

Creative Technology Innovation and Edupreneurship in Student Digital Entrepreneurship: A Case Study of Aetheria Creative Agency in the Industrial Era 5.0

Inovasi Teknologi Kreatif dan Edupreneurship dalam Kewirausahaan Digital Mahasiswa: Studi Kasus Aetheria Creative Agency di Era Industri 5.0

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Abstract

The development of the Industry 5.0 era requires college graduates to have adaptive digital entrepreneurship competencies in line with technological advances and social needs. The urgency of this research arises because colleges are faced with the challenge of preparing human resources who are ready to face the Industry 5.0 era while contributing to economic progress. However, many universities have not fully implemented digital entrepreneurship in their curricula, with education remaining theoretical without practical experience. This study examines the application of creative technological innovation and edupreneurship in student digital entrepreneurship through a case study of Aetheria Creative Agency in Yogyakarta. The approach used is qualitative with a case study method. Data was collected through indepth interviews with the CEO of Aetheria and direct observation at the location. Documentation of Aetheria's activities also served as a data source. The research findings show that Aetheria combines three main strategies: design, digitalization, and personalization, supported by technologies such as artificial intelligence (AI) and digital marketing. Students act as innovators, collaborators, and decision-makers within a human-centered digital entrepreneurship ecosystem. Digital innovation and edupreneurship impact the development of competencies such as critical thinking, cross-disciplinary collaboration, and digital literacy. This study underscores the importance of educational institutions in creating an integrated, solution-oriented, and relevant digital entrepreneurship ecosystem in the era of Industry 5.0.

Keywords: Digital entrepreneurship, edupreneurship, industry 5.0., technology innovation.

Abstrak

Perkembangan era Industri 5.0 menuntut lulusan perguruan tinggi memiliki kompetensi kewirausahaan digital yang adaptif terhadap kemajuan teknologi dan kebutuhan sosial. Urgensi penelitian ini muncul karena perguruan tinggi dihadapkan pada tantangan mempersiapkan sumber daya manusia yang siap menghadapi era Revolusi Industri 5.0 sekaligus berkontribusi pada kemajuan ekonomi. Namun, banyak perguruan tinggi belum maksimal mengimplementasikan kewirausahaan digital dalam kurikulum, dengan pendidikan yang masih teoritis tanpa pengalaman praktis. Penelitian ini mengkaji penerapan inovasi teknologi kreatif dan edupreneurship dalam kewirausahaan digital mahasiswa melalui studi kasus Aetheria Creative Agency di Yogyakarta. Pendekatan yang digunakan adalah kualitatif dengan metode studi kasus. Data dikumpulkan melalui wawancara mendalam dengan CEO Aetheria dan observasi langsung di lokasi. Dokumentasi aktivitas Aetheria juga menjadi sumber data. Hasil penelitian menunjukkan Aetheria memadukan tiga strategi utama: desain, digitalisasi, dan personalisasi, dengan dukungan teknologi seperti kecerdasan buatan (AI) dan digital marketing. Mahasiswa berperan sebagai inovator, kolaborator, dan pengambil keputusan dalam ekosistem kewirausahaan digital yang human-centered. Inovasi digital dan edupreneurship berdampak pada peningkatan kompetensi seperti berpikir kritis, kolaborasi lintas bidang, dan literasi digital. Studi ini menegaskan pentingnya dukungan institusi pendidikan dalam menciptakan ekosistem wirausaha digital yang integratif, solutif, dan relevan di era Industri 5.0.

Kata Kunci: Kewirausahaan digital, edupreneurship, inovasi teknologi, industri 5.0.

1. Introduction

College graduates are not only required to master skills relevant to the corporate sector or government agencies, but must also have an entrepreneurial spirit to create new job opportunities by utilizing the advances offered by the Industrial Revolution 5.0 (Juhairiah & Yuwono, 2022). Universities are faced with the challenge of preparing and equipping human resources with appropriate qualifications and skills in order to face the era of the Industrial Revolution 5.0, while contributing sustainably to economic progress and community welfare (Abnur et al., 2025). In the ever-evolving digital era, digital entrepreneurship is becoming an increasingly important and relevant trend. Therefore, universities are required to be able to produce graduates who are competent, have strong character, and are ready to compete at the global level through the edupreneurship approach.

