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## Fostering Young Muslims' Digital Entrepreneurship through Computer Technician Education

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Article Information	Abstract
<b>Received:</b> 20 August 2024	<i>As the digital economy grows, there is an urgent need for Muslim youth to develop technical and entrepreneurial skills. This study aims to analyze the implementation and outcomes of a computer technician entrepreneurship education program in improving the digital entrepreneurship competency of Muslim youth. This study uses a qualitative case study approach with data collection techniques in the form of interviews, observations, and document analysis. Data analysis with thematic analysis includes data recognition, coding, and conclusions. The results show that the program curriculum, aligned with the Indonesian National Qualifications Framework (INQF), successfully combines technical training in computer hardware and software with entrepreneurship education. Participants in the Digital Entrepreneurship Education program reported significant improvements in technical skills, especially in problem-solving and digital business management, and the development of managerial competencies such as financial management and online marketing. The practice-based learning method, complemented by Islamic guidance and values, fosters entrepreneurial readiness and helps program participants navigate ethically in the digital economy. This method is very beneficial for Muslim youth because it is in accordance with the experiential learning approach recommended in Islamic education, which emphasizes practice and reflection. In addition, the guidance provided focuses on technical advice and moral and ethical support, which is essential for their personal and professional development. Some areas that need improvement include upgraded facilities and more comprehensive mentoring support. This study offers important insights for policymakers and educators, highlighting the implementation of digital entrepreneurship education programs that combine technical training with entrepreneurship education to shape</i>
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*Muslim youth into ethical and competent digital entrepreneurs.*

Seiring dengan berkembangnya ekonomi digital, terdapat kebutuhan mendesak bagi pemuda Muslim untuk mengembangkan keterampilan teknis dan kewirausahaan. Penelitian ini bertujuan untuk menganalisis implementasi dan hasil program pendidikan kewirausahaan teknis komputer dalam meningkatkan kompetensi kewirausahaan digital pemuda Muslim. Penelitian ini menggunakan pendekatan kualitatif studi kasus dengan teknik pengumpulan data berupa wawancara, observasi, dan analisis dokumen. Analisis data dengan analisis tematik meliputi pengenalan data, pengkodean, dan kesimpulan. Hasil penelitian menunjukkan bahwa kurikulum program, yang diselaraskan dengan Kerangka Kualifikasi Nasional Indonesia (KKNI), berhasil menggabungkan pelatihan teknis dalam perangkat keras dan perangkat lunak komputer dengan pendidikan kewirausahaan. Peserta program Pendidikan kewirausahaan digital melaporkan peningkatan signifikan dalam keterampilan teknis, terutama dalam pemecahan masalah dan pengelolaan bisnis digital, serta perkembangan kompetensi manajerial seperti manajemen keuangan dan pemasaran online. Metode pembelajaran yang berbasis praktik, yang dilengkapi dengan bimbingan dan nilai-nilai Islam, mendorong kesiapan kewirausahaan dan membantu peserta program bernavigasi secara etis dalam ekonomi digital. Bagi pemuda Muslim, metode ini sangat bermanfaat karena sesuai dengan pendekatan pembelajaran pengalaman yang dianjurkan dalam pendidikan Islam, yang menekankan praktik dan refleksi. Selain itu, bimbingan yang diberikan tidak hanya fokus pada panduan teknis, tetapi juga dukungan moral dan etika yang penting untuk pengembangan pribadi dan profesional mereka. Beberapa area yang perlu ditingkatkan termasuk fasilitas yang harus diperbarui serta dukungan bimbingan yang lebih komprehensif. Penelitian ini menawarkan wawasan penting bagi para pembuat kebijakan dan pendidik, yang menyoroti implementasi program pendidikan kewirausahaan digital yang menggabungkan pelatihan teknis dengan pendidikan kewirausahaan untuk membentuk pemuda muslim menjadi wirausahawan digital yang etis dan kompeten.

