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The Implementation of the DaM2R Strategy to Increase the Acceleration of Student Thesis Writing

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ABSTRACT

This research aims to increase the acceleration of students' cognitive abilities in writing a thesis through the DaM2R strategy (Diagnostic assessment, Matriculation, and Mini Research). This action research was conducted in the research methodology course in the odd semester 2022-2023 at the Master of Islamic Religious Studies of the Islamic University of Indonesia. The data collection technique used tests, open-ended questions, and questionnaires. The data analysis technique was carried out using quantitative analysis. The research results show that through the application of the DaM2R strategy, there is an increase in students' cognitive abilities as demonstrated by the results of the diagnostic assessment gain (pretest), with the majority of the posttest being in the high category (<g> 0.70). After matriculation, students' knowledge increases from four to 11 abilities. Examining the results of the mini research work that has been prepared, the average score is 90, and the draft thesis proposal presented has an average score of 91. The relevance between the results of the mini research and the draft thesis proposal that was prepared is 87.5% relevant, and 12.5% have changed research ideas and types of research due to student uncertainty and students' lack of confidence in their interest and mastery of the research methodology used.

Keywords
Cognitive Ability
DaM2R Strategy
Education Methodology
Matriculation
Mini-Research

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Introduction

Writing a thesis is quite burdensome for some students, and others find it challenging. Most students have their own problems related to writing a thesis, such as: inability to analyze the issues and gaps in the field so that the issue needs to be pointed out, choosing a title that is still not appropriate to the type of research, confusion in determining the scope of study relevant to the Master's level, the personal problems of each individual, such as some who are busy teaching at school, some because they are married are can't manage time well, some are in positions studying at Islamic boarding schools, some are busy working part-time, and others, all of which require their own commitment respectively [1]-[3].

Examining problems in writing a final assignment will never end. In fact, another case stated that students were hampered in preparing their final assignments, so they dropped out. This condition often makes students look for shortcuts, such as looking for a 'final project consultant' or usually known as a 'jockey' who is rewarded with a wad of money or 'copy-pasting' another student's final assignment. However, this case usually occurs in undergraduate thesis writing. It is rarely encountered at the master's level, because on average, master's students are more mature in age and maturity. They can think ahead and are more able to be encouraged to work hard, rather than just looking for shortcuts that ultimately harm them [4]-[6].

Becoming a thesis jockey is regulated by Article 363 of the Criminal Code. The act of using a thesis jockey to write a student's final assignment can be categorized as plagiarism, in which case this activity is prohibited in the National Education System Law, article 25 paragraph (2), which states that university graduates whose scientific work is used to obtain academic, professional or vocational degrees are proven to be plagiarized his title. Furthermore, Article 70 of the National Education System Law regulates criminal threats for students who commit plagiarism or plagiarism [4], [5], [7].

Based on the results of the researcher's observations, the background of postgraduate students varies, as they come from fields of science other than education. In the undergraduate program, there are students from abroad and Islamic boarding schools internally. Still, they have never received a research methodology course, so they have difficulty compiling good scientific papers. Pedagogically, they have not done much research either.

The Master of Islamic Religious Studies study program, Faculty of Islamic Religion, Indonesian Islamic University has graduated thousands of master's. Still, he strives to improve the quality of its learning outcomes. Based on observations from the findings of the 2021 internal quality audit (AMI) [8], the average length of study for students is still relatively low at 1.77, with graduation on time at 35.9%. This means that 64.1% of students have not succeeded in graduating on time. In the internal quality audit 2021 data, the average GPA of

graduating students is 3.60, with the lowest GPA being 3.33 and the highest being 3.81. One of the reasons is the slowness in writing final assignments, which is caused by several factors, including the students' personalities, lecturers, and the curriculum system implemented.

One of the courses directly related to internal quality audit's findings is research methodology with a weight of 3 credits. Research methodology is a skills course that students must take. This course provides scientific writing skills to support students' final thesis writing activities. Therefore, several provisions, tricks, and scientific writing strategies must be provided to students to speed up the graduation rate and produce quality scientific work with scientific weight that can be justified methodologically and scientifically.

Because of the urgency of this course, it would be a shame if this course were only taught mediocrely and lacked innovation. Some students also think that this course is difficult [9]-[12]. The 2021 Internal Quality Audit document for the Islamic Religious Studies Master's Study Program at the Islamic University of Indonesia [13] also shows that student research interest for thesis completion is still not evenly distributed and is still dominated by certain types of research. Of the 16 lecturers who meet the requirements to supervise theses, the distribution of thesis supervisors is still dominated by four lecturers with an average number of supervisors of more than 10 students.

