Research Article

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Artificial Intelligence Impact on Academic Programs Management

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Abstract

Higher education institutions must recognize that jobs will change significantly as the world enters the Fourth Industrial Revolution and experiences new technological advancements, particularly in artificial intelligence (AI). Both workers and students will need to adapt, and higher education must be able to provide students with the skill set they need to enter and advance in the workforce of the future. Even though the vast majority of journalism academic programs today seem to focus more on the theoretical and practical aspects of journalism, such as news literacy, introduction to digital journalism, journalistic reporting and writing, and global issues in journalism, industry leaders already see artificial intelligence (AI) as playing a big role in journalism in the future. AI has a big potential to change how media is written and consumed. This article offers a proposal for an undergraduate journalism degree with an artificial intelligence (AI) concentration. It is based on projections of employment for the next five to ten years, the government of the United Arab Emirates' (UAE) strategic orientation, higher education, and industry demands. The planned degree, the first of its type, is intended to give students the skills, technology know-how, and information necessary to succeed in the journalism field in the future.

Keywords: *artificial intelligence, academic programs management, journalism field in the future*

1. Introduction

Journalism is embracing new digital forms and styles as our digital environment grows every day. The variety of data sources available to us is growing, and with them come deeper and more fascinating insights. Journalism may now read hundreds of papers, and use digital photos, audio and video files, and text sources (Hamilton, JT. & Turner, F., 2009). When we take into account the qualifications and abilities of journalists, these changes are especially significant. As we embark on the Fourth Industrial Revolution (FIR), and witness new developments in technology, such genetics, artificial intelligence, robotics, to name but a few, it is important that HEI acknowledge and prepare for the consequent changes, and potential opportunities, and challenges in industry and the job market. In addition, technological changes, whether socio-economic, geopolitical and/or demographic will have an impact on industry needs, the job market, and subsequently how academic degrees should look like (Carlson, M., 2017). The FIR is not about the mere improvement in productivity using technology, it is

about the pace and scale of change. In the past, computerization, and automation replaced only routine and repetitive tasks (Shwedeh, Salloum, Aburayya, Fatin, Elbadawi, Ghurabli, & Dabbagh, 2024; Shwedeh, Salloum, Aburayya, Fatin, Elbadawi, Ghurabli, Muhammad, et al., 2024). Now, technology is being used in jobs that require pattern recognition and other non-routine cognitive tasks (Aboelazm, K., 2022).

Certain industries will need to adapt, while others will experience a complete change. Certain jobs will probably go, while others will probably change in kind. This shift affects lifelong learning and ongoing professional growth in addition to recent graduates (Yas, H., Aburayya, A., & Shwedeh, F., 2024). The bottom line is that to provide society with labor forces that are prepared for the foreseeable future, students, faculty, and HEI leadership will need to go on a significant revolutionary path. Therefore, it makes sense to include those necessary abilities in the education that kids get (Yas, H., Dafri, W., Sarhan, M. I., Albayati, Y., & Shwedeh, F., 2024). The people who graduate from high school and college today will very certainly be the ones creating new jobs and taking them. The employment of journalists and news analysts is predicted to grow by 6% between 2020 and 2030, or about as fast as the average for all occupations (Galily, Y., 2018). Annually, there are expected to be 5,400 positions available for reporters, news analysts, and journalists. a large number of which are used to replace employees who change careers or leave the workforce (Yas, N., Dafri, W., Yas, H., & Shwedeh, F., 2024). The US Labor Bureau predicts the long-term demand for traditional jobs would be impacted by decreased advertising revenue. Over the next ten years, traditional journalism is anticipated to continue to diminish. Consequently, conventional revenue streams are probably going to shift as well (Salloum, Almarzouqi, Aburayya, Shwedeh, Fatin, Ghurabli, Dabbagh, et al., 2024; Shwedeh, Salloum, Aburayya, Fatin, Elbadawi, Ghurabli, Muhammad, et al., 2024; H. Yas, Aburayya, et al., 2024; H. Yas, Dafri, et al., 2024). News companies will be forced to reduce staff and hire fewer journalists as a result of declining revenue. Some of the reductions may be compensated by an increase in the demand for online news (Aboelazm, K. S., 2023). However, the increase in digital advertising could not be sufficient to offset the decline in print reading, circulation, and advertising because the money from online and mobile advertisements is typically less than that from print advertisements (Shwedeh, Salloum, Aburayya, Fatin, Elbadawi, Ghurabli, & Dabbagh, 2024; Shwedeh, Salloum, Aburayya, Fatin, Elbadawi, Ghurabli, Murad, et al., 2024; Shwedeh, Salloum, Aburayya, Kaur, Mohammad, Mazharul, Fatin, et al., 2024; N. Yas, Dafri, et al., 2024). Additionally, news firms are merging and sharing more personnel, assets, and content with other media companies. For instance, reporters employed by a media organization might compile and cover articles that appear in several magazines under the same parent corporation. If mergers, consolidations, and the sharing of news continue, there may be a reduction in the need for journalists (Yas, H., Jusoh, A., Streimikiene, D., Mardani, A., Nor, K. M., Alatawi, A., & Umarlebbe, J. H., 2021). However, consolidation can occasionally aid in reducing the number of jobs lost. Because the larger business has superior money and resources, financially struggling newspapers, radio stations, and television stations may be able to retain their staff after a merger (Yas, H., Jusoh, A., Nor, K.M., Jovovic, N., Delibasic, M., 2022).

