Introduction

In a time with rapid technological advancements, various industries have integrated Data and Artificial Intelligence to enhance operations and drive innovation. From finance to healthcare, manufacturing to marketing, these new technologies are fundamental parts of modern business strategies. They allow companies to analyze large amounts of data, automate tasks, personalize services, and make informed decisions. By doing so, they increase efficiency and competitiveness in today’s rapidly evolving digital landscape. The media domain, where innovations in data-driven technologies, has revolutionized content creation, production, marketing. Recognizing these changes is key to understanding how Data and AI are influencing the job market.

As BUas seeks to provide cutting-edge education to its students, it is crucial to determine the extent to which these advancements are integrated into the curriculum and how prepared students and staff are to navigate this evolving field.

This project aims to address these questions through a mixed-method study. By using both qualitative and quantitative research methods, we aim to gain understanding on the knowledge levels, acceptance, and perceived impact of the media domain at BUas. This will inform us about the current state and will also help in making curriculum adjustments.

Research questions

To define the objectives clearer, we agreed on summarizing the problem with multiple research questions while keeping the main theme of the study in mind:

*How can the AI knowledge and tools be implemented into the BUas Media program (=Creative Business)?*

To make this problem more specific, a mix of more detailed research questions were developed to help with understanding the situation.

**RQ1:** How can artificial intelligence be effectively integrated into media production and distribution processes to enhance content creation?

**RQ2:** To what extent can AI be implemented into the marketing sub-domain of media program at BUas?

**RQ3:** What are the perceptions and attitudes of faculty members in the media domain at BUas towards integrating Data & AI concepts into the curriculum?

**RQ4:** How do you perceive the impact of AI on creativity, efficiency, and content quality in the field of media production?

**RQ5:** What are the key attitudes and perceptions of media lecturers regarding the adoption and impact of Artificial Intelligence (AI) in content creation within the media industry?

On top of that, multiple quantitative questions were developed to grasp the situation in more detail.

**RQ6:** To what extent do media professionals perceive AI as a tool that enhances their productivity and creativity?

**RQ7:** What is the difference between lecturers, 1st and 2nd year students, and 3rd and 4th year students of the impact of using AI tools on the quality of content produced in media production and distribution processes?

**RQ8:** What factors significantly predict the perceived impact of AI on the quality of content produced in media studies programs?

**RQ9:** What is the status of attitudes, knowledge, use and acceptance of AI among the marketing/media program students and staff?

**RQ10:** How do staff and students compare on metrics from RQ9?

**RQ11:** Does knowledge of AI impact acceptance of AI?

**RQ12:** What is the current level of awareness and familiarity among media students vs. lecturers at BUas regarding Data & AI technologies?

**RQ13:** To what extent do media students perceive the influence of Data & AI on the future job landscape within the media industry?

**RQ14:** Does the age of the person and experience the person has with AI, impact the level of acceptance of AI?

**RQ15:** How effective are AI tools in enhancing media production efficiency for assignments and real-world applications?

**RQ16:** What is the impact of using AI in the field of media production efficiency compared to not using AI?

**RQ17:** How will AI assistance in media production influence the speed of content creation in the future?

**RQ18:** On a scale of 1 (low) to 5 (high), how would BUas Media program students (=creative business students) rate their current knowledge levels regarding Artificial Intelligence (AI tools)?

**RQ19:** To what extent do lecturers feel adequately trained and prepared to teach AI-related content in the Media program?

**RQ20:** What percentage of the lecturers anticipates that AI integration will significantly improve BUas media program graduates' employability in the media industry?

Literature study

Content

The comparison between AI-generated and human-created content highlights several key distinctions.

In terms of quality, AI consistently produces high-quality content, leading to increased customer satisfaction. However, humans excel in creating content of higher quality and with more nuanced aspects.  
 Both AI and humans can generate relevant and personalized content, but humans have an edge in understanding consumer desires and passions, resulting in better personalization. Humans also can create content for a broader target audience, while AI excels at tailoring content based on specific data (De Cremer, 2023).  
 Regarding personalized content, if AI can accurately identify human factors, it can generate content that is equally personalized and relevant. However, it struggles to achieve this without human input, particularly in understanding passions and desires.  
 AI's impact on customer perception and experience is mixed. Due to the abundance of AI-generated content, people may become fatigued with excessive exposure. Additionally, there is a lack of trust in AI, as it is often associated with robots and can scare people. Content presented as human-generated is perceived as more reliable and authentic, while AI-generated content may be viewed as bait.  
 In terms of knowledge acquisition and automation, AI, powered by advanced natural language processing and machine learning, has significantly improved information handling, leading to accelerated gaining knowledge. This has translated to improved efficiency and productivity gains in businesses (Haleem et al., 2022).   
 In content creation, AI has reached a level of proficiency where it can produce content that rivals human creativity. This poses a challenge in discerning between AI-generated and human-authored works. To address this, the industry may need to adopt innovative strategies in marketing and producing high-quality content (De Cremer, 2023).

