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## Research-Based Educational Innovation In The Development of Excellent Madrasah

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### **Abstract**

*This research is motivated by the existence of competition for educational institutions that are not paid attention to, which is caused by the lack of innovation by the madrasah head in determining strategies to improve the quality of education, causing the low quality and achievements obtained by the educational institution itself. Thus, a quality madrasah is certainly a madrasah that is able to produce outputs that are in accordance with market needs that can compete in various competitive eras. This study aims to describe research-based madrasah innovations carried out by madrasah stakeholders for the advancement of education. To answer this research, researchers used a phenomenological qualitative approach, with a case study research type. Data collection techniques include indepth interview, observation and documentation, besides using 3 approaches to data validity, namely extended observation, increasing persistence and data triangulation. Based on the result of study showed the conclusion that MAN 2 Kudus Central Java has a Research-Based Madrasah Program Team which is tasked with enriching creative ideas and reflecting on creative ideas about research issues by involving teachers, and researcher partnering, through madrasah forums researching innovation at the beginning of each new school year and evaluating creative ideas by its team as part of integrated success efforts, both at national and international levels. The implications of these activities are material implications, which include the realization of commercial research products such as malaria drugs that can be mass produced, while non-material implications include the interest of the community of education service users which is increasing every year.*

**Keywords:** *educational innovation, research based, excellent madrasah*

### **Abstrak**

Penelitian ini dilatarbelakangi adanya persaingan institusi pendidikan yang kurang diperhatikan, yang mana disebabkan oleh minimnya inovasi yang dilakukan kepala madrasah dalam menentukan strategi untuk meningkatkan kualitas pendidikan sehingga menyebabkan rendahnya mutu dan prestasi yang diperoleh lembaga pendidikan itu sendiri. Dengan demikian madrasah yang berkualitas tentunya adalah madrasah yang mampu menghasilkan *output* yang sesuai dengan kebutuhan pasar yang dapat bersaing di berbagai era kompetisi. Penelitian ini

bertujuan untuk mendeskripsikan inovasi madrasah berbasis riset yang dilakukan oleh stakeholder madrasah untuk kemajuan pendidikannya. Untuk menjawab penelitian ini, peneliti menggunakan pendekatan kualitatif fenomenologis, dengan jenis penelitian studi kasus. Teknik pengumpulan data meliputi *indepth interview*, observasi serta dokumentasi, selain itu menggunakan 3 pendekatan keabsahan data yaitu perpanjangan pengamatan, meningkatkan ketekunan dan triangulasi data. Berdasarkan hasil penelitian menunjukkan kesimpulan bahwa MAN 2 Kudus Jawa Tengah mempunyai Tim Program Madrasah Berbasis Riset (PMBR) yang bertugas melakukan pengayaan ide-ide kreatif dan merefleksikan ide kreatif tentang isu-isu riset dengan melibatkan guru, dan *Researcher partnering*, melalui forum madrasah meneliti berinovasi pada tiap awal tahun ajaran baru serta mengevaluasi ide kreatif oleh timnya sebagai bagian upaya kesuksesan yang terintegrasi, baik di level nasional maupun internasional. Implikasi yang diperoleh adanya kegiatan tersebut yaitu implikasi material yang mencakup terwujudnya produk-produk hasil riset komersial seperti obat malaria yang dapat diproduksi secara massal, sedangkan implikasi non material mencakup animo masyarakat pengguna jasa pendidikan yang semakin meningkat pada setiap tahunnya.

**Kata Kunci :** inovasi pendidikan, berbasis riset, madrasah unggul

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## INTRODUCTION

Appearing to be an educational institution that is able to offer prestigious qualified education is the dream of all educational institutions. With quality education, madrasahs will certainly have a high level of competitiveness. Especially in today's global era, the contestation of the world of education has become increasingly competitive, even tending to high disrupted competition. This is because in an accelerating market competition, price and technology are not enough.<sup>1</sup> Therefore, according to Philip Kotler and Kevin Lane Keller, educational design is a factor that often gives an institution for a competitive advantage. The design is the totality of features that affect the look, feel and function of a product based on customer needs.<sup>2</sup> One way that educational institutions can win the competition is by upholding the application of innovation in the educational world. This is in line with Michael E Porter's view that one of the potential strategies that can be done to win competition in the 21st century is to implement innovation.<sup>3</sup> In that context, the role of the academic community of an educational institution, especially the madrasah head, is considered very important as a locomotive for driving innovation in educational institutions.

The madrasah head is required to be able to play his leadership well, namely by implementing innovations to reform the education system which is still considered monotonous and classical system. This means that to realize the implementation of educational innovation programs in accordance with the planned educational goals, someone is needed who can influence, encourage and use the components in the institution.<sup>4</sup> This strategic step is in line with the substance of the instructions listed in Permendiknas No. 13/2007 on School/Madrasah

<sup>1</sup> Imam Gunawan et al., "School Leadership Strategy in Excellent Schools" 501, no. Icet (2020): 210–15, <https://doi.org/10.2991/assehr.k.201204.038>.

<sup>2</sup> Philip Kotler and Lane Keller Kevin, *Manajemen Pemasaran*, (Jakarta: erlangga, 2008).10.

<sup>3</sup> Danang Sunyoto, *Keunggulan Bersaing* (Yogyakarta: BukuSeru, 2015).17.

<sup>4</sup> Hajjah, "Kepemimpinan Kepala Madrasah dalam Inovasi Manajemen Pendidikan di MTsN Diwek Jombang," *Al-Idaroh: Jurnal Studi Manajemen Pendidikan Islam*, Vol.1 (1), Maret (2017):65, <https://garuda.kemdikbud.go.id/documents/detail/1099698>.