According to Lewis, S.C., Guzman, A.L., and Schmidt (2019), the bulk of case studies and literature on AI's application in journalism appear to be in support of it. In his 2019 book "the 4IR and Media Restructuring," Abdulzher claims that "AI Journalism complements the development of the media industry since the era of the first industrial revolution." He said that "Artificial Intelligence Journalism will create a new revolution in the media industry, where there are no restrictions imposed by governments on the freedom of news broadcasting and to access information, nor are there geographic or legal borders" (Alimour et al., 2024; Alkashami, Hussain, et al., 2023; Salloum, Almarzouqi, Aburayya, Shwedeh, Fatin, Ghurabli, Elbadawi, et al., 2024). AI is defined as a set of tools that "may help journalists tell new kinds of stories that were previously too resource-impractical or technically out of reach" in a 2017 study by Columbia Journalism School, according to Whittaker, J. (2019). AI is expected to supplement journalism, not to replace it. The coming together of AI and data opens up new possibilities for user engagement and customized news streams (Dahu et al., 2022; Khadragy et al., 2022; Ravikumar et al., 2023; Shwedeh, 2024). But the report also points out that

journalists using AI and engineers developing it have different communication and understanding styles. This could lead to a variety of issues, including ethical ones. The research and case studies recommend that editors and reporters invest in AI training. As AI technologies proliferate in newsrooms, journalists must learn how to use new resources for storytelling responsibly and successfully (Dafri, W., & Rezaei Gashti, Z., 2022). One of the other possibilities is to think about how to apply standards and principles to new journalism technologies by using chatbots and other AI technologies. Collaborations with academic institutions are also advised in order to match the curriculum and increase student proficiency in this area. In addition to conducting an exploratory examination into the idea to align university journalism curricula, this study introduces the essential AI capabilities for the media industry. While cornerstones including academic program rigor, quality, students, faculty, research and scholarly activities, and community participation are naturally at the center of Higher Education Institutions' (HEI) strategic plans (Jiaconda., 2019). An increasing number of higher education institutions (HEI) now provide close attention to the external social environment dynamics, particularly the global economic trends that could affect the university in the near future. These trends include:

- The dramatic changes in the job market.
- The continuous and rapid evolution of information technology.
- The need for life-long skills to equip students to adapt to a changing competitive working environment.

However, it appears that the vast majority of journalism university programs nowadays place more of an emphasis on the theoretical and practical side of journalism, including news literacy, digital journalism, journalistic writing and reporting, and covering global concerns in media. Leaders in the field already believe that AI will play a big part in journalism in the future (Abdulzher, M., 2019). AI has the ability to significantly impact how journalism is produced and read. This article proposes a model for an undergraduate academic degree in journalism with several techniques to integrate AI into the curriculum, based on job estimates for the next five to ten years, higher education demands, and the strategic direction of the UAE government. The first degree of its kind, the proposed degree is designed to equip students with the knowledge, abilities, and technological proficiency that employers in the media industry will require.