## **I. INTRODUCTION**

The rapid advancement of information and communication technology (ICT) has driven profound transformations in various sectors, including education and the economy (Iskandar et al., 2023; Musa et al., 2024; Sulkipani et al., 2024). For the millennial generations, including young Muslims, the development of digital and technical skills has become increasingly essential in addressing the challenges

of the Fourth Industrial Revolution, such as automation, artificial intelligence, and digitalization, which demand a workforce equipped with advanced competencies (Sá et al., 2021).

Islamic teachings emphasize the importance of acquiring knowledge and skills, as reflected in the saying of the Prophet Muhammad, "Seek knowledge from the cradle to the grave." One crucial skill to acquire in this digital age is digital entrepreneurship (Nambisan, 2017). Digital entrepreneurship education is critical to fostering entrepreneurial intentions among young Muslims. Research shows that digital entrepreneurship education and knowledge positively influence students' digital entrepreneurial intentions, mediated by entrepreneurial alertness (Wibowo et al., 2023). For Muslim millennial SMEs, entrepreneurial spirits such as innovation, risk-taking, and proactiveness significantly contribute to business success (Wahab et al., 2023). Furthermore, social media learning enhances entrepreneurial learning and creativity among Muslim female learners, increasing entrepreneurial intentions (Khan et al., 2022). These studies highlight the importance of digital entrepreneurship education in developing entrepreneurial skills, knowledge, and intentions among young Muslims, emphasizing the need for quality educational services and innovative learning approaches to nurture the next generation of digital entrepreneurs (Badawi et al., 2023).

Despite the increasing demand for digital entrepreneurship competencies, field observations reveal that many young Muslims lack access to relevant education and training programs. This gap has contributed to high youth unemployment rates in Indonesia, where unemployment among youth stood at 15.86% in 2018, mainly due to a lack of essential technical and managerial skills (Yanindah, 2022). Providing appropriate entrepreneurial education and technical training can enhance the skills of Muslim youth and better prepare them to meet the demands of the modern workforce (Ali et al., 2022; Nurjanah et al., 2023). Moreover, Sahut et al. (2021) assert that digital entrepreneurship promotes economic inclusion and allows young people to adapt to market changes. Moreover, digital entrepreneurship offers opportunities to engage in a wide variety

of businesses, including e-commerce, software development, content creation, and digital marketing, among others (Apeh et al., 2023; Safuri et al., 2022).

Furthermore, Existing research has highlighted the importance of entrepreneurial education and technical training. Yet, most programs still need to address the specific needs of the ICT industry, particularly within the local context of Indonesia. Previous studies have often focused on technical or entrepreneurial aspects without integrating both components. For instance, Barboutidis & Stiakakis (2023) emphasized the importance of technical education. Still, they still need to address its intersection with entrepreneurship (Achmad, 2021), while Juliasih et al. (2022) concentrated on general entrepreneurial training without considering the specific needs of computer technicians. Susilo et al. (2019) research reveals that students prefer less theoretical content and favor practical learning opportunities, such as business internships and training incorporating digital technology and social media. In addition, Ganefri et al. (2017) has identified the vital necessity of developing a comprehensive entrepreneurship pedagogy within technology and vocational education that bridges the gap between current educational practices and industry demands. This comprehensive approach is crucial to ensure students have the necessary skills and knowledge to succeed in digital entrepreneurship.

Despite the recognized importance of these factors, studies explicitly examining the effectiveness of computer technician training programs in enhancing digital entrepreneurship competencies still need to be completed. This research was conducted to fill this gap by integrating computer technician education with digital entrepreneurship training, bridging the divide between education and industry requirements. Furthermore, This study aims to analyze the implementation and outcomes of a computer technician entrepreneurship education program in enhancing the digital entrepreneurship competencies of young Muslims. Focusing on a program conducted at *Pusat Kegiatan Belajar Masyarakat* (PKBM) Gagak Bekasi, the research seeks to provide an in-depth evaluation of the curriculum, teaching methods, and available facilities to support the improvement of participants' technical and managerial skills. Additionally, this study assesses the program's impact on participants' readiness to plan and

manage digital businesses and identifies areas for improvement to inform the program's future development. The research is expected to significantly contribute to developing more effective and relevant computer technician entrepreneurship education programs aligned with the needs of the industry and young Muslims that fit with Islamic ethical standards. By offering an in-depth analysis of the program's implementation and outcomes, this study contributes to the broader literature on entrepreneurial education and technical training while providing practical recommendations for enhancing the quality and relevance of educational programs in this field.

