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HEUTAGOGY-BASED INTERNAL  
QUALITY ASSURANCE SYSTEM  
(SPMI) IMPLEMENTATION  
ASSISTANCE MODEL FOR  
ENHANCEMENT OF QUALITY  
COMMITMENT OF PTS LEADERS  
IN NORTH SUMATRA

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## DEVELOPMENT OF HEUTAGOGY-BASED INTERNAL QUALITY ASSURANCE SYSTEM (SPMI) IMPLEMENTATION ASSISTANCE MODEL FOR ENHANCEMENT OF QUALITY COMMITMENT OF PTS LEADERS IN NORTH SUMATRA

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### Abstract

The aims of this study were to: (1) determine the characteristics of the Heutagogy-Based SPMI Implementation Assistance model; (2) find out the feasibility of the heutagogy-based SPMI implementation assistance model; (3) to find out the effectiveness of the heutagogy-based SPMI implementation assistance model for increasing the quality commitment of PTS leaders in North Sumatra. This research is a development research using the ADDIE model. It was carried out in all PTS that had not been accredited in North Sumatra. The population subjects for this study were 82 PTS leaders who had not been accredited, the sample subjects were 30 people. Data collection techniques were carried out by observation, interviews, documentation, questionnaires and tests. The research instrument and model design were first validated by experts to obtain the feasibility of its use. The trials were carried out 2 (two) times, namely limited trials (10 respondents), wide trials (30 respondents). Based on the results of the study, it was found that the feasibility test obtained a value of 93.75% (material experts) in the very feasible category, 92.5% (media experts) in the very feasible category, and users 92.43% in the very good category; (2) obtained the average value of N-Gain Score is 83.66% (limited trial) and 85.91% (wide trial). Because the value of  $g > 75$  is in the effective category. The Wilcoxon test results obtained the Asymp.Sig value. (2-tailed) has a value of 0.025 and a Z value of -2.805 for the limited trial and the Asymp value. Sig. (2-tailed) has a value of 0.000 and a Z value of -4.784 broad trial with an effective category. The effectiveness of the model obtained a score of 92.86% and the mentoring program was rated an average of 92.43% in the very

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*good category. So it can be concluded that the Heutagogy-Based SPMI Implementation Assistance Model is effective in increasing the quality commitment of PTS leaders in North Sumatra.*

*Keywords: Heutagogy, Leadership Quality Commitment, SPMI Implementation Development Model.*

## Introduction

Quality education can only be built through people who have the ideals and commitment to strive to uphold the quality of education, both at the government level as policy makers and supervisors, as well as at the level of education management units. Without the presence of quality people who have a commitment that is under the umbrella of appropriate and correct national regulations and policies, universities will not have enough to become national development. Quality education, especially tertiary institutions, is when it is able to improve and realize its vision through the implementation of its mission (deductive aspect), and is able to meet the needs/satisfy stakeholders (inductive aspect), namely the needs of society, the world of work and professionals. (Willy Susilo, 2018) (Andi Mursidi, 2020)

Lack of committed leaders or weak leadership competence, concentration on control and action which impedes the smooth flow of information and makes values hard to reach, are factors that definitely hinder a quality culture. (Flumerfelt & Banachski, 2011). Whereas as an institution providing community services in the field of higher education survival, it cannot be separated from the supporting community and interested communities (stakeholders). Then higher education is required to be responsible for the services stated to the community. This responsibility is stated as the accountability of the tertiary institution for the roles and functions carried out; implementation performance; for the services provided. (A. Hanief Saha Ghafur, 2010)

This is in line with Migle Sontaite, (migle ŠONTAITĒ, 2011) There are 10 indicators for measuring reputation in tertiary institutions and 10 factors for measuring reputation in higher education institutions, namely emotion appeal, behavior, studies, citizenship and social responsibility (citizenship and social responsibility), leadership (leadership), performance (performance), workplaces (workplace), competition (competition), career (career), and innovation (innovation). Saffon stated the advantages of a quality tertiary institution with a good reputation, including: (1) being able to increase the number of students; (2) can set education costs at a premium price; (3) can improve quality in the tertiary institution; (4) creating a sense of pride among students, alumni and employees. (Safón, 2009)

However, the reality is based on the top universities in Indonesia uniRank 2021, 2022 and 2023 that the quality of private tertiary institutions in North Sumatra is not yet at a good level. For universities in the category of private tertiary institutions, especially in North Sumatra, they have not yet entered the top 50 (2021), in 2022, only one private university is in the top 50.(Budi Raharjo, 2022).

Facts on the ground illustrate that the quality of tertiary institutions in Indonesia and especially in North Sumatra cannot be stated as good. This is in line with BAN PT data taken from the official website of BAN PT in 2022 and accessed on April 8, 2022 showing that private university administrators (PTS) and quality study programs accredited Excellent or A are still few compared to the number <sup>44</sup> study programs accredited Very Good. (B) and Good (C). The data can be seen in the table below.

**Table of Higher Education Accreditation Based on PT Organizers or Higher Education Accreditation (APT)**

Organizer PT	A	B	C	Superior	Very well	Good	Not Accredited	Total
PTAN	6	48	8	1	7	8	0	78
PTAS	0	34	259	0	9	270	98	670
PTKL	7	59	1	2	13	15	1	98
PTN	37	42	0	7	11	12	0	109
PTS	31	632	724	9	70	381	56	1903
Total	81	815	992	19	110	686	155	2858

Source: PT tires

The table above illustrates that PTS accredited A in Indonesia are smaller than those accredited B, C. While only 9 PTS are superior, smaller than those accredited Very Good (70 PTS), good accreditation (381), not accredited 56 PTS out of a total of 1903.

Meanwhile in North Sumatra, based on BAN PT data for 2021 released by Higher Education Service Institutions (LLDIKTI) Region 1 in the LLDIKTI Performance Report Region 1 for 2021, out of 211 private tertiary institutions in the North Sumatra region whose institutional accreditation is A 1 (0.47%) )namely Muhammadiyah University of North Sumatra (UMSU), accredited B 44 (20.85%) and accredited C 68 (32.23%), not accredited 8 (3.79) and not accredited 90 (42.65%).(Ibn Hajar, 2021). While the data for PTS LLDIKTI Region I Medan which will be released in 2022, out of 204 PTS, PTS with superior institutional accreditation are only 1 (0.49%), very good 3 (1.47%), 44 B (21.56), 103 (50.49%) good, 1 (0.49%) C accredited, and 82 (40.19%) not accredited.(Syaiful Anwar Matondang, 2022)

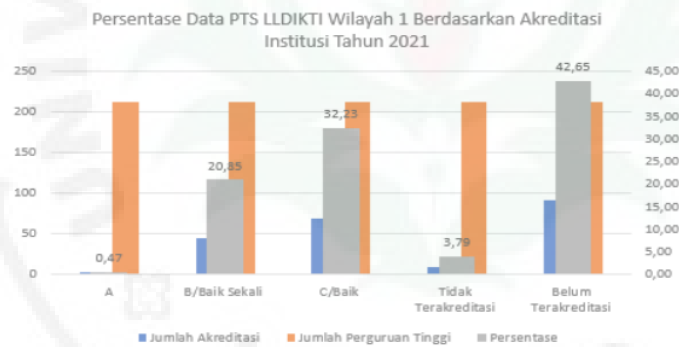
An overview of the data can be seen in the table and figure below.

**Table of PTS LLDIKTI Region 1 Medan Data Based on Institutional Accreditation in 2021**

PTS	Akreditasi Institusi					Total
	A	B / Baik Sekali	C / Baik	Tidak Terakreditasi	Belum Akreditasi	
1 Universitas	1	19	13	1	10	44
2 Institut Sekolah Tinggi		6	3	0	4	13
3 Akademi		11	25	5	31	72
4 Politeknik		6	20	1	42	69
5		2	7	1	3	13
Jumlah	1	44	68	8	90	211

Source: LLDIKTI Performance Report Region 1 Medan for 2021

**Picture Percentage of PTS LLDIKTI Region 1 Data Based on Institutional Accreditation in 2021. Percentage processed by the author**



**Picture PTS LLDIKTI Region I Data Based on Higher Education Accreditation Year 2022**



Source: Performance Report of LLDIKTI Region I Medan in 2022

From the image data above as described (Ibnu Hajar, 2021:26–27) that in 2021 LLDIKTI Region I is targeting 0.9 percent achievement out of a total of 211 PTS or as many as 2 PTS obtaining superior accreditation from previously only 1 PTS namely Muhammadiyah University of North Sumatra (UMSU). There are 2 PTS that are considered capable of meeting the criteria for PTS with Excellent accreditation, having more than 3,000 (three thousand) students enrolled or improving quality by consolidating with other PTS, in 2022 there will also be no additions as a general problem in the Regional LLDIKTI Performance Report I Medan in 2022 at point 4 which reads "The transition of study program accreditation from BAN-PT to several Independent LAMs has resulted in the non-fulfillment of the percentage of PTS with an Excellent accreditation rating of more than one at LLDIKTI I". (Syarif Anwar Matondang, 2022:vi)

Another phenomenon from the data above is that it is found that data on unaccredited and unaccredited tertiary institutions will still be high in 2021 if the sum of the two reaches 98 tertiary institutions with 46.44%. This data has decreased in 2022 as many as 80 tertiary institutions with 40.19%. Although it has decreased, it is still high. This is in accordance with the general problem conditions of LLDIKTI Region I 2022 at point 2, namely proposals for the development of higher education institutions often receive notes related to the quality of PTS strategic plan documents and statutes that do not meet standards.

