

Madrasah Education Quality Reform: Improving Teacher Quality post Pandemic in Indonesia

Arif Rahman¹, Mohd Izzuddin Mohd Pisol², Maya Novita Sari³, Zalik Nuryana⁴

¹ Universitas Ahmad Dahlan, Yogyakarta, Indonesia; arif.rahman@pai.uad.ac.id

² Universitas Islam Selangor, Malaysia; mohdizzuddin@kuis.edu.my

³ Universitas Negeri Yogyakarta, Indonesia; mayanovitasari.2017@student.uny.ac.id

⁴ Nanjing Normal University, China; zalik.nuryana@pai.uad.ac.id

ARTICLE INFO

Keywords:

madrasah reform;
teacher quality;
competence

Article history:

Received 2023-05-07

Revised 2024-01-18

Accepted 2024-03-13

ABSTRACT

Indonesia has launched a reform agenda for the quality of madrasah education through the Ministry of Religious Affairs of the Republic of Indonesia, especially in terms of improving the quality of madrasah teachers as part of the sustainable development carried out by the government in the field of education. Therefore, this research aims to highlight the factors underlying the reform agenda on teacher quality. In addition, how madrasahs take the momentum of the end of the pandemic as a turning point to make comprehensive improvements. This research uses a qualitative research paradigm with a literature approach, where data is collected from the study of various literature related to the topic of discussion. The data is then verified and analyzed systematically to be presented in a structured manner. The results show that there are at least three main factors that encourage madrasahs to reform the quality of teachers related to aspects of digitalization, adaptation, and creativity. These three aspects are the core competencies that are relevant for madrasah teachers to face various situations today. The digitalization aspect departs from teachers' low teaching technology skills when implementing online classes and using various alternative learning technologies. The adaptive aspect is how the teacher's ability to respond to uncertain changes, where the rapid transition of situations requires teachers' attitude and ability to adapt to various situations. The creativity aspect for teachers is the ability of teaching art that is needed for teachers to create a pleasant learning atmosphere for students both during online and offline learning.

This is an open access article under the [CC BY-NC-SA](https://creativecommons.org/licenses/by-nc-sa/4.0/) license.



Corresponding Author:

Arif Rahman

Universitas Ahmad Dahlan, Yogyakarta, Indonesia; arif.rahman@pai.uad.ac.id

1. INTRODUCTION

Reflecting on the Covid-19 crisis in Indonesia, particularly in the realm of education, provides significant insights. For the last couple of years, there has been a growing need for reform in education (Hubaishi, 2022). In particular, the quality of teachers has been highlighted since problems arose during school closures and online learning was introduced (Michael et al., 2020). Teachers in schools and

madrasahs face the same difficulties in most regions (Aytaç & Ahi, 2021), with school lockdown regulations and a massive shift in learning methods resulting in not only students changing the way they learn, but also teachers changing their teaching techniques (Dolighan & Owen, 2021; Saha et al., 2022; Yao et al., 2020). Initially, learning was done face-to-face and physical interaction became easier, but the pandemic since 2020 has disrupted the delivery of education around the world (Zancajo et al., 2022).

After the pandemic period that has changed the educational landscape (Singh et al., 2021), there is a need to reconsider education by looking at all the opportunities and challenges that will arise (Cahapay, 2020). In Indonesia, madrasah education, which is part of the national education system, needs to rethink the madrasah reform agenda. One of the serious concerns is the improvement of teacher quality after the pandemic (Campbell, 2020; Rapanta et al., 2021). In line with the education recovery agenda, since April 2022, the Ministry of Religious Affairs launched the "Madrasah Education Quality Reform 2022" program. The program has four reform components relating to: 1) performance and budget system; 2) learning outcomes assessment; 3) professionalization of teachers and education personnel; 4) education data collection system. Regarding the quality of madrasah teachers, the reform agenda launched by the government gives the impression of great attention to the quality of teachers and the role of madrasah principals. There are at least four points that are of concern to the government, namely: a) strengthening and expanding access to working group activities for teachers, madrasah heads, and madrasah supervisors; b) strengthening and preparation programs for madrasah heads and madrasah supervisor candidates; c) developing learning resources and assessing teacher competencies; d) strengthening the capacity of teachers and education personnel through training (kemenag.go.id).

Some research related to madrasa reforms, for example, Tan (2015) explains that madrasa education has experienced significant developments in the past decade, especially about the innovative steps taken in a religion-based education system that focuses on Islamic teachings. Furthermore, Sa'idu (2021) in his research, assessed that the competence of 21st century madrasah teachers must have technology-based competencies through the support of digital application utilization. Meanwhile, Nurdiansyah & Hudriyah (2021) both highlighted that madrasah reform must also touch on the extent of madrasah management governance capabilities. This is realized from the decentralization factor of the education system that has been going on for a long time and has affected madrasahs in encouraging changes in many aspects, including reforming learning creatively and dynamically. The condition of madrasahs is such that Azyumardi Azra (2015), predicts that madrasahs in Indonesia have a more optimistic future than other countries. In addition to the fact that Indonesia's rich Islamic heritage is a factor, madrasah reform has received direct support from the government and society in its implementation. Thus, in this case, he assesses that the madrasa reform agenda in Indonesia is running very dynamically and optimistically and is experiencing a positive trend in the development of Islamic education.

In terms of the post-Covid-19 transition period, the challenges of madrasahs are increasingly being tested in terms of their resilience and ability to carry out madrasah reforms to enter new challenges. Some of the research above shows that the previous madrasah reform agenda has been quite dynamic. However, as in the current period, the post-COVID-19 madrasah recovery has become more serious in designing its reform agenda, including the main attention to the quality of madrasah teachers.

The main contribution of this research is to uncover the fundamental factors in the reform agenda of madrasah teacher quality in post-pandemic Indonesia. The substantial reason for this research is that the momentum of the passing of the pandemic has made more than 800,000 madrasah teachers in Indonesia have to realize the extent of the quality of their competence. Considering the potential repercussions of nearly one million madrasah teachers with subpar quality, the implications could be profound, leading to challenges in the educational journey and exacerbating the difficulties in the learning recovery process.