In an effort to overcome delays in writing these proposals, previous research results from Susilo [14] have shown that through mini-research-based learning projects, it has been proven that 72% of mini-research reports support the preparation of students' thesis proposals. The benefits obtained by students include increasing experience by 18%, increasing understanding by 39%, and speeding up thesis proposal writing by 43%. With the advice given, this kind of strategy needs to be improved by making interactive learning videos during the learning process and implementing guidance. This is so that at any time the video can be accessed to re-study the material or recommendations from the guidance that has been carried out by the student concerned, in particular, and lessons can be learned for other students with a similar case.

Following up on the findings of the Internal Quality Audit 2021 and Susilo's research [14] to maximize research results, this research aims to apply a project-based learning model with a DaM2R-based learning strategy as an alternative solution to accelerate student thesis writing. This research was conducted in a research methodology course using a systematic flow of Diagnostic assessment (Da), Matriculation (M), and Mini Research (M) activities. Da activities were launched twice to obtain an initial map of student competency towards understanding the research methodology in the pretest activities. Furthermore, all students will receive the M (matriculation) activity, based on the results of the first Da, so there may be

students whose initial competency is low, sufficient, or already good. Because of the inhomogeneity of initial abilities, matriculation (M) activities are needed to equalize students' perceptions of understanding before entering more in-depth and intensive advanced lecture treatment.

For students with good initial abilities, matriculation is an enrichment that strengthens their understanding. Still, matriculation is mandatory for students whose initial skills are insufficient or low, to provide initial insight and improve their knowledge of methodology. Furthermore, after taking matriculation (M), students are given a post-test treatment to look again at their understanding map and to identify differences between initial abilities and abilities after the matriculation treatment. The next hope is that after there is a unified understanding of the types of research taught in research methodology courses at the MIAI (*Magister Ilmu Agama Islam* or Master's level in Islamic Religious Sciences), which later changed its name to IAIPM (*Ilmu Agama Islam Pendidikan Magister* or Masters Program Islamic Religious Sciences), then to deepen understanding and train skills directly, students will be treated in education. and training in preparing the research parts step by step through mini-research (MR) activities, balanced with service of excellence in the form of intensive mentoring for both groups and individuals, based on each case or the difficulties each individual feels.

One of the advantages of the mini research project treatment, which is carried out before the mid-semester examination, with a duration of six meetings in research methodology lectures, is that students have the opportunity to have more time to think about research to complete their thesis. Students will be motivated to think about titles, construct theories, and choose the correct research methodology, and not delay work until the end of the semester arrives. Students have started thinking about strategies for managing their study time at the beginning of college, when they prepare thesis proposals, seminar proposals, collect data, and thesis exams between their busy lives, some of whom are campus activists, working, preaching, and homemakers.

Based on this description, this research aims to increase the acceleration of students' abilities in writing a thesis through the DaM2R strategy in the research methodology course for the odd semester 2022-2023, IAIPM, Faculty of Islamic Religion, Islamic University of Indonesia. The urgency of this research is to improve the quality of learning based on the needs of students in the Islamic education concentration.

Methods

A. Design

This research is a type of action research. Action research is a research method that aims to solve practical problems and improve the quality of practice in a particular context [14], [15]. This research was conducted by researchers who were directly involved in the learning

process to improve the quality of learning. However, only one cycle was used, considering the implementation of achievement indicators and the time management provided.

B. Participants

This action research was carried out in the research methodology course of the Islamic religious sciences master's study program, Faculty of Islamic Religious Sciences, Indonesian Islamic University. The research was conducted for one class in the odd semester of 2022-2023. The sampling technique was saturated, involving all students in this research. There were 10 participants: five male students and five female students.

C. Procedure

Learning is carried out by following the Project-based learning (PjBL) pattern based on the DaM2R (Diagnostic Assessment-Matriculation-Mini Research) learning strategy, implemented by following the learning scenario's outline.

1. Diagnostic Assessment

   In the form of open-ended questions given to students at the beginning of the lecture. The aim is to obtain data on students' initial potential regarding understanding and knowledge of research methodology and to map student potential and student interests in the research plan that will be carried out to complete the final assignment.

2. Matriculation

   It aims to provide new and refreshing insights to students about research methodology, overhaul students' conventional mindset about types of research that are not just one type but can understand several types comprehensively, and direct students to be able to find and formulate of scientific problems and determine types research that is appropriate to the research methodology and matches student perceptions, as well as providing enrichment for students who already have good initial skills in understanding research methodology. After matriculation, students are given a post-test to test their cognitive abilities and, at the same time, to see the depth of students' understanding before attending lectures and technical treatment to write and compile a mini research and design a thesis proposal draft that is consistent with the mini research they have compiled.