Principal Standards where Madrasah heads are required to be able to create innovations that are useful for the development of their madrasahs.<sup>5</sup> Therefore, if the innovation process is associated with the three points of competition indicators as described above, then with the social process between madrasah residents in realizing innovative madrasah development, especially in the field of research, it is expected that madrasah will get various future benefits, both material and non-material, including the increasing public interest in using the services of educational institutions.

With such regulations governing education management, it is expected that the growth rate of educational innovation will improve. Based on *the World Economic Forum*, in 2017 Indonesia's innovation index reached 4.6 or ranked 30th in the world, while the higher education innovation index was 4.0 or ranked 60th in the world. This shows that there is still a need for a more innovative work ethic, so that it can improve Indonesia's education innovation index ranking at 56th in 2020.<sup>6</sup>

As reported in the 2018-2019 *Global Competitiveness Index* released by *the World Economic Forum*, it can be seen that Indonesia's competitiveness ranked 41 out of 50 countries in 2016, which has deteriorated from 37th in 2018. At the ASEAN level, Indonesia is still below Singapore which is ranked 2nd and Malaysia and Thailand at 25th and 34th respectively. As published in the GCI, although Indonesia has made many reforms in various sectors, but in performance, four other countries managed to shift Indonesia's position. These countries are Malta, India, Kuwait and Azerbaijan.<sup>7</sup> Based on the survey data, it proves that education in Indonesia has not lived up to expectations. For this reason, it takes hard work and cooperation from all parties, including academics, practitioners and the government, to realize better Indonesian education and be more equal to developed countries in the world. In particular, the need for accelerated innovation in madrasah education in Indonesia, given the existence of madrasah, which has contributed nearly 65% to the quality of Indonesian human resources.

Educational research or commonly referred to as research school is a research methodology tool in the world of education in school.<sup>8</sup> Research itself is defined as a "scientific" inquiry activity that has the main purpose of obtaining findings in the field of education.<sup>9</sup> Moreover, this reality is reinforced by the fact that research-based educational innovations carried out by schools, especially madrasah in Indonesia, are very low. In fact, research-based innovation is the 'tower of educational civilization' for a nation that wants to advance and be independent. The lagging development of research in Indonesia can be seen from several indicators, such as those found on the scimagojr.com website, including through data on the number and quality of published scientific documents from Indonesia when compared to other countries. Based on the scientific publication database, Scopus in 2020, Indonesia is ranked 57 out of 238 countries with 18,142 documents. This ranking is still below from Singapore (ranked 31st), Malaysia and Thailand (ranked 40th and 41st), and even Pakistan (ranked 49th).<sup>10</sup> Not

<sup>5</sup> Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 13 Tahun 2007 about Standar Kepala Sekolah/Madrasah.

<sup>6</sup> Esti Maharani, "Menristekdikti Serukan Reformasi Pendidikan Tinggi", *Republika*, 15 September 2017.<sup>23</sup>

<sup>7</sup> Ahmad Fauzan, "Daya Saing Pendidikan Indonesia dalam Cakrawala Asia", *Republika*, 22 Februari 2018. 14.

<sup>8</sup> Sarah Loch. "School-based research centres: one school's exploration." *The Australian Educational Researcher*, Volume 3, Number 7, (21 September 2023): 11, <https://doi.org/10.1007/s13384-023-00658-0>

<sup>9</sup> Mohammad Ali and Muhammad Asrori, *Metodologi dan Aplikasi Riset Pendidikan* (Jakarta: PT. Bumi Aksara, 2014).15.

<sup>10</sup> Hidayat Arifin, "Inovasi Pendidikan Indonesia: Meningkatkan Mutu Berbasis Riset Berkelanjutan", *Republika*, 11 Maret 2021.

to mention when compared to advanced research countries, such as Japan, China, and the United States. The document reinforces the very sad reality that was once revealed by the head of LIPI that per 1 million Indonesians, there are only 40 people who work as researchers.<sup>11</sup>

To answer the problems of human resource quality and the competitiveness of Indonesian education, the development of research-based excellent madrasah innovation is one of the important 'futuristic solutions' to be promoted. This is because a research culture will foster a 'spirit of independence and innovation', which will never appear as something that is 'taken for granted', or an instant culture.<sup>12</sup> Therefore, there is a need for a strategy where every child of the nation has the opportunity to be introduced early to scientific research and publication. And students at the secondary school level (MTs/MA) are the best time to introduce research in a more systematic, measurable, and patterned manner. Research-based madrasahs are madrasahs that successfully develop research-based academic traditions and produce research findings that are useful for developing the repertoire of science and technology carried out by teachers or students as the future of Indonesia's excellent and competitive education quality, both at the national and international levels.

The descriptive research background above reinforces how interesting and important research on the development of research-based excellent madrasah innovation is. And research at MAN 2 Kudus, Central Java was conducted based on several considerations; *first*, there is still a lack of madrasahs in Indonesia with qualified educational quality, especially with a culture of research as the basis for its excellent innovation. *Second*, the fact of the excellence of educational institutions in many developed countries, both in Asia such as Japan, China, India, Singapore, Malaysia, as well as in Europe such as America, Canada, Germany, France, and so on is supported by the high research culture instilled in students since in high school.<sup>13</sup> *Third*, the current reality reinforces that the interest of the educated community has a tendency to send their children to excellent and outstanding educational institutions, even though the cost is not cheap. For example, MAN 2 Kudus has appeared as the winner of the *National Young Inventors Award* in 2014, the winner of the *Young Researcher Olympics* in 2015, an award winner from the Taiwanese government in the *International Exhibition for Young Inventors* in 2014, also an award winner from the Hong Kong government in 2014, and even won *The Young Researcher in the 2018 LKIR LIPI competition*, and so on.<sup>14</sup> *Fourth*, the increasing culture of young student entrepreneurs in the field of research. And this is also what is felt by students in the madrasah which in turn is able to lead it to become a pilot madrasah in the field of excellent madrasah innovation as well as having competitive power at the national and international levels.

