Scientific Research Publishing

Advances in Applied Sociology, 2025, 15(4), 311-330
https://www.scirp.org/journal/aasoci
ISSN Online: 2165-4336
ISSN Print: 2165-4328

Journalism Education in the Age of AI: Curriculum Analysis from Turkey

Ayşe Fulya Şen

Faculty of Communication, Fırat University, Elazığ, Turkey
Email: fulyasen@firat.edu.tr

How to cite this paper: Şen, A. F. (2025). Journalism Education in the Age of AI: Curriculum Analysis from Turkey. *Advances in Applied Sociology, 15,* 311-330.
https://doi.org/10.4236/aasoci.2025.154017

Received: March 28, 2025
Accepted: April 27, 2025
Published: April 30, 2025

Abstract

Artificial intelligence (AI) is increasingly shaping the future of journalism. As both a transformative tool and a potential challenge, AI has begun to influence journalism education as well. This study explores how AI is currently integrated into journalism curricula at two public universities in Turkey: Ankara University and Istanbul University. By analyzing syllabi and conducting an in-depth interview with a journalism educator, the study reveals that AI is not yet systematically embedded in journalism education. The findings suggest that while both universities address digital transformation, direct references to AI are limited. Practical applications and hands-on training with AI tools are largely absent. Based on the analysis, the study emphasizes the need to restructure journalism education in Turkey to incorporate AI literacy, practical competencies, and ethical considerations.

Keywords

Artificial Intelligence (AI), Journalism Education, Curriculum Analysis, Practical AI Applications

1. Introduction

Journalism education is valuable for acquiring notions and perspectives on both professional journalistic standards and theoretical knowledge and technical skills in journalism. As Josephi (2020) notes, the academic literature on journalism education clearly illustrates the attempts to bring theory and practice together. Notwithstanding these similarities, it makes sense that journalism education has changed over time and between geographical areas. Computer-aided journalism has long been a topic of discussion in both journalism and journalism education. AI is a relatively new field of study in journalism education. It is usually categorized with online, mobile, and data journalism as new skills and competencies. AI

has become a topical area in journalism education despite decades of debate and study in the field, and is linked to discussions about new techniques, like the automated gathering of large data sets, and new skill requirements, such as programming (Jaakkola, 2023a). The challenges of digitalization and how it is framed in journalism education discourse continues to be discussed.

AI has the potential for wide-ranging and profound influence on how journalism is made and consumed. The three main goals of utilizing AI are said to be to increase company efficiency, provide users with more relevant material, and facilitate journalists' jobs more effectively (Beckett, 2019). It is predicted that the next decade of the media industry will be rocked by the next wave of technological disruption from AI-driven automation, big data, and new visual and voice-based interfaces. It is known AI is being used in news gathering, transcription, automated translation, and speech-to-text text-to-speech services. It is argued that AI is opening up new opportunities. AI has been used by news organizations and trade journals, such as Bloomberg and the Wall Street Journal, to quickly generate headlines about corporate profits (Newman, 2020). It is largely discussed in the context of opportunities presented by AI in journalism (Caswell, 2023). The advent of generative artificial intelligence (AI) has transformed journalism by enabling faster content creation, enhancing data analysis, and personalizing audience engagement. However, these advancements also bring challenges, such as ethical concerns, the potential spread of misinformation, and the risk of job displacement within the industry. Journalism education, tasked with preparing students for the realities of an AI-driven media landscape, often lags in incorporating these tools into its curricula. As Beckett (2024) notes, while AI offers opportunities to augment journalistic practices, the lack of training in generative AI tools and limited understanding of their implications pose significant barriers for aspiring journalists. Addressing these gaps is crucial to ensuring that journalism education remains relevant, equipping students with the necessary technical skills and ethical frameworks to navigate the evolving industry.

The rapid adoption of artificial intelligence (AI) in journalism has revolutionized how news is produced, distributed, and consumed, creating new opportunities and challenges for journalism education. As AI tools continue to reshape the media landscape, journalism programs are struggling to keep pace with these advancements. While there is growing recognition of AI's potential to enhance journalistic practices, concerns persist about its ethical implications, potential to exacerbate disinformation, and impact on employment in the media industry (ElGhetany, 2024). Journalists feel obligated to embrace AI technologies at the outset, regardless of how these technologies are implemented in the workplace—through algorithmic management, worker surveillance, or job displacement. Thus, The Pulitzer Center has formally launched The AI Spotlight Series, a new training program designed to teach 1000 journalists over the course of the next two years how to perform AI accountability reporting. Aiming to explain fundamental AI principles for reporters outside of the tech beat, the inaugural "Intro-

duction to AI reporting" workshop brought together over 40 journalists at the University of California, Berkeley on April 21, 2024 (Deck, 2024). It is seen that this new training endeavor of seminars and short-term courses is a supplement to journalistic education.

This paper explores how AI concepts and practices are integrated into journalism education at Ankara University and Istanbul University in Turkey. These universities were selected because they represent two of the most established schools in the field of communication. Through a document analysis of undergraduate journalism curricula and an in-depth interview with a journalism educator, the study examines whether these programs are keeping pace with digital journalism practices and adequately addressing the AI-transformed news ecosystem. It also assesses whether journalism education is playing a proactive role in adopting technological innovations and how well students are being prepared for the demands of a technologically evolving industry. Finally, the paper identifies key strengths and limitations in the current curricula and evaluates their alignment with international standards regarding AI integration.

2. Theoretical Framework and Literature Review

One important area to discuss while discussing AI in the context of journalism is the potential and difficulties it brings for the media, society, and communication as a whole. The implications of AI for journalism need to be considered in the broader context of the media's and public life's digitization (a shift to apps, algorithms, social media), and changing the nature of journalism as an institution. Thus, AI technologies can be viewed as a part of a larger narrative about journalism's reconfiguration in relation to computation, regardless of how revolutionary they turn out to be in the short, medium, or long term (Lewis, 2019). The workflows and procedures used by news organizations could be impacted by AI, which is crucial in irreversibly altering the course of journalism. AI is a technology that could have a big impact on a news organization's revenue and distribution side in addition to the production and dissemination of content. In the future, AI may enhance the creative value of journalism by providing tools that enable journalists to create more compelling and unique material. However, the change in what constitutes competition is a major obstacle that journalists must overcome (Zaimis, 2021).