2. METHODS

The paradigm of this research is qualitative by adopting a literature approach. The main reason for using this approach is that we want to explore some of the factors that drive the teacher quality

reform agenda and how madrasahs implement it through a literature review. The literature document is based on a collection of written studies from books, journal articles, mass media, and other research results. In addition, the reason for this approach is to map the study of madrasah reform in a broader and more meaningful social context (Sugiyono, 2015).

Data collection itself was carried out based on literature data, with two stages, namely: 1) examining and classifying data sources that are relevant to the topic of this research. The data sources were prioritized for the needs of this research, which highlighted reform from the point of view of teacher quality. 2) retrieving library/literature data sources after categorizing the data sources that have been mapped. This data collection can be done as many times as needed.

Furthermore, the data that has been taken from literature sources is then displayed as findings for further processing and analysis. We carried out a systematic three-step process of analysis, namely data presentation, data reduction, and meaning formulation. To obtain objectification and validity of the data, the triangulation process is also carried out so that the analyzed data can be verified. In this study, we strongly signal the literature data that highlights the important factors associated with reforming the quality of madrasah teachers. This becomes important in formulating madrasah policies that put teachers at the center of the reform agenda.

3. FINDINGS AND DISCUSSION

3.1. *During and post-Covid 19: the Dilemma and Agenda for Teacher Reform*

During the pandemic period, all madrasahs experienced severe shocks, these conditions were inevitable and the impact was felt directly by all educational institutions around the world (Reimers, 2022), including madrasahs. Among them are the emergence of various educational problems, such as online learning problems, learning loss, and the quality of graduates (Sihombing & Fatra, 2021). Rahman (2023) highlighted that education policies during and after COVID-19 were directed towards the process of restoring education. Discussions related to this have shown the emergence of an education reform agenda, especially in Indonesia, to respond to these emergency conditions (Benyamin et al., 2021).

The recovery strategy is no exception for madrasah teachers by improvising teaching in emergency conditions through various efforts, especially optimizing the use of online learning media (Ahmadi & Romadlon, 2020; Rizaldi et al., 2021). Although not easy, significant changes in learning models during the pandemic have even changed the face of madrasah education in Indonesia. It is interesting to pay attention to the distribution of madrasah data in Indonesia. As a Muslim-majority country, madrasah as one of the symbols of Islamic education in Indonesia has existed for a long time.

So far, based on the latest data related to madrasahs in Indonesia both in terms of the number of institutions, teachers and students, there are approximately 54,330 institutions, 868,213 teachers and 9,191,784 students spread throughout Indonesia (<http://infopublik-emis.kemendiknas.go.id/>). The management of madrasahs under the responsibility of the Ministry of Religious Affairs of the Republic of Indonesia is divided into three levels, namely Madrasah Ibtidaiyah (Primary School), Madrasah Tsanawiyah (Junior High School), and Madrasah Aliyah (Senior High School) levels.

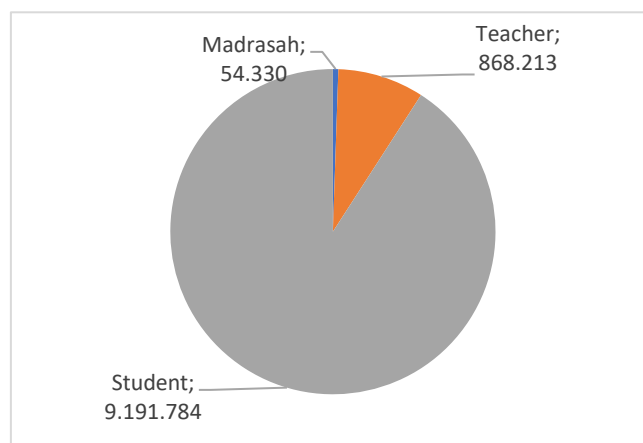


Figure 1. Data on the number of teachers, students and madrasahs in the Ministry of Religious Affairs (<http://infopublik-emis.kemenag.go.id/>)

Quantitatively, the number of madrasah institutions in Indonesia is not small for religious-based schools. This can be seen from 54,330 madrasah institutions in Indonesia, specifically divided into three levels of madrasah, namely madrasah Ibtidaiyah, madrasah Tsanawiyah and madrasah Aliyah. In percentage terms, 48.1% or 26,130 institutions are at the Ibtidaiyah madrasah level. This is followed by the Tsanawiyah madrasah with 34.5% (18,755), and finally, the Aliyah madrasah with 17.3% (9,445).

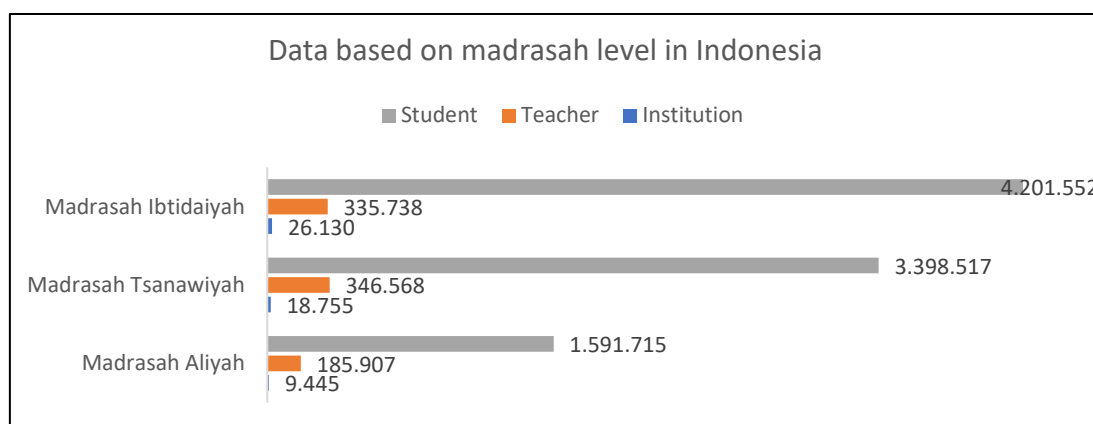


Figure 2. Tiga Level Madrasah di Indonesia ([Workbook: Dashboard EMIS Public \(kemenag.go.id\)](http://kemenag.go.id/Workbook: Dashboard EMIS Public))