In a study conducted by Suban and Gani (2024) revealed that although many universities began to facilitate the teaching of digital entrepreneurship, there is still a gap in the effective application of technology in entrepreneurship learning. They underlined that entrepreneurship education implemented in many universities is still limited to the theoretical aspect, without any practical experience that equips students with real entrepreneurial skills. According to an academic study by Achmad Rifa'i and TB. Eka Nugraha, in his journal, revealed that the problem faced by students today is that entrepreneurship education at the academic level is only oriented toward theoretical studies without any real action in digital entrepreneurship. Therefore, universities need to build a strong commitment among all members of the academic community to position universities as entrepreneurial universities. This is a crucial requirement for organizing effective digital entrepreneurship education and being able to produce entrepreneurs born on campus (Rifa'i & Nugraha, 2019).

Aetheria Creative Agency comes as one of the concrete examples of digital entrepreneurship based on creative technology innovation located in the city of Yogyakarta. Founded by students with a collaborative spirit and utilization of modern technology, Aetheria is an agency that focuses on creative content development, MSME empowerment, digital branding, and technology-based visual communication strategies. Through an adaptive approach to market trends and social needs, Aetheria has successfully demonstrated that the synergy between technology and creativity can create significant economic impact, both for industry players and local partners such as MSMEs.

Open government support in facilitating every business can be optimally utilized by all levels of society. In the growing digital era, digital entrepreneurship is becoming an increasingly important and relevant trend (Nurlaila et al., 2024). Therefore, universities are required to be able to produce student input through an edupreneurship approach that can produce competent graduate outputs, have a strong character, and are ready to compete at the global level. In this case, the creative economy is one of the leading sectors that combines creativity, technology and innovation. This paradigm shift requires students as the younger generation not only to master academic knowledge, but also to be able to read opportunities in the digital entrepreneurship sector that continues to grow dynamically (Sulistiyowati et al., 2025).

The creative economy industry has not yet fully reached the Industry 5.0 stage. However, it is heading towards that era by utilizing technology and innovation to create added value and solve social problems. Industry 5.0, which is also known as Society 5.0, emphasizes the fusion of people and technology to improve the quality of life and overall well-being of society (Subandowo, 2022). According to Burhan, CEO and Founder of Aetheria Creative Agency, this effort is spearheaded by students engaged in the creative economy. In developing the creative economy in the Industry 5.0 era, Aetheria integrates technological innovation and edupreneurship with human-centered

values, including through the use of digital technology based on artificial intelligence and automation, entrepreneurship education, collaboration with creative talents and local communities, innovative designs that support digital economic growth, and adaptability to social trends and needs (Interview at 31 May 2025).

In general, digital entrepreneurship is considered crucial because it is able to drive innovation and flexibility through the use of technology, expand access to global markets, improve operational efficiency, and strengthen business competitiveness. In addition, digital entrepreneurship allows businesses to be more adaptive to market changes and technological developments, so that they can survive and grow in the dynamic digital era (Silitonga et al., 2024). Therefore, edupreneurship systems and programs in higher education need to be adapted to be in line with the demands of the Industrial Revolution 5.0. One approach that needs to be applied is entrepreneurship education that utilizes digital technology. This is crucial, considering that life in the 21st century demands fundamental pedagogical changes (Ramadhan & Megawati, 2022).

To realize the transformation in education, UNESCO since 1998 has proposed two basic principles: first, education must be based on four pillars, namely learning to know, learning to do, learning to live together, and learning to be; second, the application of the concept of life-long learning (Herawan & Rahayu, 2019). Universities must follow the changes in education in the 21st century by implementing them for students, so that they are ready to face the challenges of society after graduation. Advances in technology and science require universities to adjust their education system so that students are not only focused on academic aspects but also equipped with insights into the rapidly growing creative economy industry (Siregar et al., 2020).