The low quality of higher education in North Sumatra can be seen from the comparative data on the accreditation results of PTS in Java Island and PTS outside Java Island which is illustrated in the table below.

**Table of Differences in Private Higher Education Accreditation between Java Island and Outside Java Island**

Region	Accredited PT						
	A	B	C	Superior	Very well	Good	Not Accredited
Java	30	393	324	8	44	178	21
Outside of Java Island	1	239	400	1	26	203	35
<b>Total</b>	<b>31</b>	<b>632</b>	<b>724</b>	<b>9</b>	<b>70</b>	<b>381</b>	<b>56</b>

Source: BAN PT

The data above shows that there are still differences in the phenomenon related to quality between higher education institutions in Java and outside Java. While other facts were revealed in research (Mursidi, 2022:10) who explained based on the report of the Directorate of Quality Assurance of the Indonesian Ministry of Research, Technology and Higher Education on the Internal Quality Assurance System in various tertiary institutions after conducting four

mappings. In fact, from the results of the 2008 mapping, it was found that only 68 tertiary institutions were declared good at implementing the Internal Quality Assurance System, in 2009 it decreased to 58 tertiary institutions, in 2010 it decreased again to 24 tertiary institutions, in 2011 it increased to 159 tertiary institutions. which is stated to have been good in the Implementation of the Internal Quality Assurance System. This is also reinforced by the implementation of the Higher Education Internal Quality Assurance System in Indonesia in 2017–2019 in the table below.

**Table of Mapping Results of Higher Education SPMI Implementation in Indonesia**

You know Description	2017		2018		2019	
	Amount	%	Amount	%	Amount	%
Number of Universities	4,524	100	4,643	100	4,666	100
Filled	2076	45.88	2,869	61.79	3,535	75.76
Not Filled Yet	2,448	54.12	1,774	38.21	1,131	24.24
Complete Charge	595	28.67	1,197	41.72	873	24.70
Not Complete Filling	1,481	71.33	1672	58.28	2,662	75.30

Source: <http://spmi.ristekdikti.go.id/peetaan>. Dataprocessed from (Mursidi, Higher Education SPMI, 2022)

The facts in the table above illustrate that the low External Quality Assurance System (SMPE) or accreditation assessment activities carried out by BAN PT are influenced by the Internal Quality Assurance System (SPMI) which has not been maximized making it difficult for tertiary institutions to achieve accreditation assessments properly if SPMI implementation has not run optimally.

The reality above is in line with the findings of research results from research that (Cao & Li, 2014) with the title "Quality and Quality Assurance in China Private Higher Education" which states that the implementation of a quality assurance system can develop higher education institutions and (Kleijnen et al., 2011) related "Does internal quality management contribute to more control or to improvement of higher education? A survey on faculty's perceptions. Quality Assurance in Education. It was explained that quality assurance activities had a very positive influence on improving the quality of departments, in this case education. This is confirmed by

research (Ruzek et al., 2004:17) at the University of Lithuania that the system for quality improvement and educational excellence must be designed as a continuous process considering that the quality of the final product of higher education is the result of the achievement of the educational process.

Based on an interview with the Research Working Group LLDIKTI Region I Medan, Dr. Sofyan Matondang (18 March 2023) the quality commitment of higher education leaders has not shown anything encouraging. For example, when asked about the quality commitment of the leadership, the answer is not the leadership. At the PTS leadership Rakerwil, the invitation letter requested not to be represented, but those who came were at the lowest level, so that the achievement of the Rakerwil policy was not achieved because the conveyer was not the leader.

The results of the interview with the SPMI LLDIKTI Region I Medan expert facilitator, Dr. Yan Hendra, M.Sc, who is also Chair of the Quality Assurance Board of Muhammadiyah University of North Sumatra (March 18 2023), stated that the quality commitment of PTS leadership was not good. Often LLDIKTI Region I Medan drops. But when carrying out SPMI assistance, weaknesses were found in reflection and follow-up. When giving assignments to PTS, the task reporting was not as expected, the presentation was not up to par.

The low commitment to quality leadership of private tertiary institutions (PTS) in North Sumatra can be seen from the initial survey conducted on 30 PTS leaders in the Higher Education Service Institutions (LLDikti) environment in the Sumatra region by distributing respondent questionnaires to elements of higher education leadership (chancellor/vice-chancellor, chairman/deputy/chairman, director/deputy director, dean/deputy dean) of various types of tertiary institutions such as universities, institutes, high schools, academies, and polytechnics. As for the result;

- 1) The existence of a quality target that is oriented towards improving the reputation of higher education institutions obtained a percentage of 50.83.
- 2) Provision of higher education quality policies obtained a percentage of 47.50.
- 3) Higher education quality assurance fund support obtained a percentage of 48.33.
- 4) The physical involvement of the leadership in implementing higher education standards obtained a percentage of 48.33.
- 5) Adequate support for facilities and human resources for higher education quality assurance obtained a percentage of 51.67.



- 6) Formation of a higher education quality assurance unit obtained a percentage of 44.17.
- 7) Selecting higher education quality assurance unit personnel obtained a percentage of 45.00.
- 8) The percentage of 47.50 for the preparation of higher education quality documents.
- 9) Improving higher education quality standards through the implementation of the PPEPP Cycle obtained a percentage of 47.50.

From the complexity of the problem of quality commitment from the leaders of private tertiary institutions (PTS) in North Sumatra from the perspective of assisting the implementation of the Internal Quality Assurance System (SPMI), the researcher is interested in conducting in-depth research entitled "Development of a Heutagogy-Based Internal Quality Assurance System (SPMI) Assistance Model for Improvement Quality Commitment of PTS Leaders in North Sumatra"

Of course, this research has a striking difference from research on the Development of an Internal Quality Assurance System (SPMI), the difference lies in the focus point of the study. If Andi Mursidi develops the SPMI Model based on Partnership, the research that the author will carry out is the Development of the Heutagogy-Based SPMI Assistance Model for Improving the Quality Commitment of PTS Leaders in North Sumatra.

### Research methods

This research uses the type of research R&D (Research and Development) or uses research and development methods. The research was conducted in two stages, the first stage used qualitative methods to obtain product design. The second stage, using quantitative methods (experiments) to test the effectiveness of these products. (Sugiyono, 2011:494). The Design for the Development of the Heutagogy-Based SPMI Implementation Model for Improving the Quality of PTS Leaders in North Sumatra was carried out by adopting the ADDIE model which consisted of five stages of development namely Analysis, Design, Development, Implementation and Evaluation and paying attention to three aspects of quality, namely valid, practical and effective. (Branch, 2010). This research was conducted at private universities spread across North Sumatra, especially those whose institutions had not been accredited. The time of the research was carried out from July 2022 to April 2023. The population subjects for this study were 82 leaders of private tertiary institutions in North Sumatra that had not been accredited, while the research sample was 30 who were determined using a purposive sampling technique. The research data was collected using

questionnaires, interviews, FGDs, observations, documentation studies, expert validation and tests.

## Literature review

### Accompaniment

Assistance is a word that is always talked about. Mentoring is the process of providing service as someone who accompanies, someone who facilitates and helps the growth of others. In the process, it can include modeling because a partner is also a mentor who must be able to model messages and suggestions that are being taught to newcomer teachers. (Gays, 2002). Mentoring activities are inseparable from human resource management as planners and movers in a company or organization. Human resources must be developed continuously with the aim of improving their quality so as to facilitate the achievement of company goals. (Eka Daryanto et al, 2022:19)

### Heutagogy

The term Heutagogy is adapted from the Kuono Greek "heutos", which means "self" and "agogy" which means study. (Hase, S., & Kenyon, 2007). Heutagogy can be thought of as "self-learning", or as defined by Hase and Kenyon, as the study in which students determine how they learn (Hase & Kenyon, 2007; 2000; 2003). Heutagogy is an approach or study of learning which requires students to be more independent in their learning or self-determined learning. ((Blaschke, 2021)(S. Hase, 2009).

