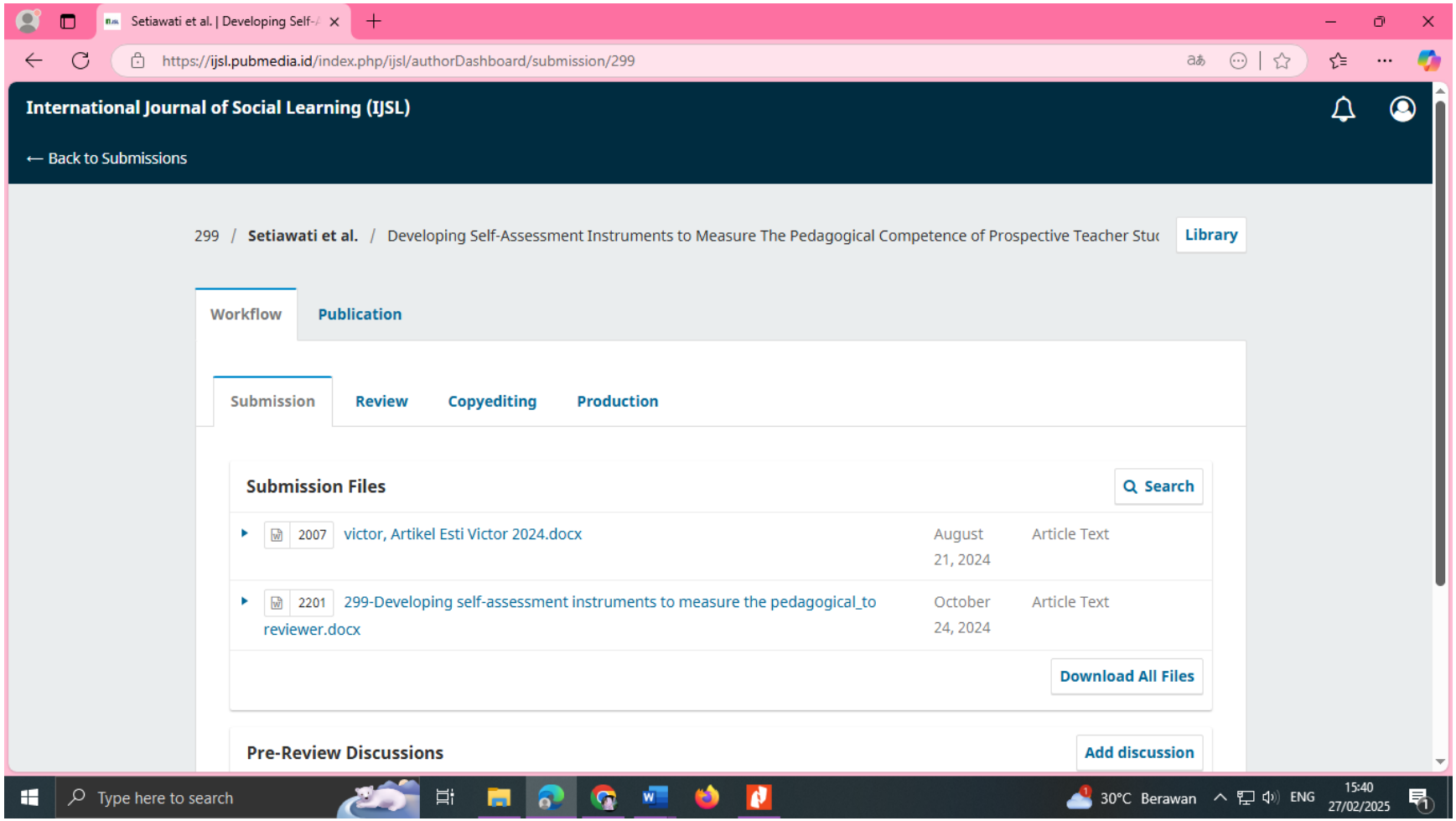
BUKTI KORESPONDENSI
ARTIKEL JURNAL NASIONAL TERAKREDITASI

Judul Artikel	:	Developing Self-Assessment Instruments to Measure The Pedagogical Competence of Prospective Teacher Students
Jurnal	:	International Journal of Social Learning (IJSL) Vol. 5 No. 1 (2024)
Penulis	:	Esti Setiawati, Abdulnassir Yassin, Sharifah Zannierah Syed Marzuki, Zhang Chen, Victor Novianto
Sinta	:	2

No	Perihal
1	Bukti konfirmasi submit artikel dan artikel yang disubmit (21 Agustus 2024) https://drive.google.com/drive/u/0/folders/1ZLueX2wPWiuOneoLI1MjBHhwcDD_iCGE
2	Bukti masukan dari Reviewer (29 November 2024) https://drive.google.com/drive/u/0/folders/1aAb2pIg9m8ytRXOAyoCpJ0xdeaoNRGAE
3	Bukti konfirmasi review dan hasil review pertama (5 Desember 2024) https://drive.google.com/drive/u/0/folders/17p3MxLEUmnoXn57n-3xhkH3QG-OLNMTW
4	Bukti konfirmasi submit revisi pertama, respon kepada reviewer (5 Desember 2024) https://drive.google.com/drive/u/0/folders/1P9csmMHzH7xFTkctMS2kK7he_-b7A65-
5	Bukti Resubmit Pertama (5 Desember 2024) https://drive.google.com/drive/u/0/folders/1sbi-eEqLcIJeaKQxWspsdF6r-qzlOAM1
6	Bukti Resubmit Kedua (11 Desember 2024) https://drive.google.com/drive/u/0/folders/1bfGlLX0Avk-7Y2TPBMaDQFaNcx0w6UfI
7	Bukti Resubmit Ketiga (13 Desember 2024) https://drive.google.com/drive/u/0/folders/1ydXjQ99v2CVxst2sK9lumvH1OXDQv9Hk
8	Bukti konfirmasi artikel accepted dan Invoice Artikel (13 Desember 2024) https://drive.google.com/drive/u/0/folders/1xeCRQMo8OugYf4IDUJZsg52g-mw9Xhkf
9	Bukti Pembayaran Biaya Publikasi https://drive.google.com/drive/u/0/folders/1KHTly9_ABdAFAGOqQlo3twwkOcFyx3tb
10	Bukti konfirmasi artikel published online dan Artikel Terpublikasi di International Journal of Social Learning (IJSL) Vol. 5 No. 1 (24 Desember 2024) https://drive.google.com/drive/u/0/folders/1Ez1hcyaH1owHsEmplC_nI72gxptPYGAH

1. **Bukti Konfirmasi Submit Artikel Dan Artikel Yang Disubmit**

(21 Agustus 2024)


Setiawati et al. | Developing Self-
https://ijsl.pubmedia.id/index.php/ijsl/authorDashboard/submission/299
International Journal of Social Learning (IJSL)
← Back to Submissions
299 / Setiawati et al. / Developing Self-Assessment Instruments to Measure The Pedagogical Competence of Prospective Teacher Stuc
Library
Workflow
Publication
Submission
Review
Copyediting
Production
Submission Files
Search
2007 victor, Artikel Esti Victor 2024.docx
August 21, 2024
Article Text
2201 299-Developing self-assessment instruments to measure the pedagogical_to reviewer.docx
October 24, 2024
Article Text
Download All Files
Pre-Review Discussions
Add discussion
Type here to search
30°C Berawan
ENG
15:40
27/02/2025

Developing self-assessment instruments to measure the pedagogical competence of prospective teacher students in the school field introduction program

Esti Setiawati[1*], Victor Novianto[2,] Abdulnassir Yassin[3,]
[1,2] Universitas PGRI Yogyakarta, [3]Islamic University in Uganda
*Corresponding Author: esti@upy.ac.id

Abstract: *Self-assessment in the second schooling field introduction program can find out how far pedagogical competencies have been mastered by student teacher candidates. However, the assessment of the second school field introduction program was dominated by field supervisors without involving the role of student teacher candidates. This study aims to develop a self-assessment instrument to assess the extent of pedagogical competence when students practice teaching in partner schools.* The research method used in this study is research and development that adopts the Plomp model *which consists of five phases, namely the initial investigation phase, the product design phase, the realization/construction phase, the test phase, evaluation and revision, and the implementation phase. The sample of this study was 58 students who were selected by purposive sampling representing study programs at the Faculty of Teacher Training and Education, Universitas PGRI Yogyakarta. The instruments developed have been validated by evaluation experts and educational experts who are considered "Almost Perfect". The reliability index is more than 0.70, which means it meets the recommended criteria. The collected data were then analyzed through descriptive statistics. Self-assessment showed that 87% of students mastered pedagogic competence which consisted of five aspects, namely understanding students, designing lessons, implementing learning, implementing learning, and developing students' potential. Therefore, the developed instrument can be used to assess pedagogical competence because it can measure students' abilities in the second schooling field introduction program. This study also revealed that self-assessment in the second schooling field introduction program is very necessary because it is to determine the readiness of students to become teachers at school.*

Keywords: pedagogic competence, school field introduction, self-assessment instrument

INTRODUCTION

One of the main programs and activities at the Teaching and Education Faculty is the school field introduction program, which was formerly called the field experience program. This program aims to train prospective teacher students to master various competencies in the learning process in class. One of the important competencies that must be mastered by prospective teachers is pedagogic competence which consists of the ability to understand students, the ability to design learning, the ability to carry out learning, the ability to evaluate learning, and the ability to develop students' potential. Pedagogic competence is fundamental and a strategic key to achievement in school (Susanto et al., 2021); (Sopandi, W., & Handayani, 2019); (Syahrial et al., 2019).

Pedagogical competence training activities for prospective teachers are one of the important factors of programs and activities in the curriculum of the faculty of teacher training and education. Training prospective teachers requires careful planning, adequate training, appropriate and effective training strategies so that prospective teachers are able to carry out learning well and be responsive to the learning needs of students (Syahmaidi et al., 2021). Through this training, it is hoped that prospective student teachers will not only learn teaching

practices, but also learn to manage classes, communication skills, improve their abilities, and prepare learning tools. The development of pedagogical competence has great potential to increase student engagement in learning, both in primary and secondary education, and in further education (Lozano et al., 2017).

Pedagogical competence is a competency related to the ability to manage learning, understanding of students, use of IT, use of learning models, curriculum development, learning evaluation and developing the potential of students in the learning process at school (Pahrudin et al, 2016); (Hartini et al, 2018). This pedagogical competence is the foundation of teacher success in managing classroom learning practices. For this reason, teacher training programs must be optimally developed to improve the pedagogical competence of prospective teachers (Yildis, 2018). This is because pedagogical competence is a competency that can determine the success of the learning process and student learning outcomes (Emiliasari, 2018). To train prospective teacher students to master pedagogical competencies, they are previously equipped with micro-teaching courses, after graduating, they are continued with a school field introduction program.

Based on the results of observations, interviews, and documentation that have been carried out, there is no clear assessment rubric, so the assessment is only general and does not specifically assess the pedagogical competence of prospective teacher students who are taking field introduction courses in schools. Therefore, it is necessary to develop a self-assessment instrument for the pedagogical competence of teachers or prospective teachers on an ongoing basis (König et al., 2021).

Self-assessment instrument can measure and evaluate student pedagogical competence independently and honestly so that it can provide feedback from the assessment activities and can improve the quality of graduate student teacher candidates. This is in accordance with the results of research (Kerberlau-Berks, 2006), which states that self-assessment can make students realistic and more accurate in assessing themselves about expected learning goals. This self-assessment is also useful for monitoring the process and results of independent learning achievement (Abun, D., Magallanes, T., Marlene, T. N., Fredoline, J. P., & Madamba, 2021). The competence of student teacher candidates in understanding students, designing lessons, implementing learning, evaluating learning, and developing the potential of students is very important to be given as provision when student teacher candidates are involved in school as teachers. For this reason, a good self-assessment is needed which can be used to assess the pedagogical competence of prospective teacher students as a benchmark for continuous assessment in the second schooling field introduction program. Because so far the results of the assessment still depend a lot on lecturers and students have never been involved in the assessment process. Students are considered not eligible to assess their own performance because they are considered unable to decide on the assessment (Budiastuti et al., 2023); (Beumann, S., & Wegner, S, 2018); (Trisnawaty, W., Citrasukmawati, A, & Thohir, M, 2017). For this reason, it is very important to involve students as assessors in assessing their current performance.