In this context, edupreneurship is a strategic approach that integrates education and entrepreneurship simultaneously. Through edupreneurship, universities not only function as places to transfer knowledge, but also as incubators of creative and innovative ideas oriented towards real solutions in society, especially in the rapidly growing creative economy industry sector (Tunru et al., 2024). Thus, students will be better prepared to enter the world of work and build businesses independently after graduation, as well as become agents of change in facing the challenges of the Industrial 5.0 era.

The role of entrepreneurship is closely related to the progress of a country. Much evidence indicates that a developed country can be independent, which can be realized through the development of innovative, creative, intelligent, brave, and persistent entrepreneurs. To achieve the government's goals, universities need to contribute in creating the next generation of the nation that is ready to face global competition, especially in facing Revolution 5.0 (Sekar et al., 2024). However, until now, creative technology innovation has not been widely applied in edupreneurship in higher education, especially in entrepreneurship courses. Students usually only develop a business plan, but the concept is often not applied in real practice. Therefore, there is a need for alignment between the business plan and the direct application of entrepreneurship to guide and monitor students' progress in developing their entrepreneurial skills (Rifa'i & Nugraha, 2019).

Currently, creative technology innovation and digital media-based edupreneurship are being encouraged by the government. According to the findings of Siti Juhairiah and Doddy Teguh Yuwono in their journal, the development of entrepreneurship is now increasingly focusing on the creative and digital economy, where each field of study requires entrepreneurs who are able to develop entrepreneurship among students (Hapsari & Suranto, 2025). Fundamentally, it is expected that entrepreneurial character education based on digital technology can result in the formation of a strong and adaptive entrepreneurial character (Juhairiah & Yuwono, 2022).

Previous research shows a significant research gap in the academic discourse regarding the explicit correlation between creative technology innovation and edupreneurship models oriented towards a human-centered approach among students, especially in the context of digital agency development. In addition, the impact of the integration of these elements on improving students' entrepreneurial competencies is also still minimally explored. The majority of existing research tends to focus on the macro perspective of the creative economy, conventional business strategies, or the dynamics of digital consumer behavior, thus not providing a comprehensive understanding of the concrete implementation of student-initiated digital agencies, which intrinsically combine the principles of technological innovation and edupreneurship.

Based on this background, this study aims to examine more deeply how Aetheria Creative Agency applies creative technology innovation and edupreneurship in its operations, and how these practices can inspire and motivate students to foster entrepreneurial spirit. This study is expected to contribute to the importance of strengthening the digital entrepreneurship ecosystem in higher education, as well as encouraging universities to be more responsive to the dynamics of the creative economy based on digital technology, which is key so that students are ready to face competition in the world of work that has entered the era of the Industrial Revolution 5.0.

2. Literature Review

2.1. Digital Entrepreneurship and Technological Innovation

Digital entrepreneurship is now one of the important foundations in facing the challenges and opportunities that arise in the era of the Industrial Revolution 5.0. In this context, the theory of innovation proposed by Joseph Schumpeter provides a strong basis for understanding how entrepreneurs utilize technology to create opportunities and remodel existing markets (Mulyana, 2023). Schumpeter in his theory of creative destruction states that innovations made by entrepreneurs can replace old ways with new, more efficient solutions, which in turn create new economic value. Innovation in digital entrepreneurship often involves advanced technologies such as artificial intelligence (AI), machine learning and digital marketing. These technologies make it easier for entrepreneurs to access global markets, accelerate business operations and improve competitiveness. Research by Sandra et al. (2025) emphasizes that digital entrepreneurship focuses not only on developing new products and services, but also on improving efficiency that can make businesses more adaptive to market changes and technological developments. This approach is increasingly relevant to the needs of the business world for human resources who have high digital literacy, computational thinking, and entrepreneurial mindset. Therefore, the utilization of technology not only serves as a tool, but also as the main foundation in creating value that is relevant to market demands.