2. Methodology

The growing use of AI technologies in journalism emphasizes how important this paper is. In order to give a broad picture of the academic degree AI needs in journalism, this paper is based on narrative reviews. This paper draws upon a variety of primary sources from the literature, industry reports, and HEI strategic plans. These sources include studies that offer an alternative viewpoint on the future demand for jobs and skill sets, such as the findings of a study commissioned by the UAE Ministry of Human Resources, "Marsad to assess the demand and supply in the UAE labor market"; a study conducted by the British Council, "Future Skills Supporting the UAE Future Workforce"; a report prepared by Abu Dhabi Suitability Week, "ADSW Future Skills 2030"; World Economic Forum Reports, World Development Report 2019; and a 2019 study by Charlie Beckett that examined 71 news organizations in 32 different countries regarding AI and related technologies (Stray, J., 2019). In response to inquiries regarding their knowledge of AI principles, its use in their newsrooms, and their opinions on the industry's potential and risks, a diverse spectrum of journalists who deal with AI provided their answers. The author, who oversees the biggest university in the United Arab Emirates, is a seasoned scholar. A strong foundation for creating and developing new academic programs can be found in the literature on data journalism and AI adaption. Good sources for learning about the use of social scientific approaches to journalism include Diakopoulos, 2013, 2014; Hamilton & Turner, 2009; Howard, 2014; Fink & Anderson, 2014; Lewis & Westlund, 2015; Parasie, 2015; and Houston, 2015. The literature has also addressed data and computational journalism (Yas, N., Al Qaruty, R., Hadi, S. A., & AlAdeedi, A., 2023). How AI systems can be used for investigative journalism is covered in

Broussard (2014). Based on the aforementioned, this research analyzes the design of several journalism undergraduate programs and recommends an introduction or discussion rather than an implementation guide (Roman, E., 2019).

3. Industry Trend for the Next Five Years

Big data, processing power, the internet, and mobile technology are the main elements changing the media industry and the nature of work, according to a 2019 World Economic Forum study Sivarajah, U., Irani, Z., Gupta, S., & Mahroof, K. (2020). Note that most responses are influenced by technology. Figure 1 shows the changing agents in the media industry (Gillpatrick, T., 2019). Figure 2 provides a prediction regarding the disruption of work in the media industry during the next five to ten years (Alkashami, Mohammad, et al., 2023; Shwedeh et al., 2020; Shwedeh, Hami, et al., 2022; Shwedeh et al., 2023). The World Economic Forum 2020 Future of Jobs report's main conclusions indicate that technology adoption will likely continue at a steady pace, maybe even accelerating in some areas. The report also suggests that automation and the COVID-19 pandemic will continue to cause "double-disruption" to businesses, that skills gaps will persist as most online white-collar workers' jobs change over the next five years, that online learning and training will become more common, and that there is less time to reskill and upskill (Aboelazm, K. S., & Ramadan, S. A., 2023).