In this regard, self-assessment of pedagogic competencies can be used by prospective teacher students themselves, because this instrument will make it easy for prospective teacher students to identify strengths and weaknesses in mastering the pedagogic competencies they must achieve. This self-assessment is a process that requires students to identify, assess and evaluate the quality of understanding and skills during the learning process and may be improved in the future (McMillan, J, H., & Hearn, 2008); (Farisi, 2012). The use of continuous self-assessment can help student teacher candidates reflect on the achievement of pedagogical competence as a framework that describes and describes the level of teaching performance of student teacher candidates in mastering these competencies. This self-assessment also serves to collect self-information about the results of the teaching practice of prospective teacher students through measurements with clear indicators. Through this self-assessment approach,

comprehensive and actual general pedagogical competencies and special skills can be found (Irina, 2011); (Mâţă et al., 2013). Because the principle of this assessment must be able to encourage teachers or prospective teachers to be able to carry out better learning, so that students will progress in their learning (Kartowagiran et al., 2019).

As a teacher education and training institution that produces teaching staff, Universitas PGRI Yogyakarta has an important role in identifying the competencies of prospective teacher students through training activities, as a form of reported performance (Carril et al., 2013). The novelty of this research is the existence of self-assessment related to pedagogical competence in the introduction to the school field program that must be taken by prospective teacher students. Because assessment is the most important component in the learning process and the quality of assessment is one of the main characteristics of good learning (Supriyadi et al., 2019). For this reason, the faculty must create good conditions for students, to develop professional abilities and pedagogical competencies so that students are able to develop creative and innovative ideas (Tilavova et al., 2020).0).

METHOD

The research method used in this study is research and development that adopts the Plomp model, with five stages, namely the initial investigation phase, the design phase, the realization/construction phase, and the test, evaluation, and revision phase, as well as implementation. Because according to (Bright, R. L., & Gideonse, 1968); (Budiastuti et al., 2023) this research and development can facilitate research that develops instructional objectives, strategies, teaching materials, and learning processes.

This self-assessment instrument is to measure the extent to which pedagogic competence is mastered in the second school field introduction program, which was developed from the adoption of the Plomp model. The development of this instrument follows the flow suggested by Plomp. The first step is problem analysis and needs analysis of the second schooling field introduction program. In this step, it was found that the assessment of pedagogic competence was limited to the assessment of teaching exercises carried out by tutors and supervising lecturers, while self-assessment from students had never existed. The results of the problem and needs analysis found a solution to design a self-assessment instrument for student teacher candidates participating in the second school field introduction program.

The second step is to make a prototype self-assessment instrument based on the instrument grid that has been prepared. This prototype is then submitted to a team of experts for assessment and validation. Based on the analysis of the results of expert validation, the results of the self-assessment instrument need to be revised from the linguistic aspect. In the third step, the construction process is carried out again on the prototype of the self-assessment instrument. After being revised, the self-assessment instrument became a new prototype, and re-validation was requested from the expert. Then the fourth step, the prototype of the self-assessment instrument was tested in a limited way on prospective teacher students participating in the second school field introduction program. The results of the trial were then analyzed, and the results did not need revision, so the prototype of the self-assessment instrument was then used in the fifth step, namely the implementation of self-assessment by 58 selected students by purposive sampling representing study programs at the Teaching and Education Faculty of the PGRI Yogyakarta University. To determine how far pedagogic competencies have been mastered by prospective teacher students, appropriate descriptive measurement criteria are used to describe these competencies. While the validity of the instrument was measured by the Kappa inter-rater technique.

The population in this study were students of the Faculty of Teaching and Education at PGRI Yogyakarta University who took the Field Introduction Program course. The selected sample in this study were 58 student teacher candidates who were taken by purposive sampling, which came from the Elementary School Teacher Education Study Program, Early Childhood

Teacher Education, Mathematics Education, History Education, Pancasila and Citizenship Education, English Education, Language Education and Indonesian Literature, Special Education, and Guidance and Counseling. The procedure for developing a self-assessment instrument is shown in Figure 1 below.

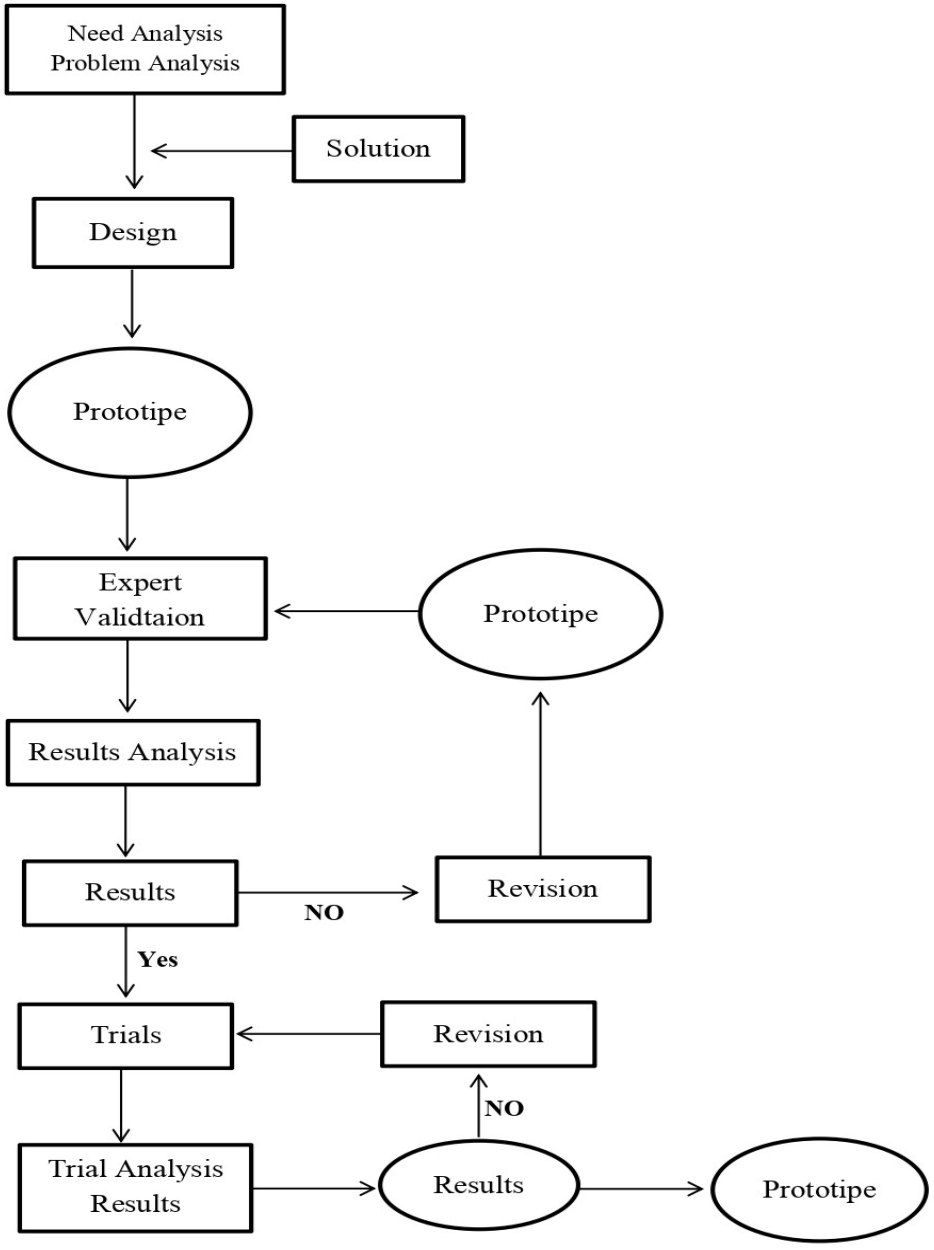


Figure 1. Procedure for preparing the self-assessment instrument

Table 1 describes the development of the pedagogic competence self-assessment instrument for prospective teacher students participating in the second schooling field introduction program. Pedagogic competency self-assessment data was collected through assessment sheets and rubrics with the categories Very Appropriate, Appropriate, Less Appropriate, Inappropriate, and Very Unsuitable.

Table 1. Pedagogic Competency Self-Assessment Instrument for Prospective Teachers

No.	Assessment Aspect	Assessment Coverage	Type of Instrument	Number of Items
1	Understanding of student	a. Pay attention to initial abilities b. understand learning difficulties c. understand the character	Self-assessment sheet	3 items
2	Learning design	a. determine learning objectives b. design lessons properly c. understand the proper method	Self-assessment sheet	3 items
3	Implementation of learning	a. managing proper learning b. implementing conducive learning c. Carry out dynamic learning	Self-assessment sheet	3 items
4	Learning evaluation	a. designing theoretical and practical assessments b. carry out test and non-test assessments c. planning remedies	Self-assessment sheet	3 items
5	Developing the potential of students	a. task reinforcement and feedback b. extracurricular assistance c. psychological reinforcement	Self-assessment sheet	3 items

Data was collected from expert judgment categorized based on the Content Validity Index (CVI), which is presented in Table 2. Meanwhile, the reliability of the instrument was measured using the Kappa inter-rater. Student teacher candidates who take part in the school field introduction program use instruments that have met the validity requirements to carry out self-assessments on aspects of pedagogic competence.

Table 2. Evaluation of the Kappa Statistical Value

Value of K	Interpretation
<0	Poor
0 – 0.20	Slight
0.21 – 0.40	Fair
0.41 – 0.60	Moderate
0.61 – 0.80	Substansial
0.81 – 1.00	Almost perfect

Source: (Lendis, J.R., Koch, 1977).

While the data analysis technique used in this research is descriptive analysis, to find out the percentage of mastery of the pedagogic competencies of prospective teacher students who take part in the second school field introduction program. Measurement of the pedagogic competence

of prospective teacher students is presented in Table 3 below.

Table 3. Categories of Pedagogic Competency Measurement

Score Intervals	Category
$4{,}2 < \bar{x}$	Very good
$3{,}4 < \bar{x} \leq 4{,}2$	Good
$2{,}6 < \bar{x} \leq 3{,}4$	Enough
$1{,}8 < \bar{x} \leq 2{,}6$	Not enough
$\bar{x} \leq 1{,}8$	Very less

Source: (S. Eko Putro Widoyoko, 2014)

FINDING AND DISCUSSIONS

Finding

The instrument developed in this research is used to measure the extent of pedagogical competence that prospective teachers have mastered while participating in the school field introduction program. This self-assessment instrument gives prospective teachers the freedom to assess themselves honestly and openly regarding the pedagogical competencies they have mastered.

This pedagogical competency includes the ability to understand students, design learning, implement learning, evaluate learning, and develop students' potential. This competency is measured independently using research instruments that have been developed and used continuously.

The results of the pedagogic competency self-assessment trial show that for the aspect of student understanding with an average score of 4.33 (87%), the aspect of learning design averages 4.45 (89%), the aspect of the implementation of learning averages 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the potential development aspect of students averaged 4.40 (88%). The results of the recapitulation of the pedagogic competency assessment can be shown in Table 4 below.

Table 4. Recapitulation of Pedagogic Competency Assessment

No.	Aspect	Average	Percentage (%)
1	Student Understanding	4,35	87
2	Learning Design	4,45	89
3	Implementation of Learning	4,30	86
4	Learning Evaluation	4,25	85
5	Potential Development of Learners	4,40	88
	Average	**4,35**	**87**

Based on the recapitulation of the pedagogic competency assessment in Table 4, it can be concluded that the average value of pedagogic competence is 4.35 or 87% which can be categorized as very good pedagogic competence, which is then shown in Figure 2 below.