2.2. The Development of Digital Entrepreneurship in Higher Education

Higher education plays a crucial role in preparing students for the growing world of digital entrepreneurship. One of the main goals of higher education is to prepare students with the appropriate skills so that they can face the challenges of the digital economy. However, despite the increasing integration of digital technology in our daily lives, many higher education institutions have yet to fully implement digital entrepreneurship in their curriculum. Suban and Gani (2024) stated that although many colleges have started to facilitate the teaching of digital entrepreneurship, there is still a gap in the effective application of technology in entrepreneurship learning. They underline that entrepreneurship education implemented in many universities is still

limited to the theoretical aspect, without any practical experience that equips students with real entrepreneurial skills. According [Kusumaningrum et al. \(2024\)](#) also suggested that for digital entrepreneurship education to be effective, there needs to be a paradigm shift from just theoretical learning to direct implementation in the field so that students can apply their knowledge in building and managing digital businesses. The edupreneurship approach, which integrates education and entrepreneurship simultaneously, is a solution to this problem. Through this approach, universities can act not only as a place to transfer knowledge, but also as an incubator of creative ideas that are oriented towards real solutions in society. Thus, students can be better prepared to develop their own digital businesses after graduation and become agents of change in a technology-based society.

3. Research Methods

This research adopts a qualitative approach, which aims to produce descriptive data in the form of speech, words, writings, and observed behavior of the research object. The type of research used is a case study, which is research in which the study of a case is carried out intensively, deeply, in detail and thoroughly ([Wakarmamu, 2022](#)). The case study research method is an appropriate strategy to use when the main research question focuses on "how" or "why", the researcher has limited time to control the events being studied, and the research focuses on contemporary phenomena to track these events. In the case study approach, the researcher focuses more on the research design and implementation of the research to understand the phenomenon that is happening ([Ilhami et al., 2024](#)).

This research was conducted from May to June 2025 at the Aetheria Creative Agency office, Anggrek Adress No.39, Baciro, Gondokusuman Subdistrict, Yogyakarta City, Yogyakarta Special Region. Data sources include primary data obtained directly from key informants through indepth interviews and participatory observation, as well as secondary data in the form of internal documents, publications, and relevant literature. Data collection techniques used triangulation: (1) indepth interviews, (2) direct observation, (3) documentation. The collected data were analyzed using the interactive model of Miles, Huberman, and Saldaña, which involves data condensation, data presentation, and conclusion drawing. The research procedures included the pre-field stage (problem formulation, literature study, instrument design, licensing), field stage (orientation, literative data collection, note-taking), and post-field stage (analysis, interpretation, report writing, and verification).

In the context of a case study of Aetheria Creative Agency located in the city of Yogyakarta, this research aims to analyze in depth how creative technology innovation is applied in students' digital entrepreneurship practices in the Industry 5.0 era. The case study approach allows the researcher to explore the internal processes, innovative strategies, and collaborative dynamics undertaken by the students in developing the digital agency. Through observational data collection, indepth interviews, and documentation of Aetheria Creative Agency's activities, this study reveals how the integration of artificial intelligence, creative design, and utilization of digital platforms can create added value and competitiveness relevant to market demands in this era of human-centered technology. This approach also provides a space to understand the challenges and creative solutions that arise in the process of technology-based student entrepreneurship.

4. Results and Discussion

4.1. Research Results

4.1.1. Transformation of Students' Role in Digital Entrepreneurship Ecosystem in the Era of Industry 5.0

An indepth interview with Burhan, CEO of Aetheria Creative Agency, on May 31, 2025, explicitly highlighted the significant role shift of students in the agency's operations. Burhan stated that,

"We don't see students as ordinary workers, but rather as strategic assets that serve as innovators, collaborators, and active decision-makers. They are the backbone of every project we undertake."

This indicates that students at Aetheria are given the space and trust to not only follow instructions, but also to substantively contribute to the formulation of ideas and strategies. Direct observation at Aetheria Creative Agency in Yogyakarta corroborates this statement. Students are routinely involved in intensive brainstorming sessions, where they are free to express new ideas and discuss openly without rigid hierarchical boundaries. They work in cross-disciplinary teams, for example between designers and marketers, demonstrating high collaboration skills. The use of digital collaboration tools and interactive whiteboards is a common sight, facilitating a dynamic and rapid exchange of ideas.

An analysis of internal documentation (such as meeting minutes or project timelines showing student contributions) as well as Aetheria's project portfolio shows that many innovative concepts and strategic decisions came from the students' own initiative. They were fully responsible for their part of the project, from the planning stage to execution and evaluation. This indicates that the role of students has transformed into change agents and key drivers in Aetheria's digital entrepreneurship ecosystem, far beyond the traditional roles in the organizational structure.