Kirchhoff (2022) has examined the adaptation of Austrian educational institutions' programs to meet the practical needs of professional journalism in the digital era and identified the essential skills and knowledge at the heart of journalism education. Kirchhoff argues that while various education and training institutions recognize the need to stay up to date with the developments of journalism in the digital age, they also tend to prioritize research, fact-checking, and storytelling over particular media technology and platform skills. Additionally, Kirchhoff emphasizes that journalism education is tasked with meeting the "urgent need" of digital transformation, just as the field of journalism as a whole does (Kirchhoff,

2022, p. 126). While AI is changing how newsrooms run, it's also making journalism colleges rethink how they teach generative tech to their students. Newsrooms have been utilizing AI for years, despite the fact that discussions about the technology have grown significantly with the release of programs like OpenAI. For example, The Washington Post has been covering elections and sports with a bot since 2016, The Associated Press began automating stories on its business news desk in 2014, and Bloomberg employed AI to facilitate searches on its terminal software. These days, a lot of talking centers on how newsrooms may increase productivity by giving AI more routine or repetitive jobs to do, like data analysis, social media analytics comprehension, and creating drafts of potential interview questions (Cohen, 2023).

The most highlighted feature of AI in media is its ability to assist writers in crafting better stories and spotting patterns and trends that human reporters might miss. AI can assist in the collection of facts and material for narratives. Reporters can use the time and energy they save by doing this to write stronger stories. On the other hand, there are several concerns regarding AI in journalism. One apprehension is the potential use of AI to fabricate fake news, as it can generate convincing yet untrue stories, potentially leading to misinformation or belief in false narratives. Another worry is that AI might influence the selection of reported stories by identifying and prioritizing those that receive the most attention on social media, which could result in a skewed and partial representation of the news. In general, there are advantages and drawbacks to AI in journalism. When contemplating how AI is transforming the media industry, it is critical to be aware of these benefits and drawbacks. Additionally, ChatGPT's responses from December 2022 offer insights into how journalism educators should prepare their students on AI. Suggestions include teaching the basics of AI and its diverse applications across industries such as healthcare, finance, and transportation, discussing the potential societal impacts of AI, considering both its benefits and drawbacks, and emphasizing the importance of rigorous research and fact-checking. It appears that journalism educators have a special and important role to play for the time being (Jaakkola, 2023b).

According to Beckett (2023), AI seems futuristic and fascinating, but it may also be very frightening. While new technologies can help journalists work more effectively, efficiently, and engagingly, they won't save journalism or fundamentally change it. Additionally, according to Beckett, AI may support human journalists by providing them with greater time and resources to employ their unique human abilities—such as creativity, empathy, and judgment—to enhance their reporting. Thus, it can assist in uncovering narratives concealed within data or in seeking out fresh perspectives and producing content, particularly for the more straightforward, practical, and factual topics like straightforward financial, sports, or meteorological updates. Additionally, it can be used to combat journalists' inherent prejudices and perform large-scale fact-checking. Large news organizations like the BBC, Bloomberg, and the Wall Street Journal are at the

forefront of AI adaptation (Beckett, 2023, pp. 13-14). When examining the Journalism AI platform, a project hosted at LSE, we observe illustrations of how news entities are employing AI. Beckett and Yaseen (2023), in their report named "Generating Change: A global survey of what news organizations are doing with AI," have investigated the utilization of AI technologies within newsrooms via a survey encompassing 105 news and media establishments across 46 different nations. According to their findings, AI applications are being deployed across three main domains—newsgathering, news production, and news dissemination—spanning all phases of content creation from conception to publication. The study indicates that a significant majority, nearly three-quarters of these organizations, employ AI tools in the process of newsgathering. For example, chatbots designed for fact-checking are utilized during news production to verify or debunk specific claims. Additionally, the amassed data aids in identifying misinformation and emerging trends, often sparking ideas for feature articles, thereby enhancing the newsgathering process. However, the research underscores substantial societal apprehensions surrounding AI, including issues of misinformation, discrimination, and bias, as well as the potential risks of media manipulation by corporations or governmental bodies.

When examining media organizations' use of AI in their newsrooms, we can refer to the Guardian's three guiding principles for the use of generative AI (GenAI) tools: prioritizing the benefit of readers, supporting their mission, staff, and the broader organization, and respecting content creators and owners. The first principle indicates that GenAI tools will be used editorially only when they contribute to the production and dissemination of original journalism. The second principle emphasizes enhancing work quality, such as aiding journalists in analyzing large datasets, providing corrections or suggestions, generating ideas for marketing campaigns, or streamlining administrative tasks. The third principle asserts the importance of trusted media organizations that prioritize intelligent, original reporting, fact-finding, holding the powerful accountable, and examining ideas. They will also address critical issues like permissions, transparency, and fair compensation (Viner and Bateson, 2023). Additionally, the New York Times's seeking skills for a senior can give insight into implementing AI in the newsroom and responding to these risks and opportunities. For instance, it is expected that this editor will be responsible for ensuring that The Times is a leader in GenAI innovation and its applications for journalism and will lead their efforts to use GenAI tools in reader-facing ways as well as internally in the newsroom. Specific responsibilities include setting a vision for how The Times makes use of generative AI related to its news report, as well (Ahmed, 2023). These criteria underscore the importance of evaluating and applying GenAI concepts effectively.