3. Mini Research

   A mini research project is simply research carried out by students as a needs assessment, or it can be interpreted as preliminary research. Mini research aims to be a training ground for students in synchronizing problems with determining the type of research and research methodology appropriately, well and correctly; train students to have scientific work as a form of preliminary research which can be used as a reference/literacy as a manifestation of building a researcher's track record before

carrying out final assignment research; and to bring students closer to the literacies related to their final assignment research so that students have a much better understanding of the theoretical concepts that will be used and can construct theoretical buildings that will be used in writing their final assignment. Mini research projects are billed in students' midterm exam assessments. While preparing the mini research, students consult on their thesis proposal, starting from formulating the title, introduction, theoretical study, and research methods. Then, after the mid-semester exam, students do a proposal seminar with peer assessment.

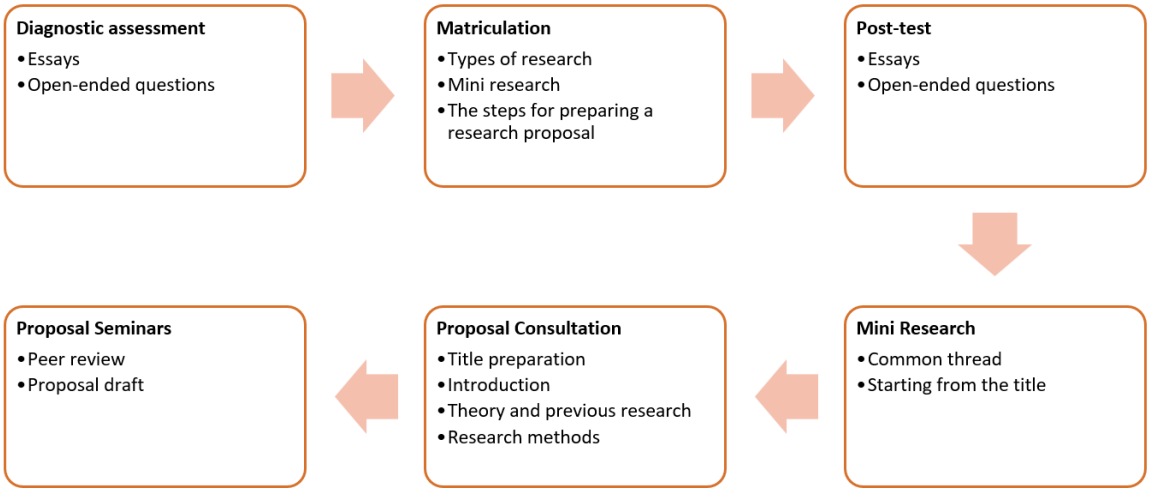


Fig. 1. Outline the flow of the learning scenario

D. Instruments

The data collection technique used tests, open-ended questions, and questionnaires. Data analysis techniques were carried out using quantitative analysis techniques. The gain score is calculated using the formula gain = (posttest - pretest) / (100 - pretest). The gain formula uses the following criteria to determine the score difference between the posttest and pretest.

Table 1. Gain index criteria

Index <g>	Category
(<g>) > 0,70	High
0.30 < (<g>) ≤ 0.70	Medium
(<g>) ≤ 0.30	Low

Source: [16], [17].

Results

A. Student Ability Testing Results

Table 2 shows the initial comprehension abilities. These abilities regarding mastery of research methodology after carrying out a diagnostic assessment (Da) or pretest already understand the characteristics of quantitative research (100%), can formulate quantitative

problems (50%), understand the content of the background of the issues in quantitative research (50%) and can differentiate between the concepts of population and sample in quantitative research (100%). The rest relates to basic qualitative concepts and mixed study that have not been mastered.

Table 2. Students' initial comprehension abilities

Num.	Students' Initial Comprehension Abilities	Percentage (%)
1.	Understanding of quantitative research	100
2.	Ability to formulate problems	50
3.	Ability to design the content of the background of the problem	50
4.	Understanding of the concept of population and sample	100

After treatment, matriculation activities include quantitative, qualitative, and mixed-method research methodology material. Students' understanding abilities increased from initially only four abilities with one type of research, namely quantitative research, to 11 abilities from qualitative, mixed, and quantitative research. Increasing students' understanding abilities includes describing the characteristics of each type of research (qualitative, quantitative, and mixed), combining unique problems/phenomena into a research title that is in accordance with the title criteria/indicators of each type of research, and writing systematic content. will be written in the background of the problem according to every kind of research, including quantitative, qualitative and mixed method research, writing the problem formulation, writing the research focus and research questions, constructing a theoretical basis according to the title of the research in each type research, mentioning the type of research with an appropriate methodological design, being able to distinguish between population and sample, research subjects and objects, choosing data collection techniques, and determining data analysis techniques that will be used in the research that will be carried out according to their respective specializations.

The addition of 11 students' understanding abilities averaged 81.8% with a maximum achievement of 9 abilities getting a score of 100%. The ability to formulate problems, focus, and research questions reached 87.5%. One ability that students still felt was difficult was writing and composing mixed-type research titles, which only reached 37.5%, an increase from the initial ability, which was utterly impossible. This is very possible for students new to mixed types of research, so they still feel unfamiliar and are still a bit confused about combining quantitative research with qualitative research. The results of student abilities can be presented in detail in Table 3.