4.1.2. Aetheria Creative Agency's Creative Technology Innovation Strategy: Synergy of Design, Digitalization, and Personalization

Aetheria Creative Agency implements an integrated innovation strategy, which Burhan expresses as a synergy between three main pillars: design, digitalization, and personalization. In the design aspect, Aetheria focuses not only on visual aesthetics, but on creating strategic and functional design solutions. Burhan emphasizes, "Our designs are powerful visual narratives, designed to solve clients' communication problems and build relevant brands." Observations show that the design team carefully analyzes the client brief, conducts audience research, and then develops a unique concept, supported by the use of the latest graphic design and video editing software, which is evident in the quality of the agency's portfolio.

Furthermore, digitization is the backbone of Aetheria's operations. Burhan explains, "We make the most of digital technology, including Artificial Intelligence (AI) for content optimization and digital marketing tools to expand reach." Observations confirm that the entire workflow, from project management, internal and external communication, to marketing campaigns, is fully integrated with digital platforms. Students actively use AI for idea generation, market trend analysis, and personalization of content recommendations, and apply digital marketing tools such as SEO, SEM, and social media management for MSME clients. The efficiencies resulting from this digitization allow Aetheria to operate with agility and responsiveness to the rapid changes in the digital market.

Personalization is the foundation of Aetheria's human-centered approach. Burhan states, "Each client has a unique identity and needs; therefore, our solutions must be deeply personalized". Observations show that the Aetheria team consistently involves clients in every stage of project development through interactive discussion sessions and continuous feedback. Students are trained to not only fulfill the brief but also explore the client's core values and long-term goals. This is reflected in the highly customized branding campaign for a local MSME, where Aetheria was able to create a visual identity and messaging that resonated with the specific target audience of the MSME, different from generic solutions often found in the market.

4.1.3. Impact and Implications of Creative Technology Innovation and Edupreneurship on The Development of Students' Digital Entrepreneurship Competencies

Implementing creative technology innovation and the edupreneurship model at Aetheria Creative Agency has significantly impacted the development of students' digital entrepreneurship competencies. Interviews with Burhan indicated that the students involved consistently showed improvement in critical thinking. "They learn to deeply analyze client problems and formulate effective creative solutions, not just following trends", Burhan explained. Observations confirmed that in problem-solving sessions, students demonstrated the ability to evaluate various options and choose the best approach.

In addition, students' cross-field collaboration also flourished. It was noticeable how the design team worked closely with the digital marketing and content development teams, sharing knowledge and expertise to achieve common project goals. These skills are honed through real-world projects that demand coordination and effective communication between disciplines. In terms of digital literacy, students routinely operate and master the latest digital tools and platforms, including design software, marketing automation, and data analysis. This mastery is not only technical, but also strategic in utilizing these features for entrepreneurial purposes.

Another impact is the increase in students' initiative, adaptability, and problem-solving skills. As they are often faced with dynamic challenges from clients and markets, they learn to take initiative in finding solutions and adapting to changes. The project documentation also shows the maturing and diverse quality of the students' portfolios, reflecting their increased technical and conceptual capabilities in digital entrepreneurship.

4.2. Discussion

4.2.1. Transformation of Student Roles in the Digital Entrepreneurship Ecosystem in The Industrial 5.0 Era

The Industry 5.0 era marks a paradigm shift from technology-based automation (Industry 4.0) towards a more humanist, collaborative, and human value-oriented approach. In this context, the role of students as strategic actors in the digital entrepreneurship ecosystem has undergone a significant transformation (Maria et al., 2024). Students no longer only act as objects of education or passive actors in the digital economy process, but rather become agents of change who are able to create innovative technology-based solutions with a touch of creativity and social empathy (Firmansyah et al., 2024). This transformation is driven by the needs of business and industry for human resources who are adaptive, creative, and have high digital skills (digital literacy, computational thinking, and entrepreneurial mindset) (Susiati et al., 2024).

