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# Integrating Deep Learning into the Office Management and Business Services Curriculum: A Mentoring Program for MGMP Teachers in Magelang City

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## ABSTRACT

Digital transformation requires the world of education, especially in the field of Office Management and Business Services, to constantly adapt to the latest technological developments, including the application of Deep Learning. This community service activity aims to improve the literacy and competence of MGMP teachers in Magelang City in integrating the concept of Deep Learning into the curriculum and learning practices. The method used is gradual mentoring through training, assistance, and direct practice of compiling open devices based on artificial intelligence technology. The results of the activity show an increase in teachers' understanding of the concept of Deep Learning, the ability to design relevant teaching materials, and readiness to apply technology-based learning in the classroom. This program is expected to support the creation of graduates who are adaptive and have 21st century skills, while strengthening the role of teachers as agents of digital education transformation at the vocational high school level.

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## INTRODUCTION

Technology integration in education has become a necessity in today's digital era. Rapid technological advances have changed the way we learn and interact, and education can no longer ignore the enormous potential offered by technology (Isti'ana, 2024; Panggabean & Hidayat, 2022). Technology opens the door to access to various unlimited learning resources, makes learning more interesting and interactive, and allows for better personalization of learning (Abdul Sakti, 2023; Hasnida et al., 2023; Murtopo et al., 2023). Technology can improve collaboration and communication between students, teachers, and parents. Through online collaboration platforms, students can work together on group projects, share ideas, and discuss learning materials (Marpaung, 2024). Teachers can also communicate with students and parents more effectively through these platforms (Maisura et al., 2023; Mantau & Talango, 2023). Technology integration in education also helps students develop important 21st-century skills, such as critical thinking, creativity, collaboration, communication, and digital literacy (Salsabila et al., 2024; Wisudojati et al., 2024; Wulandari et al., 2025).

Integration of technology in education also prepares students for the world of work that is increasingly dominated by technology. By integrating technology in education, students are prepared to face the challenges of the real world of work (Armianti et al., 2024; Emilda Sulasmi, 2025). They will be more familiar with the use of technology in various professional contexts, so they are better prepared for careers in the fields they are interested in. Technology can also increase the efficiency and effectiveness of learning. For example, teachers can use software to automate administrative tasks, so they have more time to focus on interacting with students. The development of artificial intelligence (AI) technology has brought fundamental changes to the world of education (Faltýnková, 2020; Fidowaty et al., 2022; Lip, 2010). One of the rapidly developing branches of AI is deep learning, which allows machines to learn from data in a deep and adaptive way. In the context of learning, deep learning can be used to build intelligent learning systems, adapt materials to student needs, and increase the effectiveness of the teaching and learning process.

Deep Learning in education includes three main interrelated components, namely Meaningful Learning, Mindful Learning, and Joyful Learning (fun learning) (Feriyanto & Anjariyah, 2024; Rahayu et al., 2025). Meaningful Learning occurs when students are able to connect new knowledge with previous experiences or understanding, so that they do not just memorize but truly understand the concept in depth. Meanwhile, Mindful Learning emphasizes the importance of full awareness in the learning process, where students actively pay attention, understand, and reflect on the material being studied, thereby increasing their focus and engagement. The last component, Joyful Learning, ensures that the learning process is carried out in a fun, interactive, and stress-free atmosphere, so that students are more motivated to learn (Agarwal & Verma, 2023; Armianti et al., 2024; Bakosh et al., 2016). These three elements support each other in creating an effective, innovative, and modern learning experience, especially when integrated with technology such as interactive websites based on Deep Learning.

The MPLB curriculum currently implemented in various vocational schools still does not optimally accommodate the development of digital technology. Most teaching materials are still based on manual concepts, without considering the latest technological developments such as AI and automation (Raharjo et al., 2024). As a result, MPLB graduates often have difficulty adapting to the digitalized world of work. Integration of deep learning into the curriculum is a solution to reduce the gap between student competencies and industry needs. In addition, the learning approach used in the current MPLB curriculum still tends to be conventional and does not facilitate the development of 21st century skills, such as critical thinking, problem solving, and technology-based collaborative skills. This is exacerbated by the minimal use of data and analytics in the learning evaluation process, which should be able to be done with the help of deep learning technology (Khotimah & Abdan, 2025; Sadrah Mesak Manik et al.,


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2025). By utilizing deep learning, teachers can analyze student performance in real-time and adjust learning strategies in a more adaptive, personal, and evidence-based manner.