While more specific data related to madrasah teachers, if you pay attention to the visual data in Figure 2 above, it shows that at least the ratio of teachers and students is 1:10 overall. The percentage of teachers is 21% (185,907) at the Aliyah madrasah level, 39% (335,738) at the Ibtidaiyah madrasah level and 40% (346,568) at the Tsanawiyah madrasah level. This indicates that 868,213 madrasah teachers are a large number to be included in the teacher quality reform. The biggest focus for teacher quality improvement is at the madrasah Tsanawiyah level (40%), which accounts for almost half of all madrasah teachers at all levels.

The problem of madrasah teachers' teaching during the pandemic, which has not been supported by teaching technology skills, has had a serious impact on the learning process for 9,191,784 madrasah students throughout Indonesia. In percentage terms, the biggest impact on students is 46% (4,201,552) at the madrasah Ibtidaiyah level, followed by madrasah Tsanawiyah students at 37% (3,398,517), and madrasah Aliyah students at 17% (1,591,715). Given this composition, primary education (Ibtidaiyah) is certainly receiving the most attention in terms of the impact of the quality of teacher instruction.

Regulations that have recently emerged during the pandemic actually allow madrasah heads to implement emergency and recovery policies (Rahman, 2023). During the pandemic, every teacher and student always ensures their safety and health is maintained, at the same time, teachers also wonder whether the methods used in learning during the pandemic are appropriate or meet student expectations? (Hughes et al., 2020).

Such questions have actually been felt by each teacher, it's just that sometimes teachers don't want the performance evaluation results to look bad by ignoring these feelings of expectation, so that not a few learning processes look unqualified (Fatani, 2020; Frolova et al., 2021; Lizana et al., 2021). During the pandemic, such conditions are indeed drastic because of the simultaneous change from conventional classroom teaching to virtual (Lemay et al., 2021; McQuirter, 2020; Tkachuk et al., 2021; Yates et al., 2021).

Table 1. Comparison of Madrasah Data at Every Level (<http://infopublik-emis.kemenag.go.id/>)

Data of Madrasah	Ibtidaiyah		Tsanawiyah		Aliyah	
	Quantity	%	Quantity	%	Quantity	%
Institution	26.130	48.1%	18.755	34.5%	9.445	17.3%
Teacher	335.738	39%	346.568	40%	185.907	21%
Student	4.201.552	46%	3.398.517	37%	1.591.715	17%

So far, the Ministry of Religious Affairs in Indonesia has launched three programs in an effort to improve the quality of madrasah teachers, namely: a) strengthening and expanding access to teachers' working group activities; b) developing learning resources and assessing teacher competencies; c) strengthening the capacity of teachers and education personnel through training (kemenag.go.id). These three programs are designed by the Ministry of Religious Affairs to improve the performance of madrasah teachers through various trainings. The aim is for teachers to have increased expertise in strengthening and developing teaching techniques, including the ability to use learning technology in various situations.

In addition, madrasah teachers need to adapt to various changes in the situation. Although the learning situation in Indonesia has been normalized (Hidayat, 2022), madrasahs need to learn from the experiences of the past while adjusting the rhythm of the challenges ahead, especially conducting structured reforms in the quality of madrasah teachers. Among the many factors and reasons for teacher reform, we highlight at least three dominant aspects that need to be strengthened in improving the quality of madrasah teachers, namely aspects of digitalization (Amhag et al., 2019; Eraku et al., 2021), adaptive ability (König et al., 2020; Schipper et al., 2017; Vogt & Rogalla, 2009), and creative reasoning of teachers (Amirova et al., 2020; Esquivel, 1995; Sarybayeva et al., 2018). When discussing the calibre of madrasah instructors in modern Indonesia, these three factors remain the most problematic.

3.2. Reinforcing Teachers' Digitization Skills

Findings about the low ability of digital-based teachers in learning in Indonesia (Atmojo et al., 2022), due to several factors such as teacher competency problems, unfavorable school climate, and lack of facilities (Purnasari & Sadewo, 2021). Teacher competencies such as digital literacy have undeniably become the biggest problem when the transition to learning requires using digital technology. Sánchez et al. (2021) said that the low self-perception of teachers toward digital competence is in line with the lack of training programs that are needed to improve optimal digital skills. This includes teachers facing difficulties in technical matters for the operation of learning technology (Sparrow et al., 2020). These obstacles are also supported by the fact that many madrasah teachers are no longer young. Although this is not an obstacle, it is just that most madrasahs are still dominated by senior teachers who do not master digital technology-based learning tools. This demand is even stronger when teachers cannot

have other alternatives in learning except to start using technology in their teaching (Churchill et al., 2014; Crittenden et al., 2019).

Increased utilization of applications such as e-learning and technology-based education modalities (Pham & Ho, 2020), will always be around madrasa teachers, even if the situation changes back to normal. This does not mean that learning returns to the conventional system. Instead, madrasah teachers see opportunities from previous experiences to improve teacher competence in learning technology. Although, the conventional learning that is still often found in the madrasah system is not all that has really happened so far. If traced, this applies to certain madrasahs that do experience difficulties in facilities and opportunities to improve teacher competence. While other madrasahs have also done a lot to optimize the operation of learning technology and coaching for madrasah teachers.

