



Internet-Based Learning Implementation by Certified Teachers: A Case Study at *Madrasah Aliyah Negeri* Kampar Regency

Received: 10-12-2025; Revised: 22-12-2025; Accepted: 31-12-2025

Idris Harun*

Universitas Islam Negeri Sultan Syarif Kasim Riau, Indonesia

Email: idrisharun@uin-suska.ac.id

Saipuddin Yuliar

Universitas Islam Negeri Sultan Syarif Kasim Riau, Indonesia

Email: saipuddin@uin-suska.ac.id

Nur Azizah

Sekolah Tinggi Ilmu Tarbiyah Hasiba Barus, Indonesia

Email: nurazizahlubis100214@gmail.com

**) Corresponding Author*

Abstract: This study aims to Internet-Based Learning Implementation By Certified Teachers: A Case Study At Madrasah Aliyah Negeri Kampar Regency. This research is field research using a qualitative approach. The research informants were 12 teachers from 3 Madrasah Aliyah Negeri in Kampar Regency who already have teaching certificates. The data collection techniques used in this study were interviews, observation, and documentation. Data analysis was carried out through data reduction, data presentation, and drawing conclusions. The results of the study indicate that certified teachers demonstrate professional and pedagogical competence in integrating the internet into the learning process. This is evident from the teachers' ability to design e-learning-based lessons, manage online learning interactions, and monitor the activity and discipline of students through the features of digital learning platforms. Even though it has been certified, there are still limited infrastructure, uneven internet access, lack of advanced training, limited digital device facilities, so that some certified teachers use professional skills to buy supporting devices.

Abstrak: Penelitian ini bertujuan untuk Implementasi Pembelajaran Berbasis Internet oleh Guru Bersertifikat: Studi Kasus di Madrasah Aliyah Negeri Kabupaten Kampar. Penelitian ini merupakan penelitian lapangan dengan menggunakan pendekatan kualitatif. Informan penelitian tersebut adalah 12 guru dari 3 Madrasah Aliyah Negeri di Kabupaten Kampar yang sudah memiliki sertifikat mengajar. Teknik pengumpulan data yang digunakan dalam penelitian ini adalah wawancara, observasi, dan dokumentasi. Analisis data dilakukan melalui pengurangan data, penyajian data, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa guru bersertifikat menunjukkan kompetensi profesional dan pedagogis dalam mengintegrasikan internet ke dalam proses pembelajaran. Hal ini terbukti dari kemampuan guru dalam merancang pelajaran berbasis e-learning, mengelola interaksi pembelajaran online, dan memantau aktivitas dan disiplin siswa melalui fitur platform pembelajaran digital. Meski sudah bersertifikat, infrastruktur masih terbatas, akses internet yang tidak merata, kurangnya pelatihan lanjutan, keterbatasan fasilitas perangkat digital, sehingga beberapa guru bersertifikat menggunakan keterampilan profesional untuk membeli perangkat pendukung.

INTRODUCTION

The development of information and communication technology (ICT) in the last two decades has brought significant changes to the education system in various countries, including Indonesia. The Internet has become an integral part of people's lives and plays an important role as an important medium in providing access to knowledge, learning resources, collaboration spaces, and pedagogical innovations. Digital transformation in education is not only seen as a response to technological advancements, but also as a strategy to increase the effectiveness, efficiency, and equitable access to learning. The Ministry of Religion as a madrasah supervisory agency has also initiated a digitalization program through strengthening ICT infrastructure, developing learning platforms, and improving teachers' competence in utilizing digital technology (Putri et al., 2024). Thus, internet-based learning is an important demand in realizing adaptive learning that is relevant to the needs of the times.

Madrasah Aliyah Negeri (MAN) as a formal educational institution under the Ministry of Religion has a strategic role in the implementation of the education digitalization policy. MAN not only functions as an academic and religiously oriented provider of secondary education, but also as an institution responsible for developing the competencies of students that are relevant to global developments. One of the key factors for the success of competency development is the role of teachers as learning facilitators.

Education has a strategic role in improving the quality of human resources, and teachers are a key component in determining the success of the learning process. Teachers not only play the role of delivering material, but also as educators who shape the character, attitudes, and competencies of students. Along

with the development of science and global demands, teachers are required to have high professionalism, including pedagogical, professional, social, and personality competencies in order to be able to carry out effective and quality learning.

Teacher certification is an important instrument to ensure this professionalism. Through certification, teachers obtain formal recognition for their competencies as well as encouragement to continue to improve their quality through continuous professional development. Certified teachers are expected to be able to design and implement learning in a more systematic, innovative, and responsible manner, so as to contribute directly to improving the quality of education and public trust in the teaching profession.

In this context, certified teachers are educators who have received formal recognition through the certification mechanism and Teacher Professional Education (PPG). Certified teachers are expected to have more mature pedagogic, professional, social, and personality competencies, including competence in designing and implementing internet-based learning (Rahmi Pertiwi et al., 2024).

In addition to the technical aspect, the application of the internet-based learning model shows that certified teachers have relatively adequate professional competence in effectively utilizing technology for learning (Saerang et al., 2023). Certified teachers are not only able to operate digital learning devices and applications, but can also adapt the use of technology to the learning objectives, material characteristics, and needs of students (Iskandar & Anriani, 2023). This shows that teacher certification plays an important role in increasing teachers' readiness to face the demands of technology-based learning in the digital era.

Susilaningsih's research confirms that certified teachers tend to be more able to design and implement technology-based learning models in a systematic and planned manner. Teachers with educator certificates have a better understanding of digital media selection, the use of online learning resources, and the integration of technology in student-centered learning strategies (Susilaningsih, 2013). Thus, the use of the internet is not only complementary, but also an integral part of the learning process that encourages interaction, creativity, and independent learning of students.