The type of this research is a field-based case study research where this research seeks to describe intensively and analyze certain phenomena, both groups, individuals, institutions and certain social settings that exist naturally.<sup>15</sup> In that context, of course, this research is more likely to be of the single case study type on the basis of more than one research object

<sup>11</sup> *Republika*, Kamis 8 Oktober 2019.

<sup>12</sup> Hengameh Karimi. " Researching school leadership in the time of Covid-19 The importance of research in schools." *Journal of Teaching and Learning*, Volume 7, Number 1 (2021):15, <https://doi.org/10.13140/RG.2.2.11695.56481>

<sup>13</sup> Sandra Parth, et.al. "Teenagers performing research on climate change education in a fully integrated design-based research setting." *International Journal of Science Education*, Volume 3, Number 11 (3 November 2023): 9, <https://doi.org/10.1080/09500693.2023.2268295>

<sup>14</sup> Profile Documentation of MAN 2 Kudus, Central Java, 2020.

<sup>15</sup> Robert C. Bogdan, and Sari Kopp Biklen. *Qualitative Research for Education: An Introduction to Theory and Methods*. (Boston: Aliyn and Bacon, 1998), 54-62. Bogdan and Biklen emphasized that there are several types of case study research, including: *historical organizational case studies, observational case studies, life history, case study design, dan multi case studies*.

accompanied by a variety of different excellent characteristics, which are closely related to the design of research-based excellent madrasah innovation development that has been designed and implemented by MAN 2 Kudus Central Java, in producing excellent outputs that are not only recognized nationally, but also internationally, both in terms of scientific and religious competency.

This research uses a phenomenological approach which aims to describe the circumstances or phenomena that occur. Robert C. Bogdan, and Sari Kopp Biklen emphasized that "A research with phenomenological approach attempts to understand the meanings of interrelated phenomena with people in certain situations."<sup>16</sup> This approach is the right way to reveal and interpret various interrelated and influential activities in the application of research-based excellent madrasah innovation development design, which is closely related to efforts to find out and analyze; (a). The initiation process of research-based excellent madrasah innovation, (b). The process of implementing research-based excellent madrasah innovation, (c). The continuation process of research-based excellent madrasah innovation, and (d). The implications of developing research-based excellent madrasah innovation on the competitive power of education at MAN 2 Kudus, Central Java

This research uses in-depth interview procedures, observation and documentation in extracting data, with 7 informants, where the primary data sources are obtained from the head of the madrasah, the head of curriculum, the head of student affairs, the research coordinator, homeroom teachers, and a number of students. For the data analysis technique, the researchs used the Miles, Huberman and Saldana interactive analysis model which includes data condensation, data presentation, and conclusion drawing.<sup>17</sup> Meanwhile, for the validity of the data, researchers used source triangulation and technique triangulation, as well as observation persistence in order to obtain credible and comprehensive data.

## FINDINGS AND DISCUSSION

### Initiation Process of Research-Based Educational Innovation in Developing Excellent Madrasah at MAN 2 Kudus, Central Java

Innovation is a process of renewal in the cultural elements of society, namely technology, so that innovation means new discoveries in human technology.<sup>18</sup> While in a broader sense, innovation is the renewal of various resources so that they have greater benefits for humans, and the innovation process is influenced by advances in science and technology. The process of initiating research-based excellent madrasah innovation that has been carried out by MAN 2 Kudus Central Java is well coordinated directly by the Research-Based Madrasah Program Team (PMBR) which includes a number of stages, namely: (a). Enriching creative ideas and reflecting on creative ideas about research issues by involving teachers, and researcher partnering (university researchers, and LIPI), through a 'research-innovation madrasah forum' at the beginning of each new school year; (b). Evaluating creative ideas by the PMBR team; (c). Offering draft research innovation ideas to the madrasah head; (d). Research innovation decision-making, which includes accepting the innovation design, reviewing the benefits and potential of research-based innovations; and (e). Approvallling or rejection of research-based madrasah

<sup>16</sup>. Robert C. Bogdan, and Sari Kopp Biklen, *Qualitative Research for Education: An Introduction to Theory and Methods*.71.

<sup>17</sup> Matthew B Miles. A., Michael Huberman and Jhonny Saldana, *Qualitative Data Analysis A Methods Sourcebook*, 3rd ed. (Singapore: SAGE Publications, 2014).12-14.

<sup>18</sup> Umul Hidayati, "Inovasi Madrasah Melalui Penyelenggaraan Madrasah Riset," *Edukasi: Jurnal Penelitian Pendidikan Agama dan Keagamaan* 17, no.3 Oktober (2019): 241, <https://doi.org/10.32729/edukasi.v17i3.636>.

innovations by the madrasah head.

However, in academic theory, there are a number of steps in the initiation process that need to be analyzed to identify improvement efforts. Among them: *first*, at the stage of enriching creative ideas and reflecting on these creative ideas about current research issues only involves teachers, and researcher partnering (from UGM, Undip, Unnes, so on) in the madrasah research-innovation forum at the beginning of each new school year. Theoretically, according to Michael Fullan in his book *The New Meaning of Education Change*, to produce maximum creative ideas, the involvement of all stakeholders of educational institutions is 'mandatory', especially in the context of the madrasah research program, students are not only as research objects who are given assistance in research, but also as research subjects who have a role in conducting research independently.<sup>19</sup> *Secondly*, in the decision-making stage of the research madrasah innovation plan, which is the full authority of the head of MAN 2 Kudus, although so far it has been going well, considering the good leadership quality of the madrasah head, including in accelerating decision-making. However, theoretically, especially if generalized to madrasah management in general, ideally decision-making will be much better, and accelerative if it is decided collectively and in synergy with the madrasah research program coordinator. This is also corroborated by Michael Fullan's view that structural collegial collective decision-making authority will produce more mature and comprehensive decisions. Or in other language, the collectivity of innovation decisions will lead to more visible success. In the sense that the collectivity of innovation will provide a more convincing certainty of success.<sup>20</sup>