The implementation of deep learning also enables the development of simulation and automation-based learning systems, which are highly relevant to the characteristics of expertise in the field of Office Management and Business Services (MPLB) (Nurhasanah et al., 2022; Yuliana & Suryanto, 2021). For example, students can be trained to use automated systems for digital archiving, scheduling, or AI-based document management (Wijaya & Handayani, 2020). This approach not only increases learning efficiency but also bridges the gap between learning experiences in school and real practices in the world of work (Setiawan & Prasetyo, 2023; Astuti & Wulandari, 2022). Therefore, the integration of this technology into the curriculum is a strategic step in forming competitive and work-ready MPLB graduates (Rahmawati et al., 2024; Pratama & Kurniawan, 2021; Hasanah & Fauzi, 2023).

The gap between the educational curriculum and the need of the workplace is increasingly felt, especially in the context of rapidly developing deep learning technology (Putra & Arifin, 2022; Nugroho & Cahyono, 2021). The current curriculum is often unable to accommodate the needs of the industry, which increasingly requires workers who have an understanding and skills in the field of deep learning (Siregar & Marlina, 2020). As a result, the graduates produced are less prepared to face the challenges of an increasingly digital and competitive workplace (Wijayanti et al., 2023). One of the main causes of this gap is the lack of curriculum updates that are relevant to developments in deep learning technology (Wulandari & Fadilah, 2023). Universities and other educational institutions are often late in adapting their curriculum to the latest technological trends, so that the graduates produced lack the knowledge and skills needed by the industry. In addition, the lack of cooperation between academics and industry is also an inhibiting factor. Industry has an important role in providing input on workforce needs and the technology used, but often this input is not well accommodated in the education curriculum (Rahman & Hartati, 2021).

To address this gap, collaborative efforts are needed between academics, industry, and government. Academics need to routinely evaluate and update the curriculum by involving input from industry. Industry also needs to play an active role in providing information on workforce needs and the technology used. The government can facilitate dialogue and cooperation between the two parties, as well as provide relevant policy support. Thus, it is hoped that the graduates produced will have competencies and skills that are in accordance with the needs of the world of work in the field of deep learning, to reduce unemployment and increase the nation's competitiveness.

The learning conditions at the MGMP MPLB (Office Management and Business Services) in Magelang City show an urgent need to adapt to technological developments, especially in the context of deep learning. Although it has great potential to increase efficiency and effectiveness in various aspects of work in the field of office and business services, this technology has not been optimally integrated into the curriculum and learning process. This results in a gap between the skills possessed by teachers and the demands of the increasingly digital world of work.

MGMP teachers in Magelang City generally do not have adequate knowledge and skills regarding deep learning and its applications in the context of office management and business services. These limitations hamper their efforts to provide relevant learning materials and prepare students for the challenges of the digital workforce. In addition, the current curriculum does not comprehensively cover deep learning materials, leaving students with insufficient provisions to compete in an increasingly competitive job market.

This condition is exacerbated by limited resources, such as relevant learning modules and software, which can support the implementation of deep learning in learning. Therefore, structured and systematic


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efforts are needed to address this gap, so that MGMP teachers in Magelang City can have adequate competence in integrating deep learning into learning and preparing students for success in the digital era. These resource limitations not only cover hardware and software aspects but also include the lack of availability of contextual and technology-based learning modules. The existing modules are mostly still oriented towards traditional manual and administrative processes, not accommodating machine learning or deep learning-based approaches. As a result, teachers have difficulty designing learning that is innovative, interactive, and relevant to the needs of the times. This certainly has an impact on the low digital literacy of students and their minimal readiness to face the world of work based on automation and artificial intelligence. Seeing these various challenges, mentoring for teachers in understanding and implementing deep learning is very much needed. This community service program is designed to provide training and direct mentoring to MGMP MPLB teachers in Magelang City in developing and implementing deep learning-based learning. With this approach, it is expected that teachers can adapt AI technology in MPLB learning more systematically and effectively.