The ability of certified teachers to utilize learning technology also has an impact on improving the quality of learning processes and outcomes. The use of various digital resources, such as learning videos, online learning platforms, and interactive teaching materials, allows learning to take place more varied and contextual. These findings are in line with various studies that state that the pedagogic and professional competence of certified teachers contributes positively to the effectiveness of internet-based learning, making learning more engaging, meaningful, and relevant to the learning needs of the 21st century (Choirul et al., 2024).

However, empirical reality shows that there is a gap between the expected competencies and the practice of implementing internet-based learning in the field. Previous studies have found that there is still significant variation in teachers' ability to utilize digital technology in learning, even if they already have professional certifications. These obstacles can be caused by several factors, including limited infrastructure, uneven internet access, lack of advanced training, limited digital device facilities, and school work culture that has not fully supported technology-based innovation, and there are some certification teachers who are old (senior) and gaptek so it is difficult to use internet-based learning (Choirul et al., 2024).

The success of ICT integration in learning is not only determined by the individual abilities of teachers, but also influenced by institutional support and work culture that is conducive to the use of technology.

Kampar Regency is one of the areas that has diverse geographical and social characteristics. The difference in infrastructure conditions, especially the internet network, is quite visible between areas closer to the district center and rural areas. This condition has implications for inequality of access to technology which can affect the smooth implementation of internet-based learning in madrasas. Some MANs in Kampar Regency have shown progressive efforts in utilizing digital technology, but others still face limited facilities and infrastructure. This difference in context makes Kampar Regency a relevant area to conduct in-depth research on the implementation of internet-based learning, especially for certified teachers who should be pioneers of technology integration in madrasas.

On the other hand, the implementation of internet-based learning is also a multifaceted process. Technical aspects, such as device availability and network stability, are important components, but they do not stand alone. The pedagogical aspect includes the ability of teachers to adjust learning strategies to suit the characteristics of digital learning, the ability to utilize digital platforms, and the ability to develop relevant and interactive learning materials. Meanwhile, administrative and cultural aspects include madrasah policies, madrasah head support, budget allocation, and the collective attitude of school residents towards digitalization. This complexity shows that the implementation of internet-based learning cannot be partially understood, but must be studied as a phenomenon that has technical, pedagogical, institutional, and social dimensions at the same time.

Taking into account this complexity, the study titled "Internet-Based Learning

Implementation By Certified Teachers: A Case Study At Madrasah Aliyah Negeri Kampar Regency" become relevant and important to do. This study is not only directed at mapping the extent to which certified teachers have utilized the internet in learning, but also to explore the factors that affect their success and obstacles in teaching practice. In addition, this study will identify adaptation strategies used by teachers in dealing with obstacles, as well as examine teachers' perceptions of the effectiveness of internet-based learning in the context of madrasas.

Theoretically, the results of this research are expected to contribute to the development of educational technology studies, especially in understanding internet integration as part of learning strategies in madrasas. The focus of the research on the context of madrasas and the role of teachers in the use of the internet is still relatively limited and has not been discussed in depth in previous research, so the findings of this research are expected to be able to enrich the scientific treasures in the field of religious education technology.

Practically, the results of this research can be considered for the Ministry of Religious Affairs, madrasah managers, and education policy makers in Kampar Regency in formulating teacher professional development policies and strengthening ICT-based learning systems. Thus, this research has high urgency as a strategic effort to improve the quality of madrasah education in order to be able to adapt to the demands of learning in the digital era.

METHOD

Types and Approaches to Research

This research is a field research using a descriptive qualitative approach (Sugiyono, 2021). The qualitative approach was chosen because this study aims to deeply understand the phenomenon of using internet-based learning by certified teachers, especially

related to their practices, strategies, and experiences in the context of learning in madrasas. The research data is presented in the form of a descriptive narrative in the form of informant statements, observations, and supporting documents, so as to allow researchers to capture the meaning and process holistically.

The focus of this research is directed at the behavior of certified teachers in implementing internet-based learning, which includes: Utilization of the internet as a learning resource, Utilization of the internet as a learning medium, and Application of the internet as a learning model. The three focuses are used to describe the form, pattern, and level of internet integration in learning practices in Madrasah Aliyah Negeri Kampar Regency.

Location and Research Participants

This research was carried out in Madrasah Aliyah Negeri 1, Madrasah Aliyah Negeri 2, and Madrasah Aliyah Negeri 3 Kampar Regency. The selection of the location was based on the consideration that the three madrassas have certified educator teachers and have utilized the internet in the learning process.

The research participants were 12 certified educator teachers, consisting of:

1. 4 teachers from Madrasah Aliyah Negeri 1
2. 4 teachers from Madrasah Aliyah Negeri 2
3. 4 teachers from Madrasah Aliyah Negeri 3 Kampar Regency.

Participant selection was carried out using purposive sampling with the following criteria:

1. Teachers already have an educator's certificate
2. Actively teaching during the current school year
3. Have used or are using the internet in learning activities

The number of participants is determined based on the principle of data saturation, which is when the information

obtained has been repeated and no significant new findings have been found.

Data Collection Techniques and Procedures

Data collection was carried out through in-depth interviews, observations, and documentation:

1. In-Depth Interviews

Interviews are conducted in a semi-structured manner using pre-arranged interview guidelines. The interview guidelines contain related questions: teachers' understanding of internet-based learning, forms of internet use in learning, teachers' strategies and experiences, and obstacles faced. Each interview session lasts 30–45 minutes and is recorded with the consent of the participants to maintain the accuracy of the data.

2. Observations

Observation was carried out in a non-participatory manner to directly observe the practice of using the internet in classroom learning. The aspects observed included the use of internet-based media, teacher-student interaction, and student involvement in learning.

3. Documentation

Documentation is used as supporting data in the form of lesson plans, teaching modules, digital teaching materials, screenshots of learning platforms, and photos of learning activities relevant to the research focus.