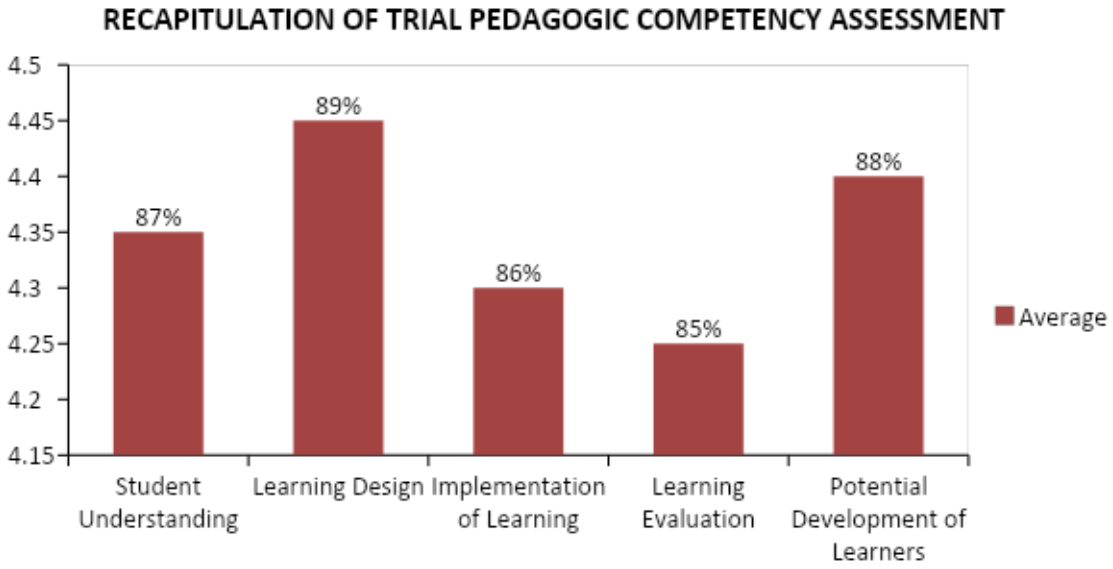


Figure 2. Pedagogic Competency Assessment Histogram

The results of students' self-assessments on aspects of student understanding are presented in Figure 3. Of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understood the participants' character. students by 85.52%. This can be explained that the ability to understand student students is very good. When referring to the existing categories, students' in-depth understanding skills are very good, as shown in Figure 3 below.

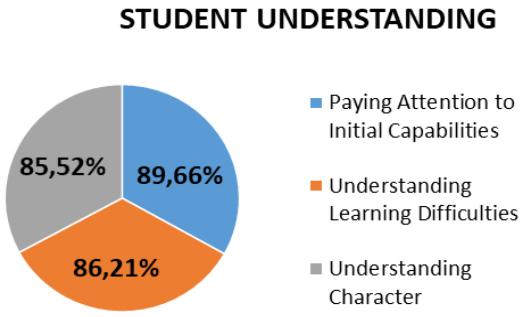


Figure 3. Diagram of Assessment of Student Understanding Aspect

While self-assessment on the aspect of learning design, four indicators of determining learning objectives obtained a percentage of 90.69%, designing learning reached 88.97%, and understanding of appropriate learning methods an achievement of 87.24%. An overview of the results of the second aspect of the self-assessment is shown in Figure 4 below.

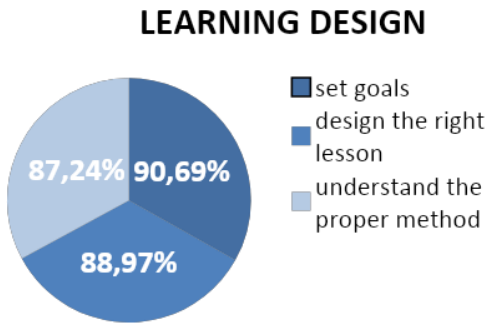


Figure 4. Learning Design Aspect Assessment Diagram

For self-assessment on the implementation aspect of learning, for the first aspect, namely optimal learning management, student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and dynamic learning implementation was 85.52%. An overview of the results of the third aspect of self-assessment can be seen in Figure 5 below.

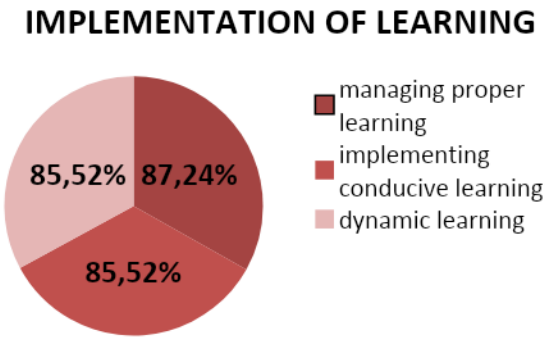


Figure 5. Diagram of the Assessment of the Implementation of Learning Implementation Aspects

For the fourth aspect of self-assessment, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student score achievement was 85.52%, the use of test and non-test assessment was 86.21% while designing remedial programs, the student score achievement was 83.1%. The results of this aspect's self-assessment can be seen in the following diagram 6.

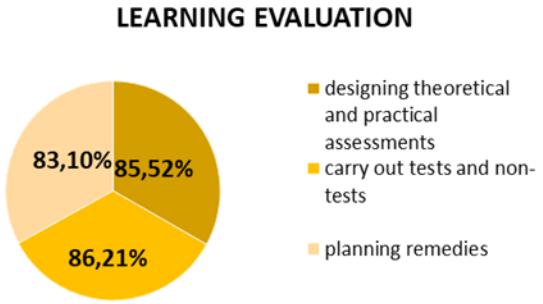


Figure 6. Learning Evaluation Aspect Assessment Diagram

The fifth aspect in students' self-assessment of the potential development of students, on

the indicators of providing reinforcement and task feedback, student achievement was 90%, extracurricular assistance was 86.55%, and psychological stimulation reinforcement was 87.59%. The results of this self-assessment can be shown in Figure 7 below.

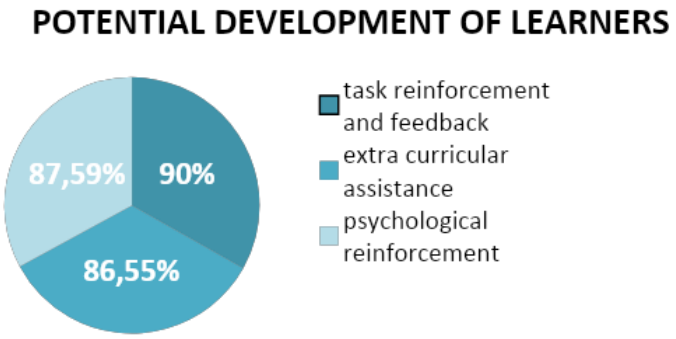


Figure 7. Diagram of Assessment of Potential Development Aspects of Learners

Discussion

The preliminary investigation stage is the stage of needs analysis or problem analysis. At this stage, data and information in the field are collected and identified according to related problems. The need for the teaching and education faculties is an instrument for self-assessment of pedagogical competence in an introductory field school program that has never existed. The assessment so far is the assessment of teaching practices carried out by tutors and supervisors. For this reason, it is necessary to design competency development and special assessments, so that candidates educators realize to have new competencies (Andryukhina et al., 2016)**.**

Furthermore, at the design stage, the design of a pedagogic competence self-assessment instrument was prepared with five aspects, namely the competence to understand students, the competence to design learning, the competence to carry out learning, the competence to evaluate learning, and the competence to develop students' potential. From each aspect, it is developed into fifteen indicators. The aspects assessed in the pedagogic competence assessment in students' understanding consist of three assessment indicators, namely understanding students' initial abilities, understanding students' initial difficulties, and understanding students' character; aspects assessed in lesson planning include three assessment indicators, namely determining learning objectives, designing appropriate learning, and determining appropriate learning methods; while the aspects assessed in the implementation of learning include three assessment indicators, namely managing to learn, carrying out the learning process, and dynamic learning. The aspects assessed in the pedagogic competency assessment in evaluating learning include three assessment indicators namely; determining the appropriate type of evaluation, fully using test and non-test evaluations in a comprehensive manner, and designing and implementing remedial programs. While the aspects assessed in the pedagogic assessment in developing students' potential include three indicators, namely providing reinforcement and task feedback, accompanying students in extra-curricular activities, and providing psychological motivation to students.

In construction, a set of self-assessment instruments was developed to measure the pedagogic competence of prospective teacher students participating in the second school field introduction program. This stage includes designing the form of a self-assessment instrument, incorporating the substance of each aspect of the assessment, and identifying indicators for each of these aspects. One very important thing is the need for an assessment sheet for each indicator in the instrument development rubric, to check whether this self-assessment instrument needs revision or not. This self-assessment is effective for measuring self-ability and improving self-

quality (Andrade, H., & Du, 2007); self-assessment allows students to be able to assess themselves and their shortcomings (Lias, N., Lindholm, T., Pahjanoksa-Mantyla, M., Westerholm, A., & Airasiknen, 2021); This self-assessment can also evoke a positive attitude of students (Zammi, M., Susilaningsih, E., & Supardi, 2018).

At the development stage, the construction of the self-assessment instrument was validated by three experts in the field of educational evaluation, language, and teacher education. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to find out how much the content validity coefficient of the expert judgment shows that the CVI value is 0.91 (almost perfect). These results have shown that the developed self-assessment instrument already reflects indicators of pedagogic competence, especially in the second schooling field introduction program.

The next step is a test or evaluation of selected students from participants in the second school field introduction program. Based on the recapitulation of the pedagogic competency assessment in Table 4 above, it shows that the average value of the pedagogic competence of prospective teacher students participating in the second school field introduction program is 4.35. This means that 87% of the 58 students in the selected sample can be categorized as a student's pedagogic competence in the very good category.

Through several stages of development, this assessment instrument can be used by students to conduct a self-assessment of pedagogic competence in an honest and independent second schooling field introduction program. The results of the self-assessment of pedagogic competence in Table 4 and figure 2 show that for aspects of student understanding with an average score of 4.33 (87%), aspects of learning design an average of 4.45 (89%), aspects of learning implementation with an average of 4, 32 (86.4%), the evaluation aspect of learning averaged 4.25 (85%), and the aspect of developing potential learners with an average of 4.40 (88%). From these five aspects, it can be concluded that 87% of the 58 students participating in the second schooling field introduction program were very good at mastering their pedagogical competencies.

In the assessment of the first aspect, namely the aspect of student understanding presented in Figure 3, it shows that of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understand the character of students by 85.52%. This can be explained that the ability to understand student students is very good, with an average of 87.12%, based on the existing categories. Even though there are still around 12.87% of students who have not been able to understand the potential of students in learning.

Self-assessment on the second aspect, namely the aspect of learning design in figure 4, for indicators of determining learning objectives the percentage of student achievement was 90.69%, designing learning was 88.97%, and understanding appropriate learning methods with an achievement percentage of 87.24%. If the average self-assessment of this second aspect is taken, the student achievement is 87.58%, which means that there are still 12.42% of students who have not been able to make a comprehensive learning plan.

For self-assessment on the third aspect, namely the implementation of learning in figure 5, for the first aspect, namely optimal learning management, the percentage of student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and the implementation of dynamic learning was 85.52%. If the average is calculated, the competence in the implementation of learning, students get a percentage score of 86.09, which can be explained that there are still 13.91% of students who have not been able to carry out the learning process in a conducive manner.

Meanwhile for the fourth aspect of self-assessment in figure 6, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student achievement score was 85.52%, the use of test and non-test assessment was 86.21%, while designing remedial programs, the achievement score students by 83.1%. The results of this

self-assessment when averaged, the student achievement is 84.94%, which can be interpreted that there are still around 15.06% of students who do not understand the design of learning evaluation.

While the fifth aspect of student self-assessment is the aspect of developing students' potential in figure 7, in the indicators of providing reinforcement and assignment feedback, student achievement is 90%, extracurricular assistance is 86.55%, and psychological stimulation reinforcement is 87.59%. The results of this self-assessment when averaged, the student competence in the fifth aspect is 88.04%, which can be explained that there are still around 11.96% of students who have not been able to optimally develop student potential.

Based on the self-assessment of prospective teacher students participating in the second schooling field introduction program, it was found that 87% of students had mastered pedagogic competencies, while 13% of students still had to learn more so that during the implementation of the schooling field introduction program they could master all aspects and assessment indicators, especially in competency assessment pedagogic.