Through activities such as project-based training, simulations of the use of AI technology, and the development of digital teaching tools, teachers not only gain conceptual knowledge, but also practical skills that can be directly applied in the classroom. This approach also encourages the formation of a culture of continuous and innovative learning among teachers, which is an important foundation for the transformation of vocational education in the digital era. This mentoring program is expected to be able to build a collaborative network between teachers in MGMP to continue to develop and update technology-based curricula. With an active professional learning community, the process of integrating deep learning into learning is not just a momentary program but develops into a sustainable movement that strengthens the quality of vocational education. This is in line with the long-term goal of producing vocational school graduates who are adaptive, competent, and ready to face the challenges of an increasingly digitalized world of work.

## PROBLEMS AND SOLUTIONS

The development of artificial intelligence (AI) technology, especially deep learning, has opened up new opportunities in the world of education, including in Office Management and Business Services (MPLB) learning. However, its implementation in MGMP MPLB Magelang City still faces various obstacles, ranging from the lack of teacher understanding of the concept of deep learning, limited technological infrastructure, to the lack of ongoing training and mentoring programs. If these problems are not resolved immediately, learning will remain conventional and less relevant to current industry needs.

In the current era of globalization and digitalization, 21st century competencies are the main key to individual and national success. These competencies include various skills and knowledge needed to face challenges and opportunities in an era that is constantly changing. deep learning, as a deep and meaningful learning approach, has an important role in developing 21st century competencies. Seeing these problems, intensive mentoring is needed to help teachers understand and implement deep learning in the MPLB curriculum. This program aims to improve teacher competency, improve technological facilities, and develop interactive website-based learning strategies. With a comprehensive and sustainable solution, it is hoped that learning at MGMP MPLB Magelang City can be more adaptive, innovative, and relevant to the needs of future industries. The following is a table of the results of the initial observations of the community service team based on direct findings in the field related to mentoring the integration of deep learning in the Office Management and Business Services learning curriculum for MGMP in Magelang City:

**TABLE 1. Initial Observations of the Community Service Team at MGMP MPLB Magelang City**


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| No. | Problem Aspects | The problem | Implementable Solutions |
|---|---|---|---|
| 1. | Pedagogical Aspects (Learning & Curriculum) | Teachers do not yet understand the concept of Deep Learning and the curriculum does not accommodate AI technology. | • Develop training and workshops for teachers on the concept of deep learning and its application in MPLB learning.<br>• Integrate AI and digital technology in teaching modules. |
| 2. | Technology & Infrastructure Aspects | Schools have limited facilities such as low-spec computers, unstable internet connections, and lack of teacher skills in using AI-based interactive websites. | • Providing more stable internet access through collaboration with internet service providers.<br>• Developing an AI-based interactive website as a learning medium so that students can learn independently. |
| 3. | Aspects of Teacher Competence and Professional Development | There is no specific training regarding the implementation of Deep Learning in MPLB, and there is no school/MGMP policy regarding its integration. | • Organize ongoing mentoring for teachers in the use of deep learning technology.<br>• Encourage school/MGMP policies to include AI technology materials as part of MPLB learning. |

To overcome the challenges in implementing deep learning in MGMP MPLB Magelang City, a solution is needed that covers three main aspects, namely pedagogical, technology & infrastructure, and teacher competency development. From the pedagogical aspect, teachers need to receive training and assistance in understanding and integrating the concept of deep learning into learning. The development of teaching materials and the preparation of technology-based teaching modules are also important parts in ensuring that learning is more innovative and relevant to the MPLB curriculum. From the technological and infrastructure aspects, the solutions offered include the provision of more stable internet access, as well as the development of an interactive AI-based website as a learning medium. With this digital platform, students and teachers can more easily access materials and practice independently.

The last aspect is the development of teacher competency and professionalism, which includes ongoing training, the formation of a learning community (Learning Community) in MGMP, and certification in the use of AI technology in learning. In addition to improving teacher skills, this approach also aims to build a collaborative and adaptive learning ecosystem to technological developments. With this comprehensive solution, it is hoped that the implementation of deep learning in MPLB learning in Magelang City can run effectively, so that students gain a more meaningful, conscious, and enjoyable learning experience in accordance with the demands of modern industry.