Data Analysis Techniques

The data analysis technique used is thematic analysis. The analysis is carried out gradually and systematically to identify the main patterns and themes of the qualitative data. The data analysis process includes the following steps:

1. Data transcription, which is converting the results of the interview recording into written text verbatim
2. Open coding, i.e. providing initial code on data units relevant to the research focus
3. Axial coding, which is grouping codes that have similar meanings into categories

4. Theme determination, which is formulating the main themes that represent the pattern of internet use by certified teachers
5. (Alfianika, 2018) (Alfianika, 2018)

The stages of data reduction, data presentation, and conclusion drawing are carried out simultaneously during the analysis process, rather than as separate stages, allowing researchers to reflect and verify continuously.

Data Validity Techniques

The validity of the data in this study is ensured through data triangulation, which includes source triangulation, method triangulation, and theoretical triangulation. Source triangulation was done by comparing information from different participants. The triangulation method was carried out by comparing the results of interviews, observations, and documentation (Sugiyono, 2021). Meanwhile, theoretical triangulation is carried out by relating research findings to relevant theories and previous research results. In addition, the researcher also conducted a member check by confirming the results of the interview and interpreting the data to several participants to ensure the compatibility between the data presented and their experiences.

RESULTS AND DISCUSSION

The informants in this study were 12 certified educator teachers, 4 people each from 3 State Aliyah Madrasah in Kampar Regency. The interview was conducted by means of an in-depth interview (indepth interview), for one month. Interviewing certified educator teachers about informants' understanding of internet-based learning, internet-based learning that is often used by informants, the stages of implementing internet-based learning used by informants and the interaction between teachers and students in internet-based learning.

Application of the Internet as a Learning Resource by Certified Teachers at Madrasah Aliyah Negeri Kampar Regency

The results of the study were obtained that internet-based learning has been used as a learning resource. The Internet has been used to access learning videos, journal articles, and learning material schemas. The teacher of Fiqh said that:

"If the subject matter is related to the procedure for worship practice, then the material can use videos on the internet. This video is shown in front of students during classroom learning. Students can see firsthand the procedure for practicing their worship. For example, a video about the procedures of tayamun, congregational prayers, pillars of hajj, and others (Interview with Yuliarti, Fiqh Teacher of MAN 1 Kampar).

The English subject teacher says:

"If the learning objective is for students' skills, then the material is taken from conversation videos on the internet. The video show is very suitable, because students can see directly and imitate how to do it, how to pronounce the language correctly, through the video show it is hoped that students will have the courage to practice English with their friends (Interview with Nurhayati, English Teacher of MAN 3 Kampar).

The Indonesian subject teacher said that:

"Searching for journal articles through the internet is always done in learning. Journal articles are used as additional reading material and also for practice materials and student group work. The Indonesian subject material is about composing techniques and writing articles. This article can be used as exercise material for students and also for group work materials. Students can use the article as an example in their assignment to write a scientific article (Interview with Rezi

Maidali Fitri, Indonesian Language Teacher MAN 2 Kampar).

SKI subject teachers say that:

"Many SKI teaching materials are available in journal articles on the internet. This journal article can provide the latest information for teachers and students, because the journal article has many research results and is more accurate in the information it presents. For example, teaching materials about the development of Islam in the time of the Prophet, the Urrashidin Khulafa and the Abbasids. This journal article is for reading material when studying in the classroom and also for students reading at home (Interview with Manahan, Teacher of SKI MAN 1 Kampar).

Geography subject teachers say that:

"The subject material of this subject features a lot of pictures and schemes. To make it easier for teachers to convey material to students, the material is taken through the internet. The drawings and schematics obtained are discussed with students in the classroom, and also for assignment materials when studying in the classroom and at home" (Interview with Deccy Treskhopa, Geography Teacher of MAN 3 Kampar).

SKI subject teachers say that:

"The internet is also used to find schemas and charts about learning materials. Schematics and charts are used to make it easier to explain learning materials to students and also for practice materials and group work. For example, material on the development of Islam in Indonesia, then a map chart about the development of Islam on the internet can be seen by students and it is easier to understand it. In such a way, the learning process is more effective and students are happier because they do not need to memorize in learning" (Interview with M. Nazir, Teacher of SKI MAN 2 Kampar).

The results of the study show that certified educator teachers at Madrasah Aliyah Negeri Kampar Regency have used the internet as a learning resource in the form of learning videos, digital teaching materials, articles, and interactive media. This finding is in line with the theory of learning resources which states that learning resources include everything that can be used to facilitate the learning process, both by *design* and those that are used from the available environment (*by utilization*) (Arsyad, 2020). The theoretical implication is that the internet can conceptually be categorized as a source of learning *by utilization* which has great potential to support learning in madrasas.

Judging from constructivism theory, the use of the internet as a learning resource provides space for students to actively build knowledge through the process of searching, processing, and reflecting on information obtained from various digital sources. Certified teachers act as facilitators who guide students in constructing understanding independently and meaningfully (Rusman, 2021). The practical implication of these findings is that there is a shift in the learning paradigm from *teacher-centered learning* to *student-centered learning*.

Multimedia learning theory which states that the use of visual and audiovisual media can improve students' understanding of learning materials (Septia, 2021). Certified teachers at MAN Kampar Regency use videos and digital media from the internet to explain abstract material. The implication of these findings is the need to improve teachers' competence in selecting and managing multimedia-based learning resources to suit learning objectives and characteristics.

From the perspective of teacher competency theory, Educator certification aims to ensure that teachers have pedagogic and professional competence in carrying out learning. The findings of the study show that

certified teachers are able to integrate the internet as a learning resource in a systematic and targeted manner. This is in line with Mulyasayang's opinion that professional teachers are required to be able to utilize information technology in learning. The policy implications of this finding are the need to strengthen digital literacy training for certified teachers so that the use of the internet is more effective (Mulyasa, 2023).

