

## **PROFESSIONALISM COMPETENCY OF PUBLIC ISLAMIC SENIOR HIGH SCHOOL (MAN) TEACHERS IN WELCOMING THE ERA OF THE INDUSTRIAL REVOLUTION 4.0 IN ACEH**

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### **Abstract**

This study aimed to determine the professional competence of teachers of the Public Islamic Senior High School ((known as Madrasah Aliyah Negeri or MAN) in welcoming the industrial revolution 4.0 era in Aceh. This qualitative research involve three principals and 60 teachers from three schools in Aceh who were selected purposively. Data analysis was carried out using a descriptive approach. The results showed that the professionalism of MAN teachers in Aceh in welcoming the industrial 4.0 era was good. It was indicated by teachers' skills in planning learning implementation plans, utilizing web-based media, using various teaching methods, using a student-centered approach, using cooperative learning models, and developing learning interactions. The professionalism of MAN teachers in Aceh has implications for improving the quality of learning, indicated by an increase in learning motivation and an increase in student participation in learning. Teachers' strategy in developing teacher professionalism in welcoming the industrial 4.0 era was carried out by pursuing a master's degree and a teacher professional development training program.

**Keywords:** *4.0; Teacher Professionalism; Implications; Strategy*

### **Abstrak**

*Penelitian ini bertujuan untuk mengetahui kompetensi profesionalisme guru Madrasah Aliyah Negeri dalam menyongsong era revolusi industri 4.0 di Aceh. Metode penelitian yang digunakan kualitatif, subjek 3 kepala Madrasah dan 60 orang guru yang bertugas pada 3 Madrasah Aliyah Negeri di provinsi Aceh yang ditentukan secara purposive.*

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*Analisis data dilakukan dengan menggunakan pendekatan deskriptif. Hasil penelitian, profesionalisme guru pada Madrasah Aliyah Negeri di provinsi Aceh dalam menyongsong era industri 4.0 sudah bagus dengan indikator keterampilan guru menyusun perencanaan pelaksanaan pembelajaran, pemanfaatan media berbasis web, menggunakan variasi metode mengajar, menggunakan pendekatan student centered, menggunakan model pembelajaran kooperatif, dan pengembangan interaksi pembelajaran. Profesionalisme guru pada Madrasah Aliyah Negeri di provinsi Aceh berimplikasi terhadap peningkatan kualitas pembelajaran yang ditandai peningkatan motivasi belajar dan peningkatan partisipasi peserta didik dalam pembelajaran. Strategi pengembangan profesionalisme guru dalam menyongsong era industri 4.0 dilakukan dengan pendidikan lanjutan ke magister (S2), program pelatihan pengembangan profesionalisme guru.*

**Kata Kunci:** 4.0; Profesionalisme Guru; Implikasi; Strategi

### مستخلص

تهدف هذه الدراسة إلى تحديد الكفاءة المهنية لمعلمي المدرسة العالية الحكومية في الترحيب بعصر الثورة الصناعية 4.0 في أتشيه. منهج البحث المستخدم هو منهج كفي. وأما موضوع البحث فيكون ثلاثة مدراء المدارس وستين مدرسا موظفا في المدرسة العالية الحكومية في إقليم أتشيه الذين تم تعيينهم بشكل مقصود. أما تحليل البيانات فيكون باستخدام المدخل الوصفي. نتائج الدراسة تشير إلى أن احترافية المعلمين في المدرسة العالية الحكومية بمحافظة أتشيه في الترحيب بالعصر الصناعي 4.0 جيدة بالفعل مع مؤشرات مهارات المعلم في تخطيط تنفيذ التعلم، واستخدام الوسائط المستندة إلى الويب أو الموقع، باستخدام مجموعة متنوعة من أساليب التدريس و باستخدام نهج يركز على الطالب، باستخدام نموذج التعلم التعاوني، وتطوير تفاعلات التعلم. يترتب على احتراف المعلمين في المدرسة العالية الحكومية بمحافظة أتشيه آثار على تحسين جودة التعلم، والتي تتميز بزيادة الحافز على التعلم و زيادة مشاركة الطلاب في التعلم. يتم تنفيذ استراتيجية تطوير احترافية المعلمين في الترحيب بالعصر الصناعي الرابع من خلال التعليم المستمر لمرحلة الماجستير (S-2)، وهو برنامج تدريبي للتطوير المهني للمعلمين.

الكلمات الرئيسية: 4.0؛ احترافية معلمين؛ استراتيجية

## A. Introduction

A teacher is an essential component in the educational process. Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers in Article 1 stipulated that teachers are professional educators. The main task of teachers is educating, teaching, guiding, directing, training, assessing, and evaluating students in early childhood education through formal education, primary education, and secondary education.

Teachers, as professional educators, are expected to carry out the learning process well and improve the quality of learning.<sup>1</sup> Teachers are expected to have competence and academic qualification standards to support the improvement of the learning quality.<sup>2</sup> Therefore, all teachers must have the qualifications of the academic standards that the government has set.