### Commitment

According to (HE Mulyasa, 2013:13) commitment is a high promise that someone will serve themselves in the world of education seriously under any circumstances. So that with someone having a commitment, that person can feel safe and comfortable and enjoyable in developing their duties and functions. In the context of quality assurance, commitment is a person's belief and acceptance of educational quality standards and his desire to continue to improve the quality of education provided. People who have a high commitment to quality will tend to show high involvement in ensuring the quality standards of education in the institution they work in, which is manifested not only in the form of support discourse but also in the form of quality attitudes and behavior. And the form and attitude of commitment will be seen from the pleasure with activities that are oriented towards quality improvement. (Gumiandari, 2013:13)

## Results and discussion

The research used is Research and Development (R&D). The Design for the Development of the Heutagogy-Based SPMI Implementation Assistance Model for Increasing the Quality Commitment<sup>36</sup> of PTS Leaders in North Sumatra is carried out by implementing the ADDIE model which consists of five development stages namely, Analysis, Design, Development, Implementation, and Evaluation. The stages and results implemented are described as follows:

### Analysis Stage

The analysis stage in the Development of the Heutagogy-Based SPMI Implementation Assistance Model for Improving the Quality Commitment of PTS Leaders in North Sumatra is the first step in the ADDIE model. This analysis phase includes an analysis of<sup>38</sup> quality commitment problems of PTS leadership in North Sumatra, an analysis of the results of the quality commitment survey of PTS leadership that has been carried out.

Based on the initial survey conducted by distributing questionnaires to respondents who belonged to higher education leadership (rector or vice-chancellor, director/deputy director, chairperson/deputy chairperson) whether in the form of universities, institutes, high schools, academies or polytechnics, it was found that the leadership's quality commitment it can be concluded that the quality commitment of the leadership has not been said to be very good. This was confirmed by the results of an interview with Irna Triannur Lubis (Battuta University Deputy Chancellor I). Of the 9 indicators of leadership quality commitment, it is acknowledged that it is not optimal. Among them, adequate support for facilities and human resources for higher education quality assurance has not been maximized, there are only three human resources, no selection of higher education quality assurance unit personnel, only seeing personnel from different backgrounds having helped prepare accreditation forms, so that the preparation of higher education quality document sets did not go beyond the standards, the team was still confused about making flow charts, making various forms. Universities need assistance in the implementation of SPMI which is actually carried out optimally, so far there has been assistance or training conducted by LLDIKTI but because there are so many participants that they cannot inquire further.

### Stage Design (Design) and Development (Development)

The design and development stage is the stage of designing the mentoring model. The assistance referred to is the design of a heutagogy-based SPMI implementation assistance model. The goal is that the leadership's quality commitment can be improved. Effective mentoring is inseparable from the input-output mentoring process.

The implementation of assistance is developed through the ADDIE model which consists of five stages of development, namely Analysis, Design, Development, Implementation and Evaluation.

The stages of developing heutagogy-based SPMI implementation assistance model design can be described as follows:

1) Analysis(Analysis)

The analysis phase in the initial steps of ADDIE was carried out by analyzing the problem of the lack of commitment to the quality of higher education leaders. Based on the literature study, the discussion obtained 9 (nine) input indicators including;

1. There is a quality target that is oriented towards increasing the reputation of the institution.
2. Provision of quality policy.
3. Quality assurance fund support.
4. Physical involvement of the leadership in carrying out and overseeing the implementation of standards.
5. Support facilities and adequate human resources.
6. Establishment of a quality assurance unit.
7. Selecting adequate number of quality assurance unit personnel with certain criteria.
8. Preparation of quality documents, and
9. Improvement of standards through the implementation of the PPEPP cycle.

Analysis of the need for assistance was carried out by interviewing a number of university leaders. Evri Ekadiansyah, S.Kom, M.Kom (Director of AMIK Polibusiness), Laura representing the Chancellor of Sari Mutiara University, Indonesia, stated that assistance had often been carried out by LLDIKTI Region I Medan. However, an SPMI implementation assistance model is urgently needed. A similar statement was conveyed by Vice Chancellor I, Indonesian Methodist University (UMI), Prof. Dr. Himpun Panggabean, M.Hum who stated that there was a need for a mentoring model in the implementation of SPMI to increase the quality commitment of PTS leaders. So far, there has been assistance provided by LLDIKTI Region I Medan, such as assistance in preparing the strategic plan and PTS statutes in the LLDIKTI Region I environment, and socialization activities for the acceleration of 5 private universities in LLDIKTI Region 1 towards A/Superior APT. Meanwhile, heutagogy-based SPMI implementation assistance does not yet exist. The same thing was conveyed by Dr. Sofyan Manullang stated that the SPMI implementation assistance was very helpful for LLDIKTI Region I Medan because it could help in mapping tertiary institutions according to the functions and duties of

LLDIKTI Region I Medan, namely carrying out tertiary quality mapping; facilitating the implementation of quality improvement in the administration of higher education. (Source; FGD, 18 March 2023). Sofyan Manullang stated that the SPMI implementation assistance was very helpful for LLDIKTI Region I Medan because it could help in mapping tertiary institutions according to the functions and duties of LLDIKTI Region I Medan, namely carrying out tertiary quality mapping; facilitating the implementation of quality improvement in the administration of higher education. (Source; FGD, 18 March 2023). Sofyan Manullang stated that the SPMI implementation assistance was very helpful for LLDIKTI Region I Medan because it could help in mapping tertiary institutions according to the functions and duties of LLDIKTI Region I Medan, namely carrying out tertiary quality mapping; facilitating the implementation of quality improvement in the administration of higher education. (Source; FGD, 18 March 2023).

71 Based on the results of the analysis of the need for assistance, it can be concluded that tertiary institutions need assistance in the implementation of heutagogy-based SPMI to increase the quality commitment of PTS leaders in North Sumatra.

## 2). Design

The facilitation model developed is a heutagogy-based SPMI implementation facilitation model which emphasizes the input-output facilitation process. The SPMI implementation assistance model developed has the following characteristics;

### 1. Modeling goals

The SPMI implementation assistance model is designed for higher education leaders to increase leadership quality commitment. The specific objectives of the heutagogy-based SPMI implementation assistance model are;

- 1). Improving quality targets oriented towards increasing the reputation of the institution.
- 2). Improve provision of quality policy.
- 3). Increase the quality assurance fund support.
- 4). Increasing the physical involvement of leaders in carrying out and overseeing the implementation of standards.
- 5). Improving the support of adequate facilities and human resources.
- 6). Increase the establishment of a quality assurance unit.
- 7). Increasing the selection of quality assurance unit personnel with certain criteria with adequate numbers.
- 8). Improving the preparation of quality document tools and,

9). Raising standards through the implementation of the PPEPP cycle.

2. Model goals

The heutagogy-based SPMI implementation assistance model is designed for leaders of PTS tertiary institutions in North Sumatra.

3. Model building principles

The heutagogy-based SPMI implementation assistance model was developed by applying heutagogy principles that are integrated into the mentoring process activities. The mentoring process has 4 (four) stages namely;

1) Need assessment/planning. The process of identifying gaps and collecting data for assistance needs. Data collection was carried out using a questionnaire technique. Data collection emphasized the need for assistance, and the understanding of higher education leaders about the leadership's quality commitment.

2) implementation stage. This stage compiles a step-by-step guide on how the heutagogy-based SPMI implementation assistance model is carried out.

3) Evaluation stage. This stage is activity after the implementation of assistance, this activity is carried out with the aim of evaluating the results of the implementation of heutagogy-based SPMI implementation assistance.

4) Reflection/follow-up stage. At this stage, the assistants need to reflect on what they have learned, as well as how the assistants have learned it and how to improve it, leading to more effective self-regulation. The reflection process enables the mentor to practice more analytical, critical thinking, to engage in reasoning and complex problem solving.

The heutagogy-based implementation assistance model is prepared by applying heutagogy principles. The principles are as follows;

1. Learner agency. Assistance is based on the core principle of heutagogy, namely learning agency which basically gives students (students in the context of this dissertation called PTS assistance/leaders) autonomy to make decisions about the specified learning path. Here the accompaniment becomes an active learner in determining and directing learning journeys and strategies, so as to develop skills of autonomy, creativity, leadership, self-direction, self-management. When given the right to assist, it can be intrinsically motivated to learn, especially critical attitudes when learning online.

2. Self-efficacy and capability. Assistance is carried out by understanding the perceptions of the assistance regarding their understanding of concepts and their ability to implement and carry out

certain tasks (competencies) and to develop their capacity to perform tasks in new and unique environments (capabilities).

3. Reflection and meta-cognition. Mentoring provides an opportunity for mentors to reflect on what they have learned (single loop learning), as well as how they learned it and how they can improve it. At this stage it leads to more effective self-regulation (double loop learning). This reflection process enables the accompaniment to practice more analytical and critical thinking when involved in complex reasoning and problem solving.

4. Nonlinear learning. The assistance provided is non-linear learning. That is, it is determined independently, not depending on the curriculum. Learning defines learning outcomes and how it will be achieved. Assistance here actively explores various paths in pursuit of learner goals. The use of the internet, social media supports nonlinear learning, and can lead to increased skills in using technology. Nonlinear learning paths can include aspects of collaboration, communication and connection with others. Learning is done inside and outside the classroom.

4. The modeling stage

At the stage of preparing the heutagogy-based SPMI implementation assistance model, the researcher coordinated with the Promoter, Prof. Dr. Zainuddin, M.Pd and Co-Promoter, Dr. Darwin, M.Pd. Coordination is intended to find out what ways can be done to increase the quality commitment of PTS leaders in North Sumatra.