This research is also relevant to the theory of digital literacy which emphasizes the ability to access, evaluate, and utilize digital information critically (Belshaw, 2014). Certified teachers not only use the internet as a source of information, but also guide students to be able to use digital learning resources responsibly. The practical implication is the importance of integrating digital literacy into the learning process in madrasas.

The results of this study are also in line with the findings of relevant research that shows that the use of the internet and digital media by teachers can increase students' motivation and learning outcomes (Widiastuti, 2020).

The similarity of these results strengthens the validity of the research findings that the internet has become an important learning resource in learning practices in madrasas. Overall, the association of research results with theory shows that the application of the internet as a learning resource by certified teachers has theoretical, practical, and policy implications. The internet is no longer positioned as a complement to learning, but as a strategic learning resource that supports active, innovative, and contextual learning at Madrasah Aliyah Negeri Kampar Regency.

The Application of the Internet as a Learning Media by Certified Teachers at Madrasah Aliyah Negeri Kampar Regency

The results of the research were obtained that internet-based learning has been

used as a learning medium. The learning process is carried out in the internet labor room. ICT subject teachers say that:

"Students always learn on the labor internet. They were guided to find information about the subject matter discussed through the websites available on the internet. Once the learning materials were obtained, they were instructed to read and discuss in groups. They presented the material that had been read and the results of the discussion with the help of infocus media in front of other students. All materials obtained from the internet must be stored on their respective *flash drives*" (Interview with Dahlan, ICT Teacher of MAN 1 Kampar).

Other ICT teachers also said that:

"The learning process always uses the labor internet. Learning on the labor internet by directing students to find material as a source of learning material for practice. After they get it, they do group learning activities. Every material obtained must be kept by each student in a flaskdisk. This is so that they can learn again at the next time" (Interview with Kasmaniar, ICT Teacher of MAN 2 Kampar).

Other ICT teachers also said that:

"Facilities that have been provided by schools such as computer labor equipped with internet must be used in the learning process. Especially in ICT subjects, the learning process must be on the labor internet. Teachers are easier to carry out the learning process and students are directly given materials that are connected to the website on the internet. Students can also directly access learning materials through the internet. They must store the material obtained on their respective floppy disks" (Interview with Andy Waldy, ICT Teacher of MAN 3 Kampar).

The results of the study showed that certified teachers at Madrasah Aliyah Negeri Kampar Regency consistently used the internet as a *learning medium*, especially through the use of the internet labor to find information on subject matter, read and discuss the results of internet sources, and present the results of group work. This finding is relevant to the theory of learning media which states that media is a *tool or intermediary* used to convey learning messages so that students' acceptance and understanding are more effective (Azhar Arsyad, 2020). The internet as a learning medium has the advantage of providing a variety of information sources quickly and flexibly, so that it is in accordance with the characteristics of 21st century learning.

In the study, ICT teachers used the internet to direct students in *exploratory learning* through searching for information from various websites. This is relevant to the *theory of self-directed learning* which emphasizes the role of learners in controlling their own learning process with the support of appropriate media (Muhaimin, 2015). With the guidance of certified teachers, these activities create a meaningful learning experience and actively engage students in finding and processing learning information.

The findings of the study also revealed that the internet is used as a medium for discussion and group work. The use of labor internet for this activity shows that the internet facilitates more dynamic student interaction (interactional learning). A good learning media is a media that can support two-way interaction between students and learning resources. The internet as a learning medium provides a space for students to collaborate virtually or in-person through online and offline discussions (Fatoni, 2022).

This study also found that the internet is used to store learning materials on *flash disks* owned by students. Offline access to digital materials can increase students' continuous learning engagement outside the

classroom. This result is related to Anas' research which shows that digital materials as a learning medium expand students' learning opportunities outside of formal lesson hours, thereby supporting flexible learning (Anas & Murti, 2021).

In addition, the use of the internet as a learning medium supports the development of *students' digital literacy*. Digital literacy is an important competency in the context of modern learning, where students are required to be able to search, evaluate, and use information from the internet critically (Sumardi et al., 2021). Certified teachers in the context of this research play the role of mentors who help students navigate digital information in a responsible and ethical way, a competency that is part of 21st century skills (Asnandar, 2018).

This finding is also in accordance with Widiastuti's research which concluded that the use of digital technology such as the internet as a learning medium increases student motivation and involvement in learning (Widiastuti, 2020). This is because the internet provides content that is relevant to students' learning needs and can be accessed flexibly according to the learning style of each student.

Based on these findings, it can be understood that the use of the internet as a learning medium by certified teachers at MAN Kampar Regency not only uses the internet as a *tool*, but also as a learning medium that is able to activate various components of digital learning: access to information, student involvement, collaboration, and technology skill development. This shows that the role of certified teachers is very important in effectively integrating internet media into the learning process.

Overall, the results of this study confirm that the internet as a learning medium makes a significant contribution to the dynamics of learning in the digital era. The role of certified teachers as mediators of technology-based learning is the key to

success in maximizing the potential of the internet as *an effective, inclusive, and adaptive* learning medium for the needs of students.

The Application of the Internet as a Learning Model by Certified Teachers at Madrasah Aliyah Negeri Kampar Regency

The results of the study were obtained that internet-based learning has been used as a learning method. Biology teachers say that:

"The learning process has used *Google Classroom learning method*. This model is carried out as a method of delivering learning materials and exercise materials to students. *This Google classroom* directs students to be able to develop an attitude of responsibility, discipline, and active learning. The attendance process and the provision of learning materials through *the classroom*. Teachers also provide opportunities for students to hone their mindset by providing the widest possible opportunity to ask questions or convey an idea in learning. In this *classroom* model, it is easier for teachers to supervise students' activeness in learning, because every student activity is recorded in the *classroom*" (Interview with Melvi Herianida, Biology Teacher of MAN 3 Kampar).