Moreover, it is crucial for journalism educators and students to engage in the discussion about how these technologies may influence the future of news media (Beckett, 2023). AI should be addressed in terms of how it is integrated into official journalism curricula. It is critical that journalism maintains its identity by ad-

hering to its fundamental principles, which set it apart from advocacy, lobbying, marketing, and policymaking and also to think about how technology advancement will impact media and journalism curriculum. While it is important to keep up with developments, reflect on them, and match the competencies taught in journalism school with the real world, it is also acknowledged that journalism education should always be one step ahead of the game (Jaakkola, 2023a). Wiik notes that journalism schools must evolve their curricula to equip students for a future where automation is more common. Schools should thus emphasize the soft skills necessary for thriving in an automated news landscape, such as creativity and adaptability. By tailoring their programs to the growing automation in the industry, journalism schools can make certain that their students are well-prepared for the future of journalism (2023, p. 103). Inspiring from Wiik (2023), it can be argued that the curricula should give insight into the use of AI in journalistic practices, for example, in machine-written articles and robot journalism. In addition, the curricula should include the ways AI is being and will be used in journalism, understanding the potentials and risks that AI entails for journalism and journalistic practice, and the human value of creating journalism. Initially, as a learning outcome, it could be expected that the students have learned to identify AI-powered technologies that are the most relevant for journalistic practice and understand how they work.

It is clear that generative AI models like ChatGPT should be integrated into curricula and be taught how ChatGPT could be useful. For instance, Diakopoulos (2023) points out that content discovery, document analysis, translation, tip processing, social media content creation, automated writing, newsletters, text summarization, comment moderation, content transformation, and push-alert personalization are merely the beginning. Diakopoulos (2023) also mentions that GPT-3 can be used to summarize newsworthy angles from scientific abstracts, embedding a news judgment into the summarization process. Moreover, any task involving document analysis requires a meticulous assessment of accuracy, encompassing both the news value attributed and the text of the summary itself. Tordecilla (2024) points out the feasibility of AI performing watchdog journalism, particularly in the context of audit reports and argues that reporters might find it more straightforward to read the audit reports themselves instead of struggling with ChatGPT to extract newsworthy details. Tordecilla also notes that GPT doesn't need to engage in critical thinking; its task is to locate the pertinent information and summarize it. He suggests that GPTs could be designed for environmental reports, court rulings, and various other document collections, thereby simplifying the work of investigative journalists (2024).

As Amponsah and Atianashie emphasize in their comprehensive review, AI technologies are increasingly influencing journalism across content generation, personalization, audience analytics, and newsroom automation. While these tools offer significant benefits, the authors also highlight persistent ethical dilemmas such as algorithmic bias, misinformation risks, and the erosion of journal-

istic autonomy. Their findings underscore the necessity for journalism education to balance technical AI literacy with critical ethical engagement. Moravec et al. conducted a large-scale survey in the Czech Republic to assess public perception of AI-generated versus human-written journalism. Their findings reveal that factors such as age, education, and in-come significantly affect individuals' ability to distinguish between human and machine-produced news, highlighting the need for targeted digital literacy strategies in journalism education. Simon (2024) highlights the dual impact of AI in the news sector, pointing out that while AI can significantly assist journalists by automating tasks such as data analysis, content creation, and distribution, it also raises concerns about job displacement and the potential replacement of certain roles. According to Simon, the adoption of AI by news organizations is driven by a combination of factors, including the uncertainty, hype, and hope surrounding AI, competitive pressures to innovate, and financial challenges facing the industry. These dynamics reflect a tension between the benefits of AI in improving newsroom efficiency and the risks it poses to employment and journalistic integrity. Simon also underscores the importance of maintaining a balance, noting that AI should enhance journalistic practices rather than undermine them (Simon, 2024). This insight underscores the necessity for journalism education to prepare students to work collaboratively with AI technologies while fostering critical awareness of its ethical and societal implications.

Globally, journalism education is adapting to the demands of an AI-driven industry. These global benchmarks highlight the potential of AI to reshape journalism education, providing insights for Turkish universities aiming to modernize their curricula. In Turkey, there are scholarly investigations that examine the integration of digital technologies into journalism education and the significance of AI in journalistic practices. Arduç Kara (2022) examined the extent to which undergraduate journalism curricula in Turkey have adapted to digitalization. She concluded that while university curricula have adapted well to digitalization, particularly in the field of new media, adequate digitalization has not been achieved in data journalism and AI/robot journalism. Etike (2023) examined journalists' experiences and perspectives to understand why, how, and to what extent AI technologies are utilized in newsrooms in Turkey. The study's findings revealed that AI technologies are employed throughout the entire news production process, from news gathering to writing and distribution, with the most intensive use occurring in the distribution phase and the least in the news gathering phase. Another significant outcome of Etike's (Etike, 2023) research is the criticism from journalists that AI applications are making news a technical task, thereby detracting from journalism as a public service. The study highlights that journalists are opposed to new practices shaped by AI technologies, as these may erode public interest (p. 425). These findings are important to shed light on the fact that advanced technical skills are becoming a critical criterion in the newsroom. Therefore, journalism education must adapt to prepare journalists for these develop-

ments.

3. Research Methodology

This study investigates the integration of AI into journalism education by analyzing the curricula of journalism departments at Ankara University and Istanbul University. The research identifies fundamental shortcomings in the teaching of AI within journalistic education, focusing on whether these departments incorporate AI courses and how the subject is addressed in their curricula. Ankara and Istanbul Universities were selected for this study due to their prominence in communication studies and their representativeness of the Turkish journalism education landscape. These institutions offer comprehensive journalism programs, making them ideal for analyzing AI integration into curricula. The study employs document analysis, a systematic methodology for evaluating and interpreting documents, to examine the presence and treatment of AI-related content in journalism curricula. Document analysis is particularly valuable in qualitative research, as it allows researchers to gain a detailed understanding of meaning, context, and significance within documents (Bowen, 2009). The study analyzed course titles and descriptions containing terms such as "digital culture," "new media," and "AI," using keywords like "digital journalism," "data mining/data journalism," "robot journalism," and "technology." This approach enabled the identification of key patterns, themes, and gaps in AI-related educational practices. Furthermore, as O'Leary (2014) emphasizes, document analysis offers a comprehensive understanding of the social, cultural, and political dynamics influencing curricula, making it an indispensable tool for evaluating educational programs.