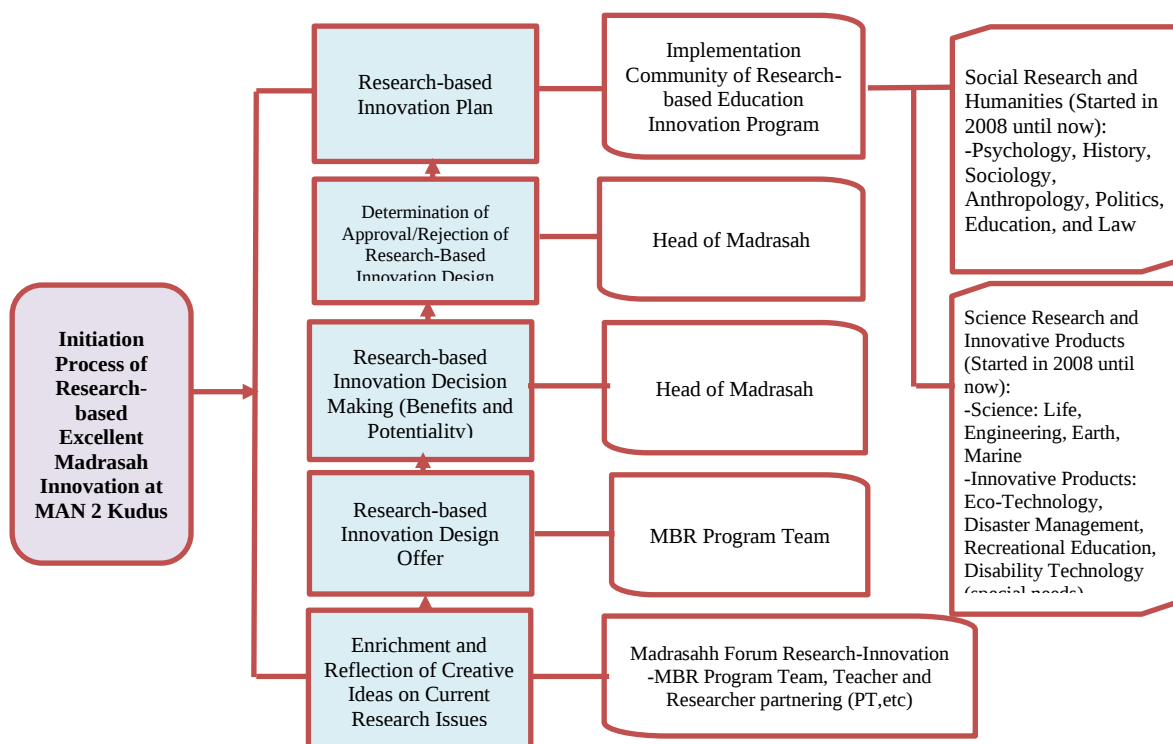


Figure 1. Initiation Process of Research-based Excellent Madrasah Innovation at MAN 2 Kudus

<sup>19</sup> Michael Fullan. *The New Meaning of Education Change*, Fourth Edition. (New York: Teachers Collenge, 2007), 57. See also on Jati Sengupta. *Theory of Innovation: A New Paradigm of Growth*. (Switzerland: Springer International Publishing, 2014), 17. Sengupta Jati defines it as a 'primary prerequisite' in the pursuit of creative ideas for more contemporary innovations..

<sup>20</sup> Robin and Suwe Marriot Lowe, *Enterprise Entreprenuership and Innovation: Concept, Context and Commercialization* (Netherland: Elsevier, 2016.).121.

In the next context, the research-based excellent madrasah innovation developed by MAN 2 Kudus Central Java includes a number of research programs, namely: (a). Research of science and innovative products; and (b). Social and Humanities Research. Both types of research innovations developed by MAN 2 Kudus can be said to be very representative and comprehensive, considering that they have covered the entire study programs that students are engaged in and interested in according to their competencies, both in the fields of science (physics, chemistry, biology, mathematics) and social humanities (education, psychology, sociology, politics and religion).

### **The Implementation Process of Research-Based Educational Innovation in Developing Excellent Madrasah at MAN 2 Kudus, Central Java**

Innovative madrasahs are madrasahs that approach the world of education from a new perspective, so that innovative madrasahs always invite students to be creative, express their emotions and abilities, and meet students' needs for the environment.<sup>21</sup> The next step, MAN 2 Kudus Central Java carried out a process of implementing research-based innovations which was a continuation of the previous process. The process of implementing research-based innovations is carried out through two interrelated and complementary phases, which are pre- and post-implementation actions. In the context of its implementation at MAN 2 Kudus, Central Java, as described includes a number of stages, namely: *the initial stage* consisting of (a). Determination of the research-based madrasah innovation implementation team coordinated by the Head of the Research-Based Madrasah Program (PMBR); (b). Preparation of supporting instruments which include; preparation of budgets, SOP and the creation of research-based innovation support programs (training, and strengthening workshops for research preparation based on core research problems); (c). Organizing human resources, which includes placement, direction and motivation from the madrasah head and Chairperson of PMBR to students and teachers as research implementers.