The teacher of Moral Faith said that:

"The learning process has used *the Google Classroom Learning Method*. This model is used to send student assignments about subject matter. Teachers find it easier to make assignments and control them through *the classroom*. Teachers can also see the time when assignments are collected by students. Teachers can assess students' assignments and they can immediately see the results of their assignment assessments from the

teacher. Teachers can also provide notes on the improvement of students' assignments" (Interview with Mukhlis, Teacher of Moral Faith MAN 1 Kampar).

ICT subject teachers say that:

"The learning process has used *the Google Calssroom* learning model. This model is a form of application of e-learning model technology in learning. ICT learning materials discuss a lot about various kinds of technologies that can be used in learning, one of which is *google calssroom*. This learning model is easier to implement and there are many activities that can be done by teachers and students by using *google calssroom*" (Interview with Kasmaniar, ICT Teacher of MAN 2 Kampar).

The application of the internet as a learning model by certified teachers at Madrasah Aliyah Negeri Kampar Regency shows a shift in the learning paradigm from the conventional model to a technology-based learning model (*e-learning*). The findings of the study show that teachers have utilized digital platforms such as Google Classroom as the main learning model in the delivery of materials, assignments, attendance, discussions, and learning evaluations. This is in line with modern learning theory that emphasizes the integration of technology as part of the learning system to increase the effectiveness and efficiency of the teaching and learning process (Rusman, 2021).

Judging from the theory of teacher competence, educator certification aims to ensure that teachers have pedagogic and professional competence, including the ability to utilize learning technology. The application of the internet-based learning model by certified teachers reflects the mastery of these competencies, especially in designing structured and monitored digital learning. Mulyasa emphasized that professional teachers

are required to be able to adapt learning strategies and models to the development of science and technology (Mulyasa, 2023).

The use of Google Classroom as a learning model is also relevant to the theory of *blended learning* and *online learning*, where learning does not only take place face-to-face, but also through virtual spaces that allow interaction without space and time limits. This model gives learners the flexibility to access materials, collect assignments, and receive feedback from teachers in person. Internet-based learning is able to increase learning independence and strengthen interaction between teachers and students (AECT, 2012).

The results of the study also show that the internet-based learning model encourages an increase in students' attitude of responsibility, discipline, and activeness. This is in accordance with *the theory of self-regulated learning* which emphasizes the ability of students to manage their own learning process. The internet as a learning model provides a system that records all student learning activities, so that certified teachers can objectively monitor the progress and activity of students (Sulistiyani, 2022).

Dalam konteks Pendidikan Islam di Madrasah, the application of the internet as a learning model shows that technology can synergize with Islamic values. Teachers of Moral Faith and Biology use Google Classroom not only as a technical means of learning, but also as a medium for fostering students' attitudes and responsibilities. This is in line with Muhammin's view that learning innovation in Islamic Education needs to utilize technology wisely without neglecting moral and spiritual values (Muhammin, 2015).

In addition, the implementation of the internet-based learning model supports the strengthening of students' digital literacy. Digital literacy is an essential competency in the 21st century, where students are required to be able to use technology critically, ethically, and productively. Certified teachers

play an important role as mentors so that students not only become users of technology, but also be able to use it for the development of knowledge and skills (Pertiwi et al., 2024). The results of this study confirm that the application of the internet as a learning model by certified teachers at Madrasah Aliyah Negeri Kampar Regency has been running functionally and pedagogically. The Internet has not only served as a learning tool, but has become a systematic and integrated learning model. The role of certified teachers is a key factor in the successful implementation of this model, as they are able to manage, supervise, and direct the digital learning process in accordance with the goals of madrasah education.

The Application of the Internet as a Source of Learning by Certified Teachers at Madrasah Aliyah Negeri Kampar Regency

Learning resources essentially include everything that can make it easier for students to gain information, knowledge, experience, and skills in the learning process. Learning resources are not limited to textbooks, but include people, materials, environments, tools, and learning activities. This concept is in line with the findings of Chalim and Anwar who stated that the diversity of learning resources allows for more contextual and meaningful learning, especially when teachers are able to integrate different types of learning resources systematically (Chalim & Anwas, 2018).

The benefits of learning resources are highly dependent on the ability and willingness of teachers and students to interact with the messages contained in them. Fransiska and Ariani's research confirms that rich learning resources will not have a significant impact if they are not accompanied by teachers' competence in managing and facilitating their use (Fransiska et al., 2024). In this context, the role of teachers becomes very strategic as a mediator who connects students

with relevant and meaningful learning resources.

The components of learning resources can be used singly or in combination, both by design and by utilization. The results of Hidayat et al's research show that a combination of learning resources that are designed and used flexibly can increase learning effectiveness and student engagement (Hidayat et al., 2024). This reinforces the view that learning resources should be seen as complementary systems, not as stand-alone elements.

The findings of this study are in line with the results of Widiastuti's research, which shows that teachers have utilized technology-based learning in the form of learning videos, interactive multimedia, and digital teaching materials. The research emphasizes that digital-based learning resources are able to enrich teaching materials and increase students' interest (Widyastuti et al., 2024). Furthermore, the results of Aidah's research showing the use of digital media such as Quizizz, Google Forms, and YouTube in learning also support the findings of this study. The digital media functions as a learning resource as well as a means of learning evaluation (Aidah & Ali, 2024). This research shows that the internet allows teachers to access and utilize various learning resources that are interactive and in accordance with modern learning needs. This corroborates the results of this study that teachers have begun to shift from conventional learning resources to more varied digital learning resources.