The results of this study indicate that self-assessment instruments for pedagogic competence in the second schooling field introduction program need to be applied to train students to self-evaluate regarding students understanding abilities, learning design, learning implementation, learning evaluation, and aspects of developing students' potential. Equally important are supervisors, tutors, and managers of the school field introduction program periodically reviewing self-assessment instruments that are in line with developments in science and technology, so that faculties and universities can prepare graduates of qualified prospective teaching staff who have high competitiveness.

CONCLUSION

This study produced a self-assessment instrument to measure pedagogic competence in the second school field introduction program. The self-assessment instrument includes five aspects of assessment, namely student understanding, learning design, learning implementation, learning evaluation, and developing student potential. This pedagogic competency assessment instrument involves students participating in the second schooling field introduction program as assessors who objectively assess what has been done during teaching practice in the second schooling field introduction program. Because so far the assessment has been carried out by tutors at partner schools and supervising lecturers. For this reason, this self-assessment instrument needs to be carried out on an ongoing basis so that its level of effectiveness can be determined periodically. Implementation and socialization on a wider scale need to be carried out so that students participating in the second schooling field introduction program can optimally prepare for learning practices in schools.

ACKNOWLEDGEMENT

The author would like to thank Universitas PGRI Yogyakarta for supporting the implementation of this research through a lecturer research grant from the Research and Community Service Institute for the 2023 fiscal year.

REFERENCES

Abun, D., Magallanes, T., Marlene, T. N., Fredoline, J. P., & Madamba, M. B. (2021). Effect of attitude toward work, work environment on the emplyees' work self-efficacy. *International Journal of Research in Business and Social Science, 10 (7).* https://doi.org/10.20525/ijrbs.v10i7.1459

Andrade, H., & Du, Y. (2007). Student responses to criteria referenced self assesment. *Assesment & Evaluation in Higher Education, 32(2),* 159–181. https://doi.org/10.1080/02602930600801928

Andryukhina, L. M., Dneprov, S. A., Sumina, T. G., Zimina, E. Y., Utkina, S. N., & Mantulenko, V. V. (2016). the model of monitoring of vocational pedagogical competences of professors in secondary vocational education. *International Journal of Environmental and Science Education*, *11*(14), 7016–7034.

Beumann, S., & Wegner, S, -A. (2018). An outlook on self assesment of homework assigments in higher mathematics education. *International Journal of STEM Education*, *5 (1)*(An outlook on self assesment of homework assigments in higher mathematics education), 55. https://doi.org/10.1186/s40594-018-0146-z

Bright, R. L., & Gideonse, H. D. (1968). Research and development strategies. *The Journal of Experimental Education*, *37(1)*, 137–145. https://doi.org/10.1080/00220973.1968.11011101

Budiastuti, E., Sugiyem, & Puad, F. N. A. (2023). Developing self-assessment instruments to measure students' performance characters in making dresses using a high-order thinking skills approach. *Cakrawala Pendidikan*, *42*(1), 27–37. https://doi.org/10.21831/cp.v42i1.50172

Carril, P. C. M., Sanmamed, M. G., & Sellés, N. H. (2013). *Pedagogical roles and competencies of university teachers practicing in the e-learning environment. The International Review of Research in Open and Distributed Learning*. *14*(3), 462–487. http://www.irrodl.org/index.php/irrodl/article/view/1477

Emiliasari, R. N. (2018). an Analysis of Teachers' Pedagogical Competence in Lesson Study of Mgmp Smp Majalengka. *ELTIN JOURNAL, Journal of English Language Teaching in Indonesia*, *6*(1), 22. https://doi.org/10.22460/eltin.v6i1.p22-33

Farisi, M. I. (2012). *Development of student self-assesment as a model for evaluation and character development of paper*. UNY Press.

Hartini, S., Putra Bhakti, C., Hartanto, D., & Alfarizqi Nizamuddin Ghiffari, M. (2018). *teacher pedagogic competency development model: a literature review*. *267*(Aecon), 211–215. https://doi.org/10.2991/aecon-18.2018.40

Irina, A. (2011). pedagogical competences – the key to efficient education. *International Online Journal of Educational Sciences*, *3*(2), 411–423.

Kartowagiran, B., Wibawa, E. A., Alfarisa, F., & Purnama, D. N. (2019). Can student assessment sheets replace observation sheets? *Cakrawala Pendidikan*, *38*(1), 33–44. https://doi.org/10.21831/cp.v38i1.22207

Kerberlau-Berks, D. R. (2006). The effects selfs-assesment on student learning. *Action Research Project*, *8*. https://digitalcommons.unl.edu/mathmudactionresearch

König, J., Blömeke, S., Jentsch, A., Schlesinger, L., née Nehls, C. F., Musekamp, F., & Kaiser, G. (2021). the links between pedagogical competence, instructional quality, and mathematics achievement in the lower secondary classroom. *Educational Studies in Mathematics*, *107*(1), 189–212. https://doi.org/10.1007/s10649-020-10021-0

Lendis, J.R., Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, *33*, 159–174.

Lias, N., Lindholm, T., Pahjanoksa-Mantyla, M., Westerholm, A., & Airasiknen, M. (2021). Developing and piloting a self-assesment tool for medication review competence of practicing pharmacist based on nationally set competence criteria. *BMC Health Services Research*, *21(1)*. https://doi.org/10.1186/s12913-021-07291-6

Lozano, R., Merrill, M. Y., Sammalisto, K., Ceulemans, K., & Lozano, F. J. (2017). Connecting competences and pedagogical approaches for sustainable development in higher education: A literature review and framework proposal. *Sustainability (Switzerland)*, *9*(10), 1–15. https://doi.org/10.3390/su9101889

Mâţă, L., Cmeciu, D., & Ghiaţău, R. M. (2013). a reference framework of pedagogical competences of language teachers in the initial training programmes. *Procedia - Social and Behavioral Sciences*, *93*, 648–653. https://doi.org/10.1016/j.sbspro.2013.09.255

McMillan, J, H., & Hearn, J. (2008). Student self-assesment: The key to stronger student

motivation and hhigher achievement. *Educational Horizons*, *87(1)*, 40–49.
Pahrudin, Martono, T., & Murtini, W. (2016). the effect of pedagogic competency, personality, professional and social competency teacher to study achievement of economic lesson in state senior high school of east lombok district academic year 2015/2016. *Proceeding The 2ndInternational Conference On Teacher Training and Education Sebelas Maret University*, *2*(1), 332–345. http://suarakita.com/artikel
S. Eko Putro Widoyoko. (2014). *Penilaian hasil pembelajaran di sekolah* (Cetakan ke). Pustaka Pelajar.
Sopandi, W., & Handayani, H. (2019). The Impact of Workshop on Implementation of (RADEC) Learning Model on Pedagogic Competency of Elementary School Teachers. *International Conference of Innovation in Education (ICoIE)*, *178*(ICoIE 2018), 7–11.
Supriyadi, E., Zamtinah, Soenarto, S., & Hatmojo, Y. I. (2019). A character-based assessment model for vocational high schools. *Cakrawala Pendidikan*, *38*(2), 269–280. https://doi.org/10.21831/cp.v38i2.24099
Susanto, R., Agustina, N., Azmi, Y., & Rachbini, W. (2021). Pedagogic Competency Model: Development from The Point of View of The Initial Characteristics of Teachers, Involvement with Organizations and Competency Development Strategies. *Review of International Geographical Education Online*, *11*(8), 826–841. https://doi.org/10.48047/rigeo.11.08.72
Syahmaidi, E., Hidayat, H., Hartanto, S., & Fitri Rahmadani, A. (2021). Designing E-Training Computer Assisted Instruction Used to Pedagogic Competency in Vocational Education. *Journal of Physics: Conference Series*, *1779*(1). https://doi.org/10.1088/1742-6596/1779/1/012038
Syahrial, S., Asrial, A., Kurniawan, D. A., Chan, F., Pratama, R. A., Nugrogo, P., & Septiasari, R. (2019). The impact of etnocontructivism in social affairs on pedagogic competencies. *International Journal of Evaluation and Research in Education*, *8*(3), 409–416. https://doi.org/10.11591/ijere.v8i3.20242
Tilavova, M. M., Husenova, A. S., & Supkhonovna, H. N. (2020). the system of development of professional competence in future primary school teachers. *Journal of Critical Reviews*, *7*(13), 4184–4189.
Trisnawaty, W., Citrasukmawati, A, & Thohir, M, A. (2017). Self assesment for student performance based on higher order thinking skills in physics learning. *Journal of Education and Learning (EduLearn)*, *11 (4)*, 446–452. https://doi.org/10.11591/edulearn.v11i4.6456
Yildis, A. (2018). The Factors Affecting Techno-Pedagogical Competencies and Critical Thinking Skills of Preservice Mathematics Teachers. *MOJES: Malaysian Online Journal of Educational Sciences*, *5*(2), 66–81. https://vmis.um.edu.my/index.php/MOJES/article/view/12625
Zammi, M., Susilaningsih, E., & Supardi, K. I. (2018). Guru, Pengembangan instrumen self-assesment untuk meningkatkan keterampilan laboratorium calon kimia. *Jurnal Profesi Keguruan*, *4(1)*. https://journal.unnes.ac.id/nju/index.php/jpk/article/view/14219

2. Bukti Masukan dari Reviwer

(29 November 2024)

Developing self-assessment instruments to measure the pedagogical competence of prospective teacher students in the school field introduction program

Abstract: *Self-assessment in the second schooling field introduction program can find out how far pedagogical competencies have been mastered by student teacher candidates. However, the assessment of the second school field introduction program was dominated by field supervisors without involving the role of student teacher candidates. This study aims to develop a self-assessment instrument to assess the extent of pedagogical competence when students practice teaching in partner schools.* The research method used in this study is research and development that adopts the Plomp model *which consists of five phases, namely the initial investigation phase, the product design phase, the realization/construction phase, the test phase, evaluation and revision, and the implementation phase. The sample of this study was 58 students who were selected by purposive sampling representing study programs at the Faculty of Teacher Training and Education, Universitas PGRI Yogyakarta. The instruments developed have been validated by evaluation experts and educational experts who are considered "Almost Perfect". The reliability index is more than 0.70, which means it meets the recommended criteria. The collected data were then analyzed through descriptive statistics. Self-assessment showed that 87% of students mastered pedagogic competence which consisted of five aspects, namely understanding students, designing lessons, implementing learning, implementing learning, and developing students' potential. Therefore, the developed instrument can be used to assess pedagogical competence because it can measure students' abilities in the second schooling field introduction program. This study also revealed that self-assessment in the second schooling field introduction program is very necessary because it is to determine the readiness of students to become teachers at school.*

Keywords: pedagogic competence, school field introduction, self-assessment instrument

Commented [A1]: The abstract consists of a statement about the background, objective of the study or focus of discussion, method or important research steps, findings and discussion, and conclusion. Abstract is written in English and Indonesian, each in one paragraph, single spacing, and in total about 150-200 words.

INTRODUCTION

One of the main programs and activities at the Teaching and Education Faculty is the school field introduction program, which was formerly called the field experience program. This program aims to train prospective teacher students to master various competencies in the learning process in class. One of the important competencies that must be mastered by prospective teachers is pedagogic competence which consists of the ability to understand students, the ability to design learning, the ability to carry out learning, the ability to evaluate learning, and the ability to develop students' potential. Pedagogic competence is fundamental and a strategic key to achievement in school (Susanto et al., 2021); (Sopandi, W., & Handayani, 2019); (Syahrial et al., 2019).

Pedagogical competence training activities for prospective teachers are one of the important factors of programs and activities in the curriculum of the faculty of teacher training and education. Training prospective teachers requires careful planning, adequate training, appropriate and effective training strategies so that prospective teachers are able to carry out learning well and be responsive to the learning needs of students (Syahmaidi et al., 2021). Through this training, it is hoped that prospective student teachers will not only learn teaching practices, but also learn to manage classes, communication skills, improve their abilities, and prepare learning tools. The development of pedagogical competence has great potential to increase student engagement in learning, both in primary and secondary education, and in further education (Lozano et al., 2017).