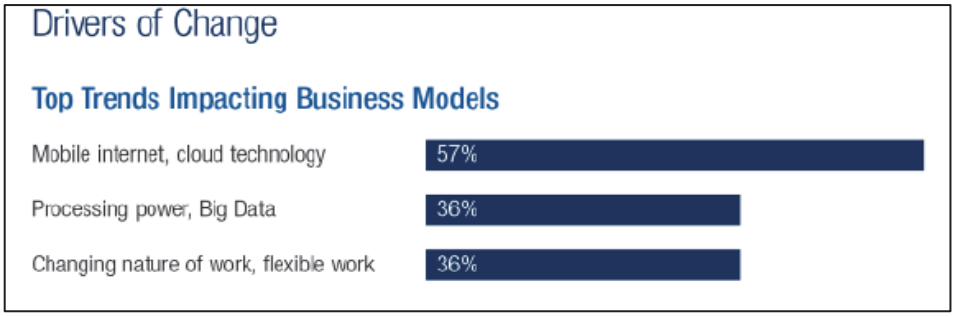

Figure 1: Drivers of Change in Media Industry

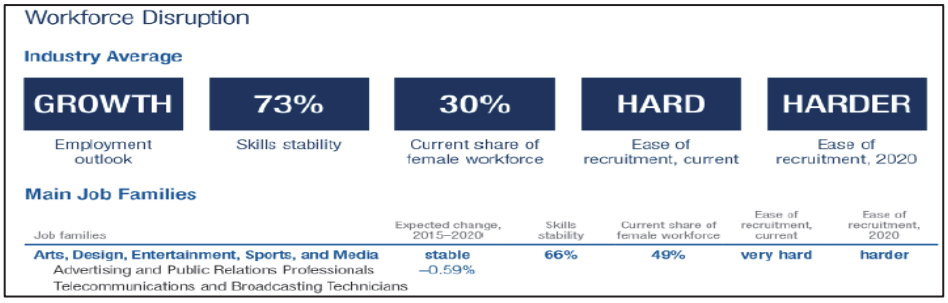

Figure 2: Workforce Disruption in Media Industry

Increasing demand		Decreasing demand	
1	Data Analysts and Scientists	1	Data Entry Clerks
2	AI and Machine Learning Specialists	2	Administrative and Executive Secretaries
3	Big Data Specialists	3	Accounting, Bookkeeping and Payroll Clerks
4	Digital Marketing and Strategy Specialists	4	Accountants and Auditors
5	Process Automation Specialists	5	Assembly and Factory Workers
6	Business Development Professionals	6	Business Services and Administration Managers
7	Digital Transformation Specialists	7	Client Information and Customer Service Workers
8	Information Security Analysts	8	General and Operations Managers
9	Software and Applications Developers	9	Mechanics and Machinery Repairers
10	Internet of Things Specialists	10	Material-Recording and Stock-Keeping Clerks
11	Project Managers	11	Financial Analysts
12	Business Services and Administration Managers	12	Postal Service Clerks
13	Database and Network Professionals	13	Sales Rep., Wholesale and Manuf., Tech. and Sci.Products
14	Robotics Engineers	14	Relationship Managers
15	Strategic Advisors	15	Bank Tellers and Related Clerks
16	Management and Organization Analysts	16	Door-To-Door Sales, News and Street Vendors
17	FinTech Engineers	17	Electronics and Telecoms Installers and Repairers
18	Mechanics and Machinery Repairers	18	Human Resources Specialists
19	Organizational Development Specialists	19	Training and Development Specialists
20	Risk Management Specialists	20	Construction Laborers

Source
Future of Jobs Survey 2020, World Economic Forum.

Figure 3: Increasing and Decreasing jobs before 2025[32]

Marconi, F. & Siegman, A. (2017) state that by 2025, the proportion of superfluous jobs is expected to drop from 15.4% to 9% based on data from the 2020 Future of Jobs Survey, while the proportion of emerging professions is expected to rise from 7.8% to 13.5%. The report suggests that by 2025, modern IT technology may eliminate 85 million jobs across the 15 industries and 26 economies it covers, while simultaneously generating 97 million new jobs in response to rising markets. Figure 3 shows the top 20 jobs before 2025, both increasing and decreasing, based on the poll results. According to Arntz, M., Gregory, T., & Zierahn, U. (2019), industries and researchers anticipate that the next five to ten years will see significant increases in automation and digitization across a range of industries; significant disruption of the labor market due to the need for new talents and skills; a narrowing of the intellectual gap between humans and machines; the emergence of new tasks requiring new skills and competencies; an increase in the number of people who will be self-employed and mobile; and a sharp decline in the number of "jobs for life."

It is anticipated that the journalism industry's consolidation and mergers, declining ad revenue, and growing technological use would lead to a more effective distribution of resources and assignments, which will in turn reduce the number of new hires. Journalists possessing specific expertise and proficiency in new media are more likely to secure employment. Not to mention that the labor market's future is extremely unpredictable due to the COVID-19 epidemic and the associated worldwide recession of 2020 (Aburayya et al., 2023; Dahu et al., 2022; Shwedeh et al., 2023; Shwedeh, Aburayya, et al., 2022). Despite the dramatic changes due to the emergence of AI in Journalism, there are professional, and ethical challenges that need be addressed. For example, under the category of professional challenges, an AI system may lead to a greater bias; an AI system may lack control and oversight. Similarly, on the ethical side, an AI system may suffer transparency, data quality, fact-checking, and fairness challenges (Carvajal, R., 2018).