To complement the document analysis, a semi-structured interview was conducted with an educator from Istanbul University. This interview explored key topics, including the inclusion of AI-related modules in the curriculum, the availability of practical training opportunities for students, institutional barriers to implementing AI in journalism education, the role AI should play in journalism education, and suggestions for improving the curriculum. Due to limited participation during the research process, only one educator was included in the semi-structured interview. Despite this limitation, the insights provided were robust and complemented the document analysis effectively, offering valuable perspectives on the challenges and opportunities for AI integration in journalism education. These insights provided a detailed perspective on the current state of AI integration and highlighted opportunities for future enhancements in journalism education. The insights from this interview enriched the analysis by offering contextual details on challenges and opportunities for AI integration that were not fully captured through document analysis alone. This integration of qualitative data helped to provide a more nuanced understanding of the subject matter.

This study has several limitations that should be acknowledged. First, the scope is limited to two public universities in Turkey, which may not fully represent the diversity of journalism education across the country. Second, the analysis relies

primarily on course syllabi and a single in-depth interview with a journalism educator. While this approach provides valuable insights, it does not capture the perspectives of students, administrators, or a broader range of faculty members. These limitations suggest that the findings should be interpreted with caution and invite further research involving more institutions and diverse participants to validate and expand upon these results.

4. Research Findings

Ankara University:

When searched with the term "new media," a total of five courses were found. The curriculum includes a course with the term "digital culture." Additionally, there is an elective course titled "AI" in the curriculum of the Ankara University Department of Journalism. However, this course is offered by a different department. The content of this course was also analyzed since students can choose it as an elective. The content of these courses was analyzed using the terms "AI," "digital journalism," "data mining/data journalism," "robot journalism," and "technology," revealing the elements directly related to journalistic practices (see Table 1).

Table 1. Curriculum analysis of Ankara University.

The Status of the University	Courses Covering Concepts in New Media, Digital Culture, and Artificial Intelligence (Frequency of Terms)	Artificial Intelligence and Related Concepts in Course Content (Frequency of Terms)	Context in which Artificial Intelligence is addressed
Public	New Media: 5	AI: 0 Digital journalism:0 Data mining/data journalism: 2 Robot journalism: 1 Technology: 15	Digital media environments, data mining and security, social media platforms, new media practices, new journalism debates
	Digital Culture: 1	AI: 13 Digital journalism: 0 Data mining/data journalism: 0 Robot journalism: 0 Technology: 2	Future societal implications, ethical and philosophical considerations, impact on employment, AI and daily life
	Artificial Intelligence: 1	AI: 15 Digital journalism:0 Data mining/data journalism: 0 Robot journalism: 0 Technology: 0	Foundational concepts, biological comparisons, practical applications, algorithmic understanding, training and optimization

Courses titled New Media:

New Media and New Journalism Debates, is an elective for undergraduate Journalism students at Ankara University. It aims to provide knowledge and perspective on new journalism practices in the context of new communication technologies and media transformations. The course covers topics such as the role of technology in journalism, digitalization effects, news transformation, democracy debates, and future trends in journalism. Firstly, based on the analysis of the course documents, I focused on how the courses incorporate technology-related concepts. The terms analyzed include "AI," "digital journalism," "data mining/data journalism," "robot journalism," and "technology." When assessing technology-related terms, it is seen that the term "digital journalism" is used to focus on blogging, content production, video editing, and exploring various new journalism practices and digital platforms. "Robot journalism" is specifically discussed in the context of software and visualization developments in journalism, and "data mining" is also covered under the concepts of data mining and data security. In general, it can be argued that the courses heavily integrate technology-related concepts, especially focusing on digital media, new communication technologies, and their implications for journalism and corporate communication. It is found that the terms "technology," "digital journalism," and "data mining/data journalism" across the courses highlight the importance of understanding and adapting to technological advancements in media practices.

Secondly, when analyzing the context of "AI" in the course documents, I focused on how digital media and related technologies in relation to journalism were framed. Although the term "AI" is not explicitly mentioned, the content of the courses provides knowledge and perspective on new journalism debates and practices influenced by new communication technologies. AI is discussed in the context of technology-driven developments such as data journalism and, to some extent, robot journalism. To sum up, across the courses, "AI" is addressed in various contexts, such as enhancing digital media and communication technologies, automating and optimizing social media and corporate communication, and transforming journalistic practices through data journalism and robot journalism. The courses also mention analyzing large datasets, creating sophisticated multimedia content, and influencing the future of journalism.

On the other hand, the courses briefly touch on data mining and security but do not delve deeply into specific AI technologies or their applications in media. In addition, there is no hands-on component that focuses on AI tools or technologies, which would be beneficial for understanding practical applications. The courses do not specifically address AI applications in media practices and do not provide a comprehensive view of its various applications in journalism. It can be argued that the courses lack practices that teach students how to use AI tools in journalism (see Table 1).

Course titled Digital Culture:

The "Digital Technologies and Digital Culture" course covers the historical, economic, and cultural dimensions of AI, providing students with a broad un-

derstanding of AI's impact on society. The course critically examines how AI influences various aspects of society, including employment, time, space, occupation, and status. However, the course is heavily theoretical and lacks hands-on experience with AI technologies. There are no practical assignments or projects that allow students to work directly with AI tools or applications. While the course covers the societal impact of AI, it does not specifically address the implications for journalism and media studies. Overall, the course provides a broad and interdisciplinary understanding of AI's societal implications but lacks practical applications, technical content, and a specific focus on journalism. By incorporating these elements, the course can offer a more comprehensive education on AI, better preparing students for the evolving landscape of media and technology (see Table 1).