Pedagogical competence is a competency related to the ability to manage learning,

understanding of students, use of IT, use of learning models, curriculum development, learning evaluation and developing the potential of students in the learning process at school (Pahrudin et al, 2016); (Hartini et al, 2018). This pedagogical competence is the foundation of teacher success in managing classroom learning practices. For this reason, teacher training programs must be optimally developed to improve the pedagogical competence of prospective teachers (Yildis, 2018). This is because pedagogical competence is a competency that can determine the success of the learning process and student learning outcomes (Emiliasari, 2018). To train prospective teacher students to master pedagogical competencies, they are previously equipped with micro-teaching courses, after graduating, they are continued with a school field introduction program.

Based on the results of observations, interviews, and documentation that have been carried out, there is no clear assessment rubric, so the assessment is only general and does not specifically assess the pedagogical competence of prospective teacher students who are taking field introduction courses in schools. Therefore, it is necessary to develop a self-assessment instrument for the pedagogical competence of teachers or prospective teachers on an ongoing basis (König et al., 2021).

Self-assessment instrument can measure and evaluate student pedagogical competence independently and honestly so that it can provide feedback from the assessment activities and can improve the quality of graduate student teacher candidates. This is in accordance with the results of research (Kerberlau-Berks, 2006), which states that self-assessment can make students realistic and more accurate in assessing themselves about expected learning goals. This self-assessment is also useful for monitoring the process and results of independent learning achievement (Abun, D., Magallanes, T., Marlene, T. N., Fredoline, J. P., & Madamba, 2021). The competence of student teacher candidates in understanding students, designing lessons, implementing learning, evaluating learning, and developing the potential of students is very important to be given as provision when student teacher candidates are involved in school as teachers. For this reason, a good self-assessment is needed which can be used to assess the pedagogical competence of prospective teacher students as a benchmark for continuous assessment in the second schooling field introduction program. Because so far the results of the assessment still depend a lot on lecturers and students have never been involved in the assessment process. Students are considered not eligible to assess their own performance because they are considered unable to decide on the assessment (Budiastuti et al., 2023); (Beumann, S., & Wegner, S, 2018); (Trisnawaty, W., Citrasukmawati, A, & Thohir, M, 2017). For this reason, it is very important to involve students as assessors in assessing their current performance.

In this regard, self-assessment of pedagogic competencies can be used by prospective teacher students themselves, because this instrument will make it easy for prospective teacher students to identify strengths and weaknesses in mastering the pedagogic competencies they must achieve. This self-assessment is a process that requires students to identify, assess and evaluate the quality of understanding and skills during the learning process and may be improved in the future (McMillan, J, H., & Hearn, 2008); (Farisi, 2012). The use of continuous self-assessment can help student teacher candidates reflect on the achievement of pedagogical competence as a framework that describes and describes the level of teaching performance of student teacher candidates in mastering these competencies. This self-assessment also serves to collect self-information about the results of the teaching practice of prospective teacher students through measurements with clear indicators. Through this self-assessment approach, comprehensive and actual general pedagogical competencies and special skills can be found (Irina, 2011); (Mâță et al., 2013). Because the principle of this assessment must be able to encourage teachers or prospective teachers to be able to carry out better learning, so that students will progress in their learning (Kartowagiran et al., 2019).

As a teacher education and training institution that produces teaching staff, Universitas

PGRI Yogyakarta has an important role in identifying the competencies of prospective teacher students through training activities, as a form of reported performance (Carril et al., 2013). The novelty of this research is the existence of self-assessment related to pedagogical competence in the introduction to the school field program that must be taken by prospective teacher students. Because assessment is the most important component in the learning process and the quality of assessment is one of the main characteristics of good learning (Supriyadi et al., 2019). For this reason, the faculty must create good conditions for students, to develop professional abilities and pedagogical competencies so that students are able to develop creative and innovative ideas (Tilavova et al., 2020).0).

Commented [A2]: In Introduction, Authors should state the objectives of the work at the end of introduction section. Before the objective, Authors should provide an adequate background, and very short literature survey in order to record the existing solutions/method, to show which is the best of previous researches, to show the main limitation of the previous researches, to show what do you hope to achieve (to solve the limitation), and to show the scientific merit or novelties of the paper. Do not describe literature survey as author by author, but should be presented as group per method or topic reviewed which refers to some literatures.

Commented [A3]: Published methods should be indicated by reference: only relevant modifications should be described. Do not repeat details of existing methods. explained in a sub-heading.

METHOD

The research method used in this study is research and development that adopts the Plomp model, with five stages, namely the initial investigation phase, the design phase, the realization/construction phase, and the test, evaluation, and revision phase, as well as implementation. Because according to (Bright, R. L., & Gideonse, 1968); (Budiastuti et al., 2023) this research and development can facilitate research that develops instructional objectives, strategies, teaching materials, and learning processes.

This self-assessment instrument is to measure the extent to which pedagogic competence is mastered in the second school field introduction program, which was developed from the adoption of the Plomp model. The development of this instrument follows the flow suggested by Plomp. The first step is problem analysis and needs analysis of the second schooling field introduction program. In this step, it was found that the assessment of pedagogic competence was limited to the assessment of teaching exercises carried out by tutors and supervising lecturers, while self-assessment from students had never existed. The results of the problem and needs analysis found a solution to design a self-assessment instrument for student teacher candidates participating in the second school field introduction program.

The second step is to make a prototype self-assessment instrument based on the instrument grid that has been prepared. This prototype is then submitted to a team of experts for assessment and validation. Based on the analysis of the results of expert validation, the results of the self-assessment instrument need to be revised from the linguistic aspect. In the third step, the construction process is carried out again on the prototype of the self-assessment instrument. After being revised, the self-assessment instrument became a new prototype, and re-validation was requested from the expert. Then the fourth step, the prototype of the self-assessment instrument was tested in a limited way on prospective teacher students participating in the second school field introduction program. The results of the trial were then analyzed, and the results did not need revision, so the prototype of the self-assessment instrument was then used in the fifth step, namely the implementation of self-assessment by 58 selected students by purposive sampling representing study programs at the Teaching and Education Faculty of the PGRI Yogyakarta University. To determine how far pedagogic competencies have been mastered by prospective teacher students, appropriate descriptive measurement criteria are used to describe these competencies. While the validity of the instrument was measured by the Kappa inter-rater technique.

The population in this study were students of the Faculty of Teaching and Education at PGRI Yogyakarta University who took the Field Introduction Program course. The selected sample in this study were 58 student teacher candidates who were taken by purposive sampling, which came from the Elementary School Teacher Education Study Program, Early Childhood Teacher Education, Mathematics Education, History Education, Pancasila and Citizenship Education, English Education, Language Education and Indonesian Literature, Special Education, and Guidance and Counseling. The procedure for developing a self-assessment instrument is shown in Figure 1 below.

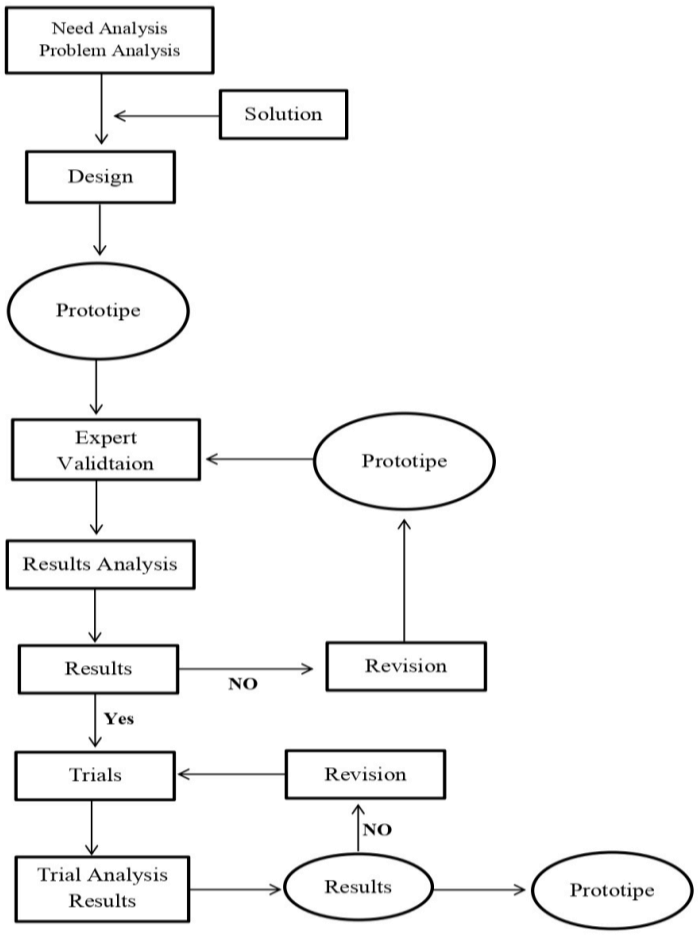


Figure 1. Procedure for preparing the self-assessment instrument

Table 1 describes the development of the pedagogic competence self-assessment instrument for prospective teacher students participating in the second schooling field introduction program. Pedagogic competency self-assessment data was collected through assessment sheets and rubrics with the categories Very Appropriate, Appropriate, Less Appropriate, Inappropriate, and Very Unsuitable.

Table 1. Pedagogic Competency Self-Assessment Instrument for Prospective Teachers

No.	Assessment Aspect	Assessment Coverage	Type of Instrument	Number of Items
1	Understanding of student	a. Pay attention to initial abilities b. understand learning difficulties c. understand the character	Self-assessment sheet	3 items
2	Learning design	a. determine learning objectives b. design lessons properly c. understand the proper method	Self-assessment sheet	3 items
3	Implementation of learning	a. managing proper learning b. implementing conducive learning c. Carry out dynamic learning	Self-assessment sheet	3 items
4	Learning evaluation	a. designing theoretical and practical assessments b. carry out test and non-test assessments c. planning remedies	Self-assessment sheet	3 items
5	Developing the potential of students	a. task reinforcement and feedback b. extracurricular assistance c. psychological reinforcement	Self-assessment sheet	3 items

Data was collected from expert judgment categorized based on the Content Validity Index (CVI), which is presented in Table 2. Meanwhile, the reliability of the instrument was measured using the Kappa inter-rater. Student teacher candidates who take part in the school field introduction program use instruments that have met the validity requirements to carry out self-assessments on aspects of pedagogic competence.

Table 2. Evaluation of the Kappa Statistical Value

Value of K	Interpretation
<0	Poor
0 – 0.20	Slight
0.21 – 0.40	Fair
0.41 – 0.60	Moderate
0.61 – 0.80	Substansial
0.81 – 1.00	Almost perfect

Source: (Lendis, J.R., Koch, 1977).

While the data analysis technique used in this research is descriptive analysis, to find out the percentage of mastery of the pedagogic competencies of prospective teacher students who take part in the second school field introduction program. Measurement of the pedagogic competence of prospective teacher students is presented in Table 3 below.

Table 3. Categories of Pedagogic Competency Measurement

Score Intervals	Category
$4{,}2 < \bar{x}$	Very good
$3{,}4 < \bar{x} \leq 4{,}2$	Good
$2{,}6 < \bar{x} \leq 3{,}4$	Enough
$1{,}8 < \bar{x} \leq 2{,}6$	Not enough
$\bar{x} \leq 1{,}8$	Very less

Source: (S. Eko Putro Widoyoko, 2014)

FINDING AND DISCUSSIONS

Finding

The instrument developed in this research is used to measure the extent of pedagogical competence that prospective teachers have mastered while participating in the school field introduction program. This self-assessment instrument gives prospective teachers the freedom to assess themselves honestly and openly regarding the pedagogical competencies they have mastered.

This pedagogical competency includes the ability to understand students, design learning, implement learning, evaluate learning, and develop students' potential. This competency is measured independently using research instruments that have been developed and used continuously.

The results of the pedagogic competency self-assessment trial show that for the aspect of student understanding with an average score of 4.33 (87%), the aspect of learning design averages 4.45 (89%), the aspect of the implementation of learning averages 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the potential development aspect of students averaged 4.40 (88%). The results of the recapitulation of the pedagogic competency assessment can be shown in Table 4 below.