Fatoni's research found the use of online-based learning through video learning and WhatsApp further emphasizes the role of the internet as a flexible and accessible learning resource. The internet in this context is categorized as *learning sources by utilization*, which is a learning resource that is available and can be directly utilized by teachers and students (Fatoni et al., 2021). This is in accordance with the findings of this

study that teachers utilize the internet through browsing, searching, resourcing, consulting, and communicating activities. Research by Anwariyah et al shows that the use of the internet as a learning resource not only expands students' horizons, but also increases independence and digital literacy skills (Anwariyah et al., 2025). Therefore, the results of this study reinforce the findings of previous research that the internet is a strategic learning resource that can be used optimally to support the learning process in schools. With the increasing variety of learning resources, the internet has become one of the main learning resources that complements and even replaces the limitations of print learning resources.

The Application of the Internet as a Learning Media by Certified Teachers at Madrasah Aliyah Negeri Kampar Regency

The results of the study show that certified teachers at Madrasah Aliyah Negeri Kampar Regency have applied the internet as a learning medium in various forms. The form of implementation includes the use of the internet as a source of teaching materials, supporting media for explaining concepts through learning videos, as well as means of communication and assignment to students. The use of the internet is carried out both in limited face-to-face learning and as a support for students' independent learning. These findings show that certified teachers have a professional awareness of the importance of utilizing information technology in learning. Teacher certification encourages teachers to meet professional and pedagogic competency standards, including the ability to integrate internet-based media in the teaching and learning process.

The results of this study are in line with Belva's research which states that teachers in Islamic schools show a positive attitude towards the use of the internet in learning and make it part of modern learning strategies (Belva et al., 2024). These similarities in

results reinforce the finding that certification status contributes to teachers' readiness to utilize learning technology.

The results of the study also show that the application of the internet has a positive impact on the learning process. The teacher stated that the use of the internet helps the delivery of material to be more varied, interesting, and contextual. Students become more active in learning because they gain access to a wider and more diverse learning resource than relying solely on textbooks.

This discussion supports the results of Lestari's research which found that the use of the internet as a learning medium can increase interaction between teachers and students and encourage active participation of students (Lestari, 2023). In addition, Silmi's research also concluded that the internet as a learning resource has a positive effect on students' learning motivation at the secondary school level (Silmi & Hamid, 2023). Thus, the results of this study strengthen the constructivistic learning theory that emphasizes the active role of students in building knowledge through various learning resources, including digital media and the internet.

Although the teachers in this study have been certified, the results of the study show that the level of internet utilization still varies. Some teachers have used the internet optimally and integrated with learning purposes, while others still use the internet on a limited basis, especially as a source of additional material. The results of the study revealed several obstacles in the application of the internet as a learning medium, including the limitations of the internet network, the availability of learning tools, and differences in students' abilities and access to technology. These obstacles cause the use of the internet to be not optimal and uneven in all classes. Infrastructure and readiness of infrastructure facilities are the main factors that affect the success of the implementation of internet-based learning, especially in areas with limited

access to technology. This shows that the success of the implementation of the internet does not only depend on the competence of teachers, but also on the support of education systems and policies.

The results of this study reinforce the findings of previous research that emphasized the importance of technology integration in 21st century learning, especially in the madrasah environment. Therefore, continuous efforts are needed in the form of teacher digital competency training, improving technology facilities, and supporting madrasah policies so that the application of the internet as a learning medium can run optimally and sustainably.

The Application of the Internet as a Learning Model by Certified Educator Teachers at Madrasah Aliyah Negeri Kampar Regency

The application of the internet as a learning model in Madrasah Aliyah Negeri (MAN) Kampar Regency indicates a shift in learning practices: from conventional to technology-based learning models that intensively utilize the internet. The internet-based learning model used by certified teachers reflects a change in instructional approaches, where technology is not only an aid, but also a key pedagogical framework that shapes the structure of learning activities. This is in line with Wati's research which found that the application of internet-based learning technology increases student engagement and triggers student-centered learning in the context of secondary education (Wati & Nurhasannah, 2024).

Biology teachers at MAN 3 Kampar use Google Classroom as a learning model to deliver material, make attendances, and provide discussion and question and answer spaces. These findings are consistent with Widoretno's study which shows that the use of Google Classroom as a medium and learning model provides a clear structure for students' activities and improves discipline and

responsibility for independent learning (Widoretno & Umaroh, 2025). Certified teachers are able to take advantage of the features in Google Classroom to create an organized and documented learning environment, so that students are encouraged to actively explore learning materials independently.

Teachers of Akidah Akhlak subjects use the Google Classroom learning model to manage assignments and evaluation of learning. The application of this model shows that certified teachers not only use the internet as a medium for delivering content, but also as a model for managing a comprehensive learning process. This result is in line with Rahman's findings that the internet-based learning model facilitates digital assignments and real-time feedback, so that teachers can monitor and evaluate student performance more effectively compared to traditional methods (Rahman, 2025).

In addition, ICT teachers use the Google Classroom learning model as part of learning practices that are relevant to the ICT content itself. This learning model reflects the integration between subject matter and learning technology, where students not only learn theory, but also direct experience of using digital learning platforms. Jumaranati's research confirms that the integration of internet-based learning with curriculum content improves students' information technology skills while strengthening their involvement in Learning (Jumrawati & Lina, 2025).

The application of the internet as a learning model by certified teachers at MAN Kampar Regency also shows a shift in the role of teachers from just conveying information to facilitating learning. The internet-based learning model opens up a wider and participatory dialogue space, where students are able to collaborate, discuss, and evaluate online learning. These findings are in line with Thohiri's research which found that internet-

based learning models are able to create more dynamic pedagogical interactions and are responsive to students' learning needs (Thohiri & Ernawati, 2021).