Digital entrepreneurship is also very relevant if studied through the perspective of entrepreneurship theory, especially the theory of innovation from Joseph Schumpeter (1934), in his book "The Theory of Economic Development" published in 1934. It emphasizes the role of

entrepreneurs as agents of change through the process of creative destruction, which is replacing old ways with new innovations. In this context, students are encouraged to become entrepreneurs who not only follow market trends, but are also able to create new economic value through the use of digital technology.

Schumpeter also emphasized that innovation is the main key to long-term economic growth and has the potential to drive an industrial revolution. In his other book, titled "Business Cycles: A Theoretical, Historical, and Statistical Analysis of the Capitalist Process". Schumpeter (1939) explained that innovation can solve problems in the market, create new products, and introduce more efficient technology. Schumpeter argued that innovation is a process that involves profound changes in the methods of production, distribution, or marketing of goods and services. He described entrepreneurship as the force that drives innovation, with a role in developing, producing, and marketing new products that add value to consumers.

In addition, the effectuation approach is also relevant to understanding digital entrepreneurship. This theory emphasizes that entrepreneurs start businesses by utilizing available resources (who I am, what I know, whom I know) (Read & Sarasvathy, 2006). Students who start digital businesses, often utilize personal expertise, communities of entrepreneurs, and free platforms such as social media, without having to rely on large capital.

Thus, in the edupreneurship ecosystem in the university environment, students are required to be able to utilize technology not just as a tool, but as the main foundation in creating value (value creation) that has a broad impact (Darma, 2024). Creative technology innovation is key in this process, as it encourages students to think creatively and develop digital solutions that are not only functional but also aesthetic and market-oriented. Through cross-disciplinary collaboration, they can combine technology, art, business, and communication insights to produce relevant, innovative, and highly competitive digital products and services (Awwallia et al., 2024).

The role of students as innovators and decision makers at Aetheria is in line with the concept of entrepreneurial university, which aims to produce graduates who are not only job-ready, but also able to create opportunities and become entrepreneurs (Siswantini & Juliannisa 2022). The freedom to innovate and autonomy at work fosters an entrepreneurial mentality, where students learn from failures and successes first-hand. This is in contrast to study approaches that only focus on general business strategies, as this research shows how student-led organizations can be a transformative tool for holistic skill development.

The implication of this role transformation is a significant increase in skillsets relevant to Industry 5.0, such as critical thinking, adaptability, and problem-solving abilities. The student engagement in cross-field collaboration observed at Aetheria is also essential in an era where innovative solutions are often born from the synergy of various expertise. The Aetheria model confirms that to produce graduates who are competitive in the digital age, universities need to support a practical ecosystem that empowers students, allowing them to move from being passive to proactive agents in creating economic and social value.

This change is also influenced by the growing access to digital technology and increasingly inclusive entrepreneurial platforms. Students can now easily develop digital-based startups through various supporting ecosystems, such as campus business incubators, digital entrepreneurship competitions, and partnerships with creative industries (Isma et al., 2024). In addition, the emergence of social media and digital marketing platforms provides wider opportunities for students to reach global markets at low cost. This condition creates an environment that encourages students to experiment, innovate, and build businesses more dynamically and responsively to community needs. Students as a digital native generation have an advantage in

adapting to technological changes, which is an important asset in facing challenges and taking opportunities in the Industrial 5.0 era (Nurhasanah et al., 2023).

The integration of human values in entrepreneurial practices characterizes the Industry 5.0 approach. Students are now challenged to not only produce innovative products or services, but also have a social and ethical impact (Hastutie, 2022). The transformation of the role of students in the digital entrepreneurship ecosystem in the Industry 5.0 era is not only about mastering technology but also about how the technology is utilized to answer real challenges in society. The role of students is to develop into social innovators, cross-disciplinary collaborators, and value creators oriented toward common benefits (Saputra, 2024).

Creative technology innovation and edupreneurship in digital entrepreneurship reflect a form of entrepreneurship that is adaptive to the times as well as a real application of Joseph Schumpeter and Saras Sarasvathy's innovation theory. Through creativity and digital technology, digital entrepreneurs create new value and drive economic growth and social transformation. The Aetheria Creative Agency case study shows that with the right ecosystem support, students are able to become the main actors in the innovation and sustainability of digital entrepreneurship. Therefore, universities and stakeholders need to continue to strengthen this transformation through visionary policies and programs.