Overall, the distinction between AI-generated and human-created content is becoming increasingly blurred, highlighting the progress in AI technology. Despite minor differences, there is a noticeable trend towards AI-generated content closely mirroring its human counterparts.

Production

In recent years, the integration and optimization of AI algorithms have emerged as pivotal trends in both multimedia and media production, as well as in the Media and Entertainment (M&E) industry. AI's transformative capabilities extend beyond the boundaries of traditional media and into the realm of M&E, where it simulates human capabilities such as understanding speech, recognizing objects and faces, and even making complex decisions (G. Olson and R. Singer, 2018). In the world of multimedia and media production, AI's potential has led to significant research and development efforts, yet it's important to critically examine current methodologies. This examination reveals certain limitations, particularly concerning layout and resource allocation during multimedia production, as highlighted in a recent study (Nan et al., 2023).

The study underscores that, despite AI's vast potential, challenges persist in terms of design rationality and resource allocation efficiency. It proposes a structured approach to address these limitations by harnessing AI algorithms and engines in multimedia production. This approach aims to enhance the pre-processing stages of production, potentially leading to more accurate and efficient design processes compared to traditional methods. However, it's essential to acknowledge that AI's significant strength, whether in multimedia or M&E, lies in optimizing various aspects of the supply chain. This includes automating resource-intensive tasks such as metadata creation and indexing.

While AI's automation capabilities are noteworthy, it's equally vital to recognize that human involvement remains indispensable in critical areas. In both multimedia production and M&E, content selection requires human creativity and cultural insight. Legal aspects demand human expertise to ensure compliance, and upholding quality standards and viewer satisfaction remains a domain where humans excel.

Marketing

The marketing industry benefited heavily from the introduction of Artificial Intelligence (AI). It allows to have more personal contact with the customer, identify needs, and analyse unbelievable amounts of data (Haalem et al., 2022). The use of

AI was already rather broad. In 2012, Target discovered that their client was pregnant before she was able to tell her family and four years later, 55% of chief marketing.

Officers stated in a report that “Artificial Intelligence is expected to have greater impact on marketing than social media “(Conick, 2016). Commonly used techniques include product recommendation, advertisements personalization, and

Clustering clients to find similar patterns with the possible complete marketing automation on the horizon. AI can also help with price management or even marketing planning. (Mariani et al., 2021; Verma et al., 2021).

However, Artificial Intelligence has its problems and disadvantages as well. Both advertising and media in general show low level of acceptance in comparison with other industries. On top of that, many people do not understand what AI can and cannot do. This causes concerns about jobs and worse attitude towards adopting AI into marketing. (Vasiljeva et al., 2021). This causes questions regarding the preparation for the future job - education.

Summary

Drawing upon these insights, our research seeks to further explore these avenues within the context of media studies at Breda University of Applied Sciences (BUas). Our paper intends to build upon these foundational insights by focusing on the seamless integration of AI tools in the curriculum at BUas, potentially revolutionizing the approach to media studies at the university. The aimis to devise strategies that can facilitate a higher degree of innovation and efficiency in media production, fostering a new generation of professionals who are proficient in leveraging AI tools in media.

Furthermore, our research will aspire to delve deeper into the nuances of AI algorithm implementation, extending beyond the prevalent focus on multimedia production to encompass a comprehensive approach that integrates theory and practice. By developing a tailored strategy for BUas, our paper promises to pave the way for a synergistic relationship between AI and media studies, nurturing a learning environment that is in tune with the contemporary advancements in the field.

Methodology

To obtain answers to the research questions, we decided to use a mix of qualitative and quantitative methods.

For the qualitative part, a student focus group will be organised to collect more in-depth information. The meeting will be recorded so that all potential information can be gathered without the risk of missing vital details.

For the quantitative research, we decided to use a questionnaire. The questions come from a previously used survey. Some questions are directly reused (Schepman and Rodway, 2020) while others come from questionnaires from different domains and needed change so that they fit the research conducted in this study (Eschert et al., 2022; Sur et al., 2020; Chen et al., 2022). Apart from collecting demographic data, information on use, knowledge, acceptance, and attitude towards Artificial Intelligence will be gathered. The survey uses previously designed questionnaires with some questions altered to match the specifics of the researched domain. The questionnaire consists of statements (like: “There are many beneficial applications of artificial intelligence”) with which the questioned can disagree or agree on a scale from 1 to 5 (1 - completely disagree, 2 - somewhat disagree, 3 - neutral, 4 - somewhat agree, 5 - completely agree). The full questionnaire can be seen in Appendix A.

The gathered results will then be analysed using the R programming language to get insights into the level of willingness to adopt AI in the program, complexity level, and intensity level of these changes. On top of that, a policy paper will be created to make suggestion regarding the best way to follow when changing the study program.