Table 4. Recapitulation of Pedagogic Competency Assessment

No.	Aspect	Average	Percentage (%)
1	Student Understanding	4,35	87
2	Learning Design	4,45	89
3	Implementation of Learning	4,30	86
4	Learning Evaluation	4,25	85
5	Potential Development of Learners	4,40	88
	Average	**4,35**	**87**

Based on the recapitulation of the pedagogic competency assessment in Table 4, it can be concluded that the average value of pedagogic competence is 4.35 or 87% which can be categorized as very good pedagogic competence, which is then shown in Figure 2 below.

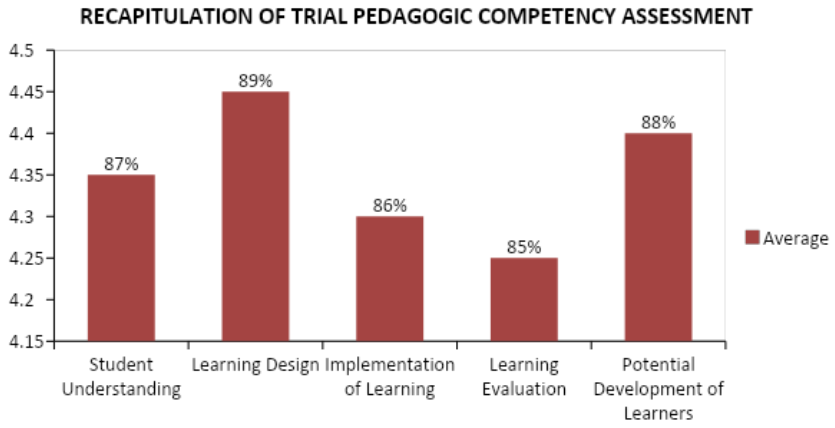


Figure 2. Pedagogic Competency Assessment Histogram

The results of students' self-assessments on aspects of student understanding are presented in Figure 3. Of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understood the participants' character. students by 85.52%. This can be explained that the ability to understand student students is very good. When referring to the existing categories, students' in-depth understanding skills are very good, as shown in Figure 3 below.

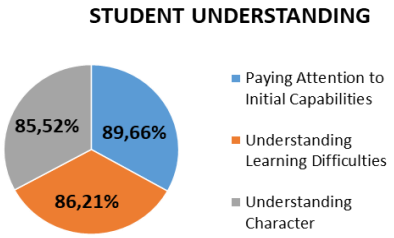


Figure 3. Diagram of Assessment of Student Understanding Aspect

While self-assessment on the aspect of learning design, four indicators of determining learning objectives obtained a percentage of 90.69%, designing learning reached 88.97%, and understanding of appropriate learning methods an achievement of 87.24%. An overview of the results of the second aspect of the self-assessment is shown in Figure 4 below.

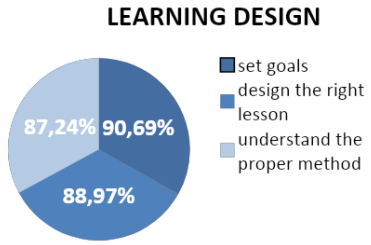


Figure 4. Learning Design Aspect Assessment Diagram

For self-assessment on the implementation aspect of learning, for the first aspect, namely optimal learning management, student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and dynamic learning implementation was 85.52%. An overview of the results of the third aspect of self-assessment can be seen in Figure 5 below.

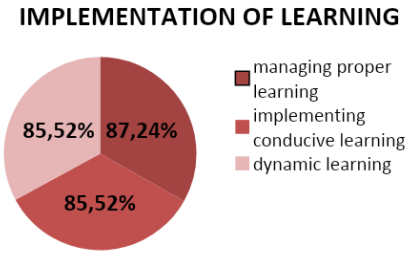


Figure 5. Diagram of the Assessment of the Implementation of Learning Implementation Aspects

For the fourth aspect of self-assessment, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student score achievement was 85.52%, the use of test and non-test assessment was 86.21% while designing remedial programs, the student score achievement was 83.1%. The results of this aspect's self-assessment can be seen in the following diagram 6.

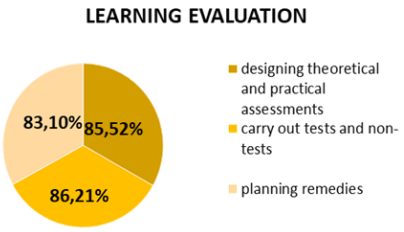


Figure 6. Learning Evaluation Aspect Assessment Diagram

The fifth aspect in students' self-assessment of the potential development of students, on

the indicators of providing reinforcement and task feedback, student achievement was 90%, extracurricular assistance was 86.55%, and psychological stimulation reinforcement was 87.59%. The results of this self-assessment can be shown in Figure 7 below.

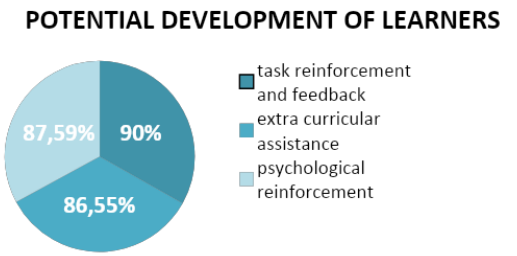


Figure 7. Diagram of Assessment of Potential Development Aspects of Learners

Discussion

The preliminary investigation stage is the stage of needs analysis or problem analysis. At this stage, data and information in the field are collected and identified according to related problems. The need for the teaching and education faculties is an instrument for self-assessment of pedagogical competence in an introductory field school program that has never existed. The assessment so far is the assessment of teaching practices carried out by tutors and supervisors. For this reason, it is necessary to design competency development and special assessments, so that candidates educators realize to have new competencies (Andryukhina et al., 2016)**.**

Furthermore, at the design stage, the design of a pedagogic competence self-assessment instrument was prepared with five aspects, namely the competence to understand students, the competence to design learning, the competence to carry out learning, the competence to evaluate learning, and the competence to develop students' potential. From each aspect, it is developed into fifteen indicators. The aspects assessed in the pedagogic competence assessment in students' understanding consist of three assessment indicators, namely understanding students' initial abilities, understanding students' initial difficulties, and understanding students' character; aspects assessed in lesson planning include three assessment indicators, namely determining learning objectives, designing appropriate learning, and determining appropriate learning methods; while the aspects assessed in the implementation of learning include three assessment indicators, namely managing to learn, carrying out the learning process, and dynamic learning. The aspects assessed in the pedagogic competency assessment in evaluating learning include three assessment indicators namely; determining the appropriate type of evaluation, fully using test and non-test evaluations in a comprehensive manner, and designing and implementing remedial programs. While the aspects assessed in the pedagogic assessment in developing students' potential include three indicators, namely providing reinforcement and task feedback, accompanying students in extra-curricular activities, and providing psychological motivation to students.

In construction, a set of self-assessment instruments was developed to measure the pedagogic competence of prospective teacher students participating in the second school field introduction program. This stage includes designing the form of a self-assessment instrument, incorporating the substance of each aspect of the assessment, and identifying indicators for each of these aspects. One very important thing is the need for an assessment sheet for each indicator in the instrument development rubric, to check whether this self-assessment instrument needs revision or not. This self-assessment is effective for measuring self-ability and improving self-

quality (Andrade, H., & Du, 2007); self-assessment allows students to be able to assess themselves and their shortcomings (Lias, N., Lindholm, T., Pahjanoksa-Mantyla, M., Westerholm, A., & Airasiknen, 2021); This self-assessment can also evoke a positive attitude of students (Zammi, M., Susilaningsih, E., & Supardi, 2018).

At the development stage, the construction of the self-assessment instrument was validated by three experts in the field of educational evaluation, language, and teacher education. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to find out how much the content validity coefficient of the expert judgment shows that the CVI value is 0.91 (almost perfect). These results have shown that the developed self-assessment instrument already reflects indicators of pedagogic competence, especially in the second schooling field introduction program.

The next step is a test or evaluation of selected students from participants in the second school field introduction program. Based on the recapitulation of the pedagogic competency assessment in Table 4 above, it shows that the average value of the pedagogic competence of prospective teacher students participating in the second school field introduction program is 4.35. This means that 87% of the 58 students in the selected sample can be categorized as a student's pedagogic competence in the very good category.

Through several stages of development, this assessment instrument can be used by students to conduct a self-assessment of pedagogic competence in an honest and independent second schooling field introduction program. The results of the self-assessment of pedagogic competence in Table 4 and figure 2 show that for aspects of student understanding with an average score of 4.33 (87%), aspects of learning design an average of 4.45 (89%), aspects of learning implementation with an average of 4, 32 (86.4%), the evaluation aspect of learning averaged 4.25 (85%), and the aspect of developing potential learners with an average of 4.40 (88%). From these five aspects, it can be concluded that 87% of the 58 students participating in the second schooling field introduction program were very good at mastering their pedagogical competencies.

In the assessment of the first aspect, namely the aspect of student understanding presented in Figure 3, it shows that of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understand the character of students by 85.52%. This can be explained that the ability to understand student students is very good, with an average of 87.12%, based on the existing categories. Even though there are still around 12.87% of students who have not been able to understand the potential of students in learning.

Self-assessment on the second aspect, namely the aspect of learning design in figure 4, for indicators of determining learning objectives the percentage of student achievement was 90.69%, designing learning was 88.97%, and understanding appropriate learning methods with an achievement percentage of 87.24%. If the average self-assessment of this second aspect is taken, the student achievement is 87.58%, which means that there are still 12.42% of students who have not been able to make a comprehensive learning plan.

For self-assessment on the third aspect, namely the implementation of learning in figure 5, for the first aspect, namely optimal learning management, the percentage of student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and the implementation of dynamic learning was 85.52%. If the average is calculated, the competence in the implementation of learning, students get a percentage score of 86.09, which can be explained that there are still 13.91% of students who have not been able to carry out the learning process in a conducive manner.

Meanwhile for the fourth aspect of self-assessment in figure 6, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student achievement score was 85.52%, the use of test and non-test assessment was 86.21%, while designing remedial programs, the achievement score students by 83.1%. The results of this

self-assessment when averaged, the student achievement is 84.94%, which can be interpreted that there are still around 15.06% of students who do not understand the design of learning evaluation.

While the fifth aspect of student self-assessment is the aspect of developing students' potential in figure 7, in the indicators of providing reinforcement and assignment feedback, student achievement is 90%, extracurricular assistance is 86.55%, and psychological stimulation reinforcement is 87.59%. The results of this self-assessment when averaged, the student competence in the fifth aspect is 88.04%, which can be explained that there are still around 11.96% of students who have not been able to optimally develop student potential.

Based on the self-assessment of prospective teacher students participating in the second schooling field introduction program, it was found that 87% of students had mastered pedagogic competencies, while 13% of students still had to learn more so that during the implementation of the schooling field introduction program they could master all aspects and assessment indicators, especially in competency assessment pedagogic.

The results of this study indicate that self-assessment instruments for pedagogic competence in the second schooling field introduction program need to be applied to train students to self-evaluate regarding students understanding abilities, learning design, learning implementation, learning evaluation, and aspects of developing students' potential. Equally important are supervisors, tutors, and managers of the school field introduction program periodically reviewing self-assessment instruments that are in line with developments in science and technology, so that faculties and universities can prepare graduates of qualified prospective teaching staff who have high competitiveness.

CONCLUSION

This study produced a self-assessment instrument to measure pedagogic competence in the second school field introduction program. The self-assessment instrument includes five aspects of assessment, namely student understanding, learning design, learning implementation, learning evaluation, and developing student potential. This pedagogic competency assessment instrument involves students participating in the second schooling field introduction program as assessors who objectively assess what has been done during teaching practice in the second schooling field introduction program. Because so far the assessment has been carried out by tutors at partner schools and supervising lecturers. For this reason, this self-assessment instrument needs to be carried out on an ongoing basis so that its level of effectiveness can be determined periodically. Implementation and socialization on a wider scale need to be carried out so that students participating in the second schooling field introduction program can optimally prepare for learning practices in schools.