Course titled Artificial Intelligence:

The course titled "AI" thoroughly covers the foundational concepts of AI, including neural networks, pattern recognition, and learning algorithms and provides practical insights into how AI is applied across various fields, although specific applications in media and journalism are not explicitly mentioned. The course covers key aspects of training and optimizing AI models, which is essential for creating effective AI systems. There is a strong emphasis on understanding and implementing AI algorithms, which is crucial for developing AI applications (see Table 1).

In spite of the strengths of the AI course, it has shortcomings in terms of its application to journalism studies. It would be useful to incorporate examples of AI applications in journalism, such as automated news writing, sentiment analysis in social media, and predictive analytics for audience engagement. The course content focuses on general AI concepts and applications, with limited emphasis on media and journalism-specific AI applications. This course can address the needs of journalism students by introducing modules focused on AI applications in media and journalism, such as automated content generation, sentiment analysis, and media analytics (see Table 2).

Table 2. Quotations for the term "artificial intelligence" in the course syllabus (exported from Atlas.ti 24 version, May 27, 2024).

Quotation Name	Quotation Content	Codes	Reference
Course Content Definitions of intelligence, mind, etc. phrases, biolog…	Course Title Code Semester L+U Hour Credits ECTS ARTIFICIAL INTELLIGENCE FMUS1023 3. Semester 2 + 0 2.0 3.0 Prerequisites None Language of Instruction Turkish Course Level Bachelor's Degree Course Type Elective Mode of delivery Assistants Goals The aim of the course is to first give basic information about artificial intelligence and its wide application area, which is very current today, and then to explain artificial intelligence applications with simple algorithms without using too many formulas.	Artificial intelligence intelligence	1 - 1

Continued

Learning Outcomes 1) Ability to follow current issues with the profess…	Learning Outcomes 1) Ability to follow current issues with the profession 2) To adapt more easily to the other courses that the student will take in the next classes 3) Ability to associate subjects with their profession and determine the areas of application WEEKLY TOPICS (CONTENT) Week Topics Teaching and Learning Methods and Techniques Study Materials Summary Lecture; Question Answer Station Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) 1. Week Introduction, history, basic definitions. Lecture; Problem Solving Opinion Pool Project Based Learning Homework Presentation (Including Preparation Time) 2. Week Biological brain, neurons and learning Lecture; Question Answer Opinion Pool Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) Quick Access 3. Week Artificial neural networks, basic artificial neuron Lecture; Question Answer Opinion Pool Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) 4. Week Pattern recognizing Lecture; Question Answer Speech Loop Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) 5. Week Learning process of the neuron Lecture; Question Answer Speech Loop Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) 6. Week Single layer neuron Lecture; Question Answer Speech Loop Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) 7. Week Applications of neural networks Lecture; Question Answer Speech Loop Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) 8. Week An algorithm for the functioning of artificial intelligence Lecture; Question Answer Speech Loop Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) 9. Week Running algorithms Lecture; Question Answer Speech Loop Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) 10.	Artificial intelligence intelligence	1 - 2
Week Number of artificial intelligence neuron layers Lecture; Question…	Week Number of artificial intelligence neuron layers Lecture; Question Answer Speech Loop Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) 12.	Artificial intelligence	2 - 2
Week Application of some problems to artificial intelligence Lecture:	Week Application of some problems to artificial intelligence Lecture; Question Answer Speech Loop Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) 13.	Artificial intelligence	2 - 2
Week training of artificial intelligence Lecture; Question Answer Spee…	Week training of artificial intelligence Lecture; Question Answer Speech Loop Project Based Learning; Problem Based Learning Homework Presentation (Including Preparation Time) SOURCES USED IN THIS COURSE Recommended Sources 1. Yapay Zeka, 7. Baskı, 2020, A.Yılmaz, ISBN 978-605-9118-80-4, Yayıncılık Sertifika No: 13206.	Artificial intelligence	2 - 2

Istanbul University:

When examining the curriculum of Istanbul University's Department of Journalism, it is evident that there is no course title containing the term "new media." However, the curriculum does include a course titled "Digital Culture." Additionally, a search for the term "AI" revealed that there is no course with this term in its title. Nonetheless, there is a course titled "Data Journalism," which is considered relevant due to its direct relationship with the concept of AI. The content of these two courses was analyzed according to AI and related concepts (see Table 3).

Table 3. Curriculum analysis of Istanbul University.

The Status of the University	Courses Covering Concepts in New Media, Digital Culture, and Artificial Intelligence (Frequency of Terms)	Artificial Intelligence and Related Concepts in Course Content (Frequency of Terms)	Context in which Artificial Intelligence is addressed
Public	New Media: 0	Null	Null
	Digital Culture: 1	AI: 0 Digital journalism:0 Data mining/data journalism: 1 Robot journalism:0 Technology: 2	Influence on employment and occupational roles, digital interaction and AI-Driven communication, surveillance, privacy, and data security, digital activism and collective intelligence, globalization and digital inequality
	Artificial Intelligence (Data Journalism): 1	AI: 0 Digital journalism: 0 Data mining/data journalism: 9 Robot journalism: 0 Technology: 0	Data journalism fundamentals, big data, open data, data analysis and interpretation, data visualization, storytelling with data

***Course titled Digital Culture*:**

The "Digital Technologies and Digital Culture" course explores the concept of digital culture and its sociological implications. It delves into how digital media and communication technologies shape cultural practices and societal norms, integrating AI discussions with various social science perspectives to provide a holistic understanding of AI's impact on society. The course also encourages critical thinking about AI's influence on societal structures, including employment, digital interaction, and privacy. However, the course does not specifically address how AI impacts journalism, missing an opportunity to explore AI applications like automated news generation and data journalism. By including recent case studies and real-world examples of AI applications, the course can offer a more comprehensive and practical education on AI, better preparing students for the evolving landscape of media and technology (see Table 3).