<sup>1</sup>Nurkholisah, "Implementasi Profesionalitas Guru Pendidikan Agama Islam Paska Sertifikasi Guru Di Madrasah Tsanawiyah Negeri Kota Binjai," *Analytica Islamica* 6, no. 2 (2017): 95-103.

<sup>2</sup>Lina Agustina, "Profesionalitas Guru PAI Di SMAN 2 Semarang," *Al-fikri Jurnal Studi dan Penelitian Pendidikan Islam* 1, no. 2 (2018): 13-21.

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Teachers' professionalism is essential to improve learning at Public Islamic Senior High School (known as *Madrasah Aliyah Negeri* or MAN).<sup>3</sup> Generally, their professionalism affects improving the quality and goals of education.<sup>4,5</sup> Thus, teachers' professionalism at MA in Aceh should be developed to improve the quality of learning following the era of the industrial revolution 4.0.

Industrial revolution 4.0 has implications for education, and the teachers are expected to follow the changes in this era professionally to carry out a quality learning process.<sup>6</sup> A teachers' professionalism is the ability according to the needs and developments of the times.<sup>7</sup> The MAN teachers are expected to implement a modern and contemporary learning process using a technological approach.

Industrial revolution 4.0 also uses learning technology to affect teaching approaches, from conventional and manual to modern.<sup>8</sup> It is time for MAN teachers to change their teaching from a conventional and teacher-centered approach to a student-centered approach<sup>9</sup> to ensure a high-quality learning process at MAN.

Industrial revolution 4.0 requires teachers to be professional in implementing and facilitating students' learning process.<sup>10</sup> Teachers should be professional in the lesson plan, learning implementation, and learning evaluation.<sup>11</sup> In addition, teachers must also be

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<sup>3</sup>Kasan As'ari, "Upaya Meningkatkan Hasil Belajar Pendidikan Agama Islam (PAI) Menggunakan Metode Hypnoteaching Bagi Siswa Kelas VII C SMPN 1 Limbangan Kabupaten Kendal Tahun 2016/2017," *Al-fikri Jurnal Studi dan Penelitian Pendidikan Islam* 1, no. 1 (2018): 22-40.

<sup>4</sup>Hanifuddin Jamin, "Upaya Meningkatkan Kompetensi Profesional Guru," *At-Ta'dib: Jurnal Ilmiah Pendidikan Agama Islam* 10, no. 1 (2018): 19-36.

<sup>5</sup>Aquami, "Hubungan Kompetensi Guru dan Peran Orang Tua Terhadap Terhadap Hasil Belajar Siswa di MIN Se-Kota Palembang," *JIP: Jurnal Ilmiah PGMI* 4, no. 1 (2018): 1-12.

<sup>6</sup>Muhammad AR, Sulaiman, Suhaimi, and Masrizal, "Industry 4.0 and the Impact of Moral Values for Madrasah 'Aliyah Negeri Students in Indonesia," *Jurnal Talent Development and Excellence* 12, no. 3 (2020): 1489-1497.

<sup>7</sup>Khoirunnisa, "Profil Guru Kompetensi Guru Pendidikan Agama Islam SMP Negeri Di Kota Bekasi," *Jurnal Tarbawi* 1, no. 3 (2014): 62-72. <https://doi.org/10.17509/t.v1i1.3763>

<sup>8</sup>Azhari, B., et al, "E-Learning as Connector Among Education Institution in the 4th Industrial Revolution," In *Journal of Physics: Conference Series* 1471, no. 1 (2020): 1-5.

<sup>9</sup>Sulaiman, "The Implementation Of Humanistic Learning At Darul Aman Islamic High School In Aceh Besar," *Ulumuna* 21, no. 1 (2017): 151-172.

<sup>10</sup>Benešová, A., & Tupa, J, "Requirements for Education and Qualification of People in Industry 4.0," *Procedia Manufacturing*, no. 11 (2017): 2195-2202.

<sup>11</sup>Jaka Siswanta, "Kompetensi Profesional Guru Pendidikan Agama Islam (PAI) Di Sekolah Umum Tingkat SMA/ SMK Kabupaten Magelang," *INFERENSI: Jurnal Penelitian Sosial Keagamaan* 6, no. 2 (2012): 349-370;

professional in utilizing learning technology.<sup>12</sup> Teachers' professionalism in technology is very supportive of improving the quality of learning.

The revolution causes rapid changes in all life and social systems, including the Indonesian educational system. It also has implications for teachers who must be professional and competent in conducting the learning process. Teachers should prepare for competitive generation and respond to the challenges of the industrial revolution 4.0.<sup>13</sup>

There are five competencies that teachers must prepare to involve in the era of the industrial revolution 4.0, namely; First, educational competence and internet-based learning competence as fundamental skills, second, competence for technological commercialization. This competence means that a teacher must have competencies to guide students toward an entrepreneurial attitude with technology on the students' innovations. Third, competence in globalization means that teachers do not stutter about various cultures and solve educational problems. Fourth, competence in future strategies to predict what will happen in the future and its strategy through joint-lecture, joint-research, joint-resources, staff mobility, and rotation. Fifth, counselor competence, namely the competence of teachers to understand that in the future, students' problems will not only be challenging to understand learning contents but also related to psychological problems.<sup>14</sup> For this reason, the development of teachers' professionalism, especially MAN teachers in Aceh, is a solution to prepare professional teachers to support improving the quality of learning in the era of the industrial revolution 4.0.