Predicted outcomes

Hypothesis

The research question arising from the problem statement and the literature gap is as follows: How can the AI knowledge and tools be implemented into the BUas Media program within Breda University of Applied Science? To t

The hypothesis regarding this question is that the integration of Artificial Intelligence (AI) knowledge and tools into the BUas Media program will prove to be successful, resulting in a favourable association within the BUas Media domain. This will yield improvements in content creation, grading strategies, and overall effectiveness, leading to positive perceptions and attitudes among staff, students, and aspiring future media professionals.

The null hypothesis states that there will not be any effect (neither positive, nor negative) on the integration of AI knowledge and tools within the Media program.

It is expected that students in the BUas Media program may have limited awareness of the ongoing transformations brought about by AI. To assess the validity of this assumption, we establish the null hypothesis as 'students in the media program are not highly aware of the changes resulting from AI.' As part of hypothesis testing, we initially adopt the null hypothesis. Any evidence contradicting the null hypothesis is considered the alternative hypothesis, which we will examine to validate these hypotheses.

Methods such as regression model in the programming language R are used to determine the effect.

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Appendix A

The questionnaire is split into multiple sections: general information, student information (when filled in by a student), knowledge, trust, will to learn, domain and domain development. Below are all the questions split by the mentioned sections:

General information:

|  |  |
| --- | --- |
| Question | Answers |
| How old are you? | Text answer |
| Are you a student or a lecturer? | student | lecturer |
| How much work / study experience with AI or AI tools do you have? | Less than 1 year | 1 – 2 years | 3 – 4 years | more than 5 years |
| What subdomain are you most interested in? | Content | Production | Marketing | Interactive |

Student information:

|  |  |
| --- | --- |
| Question | Answer |
| What is your student number?\* | Text answer |

\* We do not use your student number in any way apart from drawing the lottery winner. You can skip this question and stay anonymous but we will not be able to delete your answer later (if you would want us to do so)

The rest of the survey consists of statements with which participants can agree or disagree on a scale from 1 to 5 (1- completely disagree, 5 – completely agree)

Knowledge:

|  |  |
| --- | --- |
| Question | Answer |
| There are many beneficial applications of artificial intelligence. | 1 to 5 |
| I am impressed by what artificial intelligence can do. | 1 to 5 |
| In comparison to my colleagues in my domain, I have more knowledge in the topic. | 1 to 5 |
| I am aware of wide application of AI. | 1 to 5 |
| I have a good knowledge of AI. | 1 to 5 |
| I have experience working with ChatGPT/ BingAI. | 1 to 5 |
| I have experience working with AI tools other than ChatGPT/ BingAI. | 1 to 5 |

Trust:

|  |  |
| --- | --- |
| Question | Answer |
| Artificial intelligence can have positive impact on people’s wellbeing | 1 to 5 |
| Artificial intelligence can provide new economic opportunities for this country | 1 to 5 |
| Artificially intelligent systems can perform better than humans | 1 to 5 |
| For routine transactions, I would rather interact with an artificially intelligent system | 1 to 5 |
| Artificial intelligence makes me feel great about human ingenuity | 1 to 5 |
| Artificially intelligent systems can help people feel happier | 1 to 5 |
| Some complex decisions are best left to artificially intelligent systems | 1 to 5 |
| I would entrust my life savings to an artificially intelligent investment system | 1 to 5 |

Will to learn:

|  |  |
| --- | --- |
| Question | Answer |
| I am interested in using artificially intelligent systems in my daily life | 1 to 5 |
| Artificial intelligence is exciting | 1 to 5 |
| I love everything about artificial intelligence | 1 to 5 |
| I am satisfied with how my domain is equipped for the application of AI | 1 to 5 |
| I am willing to learn about AI | 1 to 5 |
| I would like schools to offer AI related training | 1 to 5 |

Domain:

|  |  |
| --- | --- |
| Question | Answer |
| An artificially intelligent agent would be better than an employee in many routine jobs. | 1 to 5 |
| I would like to use artificial intelligence in my own job. | 1 to 5 |
| I often use AI in my daily work. | 1 to 5 |
| There are many AI application possibilities in your domain. | 1 to 5 |
| AI has a noticeable impact on my profession. | 1 to 5 |
| AI will create new jobs in my field. | 1 to 5 |
| The introduction of AI will lead to improvement in my profession. | 1 to 5 |
| AI will boost the domain | 1 to 5 |
| AI will be used more and more widely in the domain | 1 to 5 |

Domain development:

|  |  |
| --- | --- |
| Question | Answer |
| Much of society will benefit from a future full of artificial intelligence | 1 to 5 |
| I am willing to use AI if needed | 1 to 5 |
| Employees who use AI will replace those who don’t | 1 to 5 |
| The development in AI makes me more willing to engage in the domain | 1 to 5 |
| The development of AI makes the domain less attractive to me | 1 to 5 |