The challenge of digitalization has actually occurred on all fronts (Agostino et al., 2022; Busch et al., 2018), (Agostino et al., 2022; Busch et al., 2018), however, if other sectors have accelerated their needs by using digital power, then madrasahs need to equip teachers with technology-based learning skills. When schools and madrasahs are back to normal, madrasahs must immediately design training for teachers to look back at appropriate technology-based learning techniques. Because during the pandemic, most teachers around the world experience barriers to digital learning (Aditya, 2021; Nikolopoulou et al., 2023; Winter et al., 2021). Massive reforms to the utilization of technology-based learning technologies do not mean completely replacing conventional techniques, but rather strengthening madrasah education through technological tools.

In this regard, in the concept of the 21st-century Islamic education model in Indonesia formulated by Rahman (2017), there are at least three main clusters that need to be considered, namely; *First*, "Islamic Source" is used as a fundamental basis for Islamic teachings in the form of the text of the Qur'an and Sunnah; *Second*, "Human Needs" is an aspect of the needs of mankind, and; *Third*, "Technology" is used as a product of the creation of knowledge in facilitating human life (Rahman, 2017).

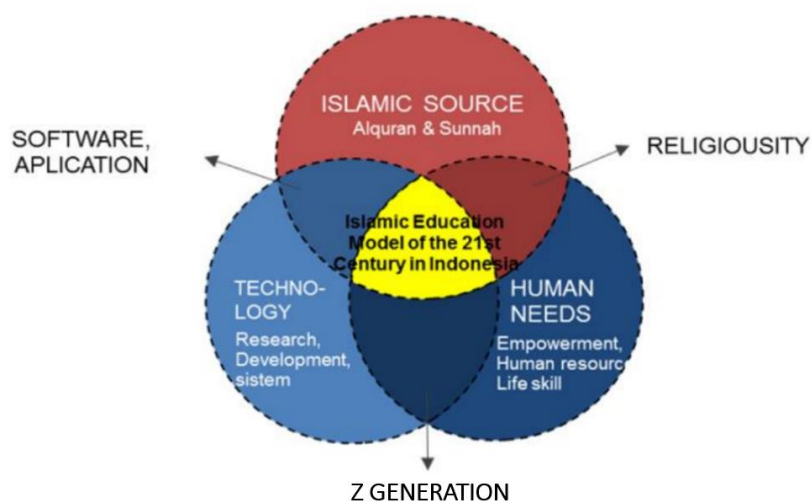


Figure 3. 21st Century Islamic Education Model

The intersection of technology with the other two clusters (Qur'an & Human needs) finds common ground and momentum in improving and strengthening Islamic education. Although Islamic teachings are sourced from the texts of the Koran and Hadith, it does not mean that there is absolutely no novelty and innovation that can be developed. In fact, the spirit of Islamic teachings strongly promotes progress and renewal in the process of dynamizing science. In fact, today's digitalization technology is the result of the hard work of science that prioritizes empirical, rational, and systematic approaches, so this is where the offer as a "new way" that cannot be ignored at all in the current madrasah reform project. Rahman's conception above, again emphasizes that madrasah teachers must be familiar with

technology as a powerful new medium in learning today. In short, the ability to digitize teachers is very much needed to encourage realizing the vision of madrasa reform in Indonesia.

3.3. An era of uncertainty: The complexity and power of madrasah teachers' adaptation

The process of adapting to various conditions also applies in education, including the global experience of school closures, and the implementation of online learning at all levels of education. These demands really force change, so madrasah education reform must really happen, especially how schools together with teachers and staff can adapt to all conditions. Let's say that teachers as the spearhead of classroom learning, it is necessary for teachers to consider how learning becomes relevant in different settings. The classroom atmosphere that switches from face-to-face to virtual should not eliminate the essence of learning itself. However, changes in situations and adaptation processes are not easy to happen in a short time. However, the character of this adaptability becomes so important for teachers and madrasah in general as a challenge for the sustainability of learning in madrasah.

This condition can be read through the concept of VUCA (Volatile, Uncertain, Complex, Ambiguous), which actually, the learning process will cause situations of stress, anxiety and vulnerability if it does not instill anticipation of VUCA itself (Keinänen & Havia, 2022). The conception of VUCA for education is not merely an antithetical view of education. Instead, the transformation of education really needs to put VUCA as the most important effort in the continuity of education. Especially in preparing future madrasah teachers with their adaptive abilities. Adaptive ability for educational institutions is the ability of resilience and sustainability in the face of world changes that are so fast and sometimes difficult to predict (Manca & Delfino, 2021). The past two years have been a valuable moment as well as a turning point for all madrasahs to reform the extent of the strength of adaptation and sustainability of the institution in all conditions. Unfortunately, most madrasahs have not been accustomed to the demands of adapting quickly (Supriatna & Ratnaningsih, 2017). In fact, the cycle of the pandemic that has ended in the past year actually does not guarantee that Covid-19 or other pandemic outbreaks will completely disappear, or even appear suddenly with other forms of pandemic variants.

The current uncertainty has provided a new perspective on anticipatory attitudes that need to be considered. Flexible policies and adaptive efforts from madrasah leaders in response to these conditions are responsive to problems that have not been resolved or are just being faced. Because rigid policies will end in complexity and it will appear that institutional leaders are not ready to respond to change (Allen & van der Velden, 2011; Nicoll, 2006). The ability to be flexible in responding to the challenges of change is the first step of adaptive competence, especially in enabling madrasahs to develop in every era (Sari et al., 2022). In this way, the interest in reforming madrasahs can also be in line with improving the quality of teachers and staff which has been demanded from the start. Unrest about life in a VUCA world ultimately also encourages educational leadership efforts to place the philosophical values of faith traditions (Jamil & Humphries-Kil, 2017). The concept of faith is one of the strong principles for coexistence in the VUCA era, and it is in line with the madrasah religious education model. Faith values emphasize peace, harmony, justice and sustainability. Armed with the principles of faith, madrasah teachers are basically encouraged to have adaptive abilities at all times.