Moreover, the professionalism of teachers at MAN in Aceh province in welcoming the era of the industrial revolution 4.0 is still low. The preliminary study conducted by interviewing six MAN principals in three districts and cities in Aceh province, observing teachers' teaching professionalism, and interviewing fifty teachers showed that teachers' professionalism competence at MAN in Aceh province is lacking, based on the following indicators:

- (1) Teachers are lack creating interaction skills.
- (2) Learning situation development skills are still less practical.
- (3) Teachers still use a *teacher-centered* teaching approach.
- (4) Generally, teachers do not use learning technology media.

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<sup>12</sup>Syamsuar and Reflianto, "Pendidikan dan Tantangan Pembelajaran Berbasis Teknologi Informasi di Era Revolusi Industri 4.0," *E-Tech: Jurnal Ilmiah Teknologi Pendidikan* 6, no. 2 (2019): 1-13. <https://doi.org/10.24036/et.v2i2.101343>

<sup>13</sup>Muhammad, A. R., Suhaimi, Sulaiman, Zulkifli, Zulfahmi, "Character Education, Student Mental Revolution, and Industry 4.0: The Case of State Islamic Senior High Schools in Indonesia," In *International Conference on Progressive Education (ICOPE 2019)*, Atlantis Press, (2020): 132-135.

<sup>14</sup>Ida Royani, "Peningkatan Kompetensi Guru Menuju Era Revolusi Industri 5.0," *Prosiding Seminar Nasional Program Pascasarjana Universitas PGRI Palembang*, (2020): 449-456.

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(5) Teachers rarely use technology in the learning process.

(6) Especially during the Covid-19 pandemic, mostly teachers complained and were less professional about using technology media in learning.

Ideally, in welcoming the era of the industrial revolution 4.0, MAN teachers in Aceh should have exemplary professionalism and master learning technology to develop the learning quality and as a distinctive nuance of the industry 4.0. However, some teachers do not have technological skills. Based on the problem, researchers are interested in focusing on “Teachers’ Professionalism Competence in the Era of Industry 4.0 at MAN in Aceh province”

This study used qualitative research methods located at three MAN in three districts and cities in Aceh province. Determination of research subjects used the purposive sampling technique. The subjects were chosen based on their capability of providing in-depth and accurate information for the research. The research subjects were three Principals of MAN and 60 teachers at MAN 1 Pidie Regency, MAN 4 Aceh Besar Regency, and MAN 1 Lhokseumawe Regency. Data collection was conducted through interviews, documentation, and observations, while the data was analyzed using a descriptive approach.

## B. Discussion

### 1. *MAN Teachers’ Professionalism in the Industry 4.0 in Aceh Province*

Teachers have a strategic role in education as educators, teachers, mentors, parents for students, and facilitators.<sup>15</sup> Teachers as educators are required to be professional to support the implementation of quality education and learning processes.

The teachers’ position as professionals has a vision of realizing the implementation of learning following the principles of professionalism to fulfill the same rights for every citizen in obtaining a quality education. However, teachers’ position as learning agents is related to the teacher’s role in learning, such as a facilitator, motivator, promoter, learning creator, and learning inspiration for students.<sup>16</sup> The roles require the professional development of teachers in improving performance in line with the changes and demands in the world of education

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<sup>15</sup>Fithriani, Syabuddin, Gunawan, Zainuddin, & Sulaiman, “Teacher As A Role Model In The 2013 Curriculum Development,” *Jurnal Ilmiah Islam Futura* 21, no. 2 (2021): 240-256. <https://dx.doi.org/10.22373/jiif.v21i2.7516>

<sup>16</sup>Syabuddin Gade and Sulaiman, *Pengembangan Interaksi Edukasi Pembelajaran Pendidikan Agama Islam: Teori Dan Praktik* (Banda Aceh: Ar-Raniry Press Banda Aceh, 2019), 67.

nowadays.<sup>17</sup> Part of the demands for professionalism that emerged in the industrial 4.0 is the teachers' professionalism in using learning technology and other skills.

Research data related to the six professional competencies of teachers at MAN in Aceh province in welcoming the industrial revolution 4.0 can be seen in the following description.

1) *Competency in lesson planning*

Lesson planning is an essential component before the learning process is started. Careful and good lesson planning needs to be prepared so that learning can be carried out effectively.<sup>18</sup> Lesson planning could be in the form of a syllabus and lesson plan.