*The initial (start-up) step* of implementation. This is the step where the first attempt is made to utilize the innovation. To support the implementation of the innovation strategy that has been formulated, the principal, vice principal, and coordinator of the flagship program must work together in developing the program, designing the budget and procedures needed to realize what has been formulated.<sup>22</sup> In this initial stage, it can be said that it is substantively good, considering that all the needs for the preparation and implementation process of the research program innovation are met, starting from the implementer, budget, SOP, and workshop training as a provision for the preparation of research implementation that will be carried out by students through the assistance of research mentor teachers. However, Robin Lowe and Suwe Marriot emphasized that in the process of implementing innovations, the implementers of innovations should have been detected and planned carefully in the decision-making scheme, so that at the implementation level, it is purely oriented towards efforts to ensure that the implementation process can run well.<sup>23</sup>

*In the advanced stage* that has been implemented by MAN 2 Kudus, the implementation

<sup>21</sup> Anas and Hosna, "Gerakan Madrasah Inovatif dalam Meningkatkan Kepribadian Siswa di Madrasah Ibtidaiyah Negeri 3 Jombang (Implementasi Gerakan Madrasah Inovatif dalam Meningkatkan Kepribadian Siswa)," *Taqwa: Jurnal Ilmu Pendidikan Islam*, 18, no.1 Maret (2022): 46-59.

<sup>22</sup> Thomas L. Wheelen and J. David Hunger, *Strategic Management and Bussiness Policy: Toward Global Sustainability*, Thirteenth (Boston: Pearson, 2012). 243.

<sup>23</sup> Rudianti, Ajeng Vena. "Implementasi Program Madrasah Riset dalam Mencapai Prestasi Belajar di Mts Negeri Batu (Studi Kasus Siswa Berprestasi Tingkat Nasional dan Internasional)." (Skripsi: UIN Malang), (2022): 23.

of research-based madrasah innovation is carried out under the supervision and evaluation of the head of the research-based madrasah program (PMBR) which takes place annually (at the end of each school year). In this context, what MAN 2 Kudus has done can be said to be appropriate, considering that control, supervision and evaluation are directly carried out by the madrasah research program manager as the main coordinator of the flagship program at the madrasah. This is also in line with Michael Fullan's idea that the existence of an innovation control function must be played by a unit or someone who not only understands but is also able to implement the innovation program.<sup>24</sup> Therefore, the selection of the madrasah research program manager as the main controller and evaluator is appropriate.<sup>25</sup> In more detail, the process can be described in figure 2 as follows:

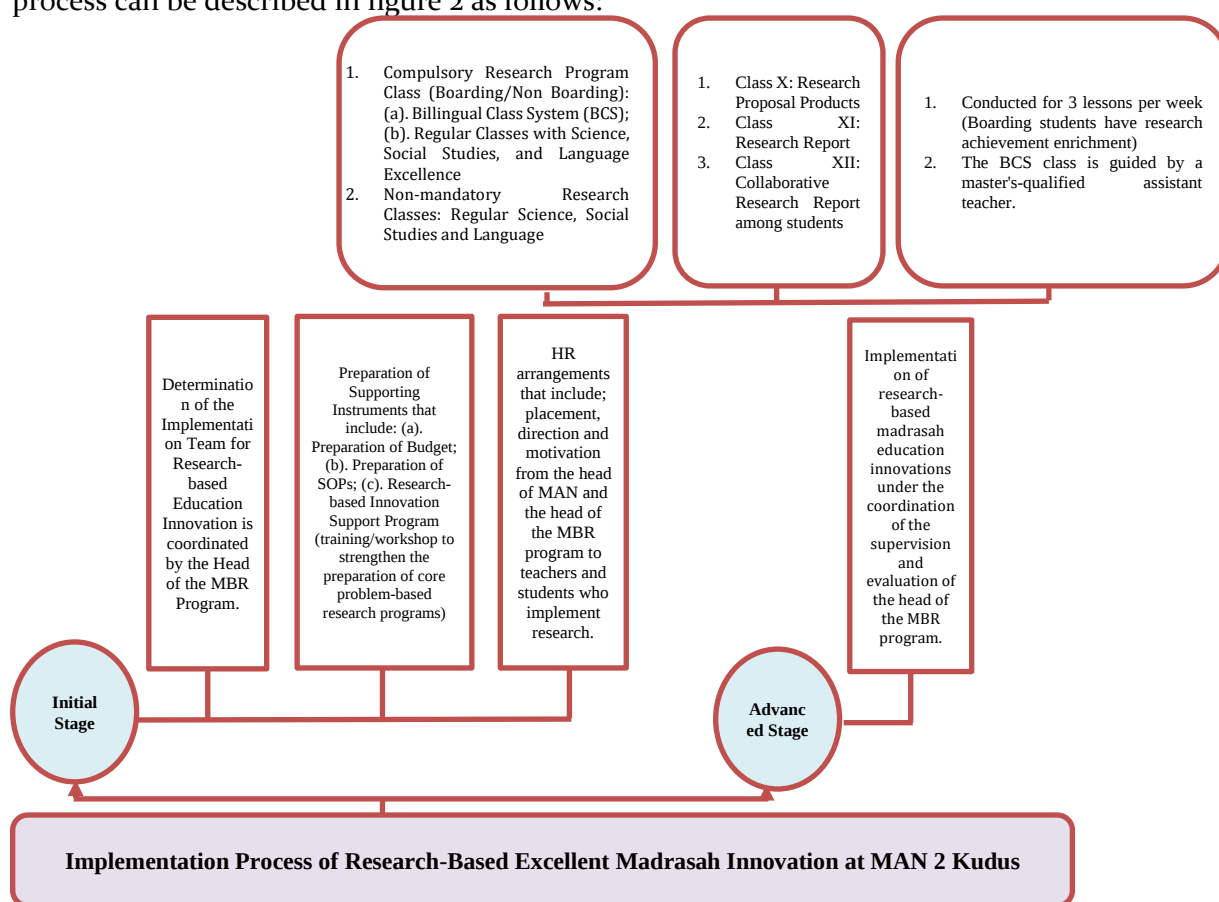


Figure 2. Implementation Process of Research-Based Excellent Madrasah Innovation at MAN 2 Kudus

### The Continuation Process of Research-Based Educational Innovation in Developing Excellent Madrasah at MAN 2 Kudus, Central Java

The implementation of the research-based madrasah program aims to make research a scientific tradition in madrasah, especially at the Tsanawiyah and Aliyah levels by instilling a

<sup>24</sup> Michael Fullan. *The New Meaning of Education Change*, 96.