***Course titled Data Journalism*:**

The "Data Journalism" course at Istanbul University's Department of Journalism focuses on new journalism methods, including data processing, visualization,

and reporting. The course aims to provide students with the skills to handle and analyze data, find stories within data, and use data visualization tools. It provides a thorough understanding of data journalism, from data collection to storytelling, emphasizes practical skills such as data cleaning, scraping, and visualization, which are essential for modern journalism, and highlights the transformation of journalism through data-driven approaches (see Table 3).

However, the course does not explicitly cover AI technologies or machine learning algorithms, which are increasingly important in data journalism, and it misses the opportunity to explore how AI can automate news generation, enhance data journalism, and improve audience engagement. There are no practical assignments involving AI tools, which limits students' exposure to cutting-edge technologies. Additionally, content specifically exploring AI applications in journalism, such as automated content generation, sentiment analysis, and predictive analytics, can be developed. Incorporating these elements can offer a more comprehensive and practical education on AI, better preparing students for the evolving landscape of media and technology (see Table 4).

Table 4. Quotations for the terms "AI" and "data journalism" in the course syllabus (exported from Atlas.ti 24 version, May 27, 2024).

Quotation Name	Quotation Content	Codes	Reference
Course Title: Data Journalism Course Details - **Course C…	Course Title: Data Journalism Course Details -**Course Code**: GZTK3373 - **Credits**: 3 - **ECTS**: 5 - **Course Type**: Elective - **Theory Hours**: 3 - **Language of Instruction**: Turkish - **Instructor Course Objectives The course aims to: - Define data journalism and its history.	Data Journalism	1 - 1
- Identify and understand data formats.	- Identify and understand data formats.	data	1 - 1
- Use data visualization tools.	- Use data visualization tools.		1 - 1
#### Teaching Methods - Weekly presentations and lectures - Visual…	#### Teaching Methods - Weekly presentations and lectures - Visual presentations - Discussions - Case studies - Q&A sessions #### Resources - Data Journalism Handbook - The Future of Journalism: Data Journalism by Pınar Dağ ### Summary of AI Context in Data Journalism Course - **Emphasis on Data Accuracy**: Understanding the accuracy and reliability of data, a fundamental concept in AI.	Data Journalism	1 - 2
- **Data Cleaning and Scraping**: Techniques for preparing data for…	- **Data Cleaning and Scraping**: Techniques for preparing data for analysis, closely related to AI data preprocessing.	Data Journalism Digital journalism practices	2 - 2
- **Data Visualization**: Tools and methods for visualizing data, an…	- **Data Visualization**: Tools and methods for visualizing data, an essential part of AI driven analytics.	Data Analysis Data Journalism Data Visualization	2 - 2

Continued

Weekly Topics for the "Data Journalism" Course 1. **Week 1**: Em…	Weekly Topics for the "Data Journalism" Course 1. **Week 1**: Emergence and Development of the Concept of Data Journalism 2. **Week 2**: Changing Journalism Practices and Data Journalism 3. **Week 3**: Use of Data in Journalism / Big Data 4. **Week 4**: Types and Forms of Data 5. **Week 5**: Civic Data: Social Media, Crowdsource 6. **Week 6**: Open Data, Open Society, Open Government and Data Journalism 7. **Week 7**: Fundamentals of Open Data 8. **Week 8**: Turkey in the Open Data Index 9. **Week 9**: Thinking Like a Data Journalist 10. **Week 10**: Data Analysis and Interpretation 11. **Week 11**: Measuring Distribution / Differentiation 12. **Week 12**: Data Visualization 13. **Week 13**: Elements of Data Visualization 14. **Week 14**: Storytelling with Data ### Summary of AI Context **Themes and Context**: - **Data Journalism**: Understanding data use and analysis in journalism.	data Data Journalism	2 - 3
- **Big Data**: Learning to handle and interpret large datasets.	- **Big Data**: Learning to handle and interpret large datasets.	data Data Journalism Data Visualization	3 - 3
- **Open Data**: Emphasis on transparency and open data sources.	- **Open Data**: Emphasis on transparency and open data sources.	data Data Analysis Data Journalism	3 - 3
- **Data Visualization**: Techniques to visually present data-driven s…	- **Data Visualization**: Techniques to visually present data-driven stories.	data Data Analysis Data Journalism	3 - 3

The analysis of curricula at Ankara University and Istanbul University revealed significant gaps in the practical integration of AI into journalism education. While some courses, such as "Digital Culture" and "New Media," include theoretical discussions on technology, the use of AI-specific tools and practices such as automated news reporting, data mining, and AI-driven content creation are largely absent. At Ankara University, an elective course titled "AI" is offered, but it is not specifically tailored to journalism practices. Similarly, Istanbul University's courses focus more on the broader societal and cultural impacts of AI rather than its practical applications in journalism (see Table 5).

Table 5. Comparison of how artificial intelligence (AI) is integrated into journalism education at Ankara University and Istanbul University.

University	New Media / Digital Culture Courses	AI-Titled Course	Data Journalism Course	AI-Related Content	Practical Training Component
Ankara University	Available (5 courses + Digital Culture)	Available (Elective from another department)	Not Available	Indirectly covered via technology and data journalism	Not Available
Istanbul University	Available (1 Digital Culture course)	Not Available	Available	Limited, within data journalism	Not Available

Insights from Semi-Structured Interview: To complement the findings from document analysis, a semi-structured interview was conducted with an educator from Istanbul University. The educator provided detailed insights by addressing the following five key questions:

The Importance of AI in Journalism Education: The educator emphasized the growing importance of AI in journalism education, stating, "*AI has moved from being a possibility to a certainty in directly influencing practical training at every level. It is no longer feasible to exclude AI from journalism education. Establishing the necessary infrastructure should be a priority in the field of education*." This underscores the necessity of integrating AI into journalism curricula to align with industry advancements.