There are at least four teacher competencies in lesson planning: First, providing clear direction for the learning process; second, emphasizing the purpose of learning for students; third, in-class activities that run smoothly; and fourth, providing tools to assess students' learning outcomes.<sup>19</sup>

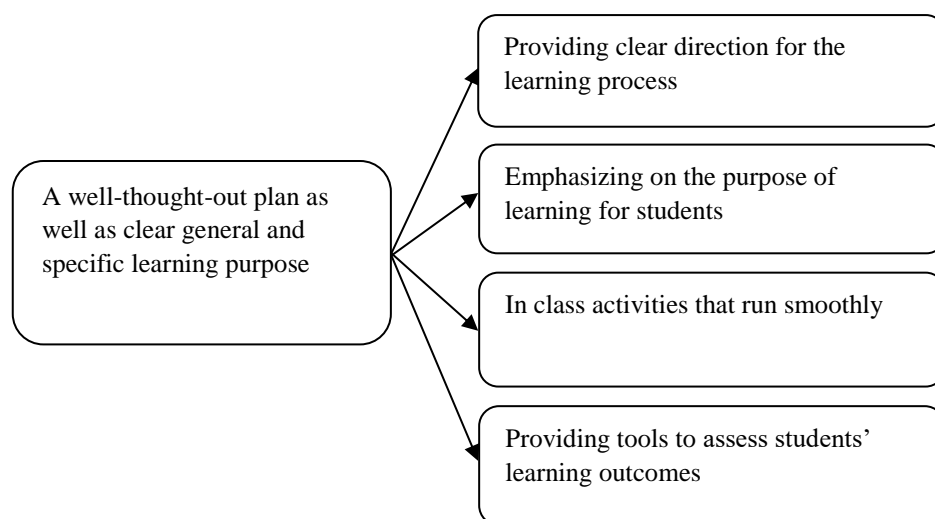


Figure 1: The consequences of lesson planning by Prastowo, A. (2017).

Compile and create lesson planning; syllabus and lesson plan are teachers' professional activities in implementing learning. The lesson plan becomes an indicator of teachers who have professional competence. In line with technological developments in the era of the industrial

<sup>17</sup>Aep Saepul Anwar & Fatkhul Mubin, "Pengembangan Sikap Profesionalisme Guru Melalui Kinerja Guru Pada Satuan Pendidikan MTs Negeri 1 Serang," *Andragogi: Jurnal Pendidikan Islam Dan Manajemen Pendidikan Islam* 2, no. 1, (2020): 147-173.

<sup>18</sup>Fithriani, Fajriah, Sulaiman, & Jabaliah, "The Academic Competence Development of Arabic Lecturers in Lecture Management in Indonesia," *Opción: Revista de Ciencias Humanas y Sociales* 27, no. 31 (2020): 533-553.

<sup>19</sup>Andi Prastowo, *Menyusun Rencana Pelaksanaan Pembelajaran (RPP) Tematik Terpadu: Implementasi Kurikulum 2018 Untuk SD/MI*. (Jakarta: Kencana, 2017), 52.

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revolution 4.0, teachers must also be professional in mastering educational technology and planning learning technology to support a quality learning process.

The research data indicated that the teachers in the MAN in Aceh province are professional in carrying out their teaching duties, as seen from the ability of lesson planning to support the development of the learning quality in the 4.0 era. Furthermore, the preparation of the lesson plan is carried out every semester. The teachers also prepare all the needs to support the learning process, including planning the technology media used.

### *2) Technology utilization skills*

Teachers' professionalism is characterized by skills in the use of learning technology.<sup>20</sup> Industrial revolution 4.0 demands that all teachers, especially teachers assigned to MA, develop learning technology skills. Based on the research information, teachers who work at MAN in Aceh Province have professional competence in learning technology, including web-based learning technology that has been used by teachers in the form of Google Meet. Teachers often use web-based technology media: Zoom, Google Classroom, Google Meet, and WhatsApp.

The use of web-based technology and internet networks is to carry out remote learning processes due to the Covid-19 pandemic conditions and limit face-to-face contact with students in classrooms. The Covid-19 situation has motivated teachers to develop their competence in web-based technology to support online learning. Overall, based on research data, teachers at MAN in Aceh have competence in learning technology.

### *3) The skills of using a variety of methods*

Skills in carrying out variations in teaching are essential to support the development of the learning process quality, including variations in methods. The skill of creating variations in the teaching process will cover three aspects: variations in teaching styles, variations in using media and learning content, and variations in interactions between teachers and students. Thus, if the three components are combined in their use or integrated way, it will increase students'