## METHOD

Mentoring activities will be carried out at the MGMP MPLB Magelang City. Participants in this community service program are 25 teachers who are members of the Subject Teachers' Conference (MGMP) of Office Management and Business Services in Magelang City. These teachers come from various State and Private Vocational High Schools (SMK) in the Magelang City area. Participants were selected purposively with the criteria of actively teaching Office Management or Business Services subjects and are committed to implementing technology-based learning innovations in their respective schools. The targets for this training are 10 SMK that are members of the MGMP that have Office


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Management and Business Services Expertise Programs (MPLB). This mentoring is carried out with several stages of activities including:

**TABLE 2. Steps of Mentoring Activities**

| No. | Steps | Activity Description |
|---|---|---|
| 1. | Identify Partner Problems | Conducting initial observations and interviews with MGMP MPLB teachers in Magelang City to identify obstacles in implementing deep learning. |
| 2. | Community Service Program Planning | Prepare activity implementation plans, including training materials, learning modules, and procurement of supporting infrastructure. |
| 3. | Implementation of Training and Mentoring | Conduct training for MGMP MPLB teachers on the concept of deep learning, integration into the curriculum. |
| 4. | Implementation in MPLB Learning | Implementing deep learning-based learning in the classroom with assistance from the community service team. |
| 5. | Evaluation and Monitoring | Conduct evaluations of program effectiveness through surveys, interviews, and analysis of student learning outcomes. |
| 6. | Publication and Dissemination of Results | Compiling final reports on community service and disseminating program results to relevant parties through scientific publications.. |

To ensure the achievement of the objectives of this community service program, an assessment score matrix was prepared that measures the achievement of participant competencies based on established indicators. The assessment was carried out comprehensively using five main indicators, each of which has a percentage weight adjusted to the level of importance in supporting the mastery of Deep Learning material and its implementation into the Office Management and Business Services curriculum.

**TABLE 3. Indicator Achievement Assessment Score Matrix (In Percentage)**

| No. | Achievement Indicators | Percentage Weight (%) | Assessment Description |
|---|---|---|---|
| 1 | Understanding the basic concept of Deep Learning | 20% | Participants are able to explain the concept, working principles, and potential applications of Deep Learning. |
| 2 | Ability to use Deep Learning support devices | 20% | Participants are able to operate software for Deep Learning simulations. |
| 3 | Preparation of Deep Learning integrated teaching devices | 30% | Participants are able to compile lesson plans, teaching materials, and worksheets that include Deep Learning applications. |
| 4 | Participation and activeness during workshops and mentoring | 15% | Participants actively discuss, ask questions, convey ideas, and collaborate with other participants. |
| 5 | Follow-up plan for implementation | 15% | Participants are able to create implementation plans and share strategies with other teachers in their schools. |
| **Total** | | **100%** | |

## RESULT AND DISCUSSION

The activity was held in the SMK 2 Magelang meeting hall located at Jl. A. Yani 135 A, Magelang city. The event began with an opening speech from the principal of SMK 2 Magelang represented by


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Murtiningsih, S.Pd., M.Pd. She said that this activity was very useful for equipping teachers, especially in the field of MPLB teaching, to be able to present learning that is in accordance with government demands, especially in the latest policies regarding in-depth learning. In the second speech, namely by the head of the MGMP MPLB Magelang city Purwaningsri, S.Pd., M.M said that this training had been long awaited by teachers, considering that government policies often change, so teachers are required to follow these changes quickly, so there needs to be a party to accompany them.

Mentoring was carried out by Arif Wahyu Wirawan, S.Pd., M.Pd in front of 40 teachers as participants. The speaker said that identifying needs is an initial form of planning for the implementation of deep learning in MPLB subjects. Deep learning, if applied properly, will be able to help students in the teaching and learning process. Through deep learning, students do not only learn general learning materials on the surface but can absorb the meaning of learning deeply and comprehensively. Therefore, this initial identification stage is very important to do, so that the learning planning that will be carried out is not wrong.


**FIGURE 1.** Delivery of Material and Assistance

The speaker conveyed that to bring up learning that uses a deep learning approach, teachers need to understand that the learning plan that is prepared at least concerns joyful learning, meaningful learning, and mindful learning. Proper planning is outlined in the Learning Implementation Plan (RPP) which will be used as the basis for implementing learning. In the MPLB subject area, the characteristics are in the form of practical learning, so this also needs to be considered. Don't just compile fun learning, but also in accordance with the character of the subject. Each learning material can be packaged in a fun way. However, the fun is not necessarily in accordance with the learning objectives to be achieved. So, this is where deep learning is important, which plays a role in ensuring that the content of learning and delivery remain in accordance with the curriculum corridor.