Inclusion of AI in Courses: When asked whether AI is included in current courses, the educator noted, "*We do not currently have practical AI-focused components in our program. Although workshops are conducted on how to utilize big data in journalism practices, we have not implemented applications specifically focused on AI*." This indicates that while AI concepts are mentioned, they are addressed indirectly rather than through dedicated modules.

Challenges in AI Integration: The educator identified several challenges to integrating AI into journalism education, explaining, "*The lack of funding and technical infrastructure needed for AI applications is a primary barrier. Additionally, the shortage of trained faculty in this field presents a significant challenge*." These challenges prevent the implementation of practical training and restrict the scope of AI-related education.

How AI Should Be Addressed in Journalism Education: The educator suggested that AI should be integrated both theoretically and practically, stating, "*AI should be approached as a tool to enhance journalism practices rather than amplifying employment concerns that it raises across creative industries. Dedicated courses focusing on AI applications in journalism, combined with hands-on workshops, are essential*." This recommendation reflects the need for journalism education to focus on practical tools and techniques while addressing broader industry implications.

Suggestions for Curriculum Improvement: To improve journalism education, the educator proposed, "*Applied courses specifically focused on AI should be added to the curriculum. Collaborations with media organizations could provide students with real-world experiences, and faculty training programs are necessary to equip educators with the skills to teach AI-focused content*." These suggestions highlight the importance of partnerships and professional development in overcoming existing barriers and ensuring that students are well-prepared for the demands of an AI-driven media landscape.

The combined insights from the document analysis and semi-structured interview reveal that journalism curricula at both universities primarily focus on the societal and cultural aspects of AI, with limited practical applications. Key challenges to AI integration include resource constraints, such as financial limitations

and inadequate infrastructure, which hinder the provision of practical training; faculty expertise, as academic staff require technical training to effectively teach AI-related content; and curriculum gaps, where AI is only indirectly addressed through related topics, lacking dedicated courses. However, there are opportunities for improvement, including introducing AI-specific modules and hands-on workshops, establishing partnerships with media organizations to provide students with real-world exposure, and implementing faculty training programs to enhance educators' technical knowledge. These findings underscore the pressing need for targeted curriculum updates, institutional support, and industry collaboration to align journalism education with the demands of an AI-driven media landscape.

5. Discussion and Conclusion

This study investigated the integration of AI into journalism education at Ankara University and Istanbul University by conducting a document analysis of undergraduate journalism curricula and a semi-structured interview with an educator from Istanbul University. The findings revealed that while both universities offer courses addressing AI indirectly within broader topics such as data journalism and digital culture, they lack dedicated modules or practical training opportunities tailored to journalism applications. Analyzing how AI is dealt with in the curricula of these two major journalism programs in Turkey shows that both universities provide a robust theoretical foundation on AI's impact in journalism, adopting an interdisciplinary approach integrating social sciences. However, both curricula lack comprehensive practical AI components and a specific focus on AI applications in journalism.

The educator emphasized that AI is no longer optional in journalism education, requiring immediate integration into curricula. It is important to note that these insights reflect the perspective of a single educator and should not be generalized. The educator stressed the importance of using AI as a supportive tool to enhance journalistic practices rather than as a disruptive force. Additionally, the educator highlighted the absence of standalone AI-focused courses, explaining that AI is only indirectly addressed through broader topics such as big data workshops and digital culture. The educator identified key challenges, including limited funding, insufficient technical infrastructure, and a lack of faculty expertise, which hinder the implementation of effective AI training. To address these gaps, the educator recommended the introduction of applied courses specifically focused on AI, combined with hands-on workshops and collaborations with media organizations. These suggestions underscore the importance of institutional investments, partnerships, and faculty development programs in overcoming these barriers. Such reforms would ensure that students are both theoretically informed and practically equipped to utilize AI technologies in their professional endeavors.

In addition to the curriculum analysis, insights from the educator provided a complementary perspective that reinforces the study's findings. The educator em-

phasized that artificial intelligence should be integrated into journalism education not as a threat, but as a supportive tool that can enhance journalistic practice. While the current program lacks dedicated AI-focused modules, the educator pointed out that this gap could be addressed by incorporating applied courses, hands-on training, and stronger infrastructure. These suggestions highlight the need for journalism programs to adapt not only conceptually but also practically to the demands of an AI-driven media landscape.

This study is limited in scope, focusing on the curricula of only two prominent public universities in Turkey. The reliance on a single semi-structured interview also restricts the breadth of qualitative insights, as additional perspectives from other educators, students, and stakeholders in journalism education could provide a more comprehensive understanding of the challenges and opportunities for AI integration. Additionally, the research primarily relies on document analysis, which may not fully capture the practical implications of AI integration beyond the written curriculum. Future research should expand the scope to include more universities with diverse geographic, institutional, and pedagogical contexts. Exploring the perspectives of students and industry professionals collaborating with journalism schools would offer richer insights into the effectiveness of AI-related training. Comparative studies across countries could provide a global perspective on how journalism education adapts to AI's evolving demands. Furthermore, longitudinal studies tracking the implementation and outcomes of AI-specific modules in journalism curricula would be valuable for understanding the long-term impact of such initiatives.

This paper concludes that journalism curricula should focus on understanding the opportunities and challenges presented by AI and introduce tools used in newsrooms. As AI progresses, syllabi and courses should be updated to reflect these advancements. The findings highlight the urgent need for targeted curriculum updates, faculty development programs, and industry collaboration to better prepare journalism students for an AI-driven media landscape. These efforts will require strategic investment and institutional commitment. Journalism education must evolve alongside technological advancements to meet the needs of future journalists and the industry as a whole.