Further coordination was carried out by holding Focus Group Discussion (FGD) activities for the Feasibility Test of the Model. Researchers asked for input and suggestions regarding the model offered, namely "Model of Assistance in the Implementation of Heutagogy-Based Internal Quality Assurance Systems (SPMI) for Increasing the Quality Commitment of PTS Leaders in North Sumatra".

The heutagogy-based implementation assistance model is structured through the following stages;

1) Research. Research has been carried out since the issuance of a research permit from the Higher Education Service Institute Region 1, dated October 21, 2022 by conducting field studies, documentation studies, interviewing higher education leaders, and distributing initial questionnaires.

2) Preparation of the draft model. The preparation of the draft model was prepared with the promoter and co-promoter and discussed during the implementation of a Focus Group Discussion (FGD).

3) The FGD discussed the draft model that had been prepared. The FGD involved promoters, co-promoters, media experts, material

experts, mentoring experts, SPMI experts, Heads of Region 1 Higher Education Service Institutions, higher education leadership consisting of the chancellor, vice-chancellor, director/deputy director, chairman/deputy chairman, dean , .

4) Preparation of module drafts, manuals, and handbooks. Module drafts are prepared independently in coordination with promoters and co-promoters.

5) Model trials. Model trials aim to determine the practicality, effectiveness and feasibility of the models<sup>46</sup> that have been developed. The trials were conducted twice, namely limited trials and extensive trials.

6) Refinement and finalization of the model. The refinement and finalization of the model is carried out based on the evaluation results of model trials.<sup>40</sup>

5. The model preparation stage, module book, and guide book.

The design stage is continued with the preparation of model books, module books, guide books. The stages can be described as follows:

First, the drafting of a model book, the model book consists of CHAPTER I, Rational Model, CHAPTER II, Theoretical Basis, CHAPTER III, Development of a Heutagogy-Based SPMI Implementation Assistance Model for Increasing Leadership Quality Commitment in North Sumatra, Bibliography, Glossary and Index.

Second, the preparation of modules. The module consists of a title, introduction, instructions for using the module, competency standards, prerequisite skills, pre-test, basic skills, content (material), learning activities, summary, test, sources used, and bibliography.

Third, the guidebook consists of an introduction, model development, preparation for the implementation of mentoring, activity structure, syllabus, companion requirements, assistance requirements, assistance implementation (time, place, rules) and assessment.

6. The stage of preparing the assessment instrument.

At this stage an assessment is carried out on the mentoring model, module assessment, and guidebook assessment, as well the effectiveness of the heutagogy-based SPMI implementation assistance model, evaluating the effectiveness of the heutagogy-based SPMI implementation assistance program, and the PTS leadership quality commitment instrument.

The assessment was carried out through a questionnaire with a Likert scale to assess the practicality, effectiveness and feasibility of the mentoring model, as well as the guidebooks, modules and mentoring handbooks that were developed.



### Development

Development is the stage after design in the ADDIE model. This stage is a follow-up to the design plan. The stages of development carried out by researchers can be described as follows;

- 1) Prepare a draft mentoring model framework.

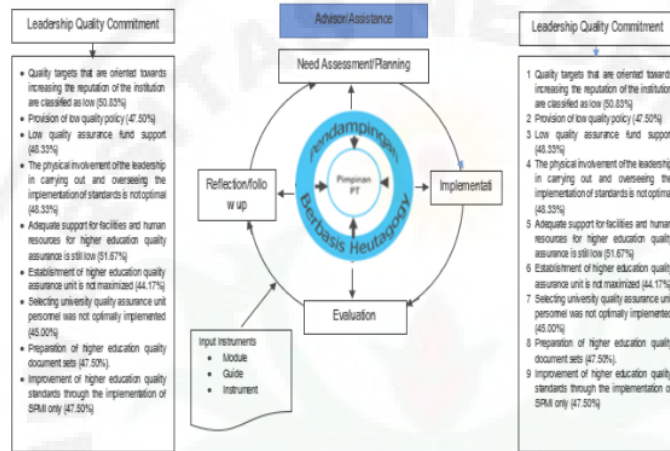
The draft framework for the heutagogy-based SPMI implementation assistance model was prepared independently by researchers by first conducting literature studies, interviews, observations, and field studies. Then look at the factual models and theoretical models first. Next, the researcher coordinated with the promoter and co-promoter to draft a model. The draft model was then tested for feasibility through a Focus Group Discussion (FGD) Model Feasibility Test which was held at the Grand Mercure Maha Cipta Hotel Medan Angkasa, Saturday, March 18 2023.

The FGD involved promoters, co-promoters, Head of Medan Region I Higher Education Service Institutions, material experts, media experts, mentoring experts, SPMI experts, and model users such as university leaders, rectors, vice-chancellors, deans, vice-deans of a number of universities.

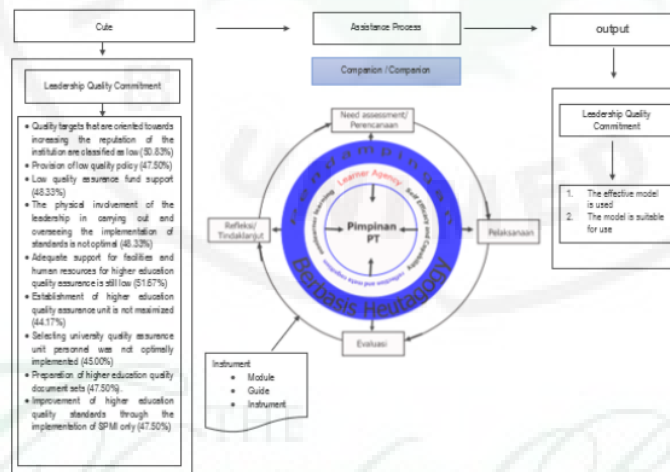
The FGD aims to get input and suggestions for the model offered regarding concept, structure, design and language. The purpose of the FGD is to obtain a mentoring model that can be used to increase the quality commitment of PTS leaders in North Sumatra.

As for the results of the FGD held at the Grand Mercure Maha Cipta Medan Angkasa Hotel, Saturday, March 18, 2023, various inputs were provided by a number of experts and users, in this case university leaders, it was found that the heutagogy-based SPMI implementation assistance model for increasing commitment to quality of PTS leaders in Sumatra North in concept, structure, design and language is good, clear, easy to understand and can be implemented. There is input so that there is a significant change from the hypothetical model offered to the final or feasible model to implement. The framework for the heutagogy-based SPMI implementation assistance model for Improving the Quality Commitment of PTS Leaders in North Sumatra can be described from before the FGD and after the FGD.

**Figure 4.1 Heutagogy-Based SPMI Implementation Assistance Model for Improving Quality Commitment of PTS Leaders in North Sumatra (before FGD)**



**Figure 4.2 Heutagogy-Based SPMI Implementation Assistance Model for Improving Quality Commitment of PTS Leaders in North Sumatra (after FGD)**



2) Assistance Module Development

The mentoring module developed includes: Cover Module, Module designed to be 15x23 in size in accordance with UNESCO regulations

and the Module Structure Framework consisting of an introduction including among others; (title, introduction, objectives, competency map, prerequisite skills, Scope, instructions for using the module, learning activities (learning objectives, competency achievement indicators, material description, evaluation, and bibliography).

### 3) Guidebook Development

The designed guidebook contains: Cover, the guidebook is<sup>76</sup> printed with UNESCO size 15 cmx23 cm with a total of 32 pages and consists of 5 (five) chapters namely, Chapter I, Introduction, Chapter II General Description of the Heutagogy-Based SPMI Implementation Assistance Model for Increasing Quality Commitment PTS Leaders in North Sumatra, Chapter III Preparation for Implementation, Chapter IV, Assistance Implementation, and Chapter V, Assessment.

### 4) Instrument Development

The instruments developed consist of:

- 1) Assisted respondent instrument.
- 2) The mentoring model assessment instrument is aimed at material experts, media experts, practitioners and users. The instrument consists of input and suggestions for improving the feasibility test model. This instrument was carried out during the FGD.
- 3) Media expert validation instrument related to heutagogy-based SPMI mentoring module.
- 4) Material expert validation instruments related to heutagogy-based SPMI implementation assistance modules.
- 5) The assessment instrument for the guidebook for the Assistance Model for the Implementation of Heutagogy-Based SPMI is aimed at the assistant/assistant.
- 6) Assessment instrument for feasibility testing of the Heutagogy-Based SPMI Implementation Assistance Model aimed at the assistant/assistant.
- 7) The Instrument for Assessment of the Effectiveness of the Assistance Model for the Implementation of SPMI Based on Heutagogy is addressed to assistants and assistants.

### 5) Validation

<sup>34</sup> Validation is a stage to determine whether the mentoring model and module<sup>34</sup> developed is feasible to be tested.

#### 1) Material expert validation

<sup>37</sup> Material expert validation is a validation stage that aims to determine the feasibility level of the module used. The material expert in this study is Dr. Arif Rahman, M.Pd (Head of the Master of Education Administration Study Program, Graduate School of Education, Medan State University) and Prof. Dr. Elfrianto, S.Pd.M.Pd (Professor of

Educational Management at Muhammad<sup>56</sup>h University of North Sumatra). After conducting the assessment, the results of the material expert validation can be described below.