The results of the gain calculation show that the average gain is 0.93, with a standard deviation of 0.19. Gain analysis is carried out descriptively by calculating the average and standard deviation of the gain and categorizing the gain into high, medium, and low categories.

Based on the analysis results, it can be concluded that the intervention effectively improves students' abilities in various aspects of research.

Table 3. Increasing students' understanding abilities

Num.	Increasing Students' Understanding Abilities	Percentage (%)
1.	Understanding of qualitative research	100
2.	Understanding of mixed research	100
3.	Ability to find and create quantitative research titles	100
4.	Ability to find and create qualitative research titles	100
5.	Ability to find and create mixed research titles	37.5
6.	Ability to design problem background content	100
7.	Ability to formulate problems, focus, and research questions	87.5
8.	Ability to state basic considerations for choosing a theoretical basis	100
9.	Distinguish between subjects and research objects	100
10.	Choose the proper data collection technique	100
11.	Explain and choose data analysis techniques according to the type of research	100

Furthermore, changes in increasing students' understanding abilities can be seen from the results of the gain between initial skills and abilities after being given matriculation treatment. Based on 14 students' understanding abilities related to quantitative, qualitative and mixed types of research, it is known that 13 students' understanding abilities are in the high category with results (g) > 0.70 and one student's understanding abilities are in the medium category with a value of 0.40 which is included in the criteria is in the range of 0.30 M (<g>) < 0.70. Table 4 shows the details of students' understanding of achievements.

Table 4. Quality improvement changes

Num.	Aspect	Pretest %	Posttest %	Enhance ment	Gain	Category
1	Understanding of quantitative research	0	100	100	1	High
2	Understanding of qualitative research	37.5	100	62.5	1	High
3	Understanding of mixed research	12.5	100	87.5	1	High
4	Ability to find and create quantitative research titles	25	75	50	0.7	High
5	Ability to find and create qualitative research titles	12.5	100	87.5	1	High
6	Ability to find and create mixed research titles	100	37.5	37.5	0.4	Medium
7	State the characteristics of the research title	25	100	75	1	High
8	Ability to design problem background content	50	100	50	1	High
9	Ability to formulate problems, focus, and research questions	50	87.5	37.5	0.8	High
10	Ability to state basic considerations for choosing a theoretical basis	25	100	75	1	High
11	Understanding of the concepts of population and sample	0	100	100	1	High

Num.	Aspect	Pretest %	Posttest %	Enhance ment	Gain	Category
12	Distinguish between subjects and research objects	12.5	100	87.5	1	High
13	Choose the proper data collection technique	12.5	100	87.5	1	High
14	Explain and choose data analysis techniques according to the type of research	12.5	100	87.5	1	High

The results of the gain calculation show that the average gain is 0.93, with a standard deviation of 0.19. Gain analysis is done descriptively by calculating the average and standard deviation of the gain and categorizing the gain into categories. Based on these data, the average gain value is 0.93. And the standard deviation value is found using the standard deviation formula (1).

$$\sigma = \sqrt{\frac{\Sigma(xi-\mu)^2}{n-1}} \quad \text{.....(1)}$$

Standard deviation of gain: 0.19,
where:
σ = standard deviation
xi = i-th data value
μ = average value
n = number of data

Then it can be explained that the results of the data analysis showed a significant increase in student ability after the intervention, with an average gain of 0.93 (standard deviation = 0.19). The 95% confidence interval for the average gain is 0.86-1.00, which indicates that the increase in student ability after the intervention is significant and consistent. Thus, the average gain and standard deviation show data precision, and the 95% confidence interval shows the range of possible values for the average population gain. So it can be concluded that the intervention effectively improves students' ability in various aspects of their studies.

B. Process Assessment (Authentic Assessment)

The successful mastery of students' understanding is then used as capital to enter the next meeting which places greater emphasis on the application of andragogie-based learning with the target learning outcome in the form of student learning independence starting from the interest inquiry process, research title, developing theoretical constructs and choosing the appropriate research methodology according to the characteristics of the type respective research. Even though in the andragogical learning process, lecturers still provide service of excellence by delivering scheduled and incidental methodology clinics through offline and online activities, some students still experience difficulties at the 3rd meeting. These difficulties can be seen from the worksheets distributed to students to write down things they feel, and become obstacles in writing a mini-research. See Fig. 2.