To better prepare journalism students for AI-integrated newsrooms, educa-tors may consider incorporating tools such as ChatGPT, Midjourney, DALL·E, Datawrapper, and Google Fact Check Explorer into their curriculum. These tools can support practical learning activities such as AI-assisted news writing, automated fact-checking exercises, visual storytelling through generative art, and interactive data visualization. Embedding such applied experiences would not only improve technical literacy but also promote critical awareness of AI's role in journalistic work.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

Ahmed, M. (2023). *The New York Times Seeks a Senior Editor for Newsroom Generative AI Lead*. https://talkingbiznews.com/biz-news-help-wanted/the-new-york-times-seeks-a-senior-editor-for-newsroom-generative-ai-lead/#:~:text=This%20editor%20will%20be%20responsible,as%20internally%20in%20the%20newsroom

Arduç Kara, E. (2022). Gazetecilik Eğitiminde Dijital Eğilimler: Türkiye'de Gazetecilik Lisans Eğitiminin Üniversiteler Arası Karşılaştırılması. *Erciyes İletişim Dergisi, 9,* 887-910. https://doi.org/10.17680/erciyesiletisim.1080612

Beckett, C. (2019). *New Powers, New Responsibilities. A Global Survey of Journalism and Artificial Intelligence*. https://blogs.lse.ac.uk/polis/2019/11/18/new-powers-new-responsibilities/

Beckett, C. (2023). Foreword: Journalists Need to Know about New Technologies. In M. Jaakkola (Ed.), *A Handbook for Journalism Educators*: *Reporting on Artificial Intelligence* (pp. 13-14). UNESCO.

Beckett, C. (2024). *What We Have Learnt about Generative AI and Journalism and How to Use It. Medium*. https://charliebeckett.medium.com/what-we-have-learnt-about-generative-ai-and-journalism-and-how-to-use-it-7c8a9f5e86fd

Beckett, C., & Yaseen, M. (2023). *Generating Change: A Global Survey of What News Organisations Are Doing with Artificial Intelligence*. https://www.journalismai.info/research/2023-generating-change

Bowen, G. A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal, 9,* 27-40. https://doi.org/10.3316/qrj0902027

Caswell, D. (2023). *AI and Journalism: What's Next*? https://reutersinstitute.politics.ox.ac.uk/news/ai-and-journalism-whats-next

Cohen, O. (2023). *As Journalism Embraces AI, College Professors Evaluate How to Incorporate the Technology*. https://newsroom.journalists.org/2023/08/25/as-journalism-embraces-ai-college-professors-evaluate-how-to-incorporate-the-technology/#:~:text=%E2%80%9CStudents%20should%20learn%20AI%20on,way%20a%20human%20journalist%20does

Deck, A. (2024). *AI Spotlight Series*. https://www.niemanlab.org/2024/05/pulitzers-ai-spotlight-series-will-train-1000-journalists-on-ai-accountability-reporting/

Diakopoulos, N. (2023). *What Could ChatGPT Do for News Production*? https://generative-ai-newsroom.com/what-could-chatgpt-do-for-news-production-2b2a3b7047d9

ElGhetany, S. S. (2024). *Artificial Intelligence and Journalism Education in the Arab Region*: *Prospects and concerns*. Arab Media Society. https://www.arabmediasociety.com/forum-review-artificial-intelligence-and-journalism-education-in-the-arab-region-prospects-and-concerns/

Etike, Ş. (2023). Artificial Intelligence Technologies in News Centers in Turkey: Journalist Experiences and Perception. In *Yeni Medya ve Toplumsal Dönüşümler* (pp.398-428). Ütopya Yayınevi.

Jaakkola, M. (2023a). Introduction: Pedagogies of Teaching about AI Technologies. In M. Jaakkola (Ed.), *A Handbook for Journalism Educators*: *Reporting on Artificial Intelligence* (pp. 15-26). UNESCO.

Jaakkola, M. (2023b). Preface. In M. Jaakkola (Ed.), *A Handbook for Journalism Educators*:

Reporting on Artificial Intelligence (pp. 6-7). UNESCO.

Josephi, B. (2020). Journalism Education. In *The Handbook of Journalism Studies* (pp. 55-69). Routledge. https://doi.org/10.4324/9781315167497-4

Kirchhoff, S. (2022). Journalism Education's Response to the Challenges of Digital Transformation: A Dispositive Analysis of Journalism Training and Education Programs. *Journalism Studies, 23,* 108-130. https://doi.org/10.1080/1461670x.2021.2004555

Lewis, S. C. (2019). Artificial Intelligence and Journalism. *Journalism & Mass Communication Quarterly, 96,* 673-695. https://doi.org/10.1177/1077699019859901

Newman, N. (2020). *Journalism, Media, and Technology Trends and Predictions 2020*. https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2020-01/Newman_Journalism_and_Media_Predictions_2020_Final.pdf

O'Leary, Z. (2014). *The Essential Guide to Doing Your Research Project* (2nd ed.). Sage Publications Ltd.

Simon, F. M. (2024). *Artificial Intelligence in the News: How AI Retools, Rationalizes, and Reshapes Journalism and the Public Arena*. https://www.cjr.org/tow_center_reports/artificial-intelligence-in-the-news.php

Tordecilla, J. (2024). *Teaching a Custom GPT to Read Audit Reports and Support Watchdog Journalism*. https://generative-ai-newsroom.com/teaching-a-custom-gpt-to-read-audit-reports-and-support-watchdog-journalism-1e124196ca15

Viner, K., & Bateson, A. (2023). *The Guardian's Approach to Generative AI*. https://www.theguardian.com/help/insideguardian/2023/jun/16/the-guardians-approach-to-generative-ai

Wiik, J. (2023). Artificial Intelligence in Journalism and Journalistic Practice. In M. Jaakkola (Ed.), *A Handbook for Journalism Educators*: *Reporting on Artificial Intelligence* (pp. 94-106). UNESCO.

Zaimis, P. (2021). *AI and the Future of Journalism: Mapping Change in a New Media Landscape*. https://blogs.lse.ac.uk/polis/2021/02/22/ai-and-the-future-of-journalism-mapping-change-in-a-new-media-landscape/