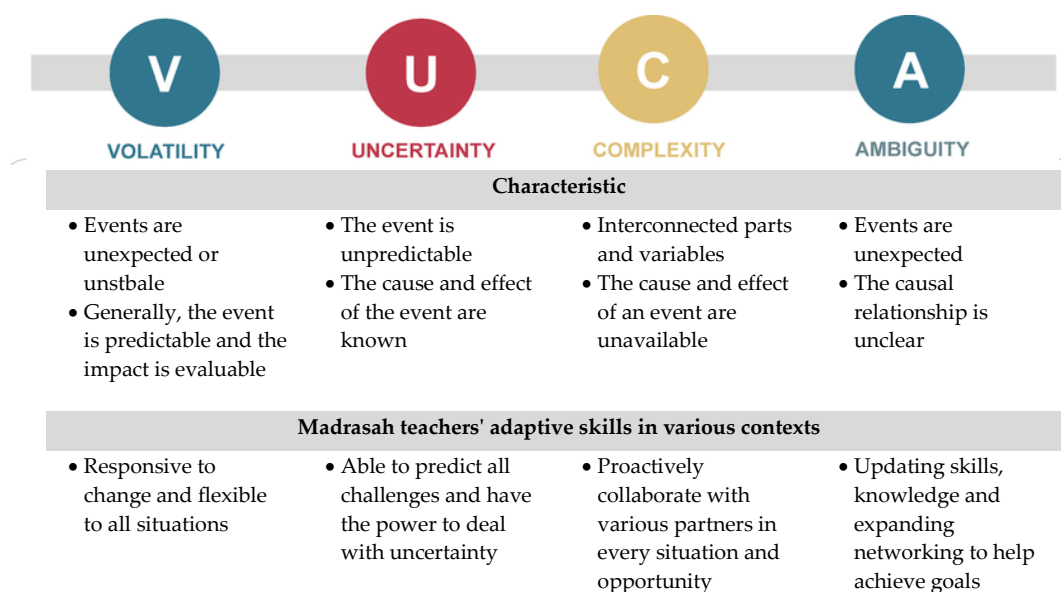


Figure 4. VUCA characteristics are related to madrasa teacher competencyStrengthening the creative reasoning of madrasah teachers

In learning, one thing that madrasa teachers must master is creative abilities in education. With all the limitations of a teacher, the teacher's creativity is actually tested. How teachers control the class and present interesting lessons. The subject matter is quite heavy and the students' diverse characters are a challenge for teachers to be able to convey the message of what they want to teach as interestingly as possible.

Through a creative mentality, teachers will always be ready to face any conditions and situations. Teacher creativity is not born by itself; it must be prepared through various activities and training that stimulate teacher creativity. Creative madrasa teachers can always adapt to whatever they encounter. Especially in normal post-pandemic times, teachers can actually think again about whether their learning can attract students' attention? Most teachers actually realize that the learning model they use has not changed much, both during and after Covid-19. Likewise, in various madrasas it is generally common to find that learning is still dominated by lecture techniques. In particular, religious material makes it difficult for teachers to find the best techniques for teaching students other than returning to conventional techniques (Ithnin et al., 2018).

The creative competence of madrasa teachers needs to be given a serious touch so that the learning atmosphere becomes more enlightening (Mirzagitova & Akhmetov, 2015). Isn't the essence of learning actually exciting and always gives rise to students' curiosity and questions (Camp, 1992; Eren & Coskun, 2016; Zeitler-Feicht, 2020). This indicator, if it is not stimulated and stimulated through the teacher's creative ability to teach, of course the learning process will be very tedious, boring and not exciting for students. To foster teacher creativity, several steps can be taken such as developing critical thinking skills (Grosser & Lombard, 2008; Staib, 2003; Wallace & Jefferson, 2013), thinking out of the box, opening space for discussion (Beghetto, 2007; Cowan et al., 2016; Parker & Hess, 2001), increasing collaboration skills (Berry, 2020), integrating technology in learning (Rahman, 2017).

Table 3. Three Domains of Reform and Competency Improvement of Madrasah Teachers

Teacher Competency	Current Weakness	Reform Agenda
Digitalization	The minimal use of learning technology in madrasahs is due to the low ability of teachers in the field of learning technology	Integration of technology in learning through various training and workshops. To equip madrasah teachers with the ability to use various digital-based learning media tools
Adaptive	Madrasahs have not paid much attention to increasing teachers' adaptive competence. Including adaptive institutions and institutions in responding to changes and challenges of the times. As a result, competitiveness is low and it is difficult to keep up with changing situations	Providing experience and involving teachers in various activities outside of school, raising awareness about the challenges of changing times so that they are better prepared to adapt to various conditions and situations
Creativity	Madrasah teachers' lack of creativity can be based on a lack of understanding of learning goals and objectives. Several other factors that influence low creativity are caused by the literacy level of teachers and leaders in developing teachers' learning abilities	Strengthening the mindset of the essence and goals of learning, training on the use of contemporary learning strategies and methods, and collaborating teachers with various partners in the learning process

The three domains that are highlighted in the madrasah teacher reform above are not just how teachers have to deal with students, but also the bargaining power of teachers to compete in a wider domain. Teachers can take opportunities to share and collaborate with various partners outside the school, as a form of awareness to increase their capacity as teachers. On the one hand, the teaching profession must be a facilitator to help students develop, but on the other hand, teachers also continue to learn to update their knowledge and skills. So, there is no such thing as saying that being a teacher means you have finished and stopped learning. On the contrary, teachers are true learners who are ready to learn new things, especially those related to their profession.

4. CONCLUSION

In this research, it was found that there were three main factors that were highlighted in the madrasah agenda for reforming teacher quality, namely those related to aspects of digitalization, adaptive abilities, and teachers' creative reasoning. The experience of the previous pandemic has given a deep impression that the madrasah reform agenda is inevitable. In fact, there are still many defects that need to be corrected in the madrasah reform agenda, but attention to teachers is something that is quite valuable. This is based on the teacher being the spearhead in learning and dealing directly with students. So, it is important to carry out systematic reforms with agendas that support the quality of madrasah teachers, especially after Covid-19. The limitations of this research are in terms of using a qualitative research approach, which actually needs to be supported by quantitative techniques to specifically measure the level of teacher quality in post-pandemic Indonesia. So, suggestions for further research can use a combination of research methods to make it more measurable.