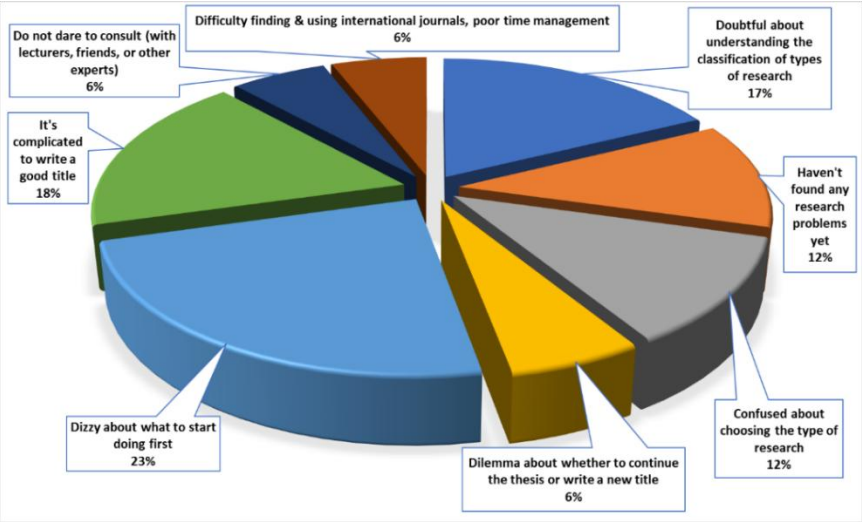


Fig. 2. Initial difficulties faced by students

Apart from initial difficulties in preparing the mini-research, students also experienced initial difficulties in drafting their thesis proposals, as explained in the following summary of student statements. Table 5 shows the obstacles in preparing the proposal.

Table 5. Student obstacles in preparing a thesis proposal draft

Num.	Student Obstacles in Preparing a Thesis Proposal Draft
1.	It is not yet clear where the research will be directed.
2.	I am still confused in the methodology section because the type of mixed method research is very different from qualitative research, since I previously had more control over qualitative research. I wouldn't be confused if I had executed it in the field.
3.	So far, thank God, I have been enlightened and have not encountered any further problems.
4.	Initially, the obstacles in research were in theoretical studies, and thank God, after consulting, the obstacles I experienced were overcome.
5.	Theoretical references regarding digital information curation in Indonesia are very minimal. Apart from that, I am hampered by health problems.
6.	Constraints on time due to not being able to divide study time with work.
7.	Researchers still lack an understanding of the world of education, starting from the meaning of terms, etc.
8.	Difficulty determining relevant methods in research.

These difficulties are more likely for students who have not yet found self-confidence. Hence, the lecturer provides direction and invites all students to self-reflect and find solutions to all things they feel are difficulties or obstacles independently after being given explanations and assistance to find solutions to the problems causing each other's difficulties and obstacles. With these efforts, students can find solutions to the issues that haunt them, and feel more courageous in dealing with every problem that becomes an obstacle, and eliminate feelings of difficulty or inability to take steps to complete tasks, which will be a way to achieve their goals. He aims to finish on time and get a master's in Islamic Education. Finally, students could rediscover their self-confidence and introspect and review their understanding, so they seemed to bring new energy and felt a change in energy, as seen in Fig. 3.

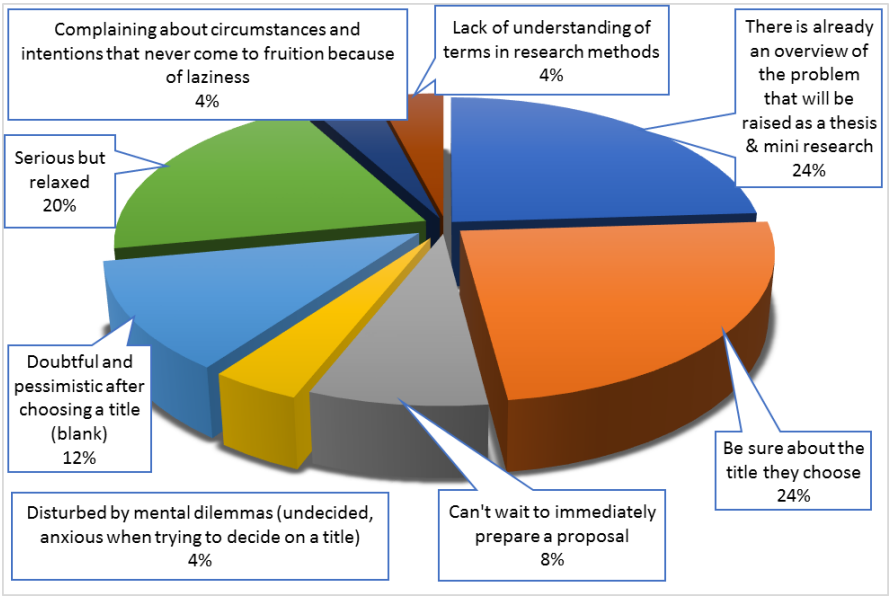


Fig. 3. The results of students' introspection towards themselves

What's even more amazing is that after students were able to control their disturbing feelings and organize their thinking mindset, they were able to provide several solutions offered by each student after analyzing their own problems, which are summarized as follows. There is enrichment about the difficulties faced; focus on an issue, then explore it and use it as research; the need for more intense and extra guidance and direction, especially for students whose basics are not from a Bachelor of Education; because there are students who are also students at the boarding school, so when they research about students they feel familiar and are not too confused in processing data; must really look at the data credibly; look for some references; spend a lot of time on research and consulting; find out the proper method; and read a lot of books related to the problems raised in the research and consult with the supervisor.

