. After reviewing the texts generated by artificial intelligence and comparing them to the content of encyclopedia articles, we observed the following: generative AI can effectively identify critical information within encyclopedic texts, structure it appropriately, and present it as coherent, logically constructed prose. Notably, the AI does not incorporate external information on the topic, relying exclusively on the provided articles. Based on the selected texts and the task at hand, we believe the AI performed competently. In some cases, ChatGPT produced better results, while in others, Gemini performed better. We did not observe a clear advantage of one chatbot over the other; both demonstrated comparable performance. This lack of significant difference between virtual assistants has been noted by many researchers studying AI applications across various domains (e.g., Rane et al., 2024).

The quality of generated text depends heavily on the quality of the source material: the more informative the original encyclopedia article, the more substantial the derived theses. In our experiment, the two articles demonstrated significant differences not only in length but also in content quality (informativeness). The article on bourgeois nationalism could have been more comprehensive, incorporating a greater amount of meaningful data and engaging facts to better illustrate this phenomenon. These shortcomings can be attributed to both editorial missteps in selecting the author and the limited editorial experience in handling such work at the time.

Regarding this issue (specifically, the process of editorial teams gaining experience), the researchers' observations are particularly insightful: work on the initial volumes of encyclopedias tends to be more carefully planned compared to subsequent volumes. For example, the experience of compiling 19th-century European encyclopedias shows that the early volumes, starting with the initial letters, were prepared with greater care in terms of article composition (Loveland, 2019). The same researcher also points out a notable imbalance in the register of entries between the initial letters — where the greatest diversity

of topics is concentrated — and the later ones. For instance, in the *Encyclopédie nouvelle* (1834–1842), the first volume is devoted exclusively to the letter "A", while the final volume covers a range of letters from "S" to "Z" (Loveland, 2019, p. 130).

The experience of assembling a Ukrainian encyclopedia bears some similarities to that of Europe, as there are cases where multi-volume encyclopedic projects remain unfinished or are started with only one or two volumes published. It is not uncommon for the final volumes to be produced hastily. Given that the realization of multi-volume encyclopedic projects spans one or even several decades, various factors contribute to the disparities between the initial and final volumes, such as the number of articles, the authors involved, and often, their professional qualifications. The creation of the *Encyclopedia of Modern Ukraine* exemplifies this trend, with significantly more authors contributing to the initial volumes compared to the later ones. Among the reasons for this decline in author participation are the lack of remuneration for writing articles and the long waiting periods for publication (typically, one volume was published annually).

The ongoing digitalization of society, open access to information, the rise of *Wikipedia*, and other factors collectively reduce the motivation for experts to engage in traditional encyclopedic projects. This suggests that editorial boards of encyclopedias may begin turning to generative AI for preparing articles. Notably, there are currently no established guidelines for the responsible use of generative AI in the field of encyclopedias. As a result, this issue requires dedicated, in-depth scholarly discussion to develop a consensus among encyclopedists regarding the ethical implications of using AI to produce encyclopedic content instead of original authorial work. Essentially, this would shift the role of encyclopedias from providing knowledge to generating knowledge, potentially undermining the credibility of encyclopedias as reliable sources and impacting the "information ecosystem and knowledge infrastructure" (Bentzen 2023).

CONCLUSIONS

- The research explored the ability of generative AI to generalize information from encyclopedia articles, identify key elements, and produce concise summaries.
- Such text blocks could serve as additional knowledge-based content to enhance online encyclopedia articles. This would increase interest in encyclopedias, boost user engagement, and improve comprehension and retention of information. It would be particularly valuable for lengthy or hard to understand articles that might pose challenges for the average reader.
- The findings suggest that generative AI is capable of performing these tasks. This conclusion is based on experiments conducted on two articles from the *Encyclopedia of Modern Ukraine*. The virtual assistants ChatGPT and Gemini identified key theses for these articles, which were positively evaluated by the authors of this study, who have experience in building the *Encyclopedia of Modern Ukraine* and other encyclopedic and lexicographic works.
- This positive evaluation hints at the potential of generative AI to effectively writing encyclopedia articles. The challenge of recruiting authors for encyclopedia articles has always been a significant concern and is now more pressing than ever. However, it is important to note that such practices (writing encyclopedia articles by AI rather than humans) would be considered a misuse in encyclopedism, potentially diminishing the value of encyclopedias. As a result, there is a growing

need for discourse among encyclopedists to establish ethical guidelines for applying generative AI in this field.