<sup>25</sup> Hedley Beare, Brian J. Caldwell, and Ross H. Millikan, "Creating an Excellent School: Some New Management Techniques, Creating an Excellent School: Some New Management Techniques", 2018:145-171, <https://doi.org/10.4324/9781351041546>.

spirit of writing and researching new things at an early age and strengthening scientific insights that continue to experience developments today.<sup>26</sup> The innovation continuation process basically describes the follow-up results of the implementation process to become an innovation institutionalization system. In other words, it becomes a new culture or refinement of the existing innovation culture. In the context of the character of madrasah continuation process, it can be said that its substance 'exceeds' what is the theoretical expectation of Michael Fullan in his book *The New Meaning of Education Change*, which only provides two options that are actually stagnant, namely becoming an institutional system or changing its institutionalization process,<sup>27</sup> so that indirectly what has been conducted by the madrasah is more adaptive, dynamic but has fundamental principles of innovation which become the organization spirit of its educational institutions.

Implementatively, the process of continuation of research-based excellent madrasah innovation carried out by MAN 2 Kudus Central Java as previously described includes a number of stages, namely: *First*, evaluating the innovation of madrasah research program continuously and simultaneously each year in order to achieve targeted improvements and perfection, both internally (led directly by the head of PMBR) and externally by inviting evaluator resource persons from a number of partnership universities such as UGM, UNDIP, UNNES, and so on.

The evaluation mechanism of the research madrasah program innovation that has been carried out by MAN 2 Kudus is also in line with Michael Fullan's view, which emphasizes that the innovation evaluation process must involve stakeholders of educational institutions who have a common interest in achieving organizational goals, so that it will produce a comprehensive evaluation as well as follow-up for improving the research program in the following year. The involvement of leaders, managers of research innovation programs, teachers, students, and external parties as the main evaluators proves that the design of deep evaluation implemented by MAN 2 Kudus is also very relevant to the ideas of Moris M. Guvenis in his book *The influences of Technological Innovations and Change on Facility Planning*, because all of these parties are innovation intersupplement that provide mutual reinforcement for the existence of existing research innovation programs.<sup>28</sup>

*Second*, collaborating with businesses/industries related to a number of research findings as an effort to synchronize the current needs of the community, such as with Kimia Farma, Jamu Sido Muncul, home industry companies, and so on to see the continuity of cooperation in following up research products. The partnership developed by MAN 2 Kudus with the industrial / business world can be said to be appropriate, because in essence assessing the achievement of the research innovation program with the involvement of business / industry world is a linear assessment. This is because it is the business/industry that will become the user and perfecter of the various research products at a later stage. This is also in line with Michael Fullan's basic thinking, which emphasizes that the contribution of innovation could be utilized, used and felt by the public costumers.<sup>29</sup> In more detail, the process can be described in Figure 3 as follows:

<sup>26</sup> Diah Ambarumi Munawarah, "Strategi Menemukan Topik Ide Penelitian Bagi Siswa di Madrasah," *JTeP: Jurnal Teknologi Apaembelajaran*, Vol 2, no. 1, Maret (2022): 27.

<sup>27</sup> Michael Fullan. *The New Meaning of Education Change*, 111.

<sup>28</sup> Moris M. Guvenis, *The Influences of Technological Innovations and Change on Facility Planning* (The Pennsylvania State University, 1989).42. See also Nurul Amanah and Wahid Hariyanto. "Manajemen Literasi Sains Sebagai Upaya Mengukuhkan Budaya Menulis Karya Ilmiah Bagi Peserta Didik (Studi Kasus di Madrasah Aliyah Darul Huda Ponorogo)." *Southeast Asian Journal of Islamic Education Management*, 3, No. 2 (2022):269, <https://doi.org/10.21154/sajiem.v3i2.113>.

<sup>29</sup> Michael Fullan. *The New Meaning of Education Change*, 133.