Commented [A4]: Conclusions should answer the objectives of the research. Do not repeat the Abstract, or just list experimental results. Provide a clear scientific justification for your work, and indicate possible applications and extensions. You should also suggest future experiments and/or point out those that are underway.

ACKNOWLEDGEMENT

The author would like to thank Universitas PGRI Yogyakarta for supporting the implementation of this research through a lecturer research grant from the Research and Community Service Institute for the 2023 fiscal year.

REFERENCES

Commented [A5]: It is suggested to use **Mendeley** as a reference manager at styling the citations and the bibliography
Journal references published in the last five years need to be added
The quotation reference must match the bibliography
Add references from journals, minimum limit is 35 references.
In this bibliography section, include the DOI or link to the reference taken.

Abun, D., Magallanes, T., Marlene, T. N., Fredoline, J. P., & Madamba, M. B. (2021). Effect of attitude toward work, work environment on the emplyees' work self-efficacy. *International Journal of Research in Business and Social Science*, *10 (7)*. https://doi.org/10.20525/ijrbs.v10i7.1459

Andrade, H., & Du, Y. (2007). Student responses to criteria referenced self assesment. *Assesment & Evaluation in Higher Education*, *32(2)*, 159–181. https://doi.org/10.1080/02602930600801928

Andryukhina, L. M., Dneprov, S. A., Sumina, T. G., Zimina, E. Y., Utkina, S. N., & Mantulenko, V. V. (2016). the model of monitoring of vocational pedagogical competences of professors in secondary vocational education. *International Journal of Environmental and Science Education*, *11*(14), 7016–7034.

Beumann, S., & Wegner, S, -A. (2018). An outlook on self assesment of homework assigments in higher mathematics education. *International Journal of STEM Education, 5 (1)*(An outlook on self assesment of homework assigments in higher mathematics education), 55. https://doi.org/10.1186/s40594-018-0146-z

Bright, R. L., & Gideonse, H. D. (1968). Research and development strategies. *The Journal of Experimental Education*, *37(1)*, 137–145. https://doi.org/10.1080/00220973.1968.11011101

Budiastuti, E., Sugiyem, & Puad, F. N. A. (2023). Developing self-assessment instruments to measure students' performance characters in making dresses using a high-order thinking skills approach. *Cakrawala Pendidikan*, *42*(1), 27–37. https://doi.org/10.21831/cp.v42i1.50172

Carril, P. C. M., Sanmamed, M. G., & Sellés, N. H. (2013). *Pedagogical roles and competencies of university teachers practicing in the e-learning environment. The International Review of Research in Open and Distributed Learning*. *14*(3), 462–487. http://www.irrodl.org/index.php/irrodl/article/view/1477

Emiliasari, R. N. (2018). an Analysis of Teachers' Pedagogical Competence in Lesson Study of Mgmp Smp Majalengka. *ELTIN JOURNAL, Journal of English Language Teaching in Indonesia*, *6*(1), 22. https://doi.org/10.22460/eltin.v6i1.p22-33

Farisi, M. I. (2012). *Development of student self-assesment as a model for evaluation and character development of paper*. UNY Press.

Hartini, S., Putra Bhakti, C., Hartanto, D., & Alfarizqi Nizamuddin Ghiffari, M. (2018). *teacher pedagogic competency development model: a literature review*. *267*(Aecon), 211–215. https://doi.org/10.2991/aecon-18.2018.40

Irina, A. (2011). pedagogical competences – the key to efficient education. *International Online Journal of Educational Sciences*, *3*(2), 411–423.

Kartowagiran, B., Wibawa, E. A., Alfarisa, F., & Purnama, D. N. (2019). Can student assessment sheets replace observation sheets? *Cakrawala Pendidikan*, *38*(1), 33–44. https://doi.org/10.21831/cp.v38i1.22207

Kerberlau-Berks, D. R. (2006). The effects selfs-assesment on student learning. *Action Research Project*, *8*. https://digitalcommons.unl.edu/mathmudactionresearch

König, J., Blömeke, S., Jentsch, A., Schlesinger, L., née Nehls, C. F., Musekamp, F., & Kaiser, G. (2021). the links between pedagogical competence, instructional quality, and mathematics achievement in the lower secondary classroom. *Educational Studies in Mathematics*, *107*(1), 189–212. https://doi.org/10.1007/s10649-020-10021-0

Lendis, J.R., Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, *33*, 159–174.

Lias, N., Lindholm, T., Pahjanoksa-Mantyla, M., Westerholm, A., & Airasiknen, M. (2021). Developing and piloting a self-assesment tool for medication review competence of practicing pharmacist based on nationally set competence criteria. *BMC Health Services Research*, *21(1)*. https://doi.org/10.1186/s12913-021-07291-6

Lozano, R., Merrill, M. Y., Sammalisto, K., Ceulemans, K., & Lozano, F. J. (2017). Connecting competences and pedagogical approaches for sustainable development in higher education: A literature review and framework proposal. *Sustainability (Switzerland)*, *9*(10), 1–15. https://doi.org/10.3390/su9101889

Mâţă, L., Cmeciu, D., & Ghiaţău, R. M. (2013). a reference framework of pedagogical competences of language teachers in the initial training programmes. *Procedia - Social and Behavioral Sciences*, *93*, 648–653. https://doi.org/10.1016/j.sbspro.2013.09.255

McMillan, J, H., & Hearn, J. (2008). Student self-assesment: The key to stronger student

motivation and hhigher achievement. *Educational Horizons*, *87(1)*, 40–49.
Pahrudin, Martono, T., & Murtini, W. (2016). the effect of pedagogic competency, personality, professional and social competency teacher to study achievement of economic lesson in state senior high school of east lombok district academic year 2015/2016. *Proceeding The 2ndInternational Conference On Teacher Training and Education Sebelas Maret University*, *2*(1), 332–345. http://suarakita.com/artikel
S. Eko Putro Widoyoko. (2014). *Penilaian hasil pembelajaran di sekolah* (Cetakan ke). Pustaka Pelajar.
Sopandi, W., & Handayani, H. (2019). The Impact of Workshop on Implementation of (RADEC) Learning Model on Pedagogic Competency of Elementary School Teachers. *International Conference of Innovation in Education (ICoIE)*, *178*(ICoIE 2018), 7–11.
Supriyadi, E., Zamtinah, Soenarto, S., & Hatmojo, Y. I. (2019). A character-based assessment model for vocational high schools. *Cakrawala Pendidikan*, *38*(2), 269–280. https://doi.org/10.21831/cp.v38i2.24099
Susanto, R., Agustina, N., Azmi, Y., & Rachbini, W. (2021). Pedagogic Competency Model: Development from The Point of View of The Initial Characteristics of Teachers, Involvement with Organizations and Competency Development Strategies. *Review of International Geographical Education Online*, *11*(8), 826–841. https://doi.org/10.48047/rigeo.11.08.72
Syahmaidi, E., Hidayat, H., Hartanto, S., & Fitri Rahmadani, A. (2021). Designing E-Training Computer Assisted Instruction Used to Pedagogic Competency in Vocational Education. *Journal of Physics: Conference Series*, *1779*(1). https://doi.org/10.1088/1742-6596/1779/1/012038
Syahrial, S., Asrial, A., Kurniawan, D. A., Chan, F., Pratama, R. A., Nugrogo, P., & Septiasari, R. (2019). The impact of etnocontructivism in social affairs on pedagogic competencies. *International Journal of Evaluation and Research in Education*, *8*(3), 409–416. https://doi.org/10.11591/ijere.v8i3.20242
Tilavova, M. M., Husenova, A. S., & Supkhonovna, H. N. (2020). the system of development of professional competence in future primary school teachers. *Journal of Critical Reviews*, *7*(13), 4184–4189.
Trisnawaty, W., Citrasukmawati, A, & Thohir, M, A. (2017). Self assesment for student performance based on higher order thinking skills in physics learning. *Journal of Education and Learning (EduLearn)*, *11 (4)*, 446–452. https://doi.org/10.11591/edulearn.v11i4.6456
Yildis, A. (2018). The Factors Affecting Techno-Pedagogical Competencies and Critical Thinking Skills of Preservice Mathematics Teachers. *MOJES: Malaysian Online Journal of Educational Sciences*, *5*(2), 66–81. https://vmis.um.edu.my/index.php/MOJES/article/view/12625
Zammi, M., Susilaningsih, E., & Supardi, K. I. (2018). Guru, Pengembangan instrumen self-assesment untuk meningkatkan keterampilan laboratorium calon kimia. *Jurnal Profesi Keguruan*, *4(1)*. https://journal.unnes.ac.id/nju/index.php/jpk/article/view/14219

3. Bukti konfirmasi review dan hasil review pertama (5 Desember 2024)

Round 1 Status
Submission accepted.

Notifications

[ijsl] Editor Decision	2024-11-29 05:47 AM
[ijsl] Editor Decision	2024-12-07 12:51 PM
[ijsl] Editor Decision	2024-12-12 10:24 AM
[ijsl] Editor Decision	2024-12-13 02:49 PM
[ijsl] Editor Decision	2024-12-13 02:49 PM

Reviewer's Attachments

Search

2403	299-Developing self-assessment instruments to measure the pedagogical_to author.docx	November 29, 2024

Revisions

Search Upload File

2454 299-Developing self-assessment instruments to measure the pedagogical_to author Fix Edit.docx	December 5, 2024	Article Text
2530 299-Developing Self-Assessment Instruments to Measure The Pedagogical Competence of Prospective Teacher Students-2nd revision 1[1].docx	December 11, 2024	Article Text
2587 299-Developing+Self-Assessment+Instruments+to+Measure+The+Pedagogical+Competence-3rd+revision.docx	December 13, 2024	Article Text

Review Discussions

Add discussion

Name	From	Last Reply	Replies	Closed
Review Results	nurhamid 2024-11-29 05:47 AM	victor 2024-12-06 09:24 AM	2	☑
2nd Revision	nurhamid 2024-12-07 12:51 PM	victor 2024-12-11 10:27 AM	1	☑
3rd Revision	nurhamid 2024-12-12 10:25 AM	victor 2024-12-13 02:01 PM	1	☑

DEVELOPING SELF-ASSESSMENT INSTRUMENTS TO MEASURE THE PEDAGOGICAL COMPETENCE OF PROSPECTIVE TEACHER STUDENTS IN THE SCHOOL FIELD INTRODUCTION PROGRAM

Abstract: *Self-assessment in the second schooling field introduction program can find out how far pedagogical competencies have been mastered by student teacher candidates. However, the assessment of the second school field introduction program was dominated by field supervisors without without student teachers' input. The objective of this study is to develop a tool for the assessment of teaching competence in partner schools. The research method used in this study is research and development that adopts the Plomp model which consists of five phases, namely the initial investigation phase, the product design phase, the realization/construction phase, the test phase, evaluation and revision, and the implementation phase. The sample for this study comprised 58 students, selected using purposive sampling. Subsequently, the data underwent descriptive statistical analysis. The results of the self-assessment indicated that 87% of students demonstrated proficiency in pedagogical competence, which encompassed five domains: understanding students, designing lessons, implementing learning, implementing learning, and developing students' potential. This study showed that self-assessment is important in the second-year teaching programme. It helps to see if students are ready to teach in an academic setting.*

Keywords: pedagogic competence, school field introduction, self-assessment instrument

Commented [A1]: The abstract consists of a statement about the background, objective of the study or focus of discussion, method or important research steps, findings and discussion, and conclusion. Abstract is written in English and Indonesian, each in one paragraph, single spacing, and in total about 150-200 words.

Commented [A2R1]: we already edit

INTRODUCTION

One of the main programs and activities at the Teaching and Education Faculty is the school field introduction program, which was formerly called the field experience program. This program aims to train prospective teacher students to master various competencies in the learning process in class. One of the important competencies that must be mastered by prospective teachers is pedagogic competence which consists of the ability to understand students, the ability to design learning, the ability to carry out learning, the ability to evaluate learning, and the ability to develop students' potential. Pedagogic competence is fundamental and a strategic key to achievement in school (Susanto et al., 2021); (Sopandi, W & Handayani, H 2019); (Syahrial et al., 2019).