Internet sebagai model pembelajaran juga facilitate flexible and contextual learning. Certified teachers use Google Classroom to provide access to materials and assignments online, so learning is not limited to face-to-face space and time. This is relevant to Dyah's findings that internet-based learning models increase learning flexibility and allow students to access materials according to their own learning rhythms (Dyah et al., 2024).

In addition to the technical aspect, the application of the internet-based learning model also shows that certified teachers have adequate competence in effectively utilizing technology for learning. Susilaningsih's research emphasizes that certified teachers tend to be more capable in designing and implementing technology-based learning models by using various digital resources optimally (Susilaningsih, 2013).

Overall, the results of this study show that the internet-based learning model applied by certified teachers at MAN Kampar Regency is in line with modern pedagogical trends outlined by many scientific studies. The internet is not only used as a source of information, but has become a comprehensive, systematic, and meaningful learning model for students. The application of this model supports the achievement of learning competencies and responses to the demands of educational technology developments in the digital era.

Conceptually, the digital divide refers to the inequality of access, ability, and utilization of information technology in the educational process. This gap is not only related to the availability of technological infrastructure, but also includes differences in digital literacy and pedagogical readiness of teachers and students (Selwyn, 2016). In the context of this study, the digital divide is the

main inhibiting factor in the implementation of internet-based learning by certified teachers, because the limitations of technological facilities and capabilities cause the use of the internet to not be optimally integrated in learning.

In addition to the digital divide, research findings can also be explained through the concept of pedagogical inertia, which is the tendency of teachers to maintain conventional learning practices despite innovation and demands for change (Fullan, 2015). Formal teacher certification is not necessarily followed by a transformation of pedagogical practice if it is not accompanied by critical reflection and continuous professional development. This inertia is strengthened by the institutional culture of schools that have not fully supported ICT-based learning innovations, both through policies, academic supervision, and organizational climate that encourages pedagogical experimentation (Schein, 2010). Thus, the implementation of internet-based learning demands changes not only in individual teachers, but also in the school institutional system and culture as a whole.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that the application of the internet as a learning model by certified educator teachers at Madrasah Aliyah Negeri Kampar Regency has been running well and effectively. The internet is not only used as a medium or learning resource, but has been implemented as a structured learning model, especially through the use of digital platforms such as Google Classroom. This internet-based learning model allows teachers to manage learning systematically, starting from delivering materials, assignments, discussions, to learning evaluation. Certified teachers demonstrate professional and pedagogic

competence in integrating the internet into the learning process. This can be seen from the ability of teachers to design e-learning-based learning, manage online learning interactions, and monitor the activeness and discipline of students through the features of digital learning platforms. The application of this learning model also encourages a shift in the role of teachers from conveyors of information to learning facilitators who guide students actively and independently.

In addition, the application of the internet as a learning model contributes positively to increasing student responsibility, discipline, participation, and motivation. The learning flexibility offered through an internet-based model allows learners to access materials and complete assignments according to their individual learning needs and rhythms, without being bound by conventional learning space and time. Thus, this study emphasizes that the success of the application of the internet as a learning model is greatly influenced by the competence of certified teachers in utilizing educational technology pedagogically and professionally. The application of the internet-based learning model at Madrasah Aliyah Negeri Kampar Regency is proof that the integration of technology in learning can improve the quality of the learning process and outcomes if supported by the readiness and competence of teachers.

REFERENCES

- Aidah, L. S., & Ali, M. (2024). Implementasi Pembelajaran Berbasis Digital Mata Pelajaran SKI Siswa Kelas 10 di MAN 3 Sragen. *Didaktika: Jurnal Kependidikan*, 13(2), 1565–1572. <https://doi.org/https://doi.org/10.58230/27454312.710>
- Alfianika, N. (2018). *Metode Penelitian Pengajaran Bahasa Indonesia*. Deepublish.
- Anwariyah, L., Yasin, N. A., & Isnaini. (2025). Transformasi Pembelajaran di Era Digital: Pemanfaatan Internet sebagai Sumber Belajar yang Inovatif. *J. Kaj. Inov. Ilmu*, 1(1), 3109–3442. <https://doi.org/10.64123/jkii.v1.i1.4>
- Belva Saskia Permana, Lutvia Ainun Hazizah, & Yusuf Tri Herlambang. (2024). Teknologi Pendidikan: Efektivitas Penggunaan Media Pembelajaran Berbasis Teknologi Di Era Digitalisasi. *Khatulistiwa: Jurnal Pendidikan Dan Sosial Humaniora*, 4(1), 19–28. <https://doi.org/10.55606/khatulistiwa.v4i1.2702>
- Chalim, S., & Anwas, E. Oos. M. (2018). Peran Orangtua dan Guru dalam Membangun Internet sebagai Sumber Pembelajaran. *Jurnal Penyuluhan*, 14(1), 33–42. <https://doi.org/10.25015/penyuluhan.v14i1.19558>
- Dyah Puspitasari, V., Sondang Sumbawati, M., Hariyanti, N., Roesminingsih, E., & Pendidikan, M. (2024). Pengaruh Penggunaan Internet, Pemanfaatan Laboratorium Komputer, dan Literasi Digital terhadap Hasil Belajar. *Journal of Education Research*, 5(3), 2687–2693.
- Fatoni, M., Dewi, N. K., & Setiawan, H. (2021). Implementasi Pembelajaran Berbasis Online di Kelas IV SDN 16 Cakranegara. *Jurnal Ilmiah Profesi Pendidikan*, 6(4), 762–767. <https://doi.org/https://doi.org/10.29303/ji pp.v6i4.299>
- Fransiska, L. O., Ariani, N., & Hamdi, H. (2024). PEMANFAATAN SUMBER BELAJAR DALAM MENINGKATKAN KUALITAS PEMBELAJARAN. *Jurnal Pendidikan KITA*, 1(1), 1–14.