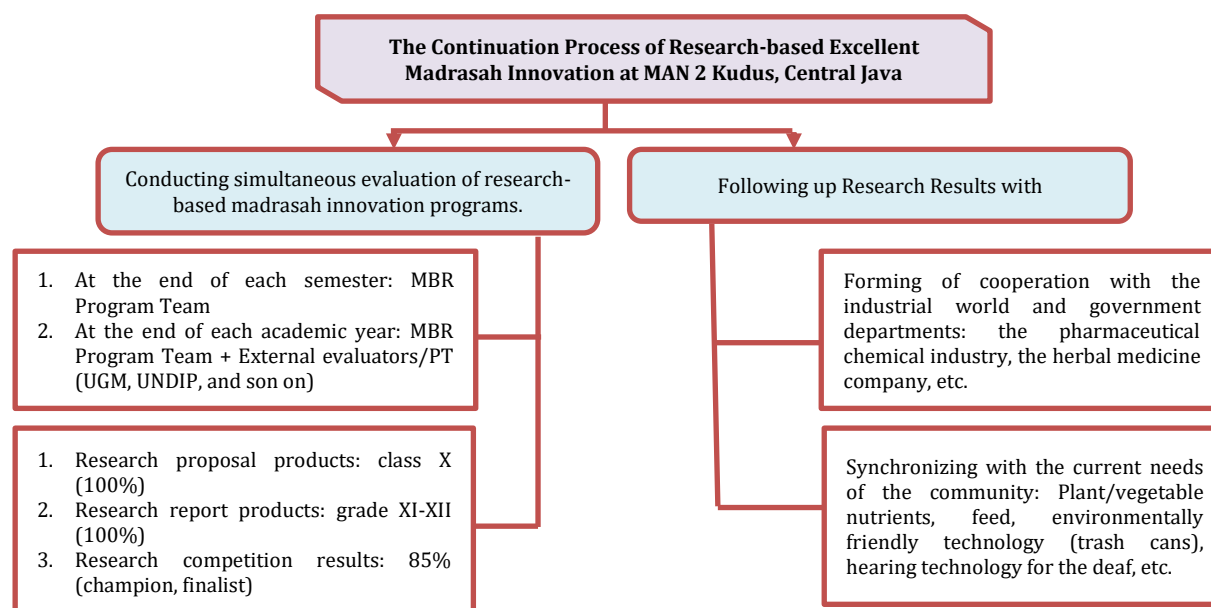


Figure 3. The Continuation Process of Research-based Excellent Madrasah Innovation at MAN 2 Kudus

### The Implication of Research-Based Innovation in Developing Excellent Madrasah for Educational Competitiveness at MAN 2 Kudus, Central Java

Everything that has been done will undoubtedly have a side effect on the existence of something itself, whether it is negative or positive, both material and non-material.<sup>30</sup> Likewise, the development of research-based excellent madrasah innovation that has been carried out by MAN 2 Kudus certainly has implications or impacts on the existence of the madrasah itself. Which ultimately places MAN 2 Kudus as one of the leading and favorite madrasah, not only at the national level but also at the international level. Including in this case, what is felt by the madrasah, MAN 2 Kudus Central Java as a consequence of the research-based excellent madrasah innovation development program that it has implemented. Qualitatively, as well as quantitatively, in general, in the perspective of researchers, there are many positive values obtained by the madrasah for the research-based innovations which has carried out, especially for the educational competitiveness values in the madrasah.<sup>31</sup>

Specifically, the implications felt by MAN 2 Kudus Central Java for the efforts to develop research-based excellent madrasah innovation that it has carried out can be studied more comprehensively, namely: *First*, material implications that include the realization of commercial research products such as malaria drugs that can be mass-produced, copyright / patent ownership, and so on. This is in line with the theory of innovation that the primary innovation product is something that can be measured convincingly, so that the innovation product can be

<sup>30</sup> Juliana Hifza, Arika Palapa, and Aslan Maskur, "The Strategic Foundation for Competitive Excellent Development in Integrated Islamic Primary Schools in Indonesia," *Int. J. Adv. Sci. Technol* 29, no. June (2020): 1747-1753, [https://www.researchgate.net/profile/Juliana-J/publication/342663112\\_The\\_Strategic\\_Foundation\\_for\\_Competitive\\_Excellent\\_Development\\_in\\_Integrated\\_Islamic\\_Primary\\_Schools\\_in\\_Indonesia/links/5eff344a299bf8816fcfb1a/The-Strategic-Foundation-for-Competitive-](https://www.researchgate.net/profile/Juliana-J/publication/342663112_The_Strategic_Foundation_for_Competitive_Excellent_Development_in_Integrated_Islamic_Primary_Schools_in_Indonesia/links/5eff344a299bf8816fcfb1a/The-Strategic-Foundation-for-Competitive-).

<sup>31</sup> Cynthia E. Bolt-Lee. "Developments in Research-Based Instructional Strategies: Learning-Centered Approaches for Accounting Education." *e-Journal of Business Education & Scholarship of Teaching*, Volume 15, Number 2 (September 2021): 5, "http://www.ejbest.org."

used directly while providing benefits that can be felt directly as well. Similarly, the product of research innovation achieved by MAN 2 Kudus, Central Java, in that context, can also be directly used and benefited by the community, the business world as well as the institution itself.<sup>32</sup> It is also in line with Terence E. Brown and Jan Ulijin's view that research product resulted from various innovative ways will give a lot of benefits for the institution its self, or for public interests.<sup>33</sup>

Second, the non-material implications include the growing interest of the community in using education services each year, the prestige of being a research-based excellent madrasah at the national-international level achievements that are increasingly recognized, and the growth of students' academic entrepreneurship spirit based on research results. The non-material implications felt by MAN 2 Kudus are also in line with Michael Fullan's statement that innovation does not only guarantee a positive material impacts, but more than that, non-material will automatically be received and felt by educational institutions as a continuation of the material impact.<sup>34</sup> For example, the recognition as an outstanding research madrasah at the national and international levels, with its innovative products, will certainly lead to these non-material profits. In more detail, the process can be described in figure 4 as follows:

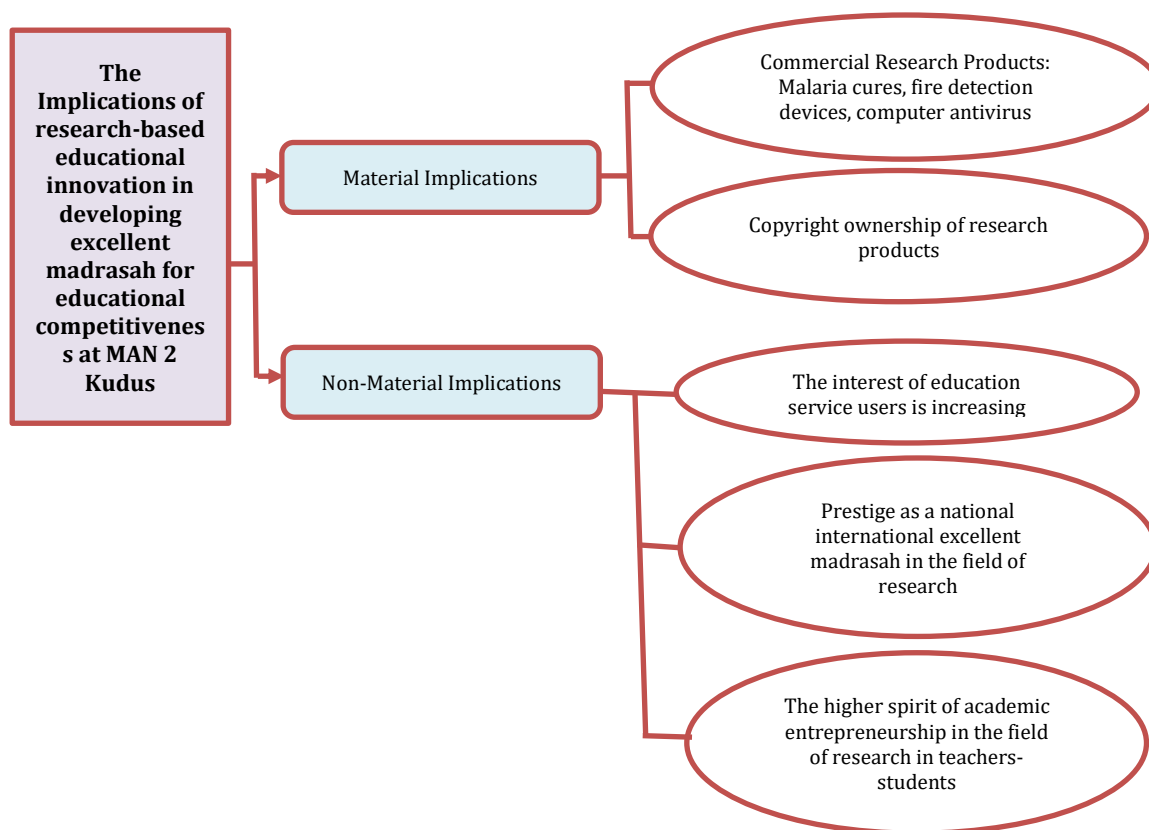


Figure 4. The Implications of research-based educational innovation in developing excellent madrasah for educational competitiveness at MAN 2 Kudus

<sup>32</sup>. Insa Wessels, et.al. "Evidence from a pre-post analysis in the social sciences." *Journal of Studies in Higher Education*, Volume 46, Number 12 (2021): 2602, <https://doi.org/10.1080/03075079.2020.1739014>.

<sup>33</sup>. Terence E. Brown and Jan Ulijin. *Innovation, Entrepreneurship and Culture: The Interaction between Technology, Progress and Economic Growth*. Edited by Edward Elgar. (UK, 2004), 29.

<sup>34</sup>. Antiq Kusthon Tiniyyah, et.al. "Manajemen Peningkatan Mutu Madrasah dalam Membentuk Madrasah Efektif di Era Global," *Al-Idarah: Jurnal Studi Manajemen Pendidikan Islam*, Vol.7 (1), Maret 2023,129, <https://doi.org/10.54437/alidaroh.v7i1.1249>

Based on the description and analysis of the data above, it can be emphasized that the novelty side of this research findings are: (1). Excellent research madrasah is born with a structured and integrated scientific paradigm between research activities in the classroom and dormitory as an effort to form a competitive research culture as developed by MAN 2 Kudus; and (2). Excellent research madrasah is born from the process of cross-scientific and institutional cooperation, both educational and business. Both aspects of this finding certainly have implications for the birth of various benefits of madrasah research results that can be utilized by madrasahs, communities and the business world, as well as madrasah scientific recognition on the stage of national and international competitions. This is in line with Mick Healy and Alan Jenkins' view that a research culture in any institution will enhance its creativity and innovation, as well as its recognition.<sup>35</sup>

## CONCLUSION

Based on the description and analysis of data, it can be concluded that some of the findings of this study are as follows:

The process of initiating research-based educational innovation in the development of excellent madrasah at MAN 2 Kudus, Central Java, is directly coordinated by the Research-Based Madrasah Program Team (PMBR) which includes a number of stages, namely: enriching creative ideas and reflecting on creative ideas about research issues by involving teachers, and researcher partnering (university researchers); evaluating creative ideas by the PMBR team; innovation decision-making, which includes accepting the innovation design, reviewing the benefits and potential of research-based innovations. The implementation process of research-based educational innovation in the development of excellent madrasah at MAN 2 Kudus Central Java includes a number of stages, namely: *the initial stage* consisting of: determination of the research-based madrasah innovation implementation team coordinated by the Head of PMBR; preparation of supporting instruments which include; preparation of budgets, SOP and the creation of research-based innovation support programs; and organizing human resources which includes placement, direction and motivation from the madrasah head. The continuation process of research-based educational innovation in developing excellent madrasah at MAN 2 Kudus, Central Java, includes a number of stages, namely: evaluating the innovation of madrasah research program continuously and simultaneously every year in order to achieve targeted improvements and perfection, both internally and externally by inviting evaluator resource persons from a number of partnership universities; and collaborating with businesses/industries related to a number of research findings as an effort to synchronize the current needs of the community. The implications of research-based innovation in the development of excellent madrasah for educational competitiveness at MAN 2 Kudus Central Java have been carried out are: material implications include the realization of commercial research products such as malaria drugs that can be mass produced, ownership of copyrights/patents, and so on; and non-material implications include the increasing interest of the community in using education services each year, and the prestige of being a national-international research-based excellent madrasah.

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<sup>35</sup>. Mick Healy and Alan Jenkins. "The Role of Academic Developers in Embedding High-Impact Undergraduate Research and Inquiry in Mainstream Higher Education: Twenty Years' Reflection." *International Journal for Academic Development*, Volume 23, Number 1 (2017): 58, <https://doi.org/10.1080/1360144X.2017.1412974>

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