4. AI and Journalism Industry

Fundamentally, artificial intelligence (AI) is, to put it simply, a field of computer science concerned with mimicking human intelligence. In other words, AI is the process of teaching a machine to analyze data, see patterns, and draw conclusions on its own, with little to no assistance from humans.

In communication and journalism, artificial intelligence (AI) refers to technologies such as conversational agents, social robots, and automated writing tools that are designed to communicate, not mediate. This extends beyond the mechanization and digital revolution that, among other things, disrupted labor patterns, challenged economic models, and released a flood of information alternatives to news, altering media as an institution, according to the Future of Jobs Report (2020). They have presented the idea of "Robot Journalism" or "Algorithm Journalism," which is essentially the use of algorithms—rather than using robots that have been trained to translate data into words. In "Automating the News: How Algorithms Are Rewriting the Media," Nicholas Diakopoulos writes that "many people will be around to see the future of AI in journalism."4 He argues that the media and academic writing have been closely observing the new "quantitative and novel" forms of journalism.

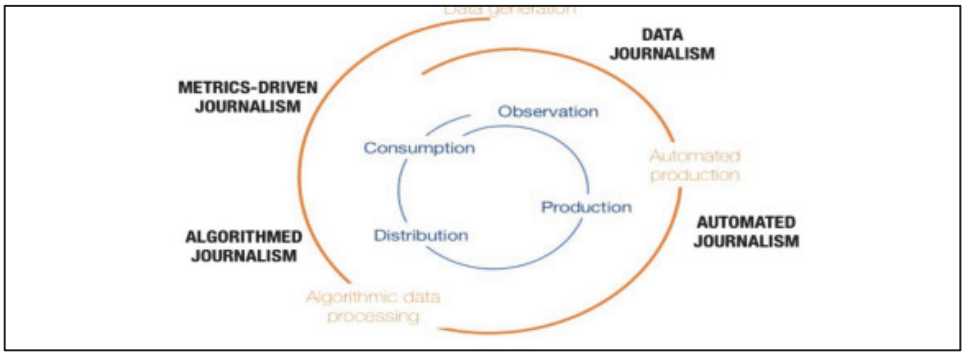

Figure 4: New Forms of Journalism

The technique of gleaning valuable information from data and crafting articles with additional visualization to enhance readers' comprehension of the story's significance is known as data journalism (Beckett, C., 2020). The term "algorithm journalism" refers to the intersection of data technology and journalism, encompassing the use of data, algorithms, and social science skills to augment the media's role in accountability. The increase in focus on content created automatically and using technology created by automated content solutions is referred to as "automated journalism". Algorithmic processes that convert data into narrative news articles with little to no human involvement are an example of these technologies. Data journalism is the process of extracting important information from data and creating stories with extra visuals to help readers understand the value of the narrative. The term "algorithm journalism" refers to the intersection of data technology and journalism, encompassing the use of data, algorithms, and social science skills to augment the media's role in accountability. The increasing focus on content generated automatically and using technologies created by automated content solutions is referred to as "automated journalism" (Jung, J., Song, H., Kim, Y., Im, H. & Oh, S., 2017). The phrase "metrics-driven journalism" refers to attempts to make sense of the increasing amount of digital footprints viewers leave behind, which could affect the way decisions are made and news is produced. The development of artificial intelligence technology has surely altered newsrooms, especially in the areas of dissemination and production of news. Figure 4 below lists the technologies mentioned as being made possible by advancements in the field of automated content production.

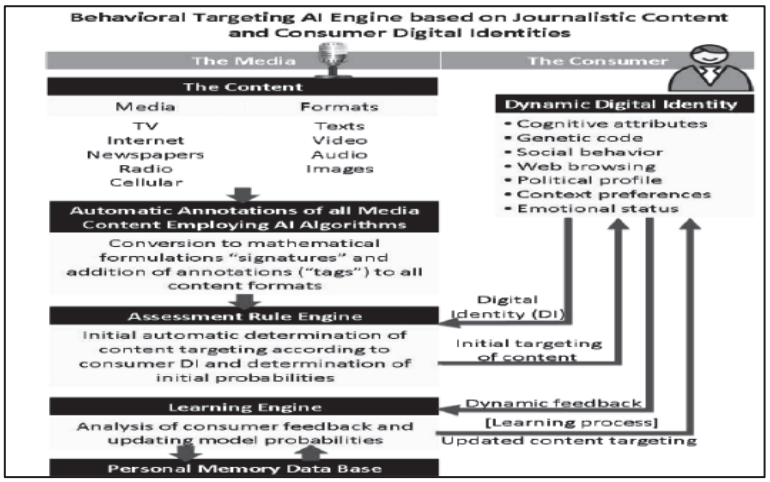

Figure 5: Automated Content Production[25]