C. The Relevance of Mini Research to the Thesis Proposal

The process of preparing the mini research was discussed during the first lecture, where the direction, aims, and objectives of organizing the mini research were explained during the lecture contract. Even though there are technical obstacles as shown in the difficulties in the lecture process, students are still consistent in following the direction and guidance provided as part of the service of excellence, so that the final product of the research methodology course is finished, including a mini research report and a thesis proposal plan. Students have high relevance (87.5%) with no significant changes in terms of the type of research, problems or research focus and only 12.5% in total experienced changes due to students' uncertainty or lack of certainty regarding their research interests, so that mini research This was done solely to relieve the obligation to take the mid-semester exam and after the mid implementation, the

student re-drafted the research draft from scratch which would be realized in his thesis proposal. Table 6 shows several considerations that confirm that the mini research report made by the student is still relevant to the design of the thesis proposal, which will be used as research for the final project.

Table 6. The relevance of the mini-research to the thesis proposal draft

Num.	The Relevance of the Mini Research to the Thesis Proposal Draft
1.	The results of the mini-research with the draft proposal are still relevant because they are still within the scope of religious moderation in Yusuf Qardhawi's view. Previously, I had written two articles related to this problem, namely: 1) the values of religious moderation in the Middle Way Islamic book by Yusuf Qardhawi, and 2) an analysis of potential learning resources in the Middle Way Islamic book by Yusuf Qardhawi. These two studies can be used to develop research studies when designing a thesis proposal.
2.	The relevance in my research is at the implementation stage of the independent curriculum. The researcher's mini-research results show the madrasah's readiness to implement the independent curriculum. As for the relevance in the researcher's thesis proposal, he wants to know how the madrasah that the researcher used is the object of implementing the independent curriculum.
3.	In this mini research, we try to see the method used to assess the validity of a hadith. In the thesis proposal, try to use one of these methods as the basis for the information curation method.
4.	In the background section, explaining the teacher's anxiety in the classroom and analyzing the 1F class environment due to children's lack of focus in studying Arabic language subjects in class, the data presented in the proposal comes from the mini research report.
5.	The data results from some of the mini-research have become a reference in the current thesis proposal.

The questionnaire results show that 87.5% of students felt that the mini research project made it easier to draft a thesis proposal. The student's statement cannot be separated from the mentoring and mentoring process carried out by lecturers in technical methodology clinics, which are carried out offline and online, both in groups and individually, without time limits (especially in methodology clinics, which are carried out online), by utilizing social media, email, and WhatsApp. 100% of students feel they receive intensive guidance. The students' impressions of receiving guidance in a methodology clinic can be summarized in Table 7.

Table 7. Intensity of coaching techniques and frequency

Num.	Intensity of Coaching Techniques and Frequency
1.	Guidance techniques are carried out online and offline almost every week.
2.	Having a metopene course in semester 1 is very helpful in writing a thesis proposal; the delivery of the material provided by the lecturer offers understanding. It can be applied in writing, so, so far, I feel that writing mini-research or thesis proposals is not too tricky because the explanations, the references, and guidance provided clear answers. In this course, one beneficial thing I applied in writing scientific papers was writing down the background of the lecturer's teaching. This does not mean that the others are unimportant, but for some reason, this section feels different because I was always confused before. In writing the background, but after getting knowledge from you, this really helped me, and this knowledge is very valuable and very expensive in my opinion.
3.	I feel that guidance in methodology courses is unlimited because you can provide advice online. Then, for offline, you are also given the opportunity for guidance and a special day schedule for guidance every Tuesday on campus.

Num.	Intensity of Coaching Techniques and Frequency
4.	Lecturers provide specific explanations of problems in student research.
5.	In fact, the lecturer has provided as wide an opportunity as possible to get guidance from him both inside and outside the classroom. Still, I have been unable to maximize intensive guidance outside class hours.
6.	Actually, lecturers always give a lot of time to carry out intensive guidance both offline and online, but I only follow guidance online.
7.	The guidance technique is used in a writing clinic. Like a surgeon, dissecting all aspects of research methodology subjects.
8.	Lecturers provide suggestions and input that must be improved during the guidance process.

The mini research preparation project is given a duration of 6 meetings. Based on the results of the questionnaire, 100% of students benefited and were able to help in writing their thesis proposal draft. These benefits can be summarized in Table 8.