## **II. METHOD**

This study employed a qualitative approach utilizing the case study method to explore and provide an in-depth understanding of the implementation and outcomes of the computer technician entrepreneurship education program at PKBM Gagak Bekasi. The case study method is particularly effective for investigating complex social phenomena within real-life contexts (Iswahyudi et al., 2023; Sugiyono, 2015). This approach allows the researcher to explore the nuances of the educational program and its role in enhancing digital entrepreneurship competencies among young Muslims. By focusing on a single case PKBM Gagak Bekasi the study delves into the particular dynamics of this program, making it possible to gain rich, detailed insights that would be difficult to capture using other research methods.

PKBM Gagak Bekasi is a Community Learning Activity Center in Bekasi, Indonesia, which provides non-formal education, including vocational training, to underprivileged youth. The center was chosen for this case study due to its focus on vocational education, particularly in computer technician training, which aligns with the aim of this research: to examine how such a program can contribute to developing digital entrepreneurship competencies among Muslim youth. The unique characteristics of PKBM Gagak Bekasi, particularly its community-based approach to education, make it an ideal setting for studying the intersection of technical training and digital entrepreneurship. The informants of this study

consisted of individuals who could provide in-depth insights into the program's implementation. The study focused on 10 Muslim participants, aged 18-30, who had completed the computer technician entrepreneurship education program and program administrator and manager. These individuals were selected for their ability to provide detailed, first-hand accounts of the program and its outcomes, as Creswell (2017) recommended for qualitative research.

Data Collection followed case study research principles, emphasizing using multiple data sources to gain a holistic understanding of the case. Data were collected using three primary methods: semi-structured interviews, observations, and document analysis. Semi-structured interviews were conducted with the program participants, instructors, and administrators to explore their experiences, perceptions, and the program's overall effectiveness. These interviews allowed for flexibility in probing specific areas of interest while maintaining consistency in the core topics. Observations were conducted during program sessions to capture real-time dynamics, such as teaching methods, participant engagement, and the use of resources and facilities. This provided contextual insights that complemented the interview data. Additionally, relevant documents, such as curriculum materials, program reports, and participant feedback forms, were analyzed further to enrich the understanding of the program's implementation (Ikhwan, 2021).

Data Analysis was conducted using thematic analysis, which involves identifying patterns or themes within qualitative data. The analysis followed several vital steps, beginning with data familiarization, in which the researcher transcribed interviews, reviewed observation notes, and read through documents to become deeply acquainted with the data. The next step, coding, involved systematically identifying and labeling key concepts and recurring themes within the data. These codes were then grouped into broader themes that captured the essential elements of the program's implementation and its impact on participants. Thematic analysis was particularly suited to this case study as it allowed for the flexibility needed to capture the complexity of the educational program while maintaining rigor in the analysis process. Triangulation was employed as a

strategy to ensure the validity and reliability of the findings. In the context of case study research, triangulation involves using multiple data sources to corroborate the evidence and enhance the credibility of the results. By collecting data through interviews, observations, and document analysis, this study could cross-verify the information, ensuring that the findings were not reliant on any single data source. This triangulation process was further strengthened by member checking, in which preliminary findings were shared with the participants and informants to confirm the accuracy of the interpretations and conclusions. This step not only enhanced the credibility of the findings but also allowed participants to contribute to the refinement of the analysis.