**Table of Material Expert Validation Results**

No	Validators	Research Aspect				Total
		Content Eligibility	Eligibility of Presentation	Language Eligibility	contextual	
1.	Dr. Arif Rahman, M.Pd	55	47	45	43	190
2.	Prof. Dr. Elfrianto, S.Pd., M.Pd	55	45	43	42	185
Average		55	46 <sup>58</sup>	44	42.5	187.5

Source: Questionnaire results from material expert validation (March 2023).

Based on the explanation above, the results of the material experts obtained a total score of 187.5 while the expected score was 200, so the percentage of eligibility can be calculated using the percentage of eligibility according to (Suharsimi Arikunto, 2010:245) that is;

$$\begin{aligned} \text{Eligibility Percentage (\%)} &= \frac{\text{Skor yang didapatkan}}{\text{Skor yang diharapkan}} \times 100\% \\ &= \frac{187,5}{200} \times 100\% \\ &= 93,75\% \end{aligned}$$

Once the eligibility percentage is known, then the eligibility percentage value is converted with the feasibility category into<sup>83</sup> etation criteria table (Riduwan & Akdon, 2006:18). Following are the results<sup>48</sup> of the feasibility assessment by material experts.

**Table of results of material expert feasibility validation**

No	Aspect	Average Percentage	Category
1.	Content Eligibility	91.66%	Very Worth it
2.	Presentation Eligibility	92.00%	Very Worth it
3.	Language Eligibility	97.77%	Very Worth it
4.	Contextual Assessment	94.44%	Very Worth it

Source: Material expert validation questionnaire (March 2023).

Based on the table above, a total score of 187 is obtained with a percentage of 93.75 in the very decent category.

2) Media expert validation

Media expert validation<sup>34</sup> is part of the validation stage which has a direction and purpose<sup>32</sup> to determine the feasibility level of the model

of the media<sup>102</sup> in this case the module used. The media expert in this research<sup>69</sup> is Prof. Dr. Abdul Hamid K, M.Pd (Professor and lecturer in the Educational Technology Study Program, Postgraduate School, State University of Medan). Following are the validation results from media experts.

**Table of Media Expert Validation Results**

No	Validators	Research Aspect				Total
1.	Prof. Dr. Abdul Hamid K, M.Pd	Module Size	Cover Design	Content Design	Encourage Curiosity	127
		9	34	18	66	

Source: Media Expert validation questionnaire (March, 2023)

Based on the table above, it can be seen that the results of the media expert's assessment obtained a total score of 127, while the expected score was 135, so the percentage of eligibility can be calculated using the formula for the percentage of eligibility according to (Suharsimi Arikunto, 2010:245) that is:

$$\begin{aligned} \text{Eligibility Percentage (\%)} &= \frac{\text{Skor yang didapatkan}}{\text{Skor yang diharapkan}} \times 100 \% \\ &= \frac{127}{135} \times 100 \% \\ &= 94,07\% \\ &= 94\% \end{aligned}$$

Once the eligibility percentage is known, then convert the eligibility percentage value with the feasibility category interpretation criteria table (Riduwan & Akdon, 2006:28). The following is the result of the media expert's<sup>48</sup> feasibility assessment.

**Table of results of media expert eligibility validation**

No	Aspect	Average Percentage	Category
1.	Module Size	90%	Very worth it
2.	Cover Design	97.14%	Very worth it
3.	Module Content Design	90%	Very worth it
4.	Encourage Curiosity	94,28	Very worth it

Source: Material expert validation questionnaire (March 2023).

Based on the table above, based on the validation results<sup>66</sup> carried out by media experts, it can be concluded that in terms of media feasibility, the heutagogy-based SPMI implementation assistance model is very feasible to use.

#### Implementation Stage

The implementation phase aims to test the SPMI implementation assistance model based on heutagogy.

### Limited Trial

The first trial was conducted on a limited basis to 10 PTS leaders in North Sumatra. Then the trial expanded to PTS leaders in North Sumatra as many as 30 people.

**Table 4.9 Data on Limited Trial Pre-Test and Post-Test Results**

subject	Pre-test scores	Post-test scores	Posttest - Pretest	Ideal score - Pretest	N-Gain Score	N-Gain Score (%)
1	59	143	84	101	0.83	83,17
2	62	148	86	98	0.88	87,76
3	55	146	91	105	0.87	86,67
4	68	152	84	92	0.91	91.30
5	69	146	77	91	0.85	84,62
6	124	151	27	36	0.75	75.00
7	78	151	73	82	0.89	89.02
8	122	153	31	38	0.82	81.58
9	87	144	57	73	0.78	78.08
10	92	146	54	68	0.79	79,41
Total	816	1480				
Average	81.60	148.00			0.84	83,66
At minimum	55	143			Tall	Effective
Maximum	124	153				

Based on the table above, it can be seen that the mean pre-test score of PTS leadership commitment is 81.60 with a minimum score of 55 and a maximum score of 124. While the mean post-test score of PTS leadership commitment is 148.00 with a minimum score of 143 and a maximum score of 153 of the 40 PTS leadership commitment instruments given.

The N-Gain Score or normalized gain test aims to determine the effectiveness of increasing the commitment of PTS leaders in North Sumatra. The results of the N-Gain Score test obtained  $g > 0.7$ , namely  $0.84 > 0.7$  so that the N-Gain value is included in the High category (Hake, nd, 1999:2). Furthermore, the N-Gain acquisition category in the form of a percent obtained a value of 83.66%, which means that the training model is effective in increasing the commitment of PTS leaders in North Sumatra. Descriptively the distribution of the average N-Gain can be presented in the form of tables and bar charts as shown below.

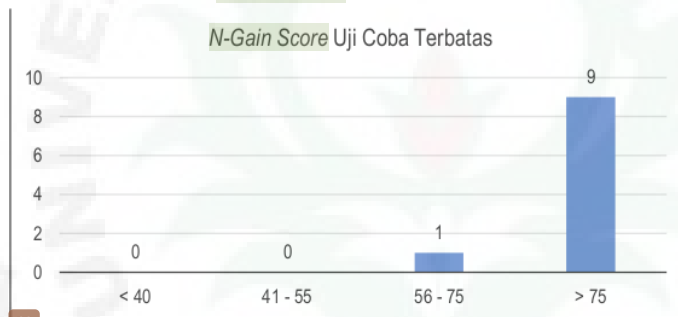
Limited Trial N-Gain Distribution Table

intervals	Limited Trial		
	f	Percentage (%)	Percentage Cumulative (%)
< 40	0	0	0

41-55	0	0	0
56-75	1	10	10
> 75	9	90	100
Amount	10	100	

Based on the table above it is known that the number of respondents was 10 people. There were no PTS leaders who received an N-Gain Score < 40 and an N-Gain Score between 41-55. There is 1 PTS leader or 10% who gets an N-Gain Score between 56-75. There are 9 PTS leaders or 90% who get an N-Gain Score > 75. Based on the data grouping above, the distribution of N-Gain Score scores on the test limited try can be described as follows.

Picture Limited Trial N-Gain Score Bar Chart



After that, the Wilcoxon test was carried out to find out whether there was an increase in the commitment of PTS leaders in North Sumatra in the heutagogy-based SPMI implementation assistance model before and after participating in the mentoring. The following are the results of the Wilcoxon test using SPSS version 22, namely:

Table of Limited Trial Wilcoxon Test Results

		N	Mean Ranking	Sum of Ranks
Posttest_limited -	Negative Ranks	0a	.00	.00
Pretest_limited	Positive Ranks	10b	5.50	55.00
	Ties	0c		
	Total	10		

- a. Posttest\_limited < Pretest\_limited
- b. Posttest\_limited > Pretest\_limited
- c. Posttest\_limited = Pretest\_limited

Statistics test

	Posttest_limited - Pretest_limited
Z	-2.805b
asymp. Sig. (2-tailed)	.005

- a. Wilcoxon Signed Ranks Test  
b. Based on negative ranks.

Based on the table above, the Wilcoxon test results show that:

- 1) Negative Ranks or the negative difference between the pre-test and the post-test is 0, whether it's the value of N, the mean rank or the sum of ranks. A value of 0 indicates that there is no decrease (reduction) in the value of the pre-test to the post-test.
- 2) Positive Ranks or the positive difference between the pre-test and post-test is 10, meaning that the 10 training participants experienced an increase in competence in making quality assurance in institutions. The mean rank is positive or the average increase is 5.50 while the sum of ranks or the number of ranks is 55.00.
- 3) Ties is the similarity of the pre-test and post-test scores which is 0, which means that there is no equal score between the pre-test and post-test.