- Fullan, M. (2015). *The New Meaning of Educational Change*. Teachers College Press.
- Hidayat, M. A. D., Wijoyo, S. H., Amalia, F., Studi, P., Teknologi, P., Komputer, F. I., & Brawijaya, U. (2024). Digital Dalam Mengelola Dan Menganalisis Informasi Sumber Belajar Dalam Dunia Pendidikan. *Jurnal Pengembangan Teknologi Informasi Dan Ilmu Komputer*, 1(1), 1–9.
- Iskandar, D., & Anriani, N. (2023). Kajian Dampak Sertifikasi Guru dan Pengajaran Berbasis Teknologi Informasi terhadap Kompetensi Guru: Literatur Review. *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, 6(2), 760–767.
<https://doi.org/10.54371/jiip.v6i2.1662>
- Jumrawati, J., & Lina, K. (2025). Tinjauan Kompetensi Profesional Guru Bersertifikat Pendidik Terhadap Efektivitas Pembelajaran. *Transformasi : Jurnal Penelitian Dan Pengembangan Pendidikan Non Formal Informal*, 11(1), 150–160.
<https://doi.org/10.33394/jtni.v11i1.16867>
- Lestari, Y. D. (2023). Pentingnya Media Pembelajaran dalam Meningkatkan Hasil Belajar di Sekolah Dasar. *Lentera: Jurnal Ilmiah Kependidikan*, 16(1), 73–80.
<https://doi.org/https://doi.org/10.52217/lentera.v16i1>
- M Choirul Muzaini, Prastowo, A., & Salamah, U. (2024). Peran Teknologi Pendidikan Dalam Kemajuan Pendidikan Islam di Abad 21. *Jurnal IHSAN Jurnal Pendidikan Islam*, 2(2), 70–81.
<https://doi.org/10.61104/ihsan.v2i2.214>
- Putri, Y. C. A., Shofa, F., Khoiroh, A., & El-Yunusi, M. Y. M. (2024). MEMBANGUN KERANGKA PENGEMBANGAN PROFESI GURU MELALUI INTEGRASI TEKNOLOGI PENDIDIKAN DAN KETERAMPILAN ADAPTIF. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, 09(04), 455–469.
<https://journal.unpas.ac.id/index.php/pendas/article/view/19294>
- Rahman, N. A., & Universitas. (2025). Improving the Quality of Educational Services Through the Utilization of Learning Resources and the Effectiveness of Teacher Performance. *Journal of Society and Development*, 05(1), 71–75.
- Rahmi Pertiwi, G., Yun Sari, L., & Saherawan, D. (2024). Dampak Sertifikasi Guru Terhadap Kinerja Guru Madrasah Tsanawiyah Al-Irsyadiyah Merangin Provinsi Jambi. *Jurnal QOSIM Jurnal Pendidikan Sosial & Humaniora*, 2(2), 36–47.
<https://doi.org/10.61104/jq.v2i2.308>
- Saerang, H. M., Lembong, J. M., Sumual, S. D. M., & Tuerah, R. M. S. (2023). Strategi Pengembangan Profesionalisme Guru di Era Digital: Tantangan dan Peluang. *El-Idare: Jurnal Manajemen Pendidikan Islam*, 9(1), 65–75.
<https://doi.org/10.19109/elidare.v9i1.16555>
- Schein, E. H. (2010). *Organizational culture and leadership*. Jossey-Bass.
- Selwyn, N. (2016). *Education and technology: Key issues and debates*. Bloomsbury Academic.
- Silmi, T. A., & Hamid, A. (2023). Urgensi Penggunaan Media Pembelajaran Berbasis Teknologi. *Jurnal Inspiratif Pendidikan*, 12(1), 69–77.
<https://doi.org/https://doi.org/10.24252/ip.v12i1.37347>
- Sugiyono. (2021). *Metode Penelitian Kuantitatif Kualitatif, dan R dan D*. Alfabeta.

- Susilaningsih, S. & (2013). Dampak Sertifikasi Guru Terhadap Peningkatan Kualitas Pembelajaran Peserta Didik the Effect of Teacher Sertification Toward the Improvement of Students' Learning Quality. *Jurnal Pendidikan Dan Kebudayaan*, 19(4), 487–498.
<https://doi.org/10.26740/jrp.v10n2.p149-155>
- Thohiri, M. K., & Ernawati, E. (2021). Peran Guru Pai Dalam Pembelajaran Berbasis Teknologi Informasi Untuk Mencegah Paham Radikalisme Siswa Di Sdit Al-Husna Gondang Tulungagung. *Ta'allum: Jurnal Pendidikan Islam*, 9(1), 163–184.
<https://doi.org/10.21274/taalum.2021.9.1.163-184>
- Wati, S., & Nurhasannah, N. (2024). Penguatan Kompetensi Guru Dalam Menghadapi Era Digital. *Jurnal Review Pendidikan Dasar: Jurnal Kajian Pendidikan Dan Hasil Penelitian*, 10(2), 149–155.
- Widoretno, Y. S., & Umaroh, S. T. (2025). The Effectiveness of Using Google Classroom in Improving Students' Learning Outcomes In Entrepreneurship. *JIPI (Jurnal Ilmiah Penelitian Dan Pembelajaran Informatika)*, 10(3), 2868–2873.
https://etd.umm.ac.id/id/eprint/7334/0Ahttps://etd.umm.ac.id/id/eprint/7334/1/Thesis_Ryan_Permadi_Teladan_202110560211001%281%29.pdf
- Widyastuti, L., Lasmawan, I. W., & Kertih, I. W. (2024). Implementasi Media Pembelajaran Berbasis Teknologi dalam Pembelajaran IPS di SD. *Didaktika: Jurnal Kependidikan*, 13(001), 563–572.
<https://doi.org/https://doi.org/10.58230/27454312.1300>