### **III. FINDINGS AND DISCUSSION**

#### **Digital Entrepreneurship Education Program Implementation**

##### ***Curriculum of Digital Entrepreneurship Education for Young Muslim***

The program curriculum was meticulously designed to cover both theoretical and practical aspects necessary for aspiring computer technicians and digital entrepreneurs. Participants expressed high satisfaction with the curriculum's design and relevance. JP (2024) noted, "The curriculum helps in honing essential IT skills," while other participants emphasized its organization, clarity, and applicability to their professional needs. The program manager highlighted that the curriculum is based on the Indonesian National Qualification Framework (INQF) and is regularly updated to keep pace with technological advancements. This alignment with national standards ensures that the program remains relevant and credible. The structured curriculum directly contributes to the development of digital entrepreneurship competencies by providing a balanced mix of theoretical knowledge and practical skills. According to Kazakeviciute et al. (2016), a well-structured curriculum is crucial in fostering digital entrepreneurship. The curriculum's alignment with KKNI ensures that it meets national education standards, enhancing its credibility and effectiveness. This is particularly important for Muslim youth, who, as a diverse group of learners, benefit from a structured and standardized approach to education that aligns with national policies and expectations.

***Teaching Method***

The program employs diverse and effective teaching methods, including lectures, demonstrations, simulations, practical exercises, discussions, and case studies. One participant, LD (2024) highlighted the importance of practical application, stating, "The practical application of lessons helps in understanding real-world problems." Another participant, AS (2024) appreciated the innovative teaching methods, describing them as "easy to grasp." The program manager, RY (2024) added that these methods are designed to cater to adult learners and bridge the gap between theory and practice effectively. These diverse teaching methods are essential for developing digital entrepreneurship competencies. Practical exercises and case studies provide hands-on experience, which is crucial for developing technical skills (Darmawan et al., 2024). For Muslim youth, these methods are particularly beneficial as they align with the experiential learning approaches promoted in Islamic education, which emphasize learning through practice and reflection (Mutmainah et al., 2019).

Practical training is a fundamental component of the program, with frequent hands-on sessions that greatly benefit the participants. The participants emphasized, "Frequent practical sessions are very beneficial," a sentiment echoed by AS (2024), who noted the critical role of hands-on training in addressing technical issues in real-world contexts. LD (2024) also confirmed that the practice-based learning approach significantly enhances comprehension and skill acquisition. The program manager noted that practical exercises are aligned with industry needs, specifically in [industry or field], to ensure participants gain relevant skills. Practical training is vital for developing digital entrepreneurship competencies, as it allows participants to apply theoretical knowledge in real-world settings (Van Gelderen, 2023). This hands-on experience is crucial for Muslim youth, who often benefit from practical learning environments that mimic real-world business scenarios. Nambisan (2017) emphasizes that hands-on experience is essential for developing practical digital entrepreneurship skills, supporting the program's approach.

### ***Facilities and Resources***

The program is supported by adequate facilities and resources, including computers and relevant software, essential for effective learning. All respondents concurred that the facilities are sufficient and well-maintained. The participants mentioned that "the facilities are well-maintained and provide a comfortable learning environment," highlighting the program's commitment to providing a conducive learning atmosphere. The program manager emphasized that the facilities are regularly updated to meet the evolving needs of the curriculum. The availability and quality of resources align with Sahut et al. (2021) findings, highlighting the importance of adequate infrastructure in supporting digital entrepreneurship education. For Muslim youth, access to high-quality resources ensures they can engage fully with the curriculum and develop the technical skills necessary for digital entrepreneurship.

### ***Digital Entrepreneurship Education Program Instructors***

The expertise and pedagogical skills of the instructors are highly praised. The participants described the instructors as "highly skilled and supportive," facilitating easier understanding of complex concepts. The participants also reported that the instructors' explanations were clear and comprehensible, underscoring the importance of competent instruction in effective learning. The program manager mentioned that instructors undergo continuous professional development to stay current with industry trends and best practices. Skilled instructors are crucial for delivering effective digital entrepreneurship education. According to Lu et al. (2020), the role of skilled instructors is critical in delivering effective digital entrepreneurship education. For Muslim youth, having instructors who are not only knowledgeable but also culturally sensitive and supportive enhances the learning experience. For instance, they provide examples and case studies that are relevant to the participants' cultural and religious backgrounds, fostering a more engaging and respectful learning environment.