Based on the output of Test Statistics, it is known that the Asymp value. Sig. (2-tailed) has a value of 0.000 and a Z value of -2.805. The basis for making a decision on the Wilcoxon test using SPSS is to use the Asymp value. Sig. (2-tailed) of 0.005 where if the Asymp. Sig. (2-tailed) < 0.05 then H<sub>0</sub> is rejected H<sub>a</sub> is accepted. Conversely, if the Asymp. Sig. (2-tailed) > 0.05 then H<sub>0</sub> is accepted, H<sub>a</sub> is rejected. The Wilcoxon test results obtained Asymp. Sig. (2-tailed) has a value of 0.000 < 0.05, meaning that the commitment of PTS leaders in North Sumatra after mentoring is higher than before mentoring.

## 2. Extensive Trials

Extensive trial of participants involved in mentoring as many as 30 PTS leaders in North Sumatra. The mentoring instructor is an expert facilitator for MI LLDIKTI Region I North Sumatra. Mentoring activities start with a pre-test to measure the commitment of PTS leaders before mentoring. Then it is continued with learning activities and at the end of the mentoring a post-test is carried out to measure the quality commitment of PTS leaders after mentoring. All activities carried out by participants during the face-to-face learning process and discussions through online media (WA, etc.) were observed by supervisors and researchers. At the end of the mentoring, an evaluation was held for the participants by giving a post-test to measure the commitment of PTS leaders after receiving assistance.



The following is the data from the pre-test and post-test results of PTS leaders.

**Table Data on Pre-Test and Post-Test Results of the Widya Trial**

No	Pre-test scores	Post-test scores	Posttest - Pretest	Ideal score - Pretest	N-Gain Score	N-Gain Score (%)
1	78	150	72	82	0.88	87,80
2	122	154	32	38	0.84	84,21
3	87	146	59	73	0.81	80,82
4	92	146	54	68	0.79	79,41
5	82	150	68	78	0.87	87,18
6	67	147	80	93	0.86	86.02
7	84	156	72	76	0.95	94.74
8	122	152	30	38	0.79	78.95
9	82	147	65	78	0.83	83,33
10	104	152	48	56	0.86	85.71
11	86	145	59	74	0.80	79,73
12	140	159	19	20	0.95	95.00
13	60	150	90	100	0.90	90.00
14	83	148	65	77	0.84	84,42
15	104	147	43	56	0.77	76,79
16	48	149	101	112	0.90	90,18
17	47	145	98	113	0.87	86,73
18	54	148	94	106	0.89	88,68
19	100	150	50	60	0.83	83,33
20	97	147	50	63	0.79	79,37
21	62	147	85	98	0.87	86,73
22	57	147	90	103	0.87	87,38
23	65	147	82	95	0.86	86,32
24	92	153	61	68	0.90	89.71
25	59	147	88	101	0.87	87,13
26	62	152	90	98	0.92	91.84
27	55	148	93	105	0.89	88.57
28	68	140	72	92	0.78	78,26
29	69	146	77	91	0.85	84,62
30	124	158	34	36	0.94	94.44
Total	2452	4473				
Average	81.73	149,10			0.86	85.91
At a minimum	47	140			Tall	Effective
Maximum	140	159				

Based on the table above, it can be seen that the mean pre-test score of the commitment of PTS leaders in quality assurance in institutions is 81.73 with a minimum score of 47 and a maximum score of 140. Meanwhile the mean pre-test score of commitment of PTS leaders in

quality assurance in institutions is 149.10 with a minimum score of 140 and a maximum score of 159.

The N-Gain or normalized gain test aims to determine the effectiveness of using the Implementation Assistance model to increase the Quality Commitment of PTS Leaders in North Sumatra. The results of the N-Gain Score test obtained  $g > 0.7$ , namely  $0.86 > 0.7$  so that the N-Gain value is in the high category (Hake, 1999). Furthermore, the N-Gain acquisition category in the form of a percent obtained a value of 85.91%, which means the Heutagogy-based SPMI Implementation Assistance Model for Improving the Quality Commitment of PTS Leaders has increased.

Descriptively the distribution of the average N-Gain can be presented in the form of tables and bar charts as shown in table and figure below:

Broad Trial N-Gain Distribution Table

intervals	Extensive Trials		
	f	Percentage (%)	Percentage Cumulative (%)
< 40	0	0	0
41-55	0	0	0
56-75	0	0	0
> 75	30	100	100
Amount	30	100	

Based on the table above it is known that the number of respondents was 30 people. There are no PTS leaders who get a N-Gain Score < 40; 41 - 55 and 56 - 75. PTS leaders or 100% obtained an N-Gain Score between > 75. Based on the data grouping above, the distribution of N-Gain Score values in the wide trial can be described as follows.

Picture Bar Chart N-Gain Score Extensive Trial



After that, the Wilcoxon test was carried out to find out whether there was an increase in the quality commitment of PTS leaders in North Sumatra in producing before and after participating in mentoring. The following are the results of the Wilcoxon test using SPSS version 22, viz.

**Table of Wilcoxon Test Results Wide Trial**

Ranks		N	MeanRanking	Sum of Ranks
Posttest_broad - Pretest_broad	Negative Ranks	0 <sup>a</sup>	.00	.00
	Positive Ranks	30 <sup>b</sup>	15.50	465.00
	Ties	0 <sup>c</sup>		
	Total	30		

- a. Posttest\_broad < Pretest\_broad
- b. Posttest\_broad > Pretest\_broad
- c. Posttest\_wide = Pretest\_wide

**Statistics test**

	Posttest_broad - Pretest_broad
Z	-4,784 <sup>b</sup>
asymp. Sig. (2-tailed)	.000

- a. Wilcoxon Signed Ranks Test
- b. Based on negative ranks.

Based on the table above, the Wilcoxon test results show that:

- 1) Negative Ranks or negative difference between the pre-test and post-test is 0, whether it's the value of N, mean rank or sum of ranks. A value of 0 indicates that there is no decrease (reduction) in the value of the pre-test to the post-test.
- 2) Positive Ranks or the positive difference between the pre-test and post-test is 30, meaning that the 30 assistance participants experienced an increase in competence in making quality assurance in institutions. The positive mean ranks or the average increase is 15.50 while the sum of ranks is 465.00.
- 3) Ties is the similarity of the pre-test and post-test scores which is 0, which means that there is no equal score between the pre-test and post-test.

Based on the output of Test Statistics, it is known that the Asymp. Sig. (2-tailed) has a value of 0.000 and a Z value of -4.784. The basis for making a decision on the Wilcoxon test using SPSS is to use the Asymp. Sig. (2-tailed) of 0.000 where if Asymp. Sig. (2-tailed) < 0.05 then H0 is rejected and Ha is accepted. Conversely, if Asymp. Sig. (2-tailed) > 0.05 then H0 is accepted and Ha is rejected. The

6 Wilcoxon test results obtained Asymp. Sig. (2-tailed) has a value of 0.000 <0.05, meaning that the quality commitment of PTS leaders after mentoring is higher than before mentoring.

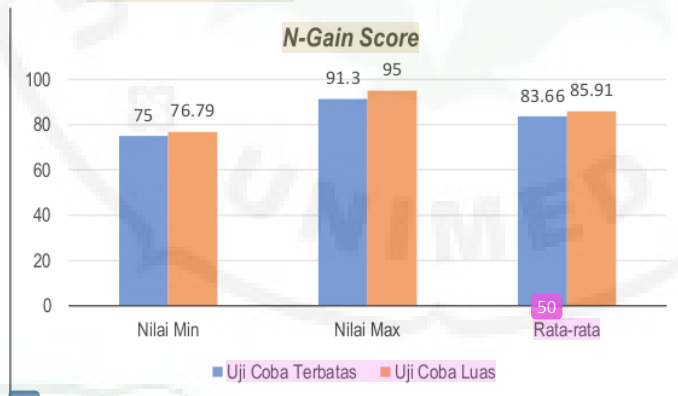
#### 42 Evaluation Stage

Evaluation is the final stage in the ADDIE development model. Evaluation was carried out by researchers by analyzing research data obtained from model assessments from the responses of mentoring participants and module assessments, mentoring guidebooks and model effectiveness.

Based on the research results, 25 the average score for the training module assessment was 92.99% in the very good category. While the average guidebook score is 93.36% in the very good category. Thus all aspects assessed in the guidebook developed have met the eligibility criteria.

For the effectiveness of the model can be seen from the objectives, processes and programs. Judging from its objectives, the Heutagogy-based mentoring model is effective in increasing the quality commitment of PTS leaders in North Sumatra. The effectiveness of the heutagogy-based SPMI implementation assistance model can be seen by the value of the N-Gain Score in limited trials and wide trials as shown below.

#### Picture N-Gain Score Results



68 Based on the picture above it is known that the average N-Gain Score is 83.66% for limited trials and 85.91% for wide trials. Because the value of  $g > 75$  is in the effective category, it can be concluded that the Heutagogy-based SPMI implementation assistance model is effective in increasing the quality commitment of PTS leaders in North Sumatra. Apart from the N-Gain Score, it can also be seen from the results of the Wilcoxon test with Asymp. Sig. (2-tailed) has a value of 0.005 and a Z

value of -2.805 for the limited trial and the Asymp value. Sig. (2-tailed) has a value of 0.000 and a Z value of -4.784 which means that the quality commitment of PTS leaders in North Sumatra at the institution after participating in mentoring is higher than before mentoring.