Table 8. The benefits that students get from having a mini research project

Num.	The Benefits that Students Get from Having a Mini Research Project
1.	It can be used as a basis for designing a thesis title.
2.	Helpful, because writing a mini-research can provide an idea for writing a thesis proposal, as I experienced myself. After the mini-research report, I was no longer confused about preparing the thesis proposal.
3.	Becomes an illustration for preparing a thesis proposal.
4.	This will allow me to finish my thesis more quickly and lighten the burden of writing it.
5.	It helps to add to the reading material, especially regarding the theory used as a thesis proposal.
6.	In the background, the problem was already structured when the mini research was created, so in the thesis proposal, all you have to do is continue, add to, and narrow down the problem again.
7.	Indirectly, preparing this mini research can encourage me to practice more in writing scientific papers.
8.	Because preparing research makes it easier to create a series of thesis proposals.

Students' impressions of participating in research methodology lectures in the odd semester of T.A. 2022/2023 are dominant in giving a good impression and motivating oneself to continue improving. From direct observation during online and offline learning, students show maximum concentration and actively participate in lectures. In detail, students' impression statements during lectures can be presented in Table 9.

Discussion

Research methodology is the science of a way to solve research problems systematically, carried out scientifically [18], [19]. Some students seem to think this research methodology course is challenging [10]. Each lecturer has their own teaching strategy for teaching their students research methodology. Some lecturers use the assignment method as an alternative learning by doing approach in teaching research methodology [20].

Table 9. Students' impressions during research methodology lectures

Num.	Students' Impressions during Research Methodology Lectures
1.	Unpredictable.
2.	Hopefully, the knowledge I gain from this course can help me complete my final assignment and continue to put it into practice.
3.	I'm happy because it adds to my knowledge that my previous research was only about qualitative, but now I'm getting more insight into mixed methods.
4.	The metopen lecture encouraged me to actively complete the assignments given, especially when writing a thesis proposal draft.
5.	Pleasant.
6.	It's delightful because the lecturer provides a lot of space for students to ask questions actively during the lecture.
7.	I know more about the techniques for writing scientific papers.
8.	Learned a lot about research.

This research aims to increase the acceleration of students' cognitive abilities in writing a thesis through the DaM2R strategy (diagnostic assessment, matriculation, and mini research). The concept of developing innovative learning models for project-based learning based on the DaM2R strategy refers to the principles of andragogy, mentoring, and service excellence [21]-[25].

A. Andragogy

The principle of andragogy (adult learning theory/ALT) is to place the learning process based on adults, so learning is designed to realize learning independence based on correct understanding. Andragogy provides the broadest possible opportunity for students to explore a particular topic related to problems that have been discovered and formulated by students to be included in their research thesis [21], [26], [27].

In the past, students always expected lecture material from the lecturer when they entered class, so they assumed that students were ready to take lectures and become students as objects of pedagogy. In fact, master's students already have the initial provision at the undergraduate level, which should be developed and innovated so that they can further grow and develop their abilities. Therefore, restoring the spirit of the lecture approach with Andragogy is essential for carrying out adult learning and positioning students not as learning objects but as teaching subjects, and lecturers as facilitators [26], [28], [29].

Many students discovered hidden potential, especially those related to basic research methodology. It's just that being shy and not confident makes students more silent. This then gave rise to a change from a pedagogical mindset to an andragogic mindset. Andragogy as an approach to learning provides the broadest possible student experience, respecting the needs of adult learners so that the teaching carried out is meaningful, ultimately encouraging lifelong learning [30], [31].

B. Mentoring

The principle of mentoring is applied in the form of intensive assistance to students [23], [24], [32] starting from consultative forms, problem-solving, and supervision of projects that students are preparing. Consultation is given full power by allowing students to consult and discuss problems faced by students, especially things that become obstacles/obstacles in the discovery process, problem formulation, theory development, and writing scientific work. Problem solving is carried out by providing solutions to each problem proposed by students with light but weighty solutions, and on track with the discussed topic. Visual analogies provide solutions, making it easier for students to understand the problem and determine the direction in which to find the solution independently, so the assistant needs to provide reinforcements to the students. Supervision is carried out to monitor the preparation and writing process carried out by students, as well as to provide full attention to students. Monitoring is carried out by asking via social media (WhatsApp), either through groups or private networks. The hope is that students will feel serious attention and concern from lecturers regarding their work.

C. Service of excellent

Excellent service is a fantastic service provided to students to oversee the realization of student scientific work that is of high quality, has scientific weight, and can be appropriately accounted for in terms of scientific methodology. Excellent service is provided from the initial process of discovery, problem formulation, theory preparation, literature writing, theoretical construct preparation, and selecting research methods that are relevant to the problems to be solved in the research [14], [19], [25], [33]-[35]. Overall, Fig. 4 describes the framework.