4.2.2. Aetheria Creative Agency's Creative Technology Innovation Strategy: Synergy of Design, Digitalization and Personalization

Aetheria Creative Agency, driven by a group of creative students, adopts a technology innovation strategy that combines three key pillars: design, digitization, and personalization. This strategy is built on the understanding that in the Industry 5.0 era, consumers not only want efficient products or services but also those that are aesthetic, personally relevant, and capable of creating emotional experiences (Suryadharma et al., 2023).

Aetheria not only utilizes conventional design software, but also integrates artificial intelligence (AI)-based technologies and machine learning in the creative process, such as in automated visual content generation, design trend analysis. Artificial intelligence (AI) or artificial intelligence is a technology in the field of computers that have special abilities to solve problems, until now AI continues to experience increasingly rapid and sophisticated developments. AI technology helps a variety of human jobs from easy to complex. This technology is then used to help professions in the visual field, one of which is for digital marketing (Salsabilla et al., 2023).

The creative process begins with indepth research on the target audience, followed by exploration of visual ideas, digital prototypes, and design trials before launch. This approach strengthens the human-centered design aspect which is the essence of Industry 5.0. (Maulina et al., 2024). Students who are members of Aetheria not only act as technical designers in a creative endeavor, but also as problem assessors, solution finders, and communicators of ideas. This is what makes Aetheria not only aesthetically appealing, but also functional and in accordance with the socio-cultural context of the target market.

In terms of digitalization, Aetheria optimizes various digital platforms to expand service coverage and accelerate work processes. Automation of project management systems, use of marketplaces on social media applications, and utilization of analytical dashboards are part of the digital efficiency strategy implemented. Aetheria also actively uses digital platforms such as Instagram, Facebook, and TikTok not only as promotional media, but also as interactive portfolios that showcase work in the form of visual storytelling. This strategy not only streamlines operations, but also reinforces Aetheria's brand position as a progressive, technology-driven creative agency.

Personalization is a key element in differentiating Aetheria from other digital agencies. By analyzing consumer behavior through digital data, Aetheria is able to provide services tailored to specific client preferences, whether in design style, communication tone, or digital marketing strategy. Moreover, entering the competition in the era of creative industries like today, a strategy is needed that can help the creative industry to work effectively and quickly (Mirzam, 2021). This process is done through a consultative approach, where the Aetheria team has a direct dialog with the client to understand their brand values, vision and goals. From this interaction, Aetheria creates creative content that is not only custom-made, but also has a narrative depth that strengthens the emotional bond between the brand and the audience.

The entire innovative strategy reflects Aetheria's philosophy of cross-field collaboration, wise use of technology, and sensitivity to human needs. In the context of higher education and student entrepreneurship, Aetheria's approach is a clear example of how creative innovation is not only born from technical expertise, but from the integration of vision, technology and empathy. With this strategy, Aetheria has successfully positioned itself not only as a creative service provider, but as a strategic partner in building clients' digital identity and presence amidst the competitiveness of the Industry 5.0 era.

4.2.3. Impact and Implication of Creative Technology Innovation and Edupreneurship on Student Digital Entrepreneurship Competency Development

Creative technology innovation has a significant impact on the development of student entrepreneurship competencies, especially in terms of adaptability to market and technological dynamics. Students involved in the digital entrepreneurship ecosystem are required to understand and master various digital tools and platforms such as social media, e-commerce, artificial intelligence (AI), and digital marketing tools (Novrita et al., 2024). The use of these technologies allows them to create more efficient, scalable, and flexible business models. In this context, digital innovation is not only a compliment, but is the main foundation for building a business strategy that is relevant to the needs of the Industry 5.0 era, which prioritizes human-machine collaboration and sustainability (Akmalia & Novita, 2025).

Meanwhile, edupreneurship forms an entrepreneurial mindset that is adaptive, collaborative, and visionary. The combination of the two strengthens students' core competencies as digital entrepreneurs, making them better prepared to face the dynamics of the creative industry and the challenges of the Industry 5.0 era. The implication is that universities must continue to develop a supportive learning ecosystem, including through incubation programs, digital business training, and cross-sector collaboration (Arta et al., 2023).