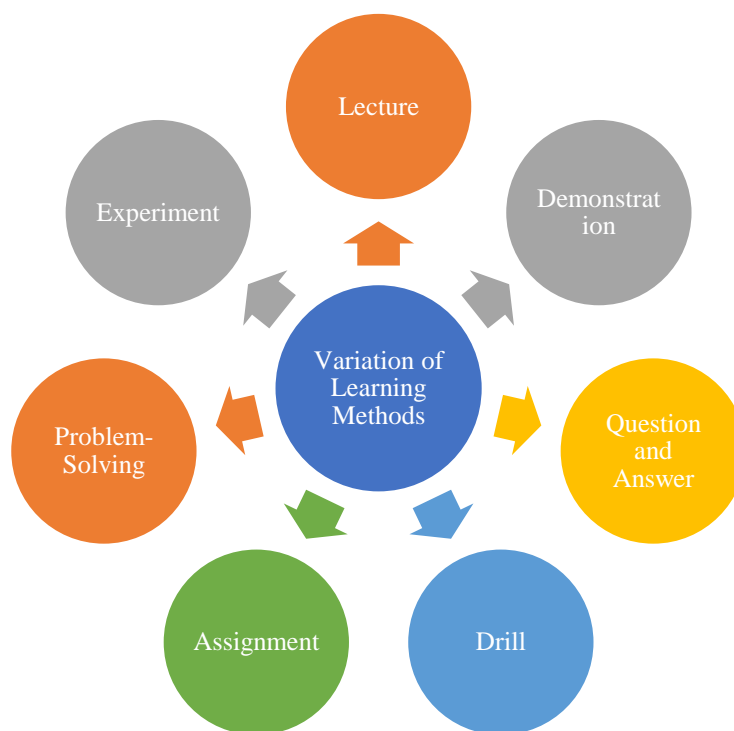
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<sup>20</sup>Bahtiar Agung Pambudi & Iman Gunawan, "Instructional Leadership as an Effort to Increase Teacher Professionalism in the Industrial Revolution Era 4.0," In *the 4th International Conference on Education and Management (COEMA 2019)*. Atlantis Press, (2019): 216-220.

attention and arouse their desire and willingness to learn. The use of variation is primarily aimed at students' attention, motivation, and learning.<sup>21</sup>

Teachers' skills in various teaching methods are part of the professional competence teachers must master in welcoming the era of the industrial revolution 4.0. Teachers must be more creative in teaching, including using teaching methods and combining several teaching methods. It is because using various methods can create an effective learning process and involve students optimally in learning activities.

The data indicate that teachers in MAN in Aceh are already professional in using various teaching methods. Teachers use different methods in the learning process by considering the content, the condition of students, increasing students' learning motivation, and considering improving the quality of learning in facing the era of the industrial revolution 4.0. The variation of learning methods in the learning process used by teachers at MAN in Aceh is represented in Figure 2.



**Figure 2:** The variation of learning methods.

Using variations in learning methods indicates that teachers who work at MAN in Aceh province have competence in mastering various teaching methods. Teachers' skills in this aspect should be developed to create professional teachers who can carry out teaching tasks following the demands of the industrial revolution 4.0.

<sup>21</sup>Fatnaton Adawiyah, "Variasi Metode Mengajar Guru Dalam Mengatasi Kejenuhan Siswa Di Sekolah Menengah Pertama," *Jurnal Paris Langkis*, 2, no. 1 (2021): 68-82.



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### *4) Skills in using a student-centered approach*

The use of a student-centered approach positions students as learning subjects in the learning process. Students are directed to carry out learning activities through this approach actively. Student-Centered Learning (SCL) is a learning approach that places students at the center of the learning process. Implementing the SCL approach is expected to enable students to be active and independent in the learning process. It also requires students to be responsible and take the initiative to recognize their learning needs, find sources of information to answer their needs, and build and present their knowledge based on their needs and the sources they find. Within certain limits, students can choose for themselves what they will learn.<sup>22</sup>

The era of the industrial revolution 4.0 requires teachers to be more professional in using learning approaches, and teachers must develop skills in using an SCL approach. The goal is that the learning process is carried out based on students. Moreover, data from the principals of MAN in Aceh, most of the teachers have high competence in using SCL approaches.

Teachers' professionalism competence in the use of the SCL approach could be seen from the following indicators:

- (1) The teachers use an SCL approach in the learning process.
- (2) The application of the SCL approach is carried out through the formation of study groups.

Welcoming the era of the industrial revolution 4.0, MAN teachers in Aceh province have made various efforts to develop the quality of learning, including using an SCL approach to increase students' participation in learning activities. The era of the industrial revolution 4.0 has changed the way and approach of MAN teachers in Aceh province from a conventional approach to an SCL approach.

### *5) Skills for using cooperative learning models*

The application of cooperative learning is part of the teachers' strategy to increase students' activeness in learning. Cooperative learning is a teaching strategy that involves students working collaboratively to achieve common goals. Cooperative learning is structured to increase students' participation, facilitate students to experience leadership attitudes and make decisions in groups, and provide opportunities for students to interact and learn with

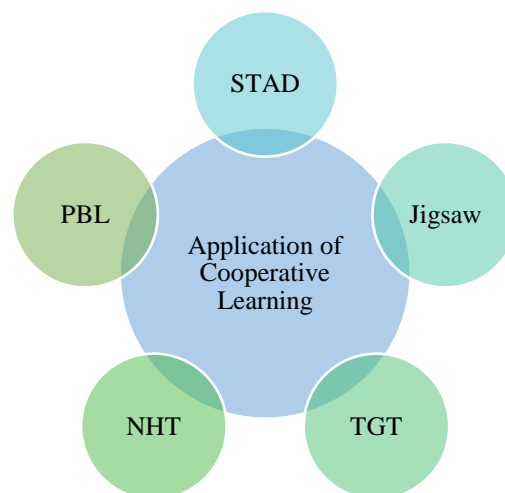
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<sup>22</sup>Rosane Medriati & Eko Risdianto, "Penerapan Pendekatan Student Centered Learning (SCL) Untuk Meningkatkan Keterampilan Berpikir Kreatif dan Komunikatif Mahasiswa Pendidikan Fisika Semester III Universitas Bengkulu," *Jurnal Kumparan Fisika* 3, no. 1 (2020): 67-74.