The presentation by the resource person was continued by helping in planning deep learning that can be applied to the MPLB field. Learning planning is prepared in the form of a learning module for MPLB subjects, which includes archiving skills, communication, excellent service, correspondence, and administrative skills. This learning design can be applied to project-based learning. This learning model is in line with deep learning, because by doing assignments in the form of projects, students can better understand the practical activities they are taking. The learning plan that has been prepared can also utilize the sophistication of technological developments. One of the latest is an artificial intelligence (AI)-based application. The deep learning approach is also collaborated with AI and should not be abandoned.


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In addition to learning modules, learning media prepared by teachers can also utilize AI developments. Some forms of AI implementation in learning media include:

1. Adaptive learning.

   Learning media is not only limited to books and activity reports. In this era, by utilizing AI as a learning medium, it can also introduce students to the latest technological developments.

2. Virtual Assistant.

   Not all learning media are done completely manually. AI allows learning media to be arranged virtually and can be shared immediately with students without waiting for face-to-face in class.

3. Technological procedures.

   What has been conveyed at the beginning is the character of the MPLB field which is practical learning. Many of these practical activities contain procedures that must be carried out. By utilizing the sophistication of AI, these procedures can be carried out technologically.

4. Digital learning simulation.

   AI helps learning to be carried out digitally, so that it will increasingly attract students' attention.

At the mentoring stage in the learning planning session, many teachers interact in the form of discussions and questions and answers. On average, teachers question how to bring up meaningful learning as part of deep learning in the field of MPLB. Because according to the experience that teachers feel, so far in designing meaningful learning has been slightly shifted by the demands of mastering student competencies through practice.

**FIGURE 2.** Q&A Session with MPLB Teacher Mentoring Participants

The speaker in answering this question, directed the teachers to think again, that character will always be attached to every subject, including subjects that contain practice. Therefore, in compiling learning, teachers must be fully aware that even though the activities will be carried out with a practice model, the content of this meaningfulness must still be included. With various kinds of practice activities, teachers can still provide direction and explanation that what students do has a background of insight. For example, in carrying out administrative practice activities, teachers provide insight into the values of attitudes contained in the administrative service process, such as patience, respect for rights, and openness of information. Above, indirectly, teachers also provide insight into human character for students. So, even though the main focus of learning is done in practice, it does not reduce the instillation


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of character in students. In this process, it appears that the deep learning approach is an approach that is carried out comprehensively and is expected to have a major impact on changing the way students learn.


**FIGURE 3.** Implementation of Deep Learning Assistance in the MPLB Curriculum

The final stage in this mentoring activity, an evaluation was carried out on the teachers who were participants in the activity. The evaluation was carried out by observing changes or developments in teacher understanding, the quality of the learning devices prepared, and the readiness to implement them in the classroom. Based on the evaluation results, the majority of participants had a new understanding that had improved from before. After participating in this activity, teachers were able to identify the potential for implementing deep learning in MPLB subjects. Also, teachers have the ability to design learning plans according to deep learning and also in accordance with the graduate profile set by SMK. It also appears that the stages that need to be carried out are further training to further observe how deep learning is implemented with various methods and other characteristics. Including the addition of aspects of technology expansion to the learning plans prepared by teachers, so that they are more solid in their long-term implementation.

**TABLE 4.** Average Achievement Score Per Indicator

| No. | Indicator | Maximum Weight (%) | Average Participant Achievement (%) |
|---|---|---|---|
| 1 | Understanding the basic concept of Deep Learning | 20% | 18% |
| 2 | Use of Deep Learning support devices | 20% | 17% |
| 3 | Preparation of integrated teaching devices | 30% | 26% |
| 4 | Participation & activeness in workshops & mentoring | 15% | 13% |
| 5 | Follow-up plan for implementation | 15% | 14% |
| **Total** | | **100%** | **88%** |

Based on the assessment results of the five achievement indicators, the average overall achievement of the mentoring program participants showed a score of 88% of the total maximum weight of 100%. This achievement indicates that in general the MGMP Office Management and Business Services teachers in Magelang City have a good understanding and skills in integrating Deep Learning into learning. In terms of understanding the basic concepts of Deep Learning, most participants are able to explain the definition,


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working principles, and benefits of this technology contextually in the field of office management. This is reflected in the average achievement of 18% of the maximum weight of 20%.