Acknowledgments: Special thanks to Universitas Ahmad Dahlan for facilitating the data search during this research, including thanks to Maya Novita Sari and Destri Fitriana for helping the data codification process for this manuscript.

Conflicts of Interest: “The authors declare no conflict of interest.”

REFERENCES

- Aditya, D. S. (2021). Embarking Digital Learning Due to COVID-19: are Teachers Ready? *Journal of Technology and Science Education*, 11(1). <https://doi.org/10.3926/jotse.1109>
- Agostino, D., Saliterer, I., & Steccolini, I. (2022). Digitalization, accounting and accountability: A literature review and reflections on future research in public services. In *Financial Accountability and Management* (Vol. 38, Issue 2). <https://doi.org/10.1111/faam.12301>
- Ahmadi, A., & Romadlon, A. (2020). The Effect of Communication and Policy-Making to Teacher's Performance on Strategic Madrasah Leadership during Pandemic Covid-19. *Al Ibtida: Jurnal Pendidikan Guru MI*, 7(2), 250–263.
- Al Hubaishi, H. S. (2022). Global Education Styles Post-COVID-19 Pandemic. *International Research in Higher Education*, 7(1). <https://doi.org/10.5430/irhe.v7n1p33>
- Allen, J., & van der Velden, R. (2011). The Flexible Professional in the Knowledge Society: New Challenges for Higher Education. *Higher Education Dynamics*, 35.
- Amhag, L., Hellström, L., & Stigmar, M. (2019). Teacher Educators' Use of Digital Tools and Needs for Digital Competence in Higher Education. *Journal of Digital Learning in Teacher Education*, 35(4). <https://doi.org/10.1080/21532974.2019.1646169>
- Amirova, A., Iskakovna, J. M., Zakaryanovna, T. G., Nurmakhanovna, Z. T., & Elmira, U. (2020). Creative and research competence as a factor of professional training of future teachers: Perspective of learning technology. *World Journal on Educational Technology: Current Issues*, 12(4). <https://doi.org/10.18844/wjet.v12i4.5181>
- Atmojo, I. R. W., Ardiansyah, R., & Wulandari, W. (2022). Classroom Teacher's Digital Literacy Level Based on Instant Digital Competence Assessment (IDCA) Perspective. *Elementary School Forum (Mimbar Sekolah Dasar)*, 9(3), 431–445.
- Aytaç, T., & Ahi, K. (2021). The Problems Faced by Teachers in Turkey During the COVID-19 Pandemic and Their Opinions. *International Journal of Progressive Education*, 17.
- Azra, A. (2015). Genealogy of Indonesian islamic education: Roles in the modernization of muslim society. *Heritage of Nusantara: International Journal of Religious Literature and Heritage*, 4(1), 85–114.
- Beghetto, R. A. (2007). Does creativity have a place in classroom discussions? Prospective teachers' response preferences. *Thinking Skills and Creativity*, 2(1). <https://doi.org/10.1016/j.tsc.2006.09.002>
- Benyamin, P., Salman, I., Sumarno, Y., Christi, A., & Hardori, J. (2021, November 17). Strategic Issues of National Education Post Covid-19. *Proceedings of the 3rd International Conference of Education and Science, ICES 2021*.
- Berry, B. (2020). Teaching, learning, and caring in the post-COVID era. *Phi Delta Kappan*, 102(1). <https://doi.org/10.1177/0031721720956840>
- Busch, P. A., Henriksen, H. Z., & Sæbø, Ø. (2018). Opportunities and challenges of digitized discretionary practices: a public service worker perspective. *Government Information Quarterly*, 35(4). <https://doi.org/10.1016/j.giq.2018.09.003>
- Cahapay, M. B. (2020). Rethinking Education in the New Normal Post-COVID-19 Era: A Curriculum Studies Perspective. *Aquademia*, 4(2). <https://doi.org/10.29333/aquademia/8315>
- Camp, R. C. (1992). Learning from the Best Leads to Superior Performance. In *Journal of Business Strategy* (Vol. 13, Issue 3). <https://doi.org/10.1108/eb039486>
- Campbell, P. (2020). Rethinking professional collaboration and agency in a post-pandemic era. *Journal of Professional Capital and Community*, 5(3–4). <https://doi.org/10.1108/JPC-06-2020-0033>
- Churchill, D., Lu, J., & Chiu, T. K. F. (2014). Integrating mobile technologies, social media and learning design. In *Educational Media International* (Vol. 51, Issue 3). <https://doi.org/10.1080/09523987.2014.969895>
- Cowan, J., Goldhaber, D., Hayes, K., & Theobald, R. (2016). Missing Elements in the Discussion of Teacher Shortages. *Educational Researcher*, 45(8). <https://doi.org/10.3102/0013189X16679145>