The program offers robust support and mentoring, which participants found invaluable. The participants highlighted the availability of mentoring during challenging times, stating, "Mentoring is available when we face difficulties." The

participants also appreciated the additional guidance provided throughout the learning process, indicating that mentoring is highly effective in enhancing learning outcomes. The program manager confirmed that personalized mentoring is a crucial program feature tailored to individual participant needs. Mentoring is essential for developing digital entrepreneurship competencies. The importance of support and mentoring is underscored by studies that highlight the role of mentorship in successful entrepreneurial training programs (Rukanda et al., 2020). For Muslim youth, mentoring provides technical guidance and moral and ethical support, which is crucial in their personal and professional development.

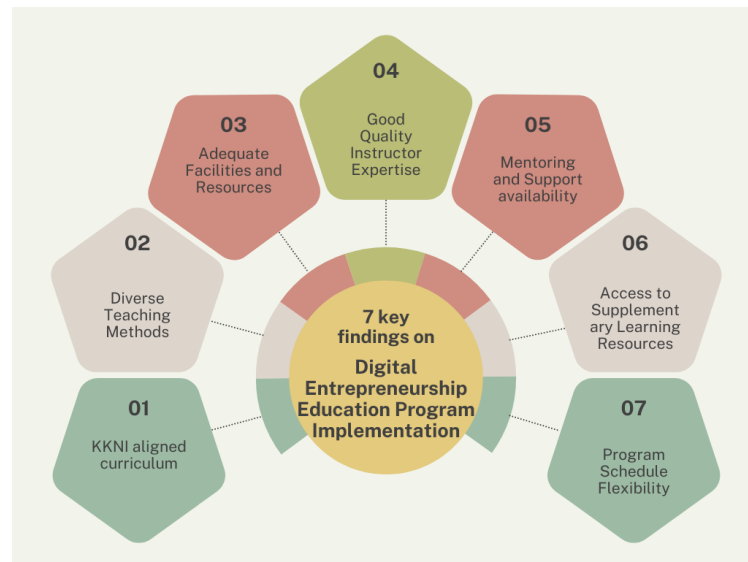
### ***Access to Supplementary Learning Resources***

The program provides supplementary learning resources such as books and online tutorials. The participants mentioned the usefulness of these resources provided by the instructors. The participants also appreciated the availability of relevant learning materials and benefited from links to video tutorials. These resources play a critical role in supporting self-directed learning. The program manager highlighted that these resources are curated to complement the curriculum and provide additional support. Access to diverse learning resources enhances digital entrepreneurship programs' learning experience and outcomes. This finding is supported by Chen et al. (2022), who note that access to diverse learning resources enhances the learning experience and outcomes in digital entrepreneurship programs. For Muslim youth, these resources provide additional opportunities for self-directed learning, which is encouraged in Islamic education (Hanik, 2020; Tiarawati et al., 2023).

### ***Program Schedule Flexibility***

Participants reported that the program schedule is flexible and suits their needs. They mentioned that "the schedule aligns well with our availability" and found the timing conducive to their learning, reflecting the program's adaptability to the participants' personal and professional commitments. The program manager emphasized the importance of flexibility in adult education and noted that the schedule accommodates participants' varied time constraints. Flexibility in scheduling is crucial for adult learners, mainly Muslim youth who may have

additional commitments related to their religious practices and family responsibilities (Cacam et al., 2023; Tiarawati et al., 2023). The flexibility of the program aligns with recommendations, who stress the importance of accommodating adult learners' schedules in educational program design (Balakrishnan, 2020; Musa & Nurhayati, 2021; Rahmat et al., 2024).