REFERENCES

Andriievska, V. (2018). Key directions of development of education in information society. *Visnyk Chernihivskoho natsionalnoho pedahohichnoho universytetu imeni T. H. Shevchenka. Pedahohichni nauky*, 153, 3–6.

Bentzen, N. (2023). Opskrbni lanci znanja u vremenu propadanja istine. *Studia Lexicographica*, 17(32), 143–152. https://doi.org/10.33604/sl.17.32.5

Blyznyuk, T. (2017). Prospects for the use of information and communication technologies in mountain schools of the Ukrainian Carpathians. *Mountain School of Ukrainian Karpaty*, 17, 69–72. https://doi.org/10.15330/msuc.2017.17.69-72

De Schryver, G. (2003). Lexicographers' dreams in the electronic-dictionary age. *International journal of lexicography*, 16(2), 143–199.

De Schryver, G. (2023). Generative AI and Lexicography: The Current State of the Art Using ChatGPT. *International Journal of Lexicography*, 36(4), 355-387. https://doi.org/10.1093/ijl/ecad021

Gupta, P., Ding, B., Guan, C., & Ding, D. (2024). Generative AI: A systematic review using topic modelling techniques. *Data and Information Management*, 100066. https://doi.org/10.1016/j.dim.2024.100066

Jovanovic, M., & Campbell, M. (2022). Generative Artificial Intelligence: Trends and Prospects. *Computer*, 55(10), 107–112. https://doi.org/10.1109/mc.2022.3192720

Jung, Y., Chen, C., Jang, E., & Shyam S. (2024). Do We Trust ChatGPT as much as Google Search and Wikipedia? In *Proceedings of the Conference on Human Factors in Computing Systems* (pp. 1–9). Association for Computing Machinery. https://doi.org/10.1145/3613905.365086

Loveland, J. (2019). *The European Encyclopedia: From 1650 to the Twenty-First Century*. Cambridge: Cambridge University Press. https://doi.org/10.1017/9781108646390

McKean, E., & Fitzgerald, W. (2024). The ROI of AI in lexicography. *Lexicography*. https://doi.org/10.1558/lexi.27569

Peña-Fernández, S., Meso-Ayerdi, K., Larrondo-Ureta, A., & Díaz-Noci, J. (2023). Without journalists, there is no journalism: the social dimension of generative artificial intelligence in the media. *El Profesional De La Informacion*. https://doi.org/10.3145/epi.2023.mar.27

Petroni, F., Broscheit, S., Piktus, A., Lewis, P., Izacard, G., Hosseini, L., Dwivedi-Yu, J., Lomeli, M., Schick, T., Bevilacqua, M., Mazaré, P., Joulin, A., Grave, E., & Riedel, S. (2023). Improving Wikipedia verifiability with AI. *Nature Machine Intelligence*, 5(10), 1142–1148. https://doi.org/10.1038/s42256-023-00726-1

Rane, N., Choudhary, S., & Rane, J. (2024). Gemini versus ChatGPT: applications, performance, architecture, capabilities, and implementation. *Journal of Applied Artificial Intelligence*, 5(1), 69–93. https://doi.org/10.48185/jaai.v5i1.1052

Rees, G. P., & Lew, R. (2023). The Effectiveness of OpenAI GPT-Generated Definitions Versus Definitions from an English Learners' Dictionary in a Lexically Orientated Reading Task. *International Journal of Lexicography*. https://doi.org/10.1093/ijl/ecad030

Rossner, A., Cassel, M., & Huschens, M. (2024). Do users really care? Evaluating the user perception of disclosing AI-Generated content on credibility in (Sports) journalism. In *MuC '24: Proceedings of Mensch Und Computer 2024*, 35, 413–418. https://doi.org/10.1145/3670653.3677490

Serbin, V. (2023). Artificial intelligence as a tool for creating dynamic product descriptions in e-commerce. *Marketing and Digital Technologies*, 7(4), 79–94. https://doi.org/10.15276/mdt.7.4.2023.5

Shi, Y., & Sun, L. (2024). How Generative AI Is Transforming Journalism: Development, Application and Ethics. *Journalism and Media*, 5(2), 582–594. https://doi.org/10.3390/journalmedia5020039

Zhelezniak, M., & Ishchenko, O. (2021). Online encyclopedias of the USA as actual education resources. *Information Technologies and Learning Tools*, 84(4), 339–353. https://doi.org/10.33407/itlt.v84i4.4410