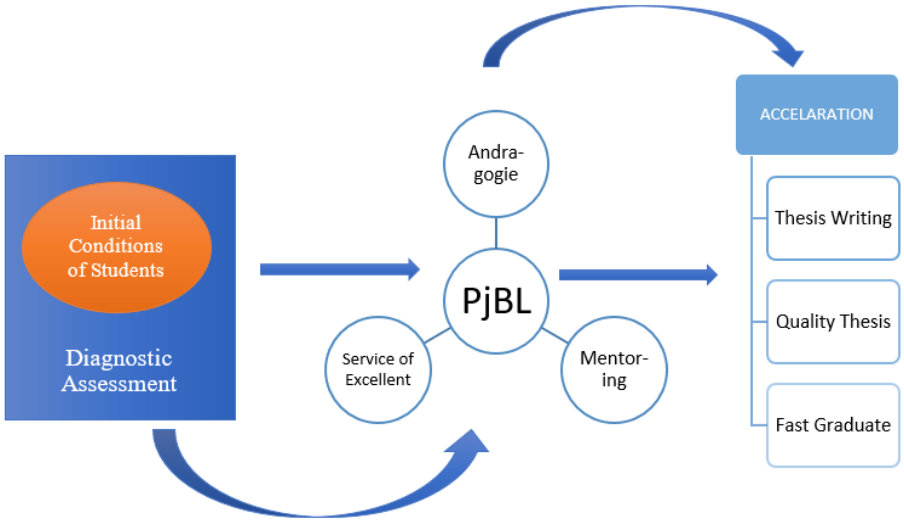


Fig. 4. Learning development cycle diagram

Challenges and Opportunities

After implementing a diagnostic assessment on students who took this course in semester 1, the research results identified several obstacles. Namely, the level of knowledge and understanding of the basic science of research methodology varies. There are even students from Islamic boarding schools who, during their undergraduate studies, have never received basic theory about research methodology. Some students have received basic research methodology, but have only focused on one type of research, namely the qualitative type. This variation in students' initial understanding of research methodology is thought to be an initial obstacle and, at the same time, provides an opportunity for special treatment through matriculation activities or equalizing perceptions at the beginning of the meeting. By implementing the project-based learning model based on the DaM2R strategy through mini research activities that are in accordance with students' needs and interests, they can increase the acceleration of students' abilities in writing theses.

This DaM2R study contributes to complementing previous research studies that examine the acceleration of thesis writing. The results of this research contribute to the proposal of a policy for accelerating student studies in the form of curriculum development, academic guidance assistance, and determining the right supervisor [36]. DaM2R assists in writing final assignments [14]. Another study also found that students' most common difficulty in writing a thesis is writing and organizing ideas. This difficulty arises because of the lack of ability to write and understand what should be included in the background. Then the ways they take to overcome their challenges include working independently, joining a group, and receiving intensive guidance [37].

Obstacles in studying research methodology courses in other research were also found, such as how to analyze data, test hypotheses, and test data statistically. This is caused by students' limited understanding of research methodology, lack of motivation to study research, lack of learning innovation from both students and lecturers, and lack of lecturer motivation in overcoming student learning difficulties [9], [10], [11], [12]. The limitation of this research lies in the research methodology course; only one class was used with a limited number of postgraduate students. This method must still be tested on a broader scale to generalize the results.

Conclusion

Based on the research results, it can be concluded that through the project based learning model based on the DaM2R strategy there has been an increase in students' abilities in terms of understanding quantitative, qualitative and mixed research, the ability to find and create quantitative, qualitative and mixed research titles, the ability to name the characteristics

of research titles, the ability to design content of the background of the problem, ability to formulate the problem, focus and research questions, ability to state the basis for consideration in choosing a theoretical basis, understanding of the concepts of population and sample, ability to distinguish between research subjects and objects, ability to select the correct data collection technique, ability to explain and choose data analysis techniques according to the type of research. The increase in students' abilities is evident from the results of diagnostic assessment gain one with the posttest, most of which are in the high category (<g> 0.70). Apart from that, there is an increase in knowledge, from students initially having four abilities in research, after matriculation, their insight into research increases to 11 abilities. Other evidence can also be seen from the results of the mini research work that has been prepared, which is converted into an average mid-semester exam score of over 90. Suppose you pay attention to students' activeness when carrying out lectures and peer review activities for their respective proposal presentations that have been prepared. In that case, Students actively provide input and review comments directly and through workshops prepared in the drive. The supporting factors for the program's success are joint commitment and readiness for learning planning. However, two students were considered inadequate in participating in learning activities because different backgrounds and cultures hampered them, and they also rarely actively attended lectures due to their position abroad.

Limitations and Suggestions

Implementing the DaM2R method is still limited to study programs and educational research methodology classes. The number of participants involved is still limited to 10 students. Therefore, based on the limitations of the study, it can be recommended, especially for further researchers, to be able to apply this method in other places on a broader scale so that the results can be generalized.

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Conflict of Interest

There is no conflict of interest.

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