students from different backgrounds.<sup>23</sup> Cooperative learning methods can improve learning outcomes and the learning process to be more effective.<sup>24</sup>

The research data show that teachers at MAN in Aceh province already have professional competence in applying cooperative learning. This aspect also shows that teachers at MAN in Aceh are capable and ready to welcome the era of the industrial revolution 4.0 in improving the quality of learning.

Teachers' skills in the application of cooperative learning are crucial to facilitate students in the learning process. As for how teachers use much cooperative learning at MAN in Aceh province, it can be seen in Figure 3.



**Figure 3:** Application of Cooperative Learning.

The application of cooperative learning models in the learning process at MAN in Aceh province is a strategy to improve the quality of learning in the era of the industrial revolution 4.0. The research data show that the application of the cooperative learning model contributes positively to the increase of students' motivation which is marked by an increase in learning activities and interactions.

#### 6) *Skills of academic interaction development*

Academic interaction is a teaching and learning interaction, an interaction process that collects values (norms) that are the substance, as a medium between teachers and students to

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<sup>23</sup> Trianto, *Mendesain Model Pembelajaran Inovatif-Progresif* (Jakarta: Kencana, 2009), 58.

<sup>24</sup> Wahyu Bagja Sulfemi, "Model Pembelajaran Kooperatif Mind Mapping Berbantu Audio Visual dalam Meningkatkan Minat, Motivasi dan Hasil Belajar IPS," *Jurnal PIPSI (Jurnal Pendidikan IPS Indonesia)* 4, no. 1 (2019): 13-19.

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achieve learning objectives.<sup>25</sup> The process of academic interaction has the following characteristics:

- (1) There is a goal to be achieved.
- (2) There is content or message in the interaction.
- (3) Students who are actively experiencing.
- (4) Teachers who conduct the process.
- (5) There are methods to achieve the goal.
- (6) Situations that allow the teaching and learning process to run well.
- (7) There is an assessment of the interaction results.<sup>26</sup>

Academic interaction skill is one of the skills that teachers must possess to achieve learning objectives. It is characterized by the active interaction of students with students, students with learning resources, and teachers with students. The teachers' skills in building these interactions affect the success of learning and teachers' professionalism.

Teachers' professionalism is the primary key in welcoming the era of the industrial revolution 4.0 to realize a quality learning process. Professional teachers have good academic interaction skills. The research data obtained, teachers who work at MAN in Aceh already have good interaction skills, as seen in Table 1.

**Table 1.** Interaction Patterns in the Learning Process

No	Interaction Pattern	Information
1	Teachers-students pattern	The pattern of teachers-students interaction is a one-way pattern that is sometimes still used by teachers. The position of students is passive in this interaction pattern and is less effectively involved.
2	Teachers-students-teachers pattern	The pattern of teachers-students-teachers interaction is an active interaction that only occurs between teachers and students, while students and students do not interact.
3	Teachers-students-students pattern	The pattern of teachers-students-students interaction is marked by the interaction between students and teachers, and there is a pattern of mutual interaction between students and fellow students.

<sup>25</sup>Syaiful Bahri Djamarah, *Guru & Anak Didik Dalam Interaksi Edukatif: Suatu Pendekatan Teoritis Psikologis* (Jakarta: Rineka Cipta, 2010), 62; Sulaiman Sulaiman, Siti Yusnaini, and Anton Widyanto, "Development of Islamic Sharia-Based Curriculum in Islamic Universities in Aceh: A Study on the Implementation of Aceh Qanun Number 9 of 2015," *Ulumuna* 27, no. 1 (June 12, 2023): 89–114, <https://doi.org/10.20414/UJIS.V27I1.521>; Anton Widyanto, "Reformulating Strategies to Develop Democratization through Civic Education in Aceh," *Ulumuna* 21, no. 1 (October 27, 2017): 33–56, <https://doi.org/10.20414/UJIS.V21I1.1179>.

<sup>26</sup>Ida VinnySudaningsih, "Interaksi Edukatif antara Pendidik dan Peserta Didik Untuk Meningkatkan Motivasi Belajar Bahasa Inggris," In *Seminar Nasional Pendidikan* 1, no. 1 (2020): 300-309.

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4	Teachers-students, students-teachers, students-students pattern	This interaction pattern is great to use because it creates a lot of interactions; teachers-students, students-teachers, and students-students.
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Teachers at MA in Aceh province use four patterns of interaction to improve the quality of learning to welcome the 4.0 era.

## 2. *Implications of Teachers' Professionalism on the Learning Quality at MA in Aceh Province*

The implications of teachers' professionalism in this study focus on improving students' learning motivation and active participation in the learning process at MAN in Aceh province.