Artificial intelligence (AI) is increasingly being used in journalism to improve material quality, increase marketing effectiveness, automate information validation, and speed up data classification (Bradshaw, P., 2019). According to Abdulzaher (2019), AI can enhance news creation, collection, and customization, as well as facilitate processes like automatic translation and text synthesis. It has been shown to be helpful in tailoring media news, news flow, and public relations. The availability of new platforms and tools, such as wearables, voice, image, and text generation, has also improved the facilitation of new distribution channels.

- Improved tailored content distribution
- Increased productivity through automated content creation
- Dynamic pricing for both subscriptions and adverts
- more stories extracted from the current data and vice versa
- Improved computerized transcriptions
- Manage the moderation of material.
- Identification of deep fakes and fake news
- Deeper sentiment analysis
- improved image/video search;
- new debunking tools

5. Academic Programs in Journalism

Most undergraduate journalism programs require between 120 and 150 credit hours. Three degree options are available: A Bachelor of Science in Journalism, a Bachelor of Arts in Journalism and Mass Communication, and a Bachelor of Journalism (Graefe, A., 2016). Depending on the type of degree, a program may include general education requirements, journalism requirements, communication requirements, liberal arts requirements, and a variety of elective courses (Yas et al., 2022). The Accrediting Council on Education in Journalism and Mass Communications (ACEJMC) is the accreditation body responsible for evaluating professional journalism and mass communications academic programs. To receive a baccalaureate degree from ACEJMC, a minimum of 72 semester credits must be taken in subjects other than mass communications and journalism. In addition, students need to complete the liberal arts and sciences general education criteria set by the university (Gynnild, A., 2014).

The University of Missouri at UNC Chapel Hill in North Carolina founded the world's first journalism school in 1908 and provided combined programs in commerce, science, health, and law to better prepare students wishing to work in those fields. Columbia Journalism School offer a degree in journalism with areas of study in data, documentary, investigate, multimedia, broadcast, business, arts, audio, politics, international, science, and writing (Graefe, A., 2016). Table 1 shows examples of the distribution of requirements in some of the examined academic programs. As shown in table 1, undergraduate degrees in journalism are distributed across journalism, liberal arts, communication, and general education requirements. Courses with technology component are mostly related to Interactive Design and Development, News Videography, Photojournalism, Social Media, Multimedia, Audio/Visual Newsgathering, Data Journalism.

Table 1: Requirements Distribution of Journalism Academic Programs

HEI	GEN	COMM/Liberal Arts/OTHR	JOUR	ELEC	TOTAL
Canadian University	36	42	30	15	123
Michigan State University	39	42	42	0	123
Arizona State	45	39	38	3	125
Drake University	36	24	44	20	124
Temple University	19	41	46	0	124
New York	42	18	36	21	117
Maryland	15	65	42		122

There is a never-ending discussion on how academic degrees in journalism should be changed. Scholars and professionals in the field have contended that there is no better model for a working journalist than the academic or practical approaches (Ali, W., Hassoun, M., 2019). The solution might lie in combining the two models. A few recommendations that could help imitate the work environment while learning include switching from undergraduate journalism skills courses to professional internships and campus journalism (Aboelazm, K. S., 2023). Graduate journalism school programs ought to gradually eliminate skills training. The essential media courses (legal, ethics, history, critique, etc.) should be kept along with some advanced courses like investigative and documentary journalism. Focused lectures on the fellowship model for professional journalists ought to be offered at more colleges.