- Crittenden, W. F., Biel, I. K., & Lovely, W. A. (2019). Embracing Digitalization: Student Learning and New Technologies. *Journal of Marketing Education*, 41(1). <https://doi.org/10.1177/0273475318820895>
- Dolighan, T., & Owen, M. (2021). Teacher efficacy for online teaching during the COVID-19 pandemic. *Brock Education Journal*, 30(1). <https://doi.org/10.26522/brocked.v30i1.851>
- Edeh Michael, O., Chika Eucheria, N., Ayobamidele Obafemi, F., Sen, S., Grace Atonye, F., Sharma, A., & Omar Alsayed, A. (2020). Impact of Coronavirus pandemic on education. *Journal of Education and Practice*, 11(13), 108–121.
- Eraku, S. S., Baruadi, M. K., Anantadjaya, S. P., Fadjarajani, S., Supriatna, U., & Arifin, A. (2021). DIGITAL LITERACY AND EDUCATORS OF ISLAMIC EDUCATION. *Edukasi Islami: Jurnal Pendidikan Islam*, 10(01). <https://doi.org/10.30868/ei.v10i01.1533>
- Eren, A., & Coskun, H. (2016). Students' level of boredom, boredom coping strategies, epistemic curiosity, and graded performance. *Journal of Educational Research*, 109(6). <https://doi.org/10.1080/00220671.2014.999364>
- Esquivel, G. B. (1995). Teacher behaviors that foster creativity. *Educational Psychology Review*, 7(2). <https://doi.org/10.1007/BF02212493>
- Fatani, T. H. (2020). Student satisfaction with videoconferencing teaching quality during the COVID-19 pandemic. *BMC Medical Education*, 20(1). <https://doi.org/10.1186/s12909-020-02310-2>
- Frolova, E. V., Rogach, O. V., Tyurikov, A. G., & Razov, P. V. (2021). Online Student Education in a Pandemic: New Challenges and Risks. *European Journal of Contemporary Education*, 10(1). <https://doi.org/10.13187/ejced.2021.1.43>
- Grosser, M. M., & Lombard, B. J. J. (2008). The relationship between culture and the development of critical thinking abilities of prospective teachers. *Teaching and Teacher Education*, 24(5). <https://doi.org/10.1016/j.tate.2007.10.001>
- Hidayat, A. (2022). Post-Pandemic Education Study: Analysis of Resources, Opportunities, and Challenges of Madrasah Education in Indonesia. *Journal of Positive School Psychology*, 6(5).
- Hughes, M. C., Henry, B. W., & Kushnick, M. R. (2020). Teaching During the Pandemic? An Opportunity to Enhance Curriculum. *Pedagogy in Health Promotion*, 6(4). <https://doi.org/10.1177/2373379920950179>
- Ithnin, R. B., Syafri, U. A., & Beik, I. S. (2018). *The Development of Teaching and Learning Methods in Hadits in the Islamic Education Program at Madrasah Irsyad Zuhri Al-Islamiah Singapore*. <https://doi.org/10.2991/amca-18.2018.16>
- Jamil, N., & Humphries-Kil, M. (2017). Living and leading in a VUCA world: Response-Ability and people of faith. In *Managing VUCA Through Integrative Self-Management: How to Cope with Volatility, Uncertainty, Complexity and Ambiguity in Organizational Behavior* (pp. 65–79). Springer.
- Keinänen, M., & Havia, M. V. (2022). Embedding Uncertainty in the Learning Process – An Evaluation Case-Study of VUCA Model in Education. *Applied Degree Education and the Future of Learning*, 151–164.
- König, J., Jäger-Biela, D. J., & Glutsch, N. (2020). Adapting to online teaching during COVID-19 school closure: teacher education and teacher competence effects among early career teachers in Germany. *European Journal of Teacher Education*, 43(4). <https://doi.org/10.1080/02619768.2020.1809650>
- Lemay, D. J., Bazalais, P., & Doleck, T. (2021). Transition to online learning during the COVID-19 pandemic. *Computers in Human Behavior Reports*, 4. <https://doi.org/10.1016/j.chbr.2021.100130>
- Lizana, P. A., Vega-Fernandez, G., Gomez-Bruton, A., Leyton, B., & Lera, L. (2021). Impact of the covid-19 pandemic on teacher quality of life: A longitudinal study from before and during the health crisis. *International Journal of Environmental Research and Public Health*, 18(7). <https://doi.org/10.3390/ijerph18073764>
- Manca, S., & Delfino, M. (2021). Adapting educational practices in emergency remote education: Continuity and change from a student perspective. *British Journal of Educational Technology*, 52(4). <https://doi.org/10.1111/bjet.13098>