### 1) *Increasing students' learning motivation*

The era of the industrial revolution 4.0 has created various technologies that can be used in learning. Even the learning process in the 4.0 era is not technology-free, and almost all learning processes occur with the support of learning technology.<sup>27</sup> The era of the industrial revolution 4.0, which emphasizes the digital economy, artificial intelligence, big data, and robotics, requires the education world to be creative, think critically, technology, and have digital literacy skills.<sup>28</sup> The shifting of the educational process from conventional to modern is supported by technological sophistication.

Industrial revolution 4.0 has implications for education and learning, especially teachers as the frontline in learning. Teachers' professionalism is required to use learning technology to improve the quality of the learning process, both learning motivation and increasing students' activity in learning.

Furthermore, motivation is a change of energy in a person's personality characterized by the emergence of affective (feelings) and reactions to achieve goals. Students with motivation always try to achieve their goals by studying harder in each subject. Students' interest influences the motivation in learning contents or subjects. Students who have an interest in something tend to pay more attention and study it wholeheartedly.<sup>29</sup> Therefore, the

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<sup>27</sup>Desi Agustini, Bukman Lian & Artanti Puspita Sari, "School's Strategy for Teacher's Professionalism Through Digital Literacy in the Industrial Revolution 4.0," *International Journal of Educational Review* 2, no. 2 (2020): 160-173.

<sup>28</sup>Tri Ani Hastuti, "Implikasi Profesionalisme Guru untuk Pembelajaran Berorientasi Berfikir Tingkat Tinggi (HOTS) dalam Menghadapi Era Revolusi Industri 4.0," In *Prosiding Seminar Nasional Pascasarjana (PROSNAMPAS)* 2, no. 1, (2019): 876-880.

<sup>29</sup>Iik Faiqotul Ulya, Riana Irawati, and Maulana, "Peningkatan Kemampuan Koneksi Matematis dan Motivasi Belajar Siswa Menggunakan Pendekatan Kontekstual," *Jurnal Pena Ilmiah* 1, no. 1 (2016): 121-130.

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professional competence of teachers is expected to be a driving force for students' learning motivation to be more diligent in conducting learning activities.

Data from teachers reveal that the era of the industrial revolution 4.0 encourages teachers to think ahead for the advancement of education and prepare the nation's generation with skills to be ready to face the challenges of the 4.0 era. To answer these challenges, teachers as the frontline in the learning at MAN in Aceh must have professional competence, especially in using technology developed in the era of the industrial revolution 4.0.

The professionalism of MA teachers in Aceh province has implications for increasing students' learning motivation. This data refer to the results of interviews with teachers and school principals. In addition, the increase in learning motivation has implications for students' achievement.

The implications of teachers' professionalism at MA in Aceh province increase students' learning motivation based on the following indicators:

- (1) Improving students' learning achievement.
- (2) Students' diligence in learning.
- (3) Students' enthusiasm in achieving learning goals.
- (4) Students persevere in doing the task.
- (5) Students do not always have to have extrinsic motivation.
- (6) Students enjoy doing learning and working activities and solving problems by conducting studies independently.

Students who have learning motivation can be seen from the characteristics of persistence, high concentration in learning, and high interest in learning. For this reason, MA teachers in Aceh province are expected to develop their professional competence to support increasing students' learning motivation.

### 2) *Students' participation in learning*

Students' participation in learning is students' involvement in the learning process to achieve the learning outcomes.<sup>30</sup> Participation can also be mentioned as students' mental and

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<sup>30</sup>Eggi G.Ginanjari, Bambang Darmawan, and Sriyono, "Faktor-Faktor yang Mempengaruhi Rendahnya Partisipasi Belajar Peserta Didik SMK," *Journal of Mechanical Engineering Education* 6, no. 2 (2019): 206-219; Usman Muhammad et al., "Internalisasi Nilai-Nilai Toleransi Dalam Pembelajaran Pendidikan Agama Islam Di SMA Negeri 1 Lhokseumawe," *DAYAH: Journal of Islamic Education* 2, no. 1 (January 24, 2019): 36-52, <https://doi.org/10.22373/JIE.V2I1.2939>; Mayumi Maysah and Mukhlisah Mukhlisah, "Tatwir Kitab Khulāṣah Nūr Al-Yaqīn Bi Al-Ṣuwar Al-Bayāniyah," *DAYAH: Journal of Islamic Education* 1, no. 1 (March 18, 2018): 27, <https://doi.org/10.22373/jie.v1i1.2487>.

emotional inclusion in the learning process that stimulates students to develop thinking skills to achieve learning goals. Indicators of students' involvement in learning consist of actively participating in lessons, understanding teachers' explanations, asking and answering teachers' questions, and having the courage to explain. They also include proving answers by providing data and facts, issuing ideas, developing ideas in problem-solving, drawing conclusions, and discovering relationships between aspects (contents).<sup>31</sup> Furthermore, the participation and involvement of students in learning must be supported by the skills and professionalism of the teacher.