Student experiences in running digital businesses, such as those at Aetheria Creative Agency, show how digital innovation can encourage the development of various entrepreneurial competencies such as problem solving, critical thinking, digital literacy, and decision making. Through a hands-on and project-based process, students not only learn theory, but also engage in real creative, managerial and analytical processes (Dewi et al., 2024). For example, when it comes to developing a digital campaign strategy for a client, they need to analyze the market, understand audience characteristics, design engaging content, and evaluate the effectiveness of the strategy based on analytical data. These activities indirectly strengthen students' strategic and innovative thinking skills (Indrapura & Fadli, 2023).

In addition, digital innovation also has an impact on increasing collaborative competence and cross-field communication (Fajriyani et al., 2023). In multidisciplinary teams such as at Aetheria, students from different backgrounds work together on the same project, integrating design, technology, business and communication skills. This collaboration fosters teamwork skills,

tolerance for diversity of ideas, and leadership in a digital context. In the Industry 5.0 era, these skills are essential as businesses increasingly prioritize collaborative work and collective problem solving. In addition, students are also required to be able to communicate professionally through digital media, both to teammates and to clients, which strengthens entrepreneurial ethics and professionalism (Asida & Saputro, 2024).

A further implication of digital innovation on student entrepreneurship is the birth of a more open, adaptive, and value-based entrepreneurial mindset. Digital innovation allows them to build impactful businesses, for example in the social, educational, or environmental fields, with a solutive technological approach. Therefore, higher education institutions need to respond to this phenomenon by providing creative spaces, business incubation, and intensive mentoring so that students' entrepreneurial competencies can develop thoroughly and sustainably in the midst of the accelerating digital transformation era.

It can be concluded that the integration of creative technology innovation and edupreneurship plays a crucial role in the development of students' digital entrepreneurship competencies. Through the strategic utilization of digital technology and the formation of an adaptive and collaborative entrepreneurial mindset, students are not only able to respond to the challenges of the Industry 5.0 era, but also become the driving force in creating innovative solutions that have social and economic impacts. The Aetheria Creative Agency case study proves that with the right ecosystem support, such as creative spaces, incubation programs, and intensive mentoring, universities can produce competent, professional, and visionary digital entrepreneurs. Therefore, strengthening the synergy between educational institutions, the industrial world, and public policy is key in creating a generation of competitive and sustainable digital entrepreneurs.

5. Conclusion

This research examines the implementation of creative technology innovation and edupreneurship in student digital entrepreneurship at Aetheria Creative Agency in Yogyakarta, representing the dynamics of the ecosystem in the Industry 5.0 era. The results consistently indicate that Aetheria Creative Agency successfully facilitates the transformation of students' roles from mere educational subjects to proactive strategic actors as innovators, collaborators, and active decision-makers in every project. This transformation effectively bridges the gap between theoretical entrepreneurship education and the need for practical experience, while being adaptive to the demands of the Industry 5.0 era that emphasizes humanistic collaboration and social relevance. The research outlines that Aetheria Creative Agency adopts a creative technology innovation strategy synergized through three fundamental pillars: design, digitalization, and personalization. The utilization of advanced technologies such as artificial intelligence (AI) and digital marketing tools not only improves operational efficiency and expands service reach, but also supports a human-centered approach that enables the development of deeply personalized and relevant solutions for clients, especially Micro, Small, and Medium Enterprises (MSMEs). The synergy of these three strategies proves how creative technology innovation is functionally integrated in edupreneurship practices to create significant economic and social value. digital innovation and edupreneurship implemented at Aetheria Creative Agency have a substantial impact on the development of students' digital entrepreneurship competencies. Students demonstrated increased capacity in critical thinking, cross-field collaboration skills, and digital literacy. In addition, they also developed initiative, adaptability, and problem-solving skills in the face of complex market dynamics. Therefore, universities need to continue strengthening the technology-based entrepreneurship ecosystem with a practical and collaborative approach to

produce a generation of digital entrepreneurs who are competent, characterized, and ready to answer future challenges.

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