- McQuirter, R. L. (2020). Lessons on Change: Shifting to Online Teaching during COVID-19. *Brock Education Journal*, 29(2). <https://doi.org/10.26522/brocked.v29i2.840>
- Mirzagitova, A. L., & Akhmetov, L. G. (2015). Self-development of pedagogical competence of future teacher. *International Education Studies*, 8(3). <https://doi.org/10.5539/ies.v8n3p114>
- Nicoll, K. (2006). Flexibility and lifelong learning: Policy, discourse and politics. In *Flexibility and Lifelong Learning: Policy, Discourse and Politics*. <https://doi.org/10.4324/9780203969441>
- Nikolopoulou, K., Gialamas, V., & Lavidas, K. (2023). Mobile learning-technology barriers in school education: teachers' views. *Technology, Pedagogy and Education*, 32(1). <https://doi.org/10.1080/1475939X.2022.2121314>
- NS, M., Rahman, A., & Habiburrahman, S. (2022). Madrasah Leadership in the Post COVID-19 Era: Lesson Learn From Crisis in Indonesia. *EduLine: Journal of Education and Learning Innovation*, 2(2). <https://doi.org/10.35877/454ri.eduline1037>
- Nurdiansyah, N. M., & Hudriyah, H. (2021). Policy and Implementation of Education Management Based on Madrasah. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam*, 5(1), 14–27.
- Parker, W. C., & Hess, D. (2001). Teaching with and for discussion. *Teaching and Teacher Education*, 17(3). [https://doi.org/10.1016/S0742-051X\(00\)00057-3](https://doi.org/10.1016/S0742-051X(00)00057-3)
- Pham, H. H., & Ho, T. T. H. (2020). Toward a 'new normal' with e-learning in Vietnamese higher education during the post COVID-19 pandemic. *Higher Education Research and Development*, 39(7). <https://doi.org/10.1080/07294360.2020.1823945>
- Purnasari, P. D., & Sadewo, Y. D. (2021). Strategi Pembelajaran Pendidikan Dasar di Perbatasan Pada Era Digital. *Jurnal Basicedu*, 5(5), 3089–3100.
- Rahman, A. (2017). Islamic Education in the Era of Technological Wave; A case in Indonesia Today. *International Journal of Ittishal*. <https://doi.org/10.31002/jpalg.v7i1.7436>
- Rahman, A. (2023). Education Policy in a Post-Pandemic: Recovery and Strengthening of Learning in Indonesia. *Journal of Public Administration and Local Governance*, 7(1), 43–49. <https://doi.org/10.31002/jpalg.v7i1.7436>
- Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2021). Balancing Technology, Pedagogy and the New Normal: Post-pandemic Challenges for Higher Education. *Postdigital Science and Education*, 3(3). <https://doi.org/10.1007/s42438-021-00249-1>
- Reimers, F. M. (2022). Learning from a Pandemic. The Impact of COVID-19 on Education Around the World. In *Primary and Secondary Education During Covid-19*. https://doi.org/10.1007/978-3-030-81500-4_1
- Rizaldi, D. R., Doyan, A., Fatimah, Z., Zaenudin, M., & Zaini, M. (2021). Strategies to Improve Teacher Ability in Using The Madrasah E-Learning Application During the COVID-19 Pandemic. *International Journal of Engineering, Science and Information Technology*, 1(2), 1–6.
- Saha, S. M., Pranty, S. A., Rana, M. J., Islam, M. J., & Hossain, M. E. (2022). Teaching during a pandemic: do university teachers prefer online teaching? *Heliyon*, 8(1). <https://doi.org/10.1016/j.heliyon.2021.e08663>
- Sa'idu, N. U. R. (2021). Implementasi Aplikasi EDM dan E-RKAM dengan Menggunakan Aplikasi G-Suite for Education pada Madrasah Sasaran Proyek Realizing Education's Promise-Madrasah education Quality Reform (Rep-Meqr) IBRD Loan Number: 8992-ID Th. 2020-2024. 1(2), 193–199.
- Sánchez-Cruzado, C., Santiago Campión, R., & Sánchez-Compañía, M. T. (2021). Teacher digital literacy: The indisputable challenge after COVID-19. *Sustainability*, 13(4), 1858.
- Sarybayeva, A. K., Berkinbayev, M. O., Kurbanbekov, B. A., & Berdi, D. K. (2018). The conceptual approach to the development of creative competencies of future teachers in the system of higher pedagogical education in Kazakhstan. *European Journal of Contemporary Education*, 7(4). <https://doi.org/10.13187/ejced.2018.4.827>
- Schipper, T., Goei, S. L., de Vries, S., & van Veen, K. (2017). Professional growth in adaptive teaching competence as a result of Lesson Study. *Teaching and Teacher Education*, 68. <https://doi.org/10.1016/j.tate.2017.09.015>

- Sihombing, A. A., & Fatra, M. (2021). Distance Learning During the Pandemic Era: Online Learning Experiences of State Madrasah Tsanawiyah Students During Covid-19 in Indonesia. *Analisa: Journal of Social Science and Religion*, 6(01), 95–112.
- Singh, J., Steele, K., & Singh, L. (2021). Combining the Best of Online and Face-to-Face Learning: Hybrid and Blended Learning Approach for COVID-19, Post Vaccine, & Post-Pandemic World. *Journal of Educational Technology Systems*, 50(2). <https://doi.org/10.1177/004723952111047865>
- Sparrow, R., Dartanto, T., & Hartwig, R. (2020). Indonesia Under the New Normal: Challenges and the Way Ahead. *Bulletin of Indonesian Economic Studies*, 56(3). <https://doi.org/10.1080/00074918.2020.1854079>
- Staib, S. (2003). Teaching and measuring critical thinking. In *Journal of Nursing Education* (Vol. 42, Issue 11). <https://doi.org/10.3928/0148-4834-20031101-08>
- Sugiyono. (2015). *Metode Penelitian Pendidikan (Pendekatan Kuantitatif, Kualitatif dan R&D)*. CV. Alfabeta.
- Supriatna, R. D., & Ratnaningsih, S. (2017). Indonesian Madrasah in the Era of Globalization. *TARBIYA: Journal of Education in Muslim Society*, 4(1). <https://doi.org/10.15408/tjems.v4i1.5908>
- Tan, C. (2015). Educative Tradition And Islamic School In Indonesia. *Jurnal Ilmiah Peuradeun*.
- Tkachuk, V., Yechkalo, Y., Semerikov, S., Kislova, M., & Hladyr, Y. (2021). Using Mobile ICT for Online Learning During COVID-19 Lockdown. *Communications in Computer and Information Science*, 1308. https://doi.org/10.1007/978-3-030-77592-6_3
- Vogt, F., & Rogalla, M. (2009). Developing Adaptive Teaching Competency through coaching. *Teaching and Teacher Education*, 25(8). <https://doi.org/10.1016/j.tate.2009.04.002>
- Wallace, E. D., & Jefferson, R. N. (2013). Developing Critical Thinking Skills For Information Seeking Success. *New Review of Academic Librarianship*, 19(3). <https://doi.org/10.1080/13614533.2013.802702>
- Winter, E., Costello, A., O'Brien, M., & Hickey, G. (2021). Teachers' use of technology and the impact of Covid-19. *Irish Educational Studies*, 40(2). <https://doi.org/10.1080/03323315.2021.1916559>
- Yao, J., Rao, J., Jiang, T., & Xiong, C. (2020). What Role Should Teachers Play in Online Teaching during the COVID-19 Pandemic? Evidence from China. *Science Insights Education Frontiers*, 5(2). <https://doi.org/10.15354/sief.20.ar035>
- Yates, A., Starkey, L., Egerton, B., & Flueggen, F. (2021). High school students' experience of online learning during Covid-19: the influence of technology and pedagogy. *Technology, Pedagogy and Education*, 30(1). <https://doi.org/10.1080/1475939X.2020.1854337>
- Zancajo, A., Verger, A., & Bolea, P. (2022). Digitalization and beyond: the effects of Covid-19 on post-pandemic educational policy and delivery in Europe. *Policy and Society*, 41(1). <https://doi.org/10.1093/polsoc/puab016>
- Zeitler-Feicht, M. (2020). Curiosity and exploratory behavior. In *Horse Behaviour Explained*. <https://doi.org/10.1201/b16494-23>