The data indicates that students' participation in the learning process at MAN in Aceh province is high; the professional competence of teachers supports it. The competence factor of teachers' professionalism has implications for increasing students' participation in the learning process which is marked by perseverance in doing assignments, asking questions, daring to give arguments and new ideas.

Strategies to increase students' participation are conducted using active learning methods, student-centered approaches, problem-solving models, and creating practical and conducive classroom situations. Teacher's professionalism in this aspect has implications for increasing students' participation and learning quality, as can be seen in the following description:

- (1) Students' participation is influenced by the teacher's professionalism factor.
- (2) The teachers' skills in using interactive methods, student-centered approaches, and problem-solving learning models have implications for increasing students' participation in learning.
- (3) Teachers' professionalism in creating a conducive and effective learning environment has implications for increasing students' participation in learning.

Teachers' professionalism is an essential aspect in supporting the development of learning quality marked by an improvement in students' learning motivation and an increase in students' participation so that learning objectives can be achieved. Teachers at MAN in Aceh have committed to improving the quality of education and learning by developing professional competence and teaching skills to become skilled teachers in the 4.0 era.

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<sup>31</sup>Eggi G.Ginanjari, Bambang Darmawan, and Sriyono.

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**3. Strategy for Professionalism Development in the Industrial 4.0 Era at MAN in Aceh Province**

Welcoming the era of the industrial revolution 4.0 and the development of the quality of education must be supported by teachers' professional competence.<sup>32</sup> The Industrial Revolution 4.0 era is closely related to technology and will bring significant changes to all aspects of human life; social, economic, political, and educational. Changes in the education system will have implications for the role of teachers.

Teachers as educators, especially teachers at MAN, are emphasized to have the professional competence to conduct teaching tasks and develop quality learning to produce competent students in facing the era of the industrial revolution 4.0, which is full of challenges.

One of the significant responsibilities of teachers in the 4.0 era is to prepare competent and able to answer the challenges of the Industrial revolution 4.0. Based on this fact, according to the provisions of Law Number 14 of 2005 concerning teachers and lecturers in Article 10 stipulated that teachers' competencies consist of pedagogic, personality, social, and professional competence obtained through professional education.

The strategy for developing teachers' professional competence at MAN in Aceh Province in welcoming the era of the industrial revolution 4.0 can be seen in Table 2.

**Table 2.** Strategies for developing professional competence of teachers in era 4.0

No	Variable	Strategy
1	Development of teachers' professional competence at MAN in Aceh Province	<ol style="list-style-type: none"> <li>1. Education to Master and Doctoral Degree</li> <li>2. Training on the use of technology media</li> <li>3. Internet usage training</li> <li>4. Online teaching training; Zoom, Google Classroom, and WhatsApp</li> <li>5. Classroom management training</li> <li>6. Training on the preparation of Lesson Plan</li> <li>7. Optimizing the Teacher Working Group (KKG).</li> <li>8. Optimization of Subject Teacher Consultations (MGMP).</li> <li>9. Research Leading MAN Curriculum Development Training</li> </ol>

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<sup>32</sup>Warni Tune Sumar, Nina Lamatenggo, "The Strategy of Teachers in Developing Curriculum for Learning Process in Facing Challenges in Era of Industrial Revolution 4.0," In *5th International Conference on Education and Technology (ICET 2019)*, 382 (2019): 183-186; Zulmuqim et al., "The Characteristics of Pesantren in the Development of Islamic Education in West Sumatra," *Ulumuna* 24, no. 1 (June 18, 2020): 132–54, <https://doi.org/10.20414/UJIS.V24I1.382>; Ade Alimah, "Contemplative and Transformative Learning for Character Development in Islamic Higher Education," *Ulumuna* 24, no. 1 (June 9, 2020): 1–23, <https://doi.org/10.20414/UJIS.V24I1.384>.

Professional competence development is carried out on an ongoing basis at the MA level in Aceh province, the Ministry of Religion district/city, and the Ministry of Religion Regional Office in Aceh province. Furthermore, the competency development activity program aims to improve the quality of learning and teachers' competence at MAN in Aceh, welcoming the era of industrial revolution 4.0.

### **C. Conclusion**

MAN Teachers in Aceh are seen professional, as indicated by some indicators. Teachers are highly competence in planning the learning and using web-based learning technology, such as google classroom, zoom, google meet, and WhatsApp. Teacher professionalism is also indicated by their skills in applying various teaching methods, student-centred approach, cooperative learning models, and developing learning interaction skills. The school principal conducts supervision continuously to develop teacher professionalism and improve the quality of learning in welcoming the era of the industrial revolution 4.0.

The professionalism of MAN teachers in Aceh has implications for improving the quality of learning, marked by an increase in learning motivation and student participation in learning. The strategy for developing teacher professionalism in the industrial 4.0 era at the Public Islamic Senior High School in Aceh is carried out by granting permission for teachers to continue their education to a master's level, web-based learning technology training, online teaching training, training in the preparation of learning implementation planning, optimizing Teacher Working Groups (KKG) and Subject Teacher Consultations (MGMP), also training in developing Leading Research of Islamic School Curriculum.

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