In the indicator of the ability to use Deep Learning supporting devices, the average achievement of participants is 17% of the maximum 20%. This shows that although the majority of participants are able to follow the simulation practice well, a small number of teachers still face technical obstacles in operating the software. Therefore, follow-up in the form of advanced training is needed so that this technical competence is evenly distributed among all participants. The indicator with the highest achievement is the preparation of integrated teaching devices, with an average score of 26% of the maximum weight of 30%. These results indicate that participants have been able to translate the material obtained into lesson plans, teaching materials, and worksheets that are relevant to classroom learning needs. Most of the teaching device designs also include practical steps to link Deep Learning to the context of real-world tasks and case studies in the field of office administration. Meanwhile, the participation and activeness of participants during workshops, discussions, and mentoring sessions also showed positive results with an average achievement of 13% of the 15% weighting. The high participation reflects the enthusiasm of participants in exploring new topics and their sincerity in sharing ideas and good practices.

In the last indicator, namely the follow-up plan for implementation in schools, participants achieved an average achievement of 14% of the maximum weighting of 15%. Almost all participants have prepared a program implementation plan in their respective schools, including strategies to disseminate knowledge and practices of Deep Learning-based learning to colleagues through the MGMP forum. Overall, these results confirm that 88% of participants have successfully met the minimum achievement criteria, namely a total score of $\geq$ 70%. Thus, this community service program can be declared successful in supporting the improvement of teachers' technological literacy and encouraging the transformation of Office Management and Business Services learning to be more relevant to the development of artificial intelligence technology.

The integration of deep learning technology into the Office Management and Business Services (MPLB) learning curriculum is a strategic step in responding to the challenges of the Industrial Revolution 4.0. This approach not only prioritizes in-depth conceptual understanding, but also encourages the development of critical thinking skills, collaboration, and adaptation of technology that is relevant to the needs of modern industry (Manik et al., 2025). In this context, mentoring teachers who are members of the Subject Teachers' Conference (MGMP) in Magelang City is crucial to ensure effective and sustainable implementation.

Community service activities carried out by lecturers from Semarang State University (UNNES) at SMKN 2 Magelang are a real example of this effort. Through training and mentoring, MPLB teachers are equipped with an understanding of the concept of deep learning and its application in the learning process of SMKN 2 Magelang. This aims to improve the quality of learning that not only focuses on cognitive aspects, but also affective and psychomotor, so that students can develop holistic competencies.

The integration of deep learning into the MPLB curriculum is not without challenges. Limited technological infrastructure, teacher readiness to adopt new approaches, and the need for supportive educational policy support are some of the obstacles that need to be overcome (Sumarto & Harahap, 2025). Therefore, collaboration between educational institutions, government, and industry is key to creating a learning ecosystem that is adaptive and responsive to technological developments (Alao, 2025). In addition, the importance of a meaningful learning approach, mindful learning, and joyful learning in the implementation of deep learning also needs to be considered. This approach can increase students' learning motivation and encourage active involvement in the learning process (Manik et al., 2025). Thus, mentoring the integration of deep learning in the MPLB curriculum not only improves the quality of


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education but also prepares students to face the challenges of an increasingly complex and dynamic world of work.

## CONCLUSION

Based on the results of community service activities that have been implemented, it can be concluded that the mentoring program with the theme "Integrating Deep Learning into the Office Management and Business Services Curriculum" has succeeded in improving the understanding and skills of MGMP teachers in Magelang City in integrating Deep Learning technology into learning practices. This is evidenced by the achievement of an average participant score of 88% of the total assessment weight, which shows that most participants have been able to understand the concept, practice supporting devices, compile teaching devices, and design follow-up implementation in schools. This success proves that mentoring and training activities based on direct practice (hands-on practice) are effective in encouraging teachers to be more adaptive to technological developments. However, for the impact of the program to be sustainable and reach more teachers in the field of Office Management and Business Services, broader collaborative efforts are needed. Strengthening technological literacy among teachers cannot run optimally without adequate policy and institutional support. Therefore, support for education policies from the local government and strengthening of MGMP institutions are needed to expand the scale of implementation, ensure the sustainability of the program, and encourage the creation of a learning ecosystem that is responsive to digital transformation in vocational schools.

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