Data from the assessment of the mentoring model by the participants is used to determine the participant's response to the mentoring model developed. Following are the results of assessing the effectiveness of the mentoring model.

**Table of Assessment of the Effectiveness of the Heutagogy-Based SPMI Implementation Assistance Model**

No	Assessment Aspects	Limited Trial		Extensive Trials	
		Average Percentage	Category	Average Percentage	Category
1	Assistance results	92.50	Very good	94.17	Very good
2	Curriculum	93,44	Very good	94.06	Very good
3	Delivery	92.50	Very good	93.38	Very good
4	Evaluation	92.50	Very good	91.25	Very good
5	Assistance documentation	91.25	Very good	92.50	Very good
Total		92.44	Very good	93,27	Very good
Average		92.86		Very good	

Based on the results of the table above, the average score for the training module assessment is 92.86% in the very good category. Thus it can be concluded that the heutagogy-based SPMI implementation assistance model that was developed received very good responses from the assistance.

Based on the results of the assessment of the mentoring module and mentoring model, it can be concluded that: (1) the SPMI implementation assistance model developed is in accordance with the heutagogy-based preparation steps, namely learner agency, nonlinear learning, self-efficacy and capability, reflection and meta cognition. (2) the heutagogy-based mentoring model that has been developed is in accordance with the essence of mentoring regarding adult assistance and what assistance should be done. Expected clarity is the result to be achieved and assistance is able to do what is determined in accordance with the results, and the models, modules and guidebooks developed have met the criteria of validity and effectiveness.

## Discussion

The Feasibility of the Heutagogy-Based SPMI Implementation Assistance Model for Increasing the Quality Commitment of PTS Leaders in North Sumatra.

Based on the results of the material expert validation, the results of the media expert validation and the results of the model trials by users, it was found that the heutagogy-based SPMI implementation assistance model is very feasible to use. The feasibility of the material reviewed is one of the criteria for assessing the eligibility of textbooks that must be considered with the regulations set by the National Education Standards Agency (BSNP), namely content eligibility, presentation eligibility, language eligibility, and contextual assessment. (Princess Kinanti, 2017). Which is confirmed by study (Sujarwo, 2015:21) The feasibility of media experts and material experts is seen from the aspects of feasibility of content, language, graphic presentation, and cover as well as aspects of guidelines, objectives, material descriptions, and appearance.

The feasibility of the model by users in terms of mentoring results, curriculum, delivery, assessment, mentoring documents is 92.85% with very decent or very good categories. Due diligence by users in this study is very much in line with (Asep et al., 2015) And (Ardiansyah et al., 2021) assessed from the aspect, content feasibility, presentation feasibility and language.

Based on the results of the due diligence, the heutagogy-based SPMI implementation assistance model for increasing the Quality Commitment of PTS Leaders in North Sumatra is very feasible to use. This is in line with research (Masrukhi et al., 2015: 115) where the training models developed as a result of the development implemented in the study "Development of Assistance-Based PTK Training Models to Improve Professional High School Mathematics Teachers in Brebes Regency" were perceived by respondents as very practical (average score 3.560. This is because the model is very easy to apply in training in terms of training time and in terms of cost. This concurs with Velada et al., (2007:283) that a good model is a model that is practical or uncomplicated, simple and easy to understand the factors that affect the transfer of training namely design, individual characteristics of the participants (self-efficiency and training retention).

The Effectiveness of the Heutagogy-Based SPMI Implementation Assistance Model for Increasing the Quality Commitment of PTS Leaders in North Sumatra.

Based on the implementation and evaluation stages, the SPMI implementation assistance model is based on heutagogy to increase the quality commitment of PTS leaders in North Sumatra. The increase

in quality commitment can be seen from the N-Gain Score test, the minimum N-Gain Score is 75.00% for limited trials and 76.79% for wide trials. While the maximum Gain Score is 91.30% for limited trials and 95.00% for wide trials. So that the average value of the N-Gain Score is 83.66% for limited trials and 85.91% for wide trials. Because the value of  $g > 75$  is in the effective category, it can be concluded that the Heutagogy-based SPMI implementation assistance model is effective in increasing the quality commitment of PTS leaders in North Sumatra. Furthermore, the Wilcoxon results obtained an Asymp.Sig (2-tailed) value of 0.005 and a Z value of -2.805 for a limited trial and an Asymp value of -2.805. Sig. (2-tailed) has a value of 0.000 and a Z value of -4.784 which means that the quality commitment of PTS leaders in North Sumatra at the institution after participating in mentoring is higher than before mentoring.

Based on the results of limited trials and extensive trials, it can be concluded that the heutagogy-based SPMI implementation assistance model is effective in increasing the quality commitment of PTS leaders in North Sumatra. The effectiveness of the heutagogy-based SPMI implementation assistance model is also strengthened by the results of interviews with PTS leaders. It was conveyed that the PTS leadership wanted to increase the leadership's quality commitment through strengthening SPMI, including strengthening SPMI mentoring. The results of this study are in line with the opinion (Husaini Usman, 2006) the importance of the existence of quality leadership to carry out quality improvement cannot be ignored. Without quality leadership it is difficult to improve quality. This is in line with study Een Yayah Haenilah, Ridwan & Hasan Hariri, (2019) explained, mentoring was able to improve the quality of teacher services in pedagogic competence. (Masrukhi et al., 2015)

This is confirmed by research Sugeng Prayoga, (2019) SPMI assistance is able to improve the quality of education in accordance with national standards in Mataram, able to increase SPMI understanding of supervisors, principals, teachers, education staff, parents/school committees and stakeholders in and model schools. Improving school skills in implementing SPMI, and strengthening SPMI implementation for supervisors, principals, teachers of other education staff, parents/school committees and stakeholders.

The findings of this study reinforce the theory that a model can be categorized as effective if the average test results achieve a minimum value of  $> 75$ , and the comparison of the average pre-test and post-test (N-Gain) achieves a minimum value of  $> 55$ . (Meltzer, 2005). In relation to the effectiveness of mentoring management, mentoring programs are said to be effective when the results of mentoring (training) are in accordance with the objectives. (Junaidah, 2015). Effective education and training management consists of several

dimensions including 1) planning aspects including needs analysis, curriculum development, preparation of mentoring materials, selection of participants, appointment of teachers, and management of facilities and infrastructure, 2) implementation of mentoring, which is the implementation of the mentoring plan that has been prepared previously, covering the preparation and implementation of mentoring (teaching and learning process), 3) mentoring evaluation includes mentoring evaluation, mentor/teacher evaluation, implementation evaluation, and mentoring process evaluation.

The mentoring that was carried out produced visible results from the increase in the leadership's quality commitment after participating in the mentoring. This can be proven from the high N-Gain Score, the Wilcoxon test results which prove the quality commitment of PTS leaders is higher before participating in mentoring.

Furthermore, the effectiveness of the heutagogy-based SPMI implementation assistance program is assessed from the aspects of reactions, learning, behavior, and results. This aspect is in accordance with Donald Kirkpatrick's model (Benny A. Personal, 2016:177-178) which is the four-stage evaluation assessment, at the stage of reactions or reactions from participants to the implementation of assistance. The results of the research on limited trials were 92.14, and wide trials were 94.40. This means that the mentoring participants give a positive assessment of the mentoring because the mentoring held is relevant to the needs and benefits of supporting the duties of higher education leaders.

Second, this learning stage is to find out how far the mentoring program participants are able to "absorb" the knowledge and attitude skills being mentored (trained). The results showed that the assessment aspect of learning outcomes for limited trials was 93.33% and 91.39% for wide trials. This means that there is an increase in the understanding of the mentoring participants during the mentoring.

Third, the stage of behavior (behavior). This stage is the evaluation stage of the Kirkpatrick model which emphasizes efforts to obtain data from information about the ability of participants to apply the competencies being trained (assisted). The results showed that the evaluation aspect of the behavior of the participants who provided assistance for the limited try-out had an average score of 91.67% and wide-ranging trials, 93.33%. This means that the training participants experienced an increase in understanding during the mentoring.

Fourth, the result stage, this stage is carried out to determine the impact of the long-term contribution made by a mentoring program. The evaluation stage of the mentoring program at this stage is focused on evaluating the effectiveness and efficiency of carrying out tasks and work within the company as a whole. At this stage the average value obtained in limited trials was 91.67% and wide trials, 92.84%. This



46 means that there is an increase in the quality commitment of PTS leaders in North Sumatra.

The results showed that overall the assessment of the heutagogy-based SPMI implementation assistance program to 117 ease the quality commitment of PTS leaders in North Sumatra obtained an average score of 92.43% in the very good category. The results of this study support the 108 search Ghiffari et al., (2021) the study assistance work program is able to attract back interest in learning.

Research Novelty

The Heutagogy-Based SPMI Implementation Assistance Model for Improving the Quality Commitment of PTS Leaders in North Sumatra has never been done. The Heutagogy-Based SPMI Implementation Assistance Model is found from every process carried out to be a new and valuable finding for increasing the quality commitment of PTS leaders.