**Figure 1.** 7 Key findings on digital entrepreneurship education program implementation

## **Program Outcomes Digital Entrepreneurship Education**

### ***Technical Competency Improvement***

All participants reported significant enhancements in their technical skills. JP (2024) stated that his proficiency in both hardware and software has improved, while other participants indicated that they are now more adept at addressing technical issues. This improvement in technical competency is a testament to the program's efficacy. The program manager highlighted that the program's focus on real-world applications and continuous practice contributes to these significant improvements. Improving technical competency is a fundamental aspect of digital entrepreneurship. This aligns, who noted that integrated technical training programs significantly enhance participants' practical skills (Badoi-Hammami, 2023; Kurniawati et al., 2024). For Muslim youth, developing technical skills is essential for participating in the digital economy and creating technology-based businesses (Setiadi et al., 2023; Tokarcikova et al., 2020).

***Managerial Skills Development***

The program effectively develops participants' managerial skills, particularly in using business management software. The participants emphasized the practical application of business management software, which he found very useful. They also indicated that the training in software management has been instrumental in their business planning and execution. The program manager noted that managerial skills are integrated into the curriculum to ensure participants are well-rounded in technical and business aspects. Organizational skills are critical for successful entrepreneurship. This is consistent with research by Nambisan (2017), which highlights the importance of integrating managerial skills training into digital entrepreneurship programs. For Muslim youth, developing organizational skills is essential for running profitable and ethical, successful businesses (Olaofe, 2023).

***Readiness for Digital Business***

Participants expressed increased readiness to initiate and manage digital businesses post-program. One participant, JP (2024), stated, "I am ready to launch a digital business," other participants conveyed confidence in their newly acquired skills and knowledge, reflecting the program's success in preparing participants for entrepreneurial ventures. The program manager emphasized the importance of fostering entrepreneurial mindsets and noted that many participants have successfully started their businesses after completing the program. Readiness for digital business is a crucial outcome of the program. This finding supports the conclusions of Ahmed et al. (2020), who found that comprehensive digital entrepreneurship programs significantly enhance participants' readiness to start their businesses. For Muslim youth, this readiness translates into the ability to create and sustain digital enterprises that align with Islamic values and principles.

***Marketing Strategies***

The program provides comprehensive training in online marketing strategies. The participants noted that online marketing has significantly boosted their sales and found digital marketing more efficient than traditional methods. They also felt

capable of creating engaging online marketing content, indicating the program's effectiveness in teaching modern marketing techniques. The program manager highlighted up-to-date marketing strategies that align with current industry practices. Marketing skills are essential for digital entrepreneurs (Safuri et al., 2022). This aligns with Papageorgiou et al. (2021), who emphasize the importance of digital marketing skills in contemporary entrepreneurship. For Muslim youth, learning effective marketing strategies is crucial for reaching broader markets while adhering to ethical marketing practices.

### ***Identifying New Business Opportunities***

Participants reported an enhanced ability to identify new business opportunities. One of the participants mentioned opportunities in computer service and software installation; other participants highlighted the demand for internet-supported hardware and recognized the efficiency of addressing minor technical issues independently. These insights demonstrate the program's role in fostering entrepreneurial vision. The program manager noted that participants are encouraged to continuously explore innovative solutions and market needs. Identifying new business opportunities is a critical competency in digital entrepreneurship. This finding aligns with research by Baig et al. (2022), which underscores the importance of identifying new opportunities as a crucial competency in digital entrepreneurship. This competency is vital for creating innovative and socially responsible businesses for Muslim youth.