6. Proposal and Conclusion - Journalism with AI Academic Degree

In conclusion, at this time, AI is considered as an enhancement tool to journalism. In other words, an academic degree in journalism with AI components is not expected to be a total revamp in curricula and pedagogy (Bernstein, C., and Rouse, M., 2018). Rather, the vision is more about AI-embedded components, with specific learning objectives' approach. The proposal here does not also advocate any curricular adjustments that might entail longer graduation times, or increased cognitive load. Depending on supply and demand, HEI may select one of several approaches that are not mutually exclusive, such as:

1. No substantive change to the existing program. Offering courses in AI as electives is a plausible starting point.
2. No substantive change to the existing academic program, or core courses. AI content/modules can be included in some of the technology-related courses; or integrated in an introductory course, for example, AI, machine learning and deep learning in journalism (Broussard, M., and Lewis, S., 2019). For example, to enhance skills and competencies required to identify fake news, the course would have a module showing how AI can be used to facilitate the detection of false information, as opposed to the time-consuming.

3. There has been no significant alteration to the current curriculum. Present one or more AI courses. Courses might be provided, for instance, to show how AI can help with multiple-source data analysis, text-to-audio or speech-to-text conversion, and the identification of fake news through the use of intelligent software. Students can learn how to use software like Factmata1, an AI-based program that can lessen false information and offensive content online, in a lab setting (Latar, NL., 2018). In the framework of news editing in accordance with the editorial policy, another course with a lab may be established; one example would be rephrasing the article to match the editorial policy of each medium. An exemplary piece of software is the Associated Press's version of Urbs. AI can be discussed in relation to content personalization as well. The module/course can demonstrate to students how artificial intelligence (AI) can help users and businesses establish their own tailored news agenda. It can also generate news in many languages, which makes material more favorable, relevant, and personalized (Latar, NL., 2018).
4. A significant modification to the program. Present the concentration in AI. This might include specialized journalism-AI courses covering topics like sentiment analysis, automated transcription, image and video processing, content management and moderation, deep fakes and fake news identification, and new debunking tools.

As an academician, I have to keep in mind a number of internal and external factors that would guarantee the feasibility, sustainability, and relevance of any academic program, hence my recommendation to make this transition to Journalism with AI in a few incremental steps (Aljazairi, S., 2016). The first approach would be to begin introducing AI-related topics into journalism core courses. This would support the current programs while enabling HEI to initiate the shift. Next, progressively go to the second phase of the program by adding several journalism-based AI courses and modules to the current academic curriculum. Lastly, get into a program emphasis or specialty. A few of the previously suggested modules, as well as an introduction to AI, sentiment analysis, content management and moderation, automated transcription using AI, image and video, and the identification of deepfakes and fake news, would be included in the proposed journalism-AI courses. Table 2 displays a suggested requirement distribution.

Table 2: Requirements Distribution of Journalism Academic Programs with AI

GENERAL ED	Journalism	JOR-AI	ELEC	TOTAL
27	48	15	30	120

Category	Examples of courses to choose from
General Education	• Emiratis Studies • Arabic Concepts • English Composition I • English Composition II • Mathematics • Natural Science • Innovatio9n and Entrepreneurship • Introduction to information technology • Methods of research
Core Courses	• Journalistic Storytelling across Media • Journalism in the Digital World • News Gathering and Assessment • Media Ethics and Law • Storytelling: Interactive News • Storytelling: Magazine and Feature Writing • Video Journalism-Video Producing Broadcast/Web • Advanced Online Storytelling • Exploring Future Digital Journalism • Social Media Practice in Journalism • Data Journalism Research and Investigation • Journalism Newsroom • Editorial Design • Feature Writing • Photojournalism • Magazine Writing and Editing • Radio Newsroom • Television Newsroom

Electives	• Mobile Journalism • Fashion Journalism • Gender and the Media • Media and Religion • Sports, Media and Society • Sports Journalism • Politics and Journalism • Health Journalism • Digital, Social and Mobile Marketing • Trauma Journalism
AI	• AI, machine learning and deep learning in journalism • Sentiment analysis • Content management and moderation • Automated transcription • Image and video • Fake news/deep fakes recognition • New tools for debunking.

While each research study is unique in nature, and it has its own challenges. I strongly recommend that more research is conducted on the impact of AI on curriculum structure across different disciplines, as it will illustrate important patterns that higher education need to be informed about. Higher Education is diverse, and has many variables that could lead to different conclusion.

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