The Heutagogy-based SPMI Implementation Assistance Model for Increasing the Quality Commitment of PTS Leaders is an alternative that can be used to increase the quality commitment of PTS leaders. This is done through a heutagogy-based SPMI implementation facilitation process as a way to increase leadership's quality commitment.

## Conclusion 54

This model was developed with the ADDIE model which includes analysis, design, development, implementation, and evaluation. This model has the 25 advantages of (1) heutagogy-based implementation assistance development steps including analysis, design, implementation development and evaluation, (2) can increase the leadership's quality commitment; (3) developed by involving elements, LLDIKTI Region 1 Medan, higher education leaders starting from 5 types, universities, institutes, high schools, academies and polytechnics; (4) can motivate PTS tertiary leaders to become tough learners independently and for life; (5) minimum error rate.

The Heutagogy-Based SPMI Implementation Assistance Model is effective for increasing the quality commitment of PTS leaders 62 North Sumatra. The effectiveness test can be seen from the value of the N-Gain Score, namely the average value of the N-Gain Score is 83.66% (limited trial) and 85.91 65 (wide trial). Because the value of  $g > 75$  is in the effective category. The Wilcoxon test results obtained the Asymp. Sig. value. (2-tailed) has a value of 0.005 and a Z value of -2.805 for the limited trial and the Asymp value. Sig. (2-tailed) has a value of 0.000 and a Z value of -4.784 wide trial. The effectiveness of the mentoring program is assessed from the aspects of reactions, learning,

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behavior, and results. The results showed that the assessment<sup>39</sup> of the heutagogy-based SPMI implementation assistance program obtained an average score of 92.43% in the very good category. It means,

## Bibliography

- A. Hanief Saha Ghafur. (2010). Higher Education Quality Assurance Management in Indonesia; A Policy Analysis. Aksar Earth.
- Andi Mursidi. (2020). Model of the Internal Quality Assurance System (SPMI) for Partnership-Based Education Personnel Institutions (LTPK). Lakeisha .
- Ardiansyah, AS, Sari, SN, & Hamidah, FS (2021). Feasibility Test of Integrated Basic Mathematics Textbook Challenge Based on Blended Learning to Improve Creative Thinking Ability. *Soulmath Scientific Journal : Journal of Mathematics Education Education*, 9(1), 89–100. <https://doi.org/10.25139/smj.v9i1.3481>
- Asep, O. ., Hidayat, I., Madya, W., Pusklat, K., Bandung, R., Syaefudin, U., & Ud, S.'. (2015). Competency-Based Education and Training Models for Young Widyaishwara. In *Educational Administration Journal: Vol. XXII (Issue 2)*.
- Benny A. Private. (2016). Design and Development of ADDIE Model Implementation Competency-Based Training Program (2nd ed.). Prenada Media Group .
- Blaschke, LM (2021). The dynamic mix of heutagogy and technology: Preparing learners for lifelong learning. *British Journal of Educational Technology*, 52(4), 1629–1645. <https://doi.org/10.1111/bjet.13105>
- Branch, RM (2010). Instructional design: The ADDIE approach. In *Instructional Design: The ADDIE Approach*. Springer US. <https://doi.org/10.1007/978-0-387-09506-6>
- Budi Raharjo. (2022, October 1). <https://news.republika.co.id/berita/rj2oh7415/100-universitas-terbaik-di-indonesia-versi-unirank-2022>. <https://News.Republika.Co.Id/>.
- Cao, Y., & Li, X. (2014). Quality and quality assurance in Chinese private higher education. *Quality Assurance in Education*, 22(1), 65–87. <https://doi.org/10.1108/QAE-09-2011-0061>
- Dr. Ir. Eka Daryanto, et al (2022). *Vocational Education Training Management Model (Vol. 1)*.
- Een Yayah Haenilah, Ridwan, & Hasan Hariri, DHK (2019). Assistance in Management of Quality Improvement of Teacher Services in Pedagogic Competence (Comprehensive Guide to Teacher Development) (first). Media Heritage. [http://repository.lppm.unila.ac.id/33781/1/Pengesahan%26Konten Management Assistance Textbook.pdf](http://repository.lppm.unila.ac.id/33781/1/Pengesahan%26Konten%20Management%20Assistance%20Textbook.pdf)
- Flumerfelt, S., & Banachowski, M. (2011). Understanding leadership paradigms for improvement in higher education. *Quality Assurance in Education*, 19(3), 224–247. <https://doi.org/10.1108/09684881111158045>

- Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher Education*, 53(2), 106–116. <https://doi.org/10.1177/0022487102053002003>
- Ghiffari, AR, Malahayati, A., Rais, Y., Management, ), Economics, F., Islam, B., Islam, U., Sunan, N., & Djati Bandung, G. (2021). The Effectiveness of the Study Assistance Work Program on Children's Learning Interests in the Pandemic Era (Issue 40). <https://proceedings.uinsgd.ac.id/index.php/Proceedings>
- Gumiandari, S. (2013). Leadership Commitment in Implementation of Higher Education Quality Assurance (Case Study of IAIN Syekh Nurjati Cirebon) (Vol. 02).
- Hake, RR (n.d.). ANALYZING CHANGE/GAIN SCORES\* †. <http://lists.asu.edu/cgi-bin/wa?A2=ind9903&L=aera-d&P=R6855>
- Hase, S. (2009). Heutagogy and e-learning in the workplace: Some challenges and opportunities. *Journal of Applied Research in Workplace E-Learning*, 1(1), 43–52.
- Hase, S., & Kenyon, C. (2007). Complexity: An international journal of complexity and education. *Complexity: An International Journal of Complexity and Education*, 4(1), 111–118.
- HE Mulyasa. (2013). *Mulyasa Principal Management and Leadership* (3rd ed.). Script Earth.
- Husain Usman. (2006). *Management: theory, practice, and educational research*. Script Earth.
- Ibn Hajart, et al. (2021). Performance Report of Region V Yogyakarta Higher Education Service Institutions. In I (I, p. 56). Region I Medan Higher Education Service Institute.
- Kleijnen, J., Dolmans, D., Willems, J., & van Hout, H. (2011). Does internal quality management contribute to more control or to improvement of higher education? *Quality Assurance in Education*, 19(2), 141–155. <https://doi.org/10.1108/09684881111125041>
- Masrukhi, D., Widodo, J., & Tri Joko Raharjo, and. (2015). Development of Mentoring-Based Ptk Training Models to Improve the Professionalism of High School Mathematics Teachers in Brebes Regency. *Education Management*, 10(2), 107–116.
- Meltzer, DE (2005). Relation between students' problem-solving performance and representational format. *American Journal of Physics*, 73(5), 463–478. <https://doi.org/10.1119/1.1862636>
- miglė ŠONTAITĖ. (2011). miglė ŠONTAITĖ, Arvydas BAKANAUSKAS The importance of corporate reputation measurement.
- Mursidi, PA (2022). SPMI HIGHER EDUCATION.
- Putri Kinanti, L. (2017). Feasibility Analysis of the Material Content of the Learning Support Material Components in Sociology Class XI Textbooks at State Senior High Schools in the City of Bandung. In SOCIETY (Vol. 7, Issue 1).
- Riduwan, & Akdon. (2006). *Formulas and data in statistical applications: for research [educational administration-business-government-social-policy-economic-law-management-health]* (Buchari Alma, Ed.). Alfabet.

- Ruzevicius, Adomaitiene, & Sirvidaite. (2004). Motivation and Efficiency of Quality Management Systems Implementation: a Study of Lithuanian Organizations. *Total Quality Management & Business Excellence*, 15(2), 173–189. <https://doi.org/10.1080/1478336032000149018>
- Safón, V. (2009). Measuring the Reputation of Top US Business Schools: A MIMIC Modeling Approach. *Corporate Reputation Review*, 12(3), 204–228. <https://doi.org/10.1057/crr.2009.19>
- Sugeng Prayoga. (2019). SPMI Implementation Assistance in Model Schools and High School Graduates in Mataram City 2019. *Journal of Paedagogy*, 7(1), 25–34. <https://e-journal.undikma.ac.id/index.php/pedagogy/article/view/2512/1779>
- Suharsimi Arikunto. (2010). *Research procedure: a practical approach* (1st ed.). Rineka Cipta.
- Sujarwo, MET (2015). Environmental Awareness Education Model for Communities of Merapi Eruption Victims Based on Local Potential. *Educational Horizon*, XXXIV(1), 12–23.
- Syaiful Anwar Matondang. (2022). *Performance Accountability Report for 2022*.
- Velada, R., Caetano, A., Michel, JW, Lyons, BD, Kavanagh, MJ, Professor, A., & Emeritus, P. (2007). The effects of training design, individual characteristics and work environment on the transfer of training. *International Journal of Training and Development*, 11, 4.
- Willy Susilo. (2018). *Strategy for Upholding the Quality of Higher Education Based on the IQF (Indonesian National Qualifications Framework)*. Andi.

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