### ***Professional Networking***

The program assists participants in building professional networks. Mentioned joining professional communities and networking groups, which provide additional support and collaboration opportunities. This networking is beneficial for professional growth and business development. The program manager highlighted efforts to connect participants with industry professionals and alums networks. Professional networking is essential for entrepreneurial success. This supports the findings by Sahut et al. (2021), who emphasize the role of professional networking in entrepreneurial success. Building professional networks helps Muslim youth

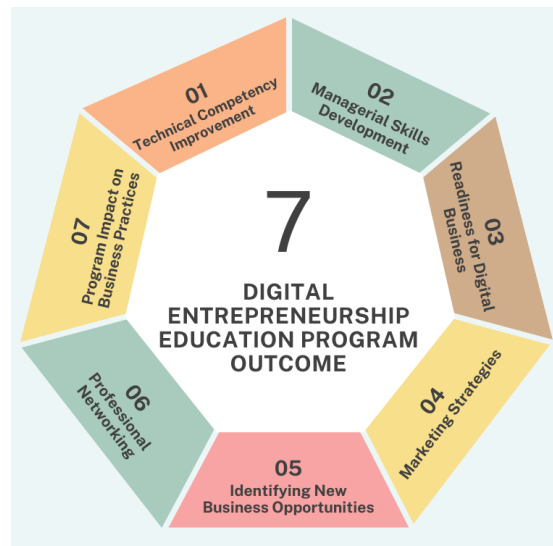
access resources, mentorship, and collaboration opportunities crucial for their business growth.

### ***Program Impact on Business Practices***

The program has a significant impact on participants' business practices, as evidenced by inspiring success stories. One participant has not only started his own business but also created jobs for others, a testament to the program's potential for economic empowerment. Another participant has seen tangible improvements in financial documentation and increased efficiency in his workplace responsibilities. These outcomes not only highlight the program's practical benefits but also inspire hope for the future. The program manager pointed out that many participants have successfully transitioned into entrepreneurship or advanced their careers due to the skills acquired in the program. The significant impact on business practices underscores the practical benefits of the program. This is consistent with Nurmawati et al. (2021), who found that practical business skills acquired through training programs significantly impact entrepreneurial success. For Muslim youth, the ability to implement effective business practices ensures that their enterprises are sustainable and ethically managed.

All Participants suggest that the program should be sustained and supported by both government and private sectors. They recommend collaborations with companies for internships or job placements and emphasize the importance of continuous training and networking opportunities. These recommendations can enhance the program's reach and effectiveness. The program manager acknowledges these suggestions and highlights ongoing efforts to secure partnerships and funding for program sustainability. The findings from this study indicate that the computer technician entrepreneurship education program at PKBM Gagak Bekasi is highly effective in developing digital entrepreneurship competencies among Muslim youth. The program's structured curriculum, diverse teaching methods, practical training, and robust support mechanisms significantly improve participants' technical skills, managerial capabilities, and entrepreneurial readiness. This study aligns with previous research emphasizing the importance of integrated technical and entrepreneurial education (Aranha et al., 2018). However,

it extends the literature by demonstrating the effectiveness of such programs in the specific context of Indonesian community learning centres. The emphasis on practical training and real-world application distinguishes this program from others, addressing the identified gap in comprehensive, context-specific training programs.



**Figure 2.** *Digital entrepreneurship education program outcome diagram*

#### IV. CONCLUSION

The computer technician entrepreneurship education program at PKBM Gagak Bekasi effectively enhances digital entrepreneurship competencies among Muslim youth. By providing a balanced mix of theoretical knowledge and practical skills, the program prepares participants to thrive in the digital economy. The findings underscore the importance of integrated education programs that cater to the specific needs of their participants, providing a valuable model for future educational initiatives. The program's success in enhancing digital entrepreneurship competencies has several practical implications. For educators and policymakers, the program provides a model for similar initiatives seeking to bridge the gap between education and industry needs. Integrating technical and entrepreneurial skills, combined with robust support and mentoring, ensures that participants are well-prepared to succeed in the digital economy. For Muslim youth, the program's approach aligns with cultural and religious values, ensuring that their education is relevant and respectful of their backgrounds. Future

research could explore the longitudinal impacts of the program on participants' career trajectories and entrepreneurial success. Additionally, studies could examine the scalability of this model to other regions and contexts, ensuring broader applicability and impact. Researchers could also investigate the challenges and opportunities Muslim youth face in digital entrepreneurship, providing further insights into how educational programs can be tailored to meet their unique needs.

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