Pedagogical competence training activities for prospective teachers are one of the important factors of programs and activities in the curriculum of the faculty of teacher training and education. Training prospective teachers requires careful planning, adequate training, appropriate and effective training strategies so that prospective teachers are able to carry out learning well and be responsive to the learning needs of students (Syahmaidi et al., 2021); (Sudargini & Purwanto, 2020). Through this training, it is hoped that prospective student teachers will not only learn teaching practices, but also learn to manage classes, communication skills, improve their abilities, and prepare learning tools. The development of pedagogical competence has great potential to increase student engagement in learning, both in primary and secondary education, and in further education (Lozano et al., 2017).

Pedagogical competence is a competency related to the ability to manage learning, understanding of students, use of IT, use of learning models, curriculum development, learning evaluation and developing the potential of students in the learning process at school (Pahrudin, et.al, 2016); (Hartini et al., 2018). This pedagogical competence is the foundation of teacher success in managing classroom learning practices. For this reason, teacher training programs must be optimally developed to improve the pedagogical competence of prospective teachers (Yildiz, 2013). This is because pedagogical competence is a competency that can determine

the success of the learning process and student learning outcomes(Emiliasari, 2018); (Susanto et al., 2019). To train prospective teacher students to master pedagogical competencies, they are previously equipped with micro-teaching courses, after graduating, they are continued with a school field introduction program.

Based on the results of observations, interviews, and documentation that have been carried out, there is no clear assessment rubric, so the assessment is only general and does not specifically assess the pedagogical competence of prospective teacher students who are taking field introduction courses in schools. Therefore, it is necessary to develop a self-assessment instrument for the pedagogical competence of teachers or prospective teachers on an ongoing basis (König et al., 2021). The development of this instrument is based on the faculty's need to map how much competency student teachers have achieved and to map the needs of supervisors who are relevant to increasing pedagogical competence.

Self-assessment instrument can measure and evaluate student pedagogical competence independently and honestly so that it can provide feedback from the assessment activities and can improve the quality of graduate student teacher candidates. This is in accordance with the results of research (Grabe & Stoller, 2019), which states that self-assessment can make students realistic and more accurate in assessing themselves about expected learning goals. This self-assessment is also useful for monitoring the process and results of independent learning achievement (Abun, D., et.al 2021). The competence of student teacher candidates in understanding students, designing lessons, implementing learning, evaluating learning, and developing the potential of students is very important to be given as provision when student teacher candidates are involved in school as teachers. For this reason, a good self-assessment is needed which can be used to assess the pedagogical competence of prospective teacher students as a benchmark for continuous assessment in the second schooling field introduction program. Because so far the results of the assessment still depend a lot on lecturers and students have never been involved in the assessment process. Students are considered not eligible to assess their own performance because they are considered unable to decide on the assessment (Budiastuti et al., 2023); (Beumann & Wegner, 2018). For this reason, it is very important to involve students as assessors in assessing their current performance.

In this regard, self-assessment of pedagogic competencies can be used by prospective teacher students themselves, because this instrument will make it easy for prospective teacher students to identify strengths and weaknesses in mastering the pedagogic competencies they must achieve. This self-assessment is a process that requires students to identify, assess and evaluate the quality of understanding and skills during the learning process and may be improved in the future (Hearn & McMillan, 2008); (Farisi, 2012). The use of continuous self-assessment can help student teacher candidates reflect on the achievement of pedagogical competence as a framework that describes and describes the level of teaching performance of student teacher candidates in mastering these competencies. This self-assessment also serves to collect self-information about the results of the teaching practice of prospective teacher students through measurements with clear indicators. Through this self-assessment approach, comprehensive and actual general pedagogical competencies and special skills can be found (Irina, 2011); (Mâță et al., 2013). Because the principle of this assessment must be able to encourage teachers or prospective teachers to be able to carry out better learning, so that students will progress in their learning (Kartowagiran et al., 2019).

As a teacher education and training institution that produces teaching staff, Universitas PGRI Yogyakarta has an important role in identifying the competencies of prospective teacher students through training activities, as a form of reported performance (Muñoz Carril et al., 2013). The novelty of this research is the existence of self-assessment related to pedagogical competence in the introduction to the school field program that must be taken by prospective teacher students. Because assessment is the most important component in the learning process and the quality of assessment is one of the main characteristics of good learning (Supriyadi et

al., 2019). For this reason, the faculty must create good conditions for students, to develop professional abilities and pedagogical competencies so that students are able to develop creative and innovative ideas (Matlab Mukhamadovna et al., 2020).

To find out all the components of pedagogic competency of prospective teacher students, a valid and reliable self-assessment instrument is needed (Maksymchuk et al., 2020). This makes it possible for student teachers to be able to assess their pedagogical abilities independently and continuously. Several previous studies have proven that through self-assessment instruments, student teachers can describe the competencies they have achieved and deficiencies that need to be corrected (Budiastuti et al., 2023). This proves that a self-assessment instrument for prospective teacher students regarding pedagogical competence is very necessary and is in line with the aim of this research, namely to develop a valid and reliable self-assessment instrument for prospective teacher students' pedagogic competence.

METHOD

The research method used in this study is research and development that adopts the Plomp model, with five stages, namely the initial investigation phase, the design phase, the realization/construction phase, and the test, evaluation, and revision phase, as well as implementation. Because according to (Bright, R. L., & Gideonse, 1968); (Budiastuti et al., 2023) this research and development can facilitate research that develops instructional objectives, strategies, teaching materials, and learning processes.

This self-assessment instrument is to measure the extent to which pedagogic competence is mastered in the second school field introduction program, which was developed from the adoption of the Plomp model. The development of this instrument follows the flow suggested by Plomp. The first step is problem analysis and needs analysis of the second schooling field introduction program. In this step, it was found that the assessment of pedagogic competence was limited to the assessment of teaching exercises carried out by tutors and supervising lecturers, while self-assessment from students had never existed. The results of the problem and needs analysis found a solution to design a self-assessment instrument for student teacher candidates participating in the second school field introduction program.

The second step is to make a prototype self-assessment instrument based on the instrument grid that has been prepared. This prototype is then submitted to a team of experts for assessment and validation. Based on the analysis of the results of expert validation, the results of the self-assessment instrument need to be revised from the linguistic aspect. In the third step, the construction process is carried out again on the prototype of the self-assessment instrument. After being revised, the self-assessment instrument became a new prototype, and re-validation was requested from the expert. Then the fourth step, the prototype of the self-assessment instrument was tested in a limited way on prospective teacher students participating in the second school field introduction program. The results of the trial were then analyzed, and the results did not need revision, so the prototype of the self-assessment instrument was then used in the fifth step, namely the implementation of self-assessment by 58 selected students by purposive sampling representing study programs at the Teaching and Education Faculty of the PGRI Yogyakarta University. To determine how far pedagogic competencies have been mastered by prospective teacher students, appropriate descriptive measurement criteria are used to describe these competencies. While the validity of the instrument was measured by the Kappa inter-rater technique.

The procedure for developing a self-assessment instrument is shown in Figure 1 below.

Commented [A3]: Published methods should be indicated by reference: only relevant modifications should be described. Do not repeat details of existing methods. explained in a sub-heading.

Commented [A4R3]: we already delete repeated teks

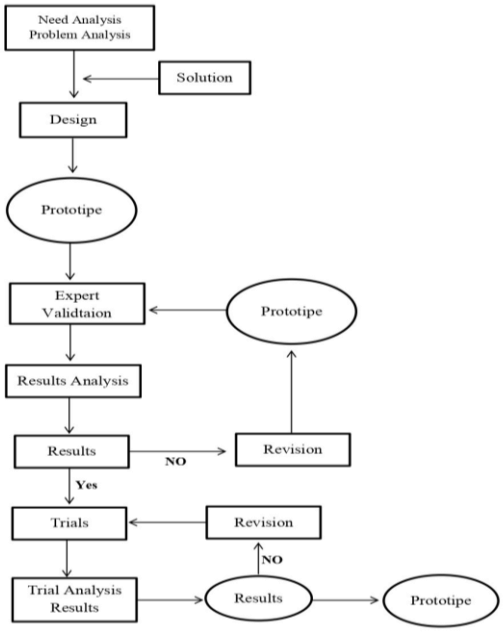


Figure 1. Procedure for preparing the self-assessment instrument

Table 1 describes the development of the pedagogic competence self-assessment instrument for prospective teacher students participating in the second schooling field introduction program. Pedagogic competency self-assessment data was collected through assessment sheets and rubrics with the categories Very Appropriate, Appropriate, Less Appropriate, Inappropriate, and Very Unsuitable.

Table 1. Pedagogic Competency Self-Assessment Instrument for Prospective Teachers

No.	Assessment Aspect	Assessment Coverage	Type of Instrument	Number of Items
1	Understanding of student	a. Pay attention to initial abilities b. understand learning difficulties c. understand the character	Self-assessment sheet	3 items
2	Learning design	a. determine learning objectives b. design lessons properly c. understand the proper method	Self-assessment sheet	3 items

3	Implementation of learning	a. managing proper learning b. implementing conducive learning c. Carry out dynamic learning	Self-assessment sheet	3 items
4	Learning evaluation	a. designing theoretical and practical assessments b. carry out test and non-test assessments c. planning remedies	Self-assessment sheet	3 items
5	Developing the potential of students	a. task reinforcement and feedback b. extracurricular assistance c. psychological reinforcement	Self-assessment sheet	3 items

Data was collected from expert judgment categorized based on the Content Validity Index (CVI), which is presented in Table 2. Meanwhile, the reliability of the instrument was measured using the Kappa inter-rater. Student teacher candidates who take part in the school field introduction program use instruments that have met the validity requirements to carry out self-assessments on aspects of pedagogic competence.

Table 2. Evaluation of the Kappa Statistical Value

Value of K	Interpretation
<0	Poor
0 – 0.20	Slight
0.21 – 0.40	Fair
0.41 – 0.60	Moderate
0.61 – 0.80	Substansial
0.81 – 1.00	Almost perfect

Source: (Landis & Koch, 1977).

While the data analysis technique used in this research is descriptive analysis, to find out the percentage of mastery of the pedagogic competencies of prospective teacher students who take part in the second school field introduction program. Measurement of the pedagogic competence of prospective teacher students is presented in Table 3 below.

Table 3. Categories of Pedagogic Competency Measurement

Score Intervals	Category
$4{,}2 < \bar{x}$	Very good
$3{,}4 < \bar{x} \leq 4{,}2$	Good
$2{,}6 < \bar{x} \leq 3{,}4$	Enough
$1{,}8 < \bar{x} \leq 2{,}6$	Not enough
$\bar{x} \leq 1{,}8$	Very less

Source:(Widoyoko, 2014)

FINDING AND DISCUSSIONS

Finding

The instrument developed in this research is used to measure the extent of pedagogical competence that prospective teachers have mastered while participating in the school field introduction program. This self-assessment instrument gives prospective teachers the freedom

to assess themselves honestly and openly regarding the pedagogical competencies they have mastered.

This pedagogical competency includes the ability to understand students, design learning, implement learning, evaluate learning, and develop students' potential. This competency is measured independently using research instruments that have been developed and used continuously.

The results of the pedagogic competency self-assessment trial show that for the aspect of student understanding with an average score of 4.35 (87%), the aspect of learning design averages 4.45 (89%), the aspect of the implementation of learning averages 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the potential development aspect of students averaged 4.40 (88%). The results of the recapitulation of the pedagogic competency assessment can be shown in Table 4 below.

Table 4. Recapitulation of Pedagogic Competency Assessment

No.	Aspect	Average	Percentage (%)
1	Student Understanding	4,35	87
2	Learning Design	4,45	89
3	Implementation of Learning	4,30	86
4	Learning Evaluation	4,25	85
5	Potential Development of Learners	4,40	88
	Average	**4,35**	**87**

Based on the recapitulation of the pedagogic competency assessment in Table 4, it can be concluded that the average value of pedagogic competence is 4.35 or 87% which can be categorized as very good pedagogic competence, which is then shown in Figure 2 below.

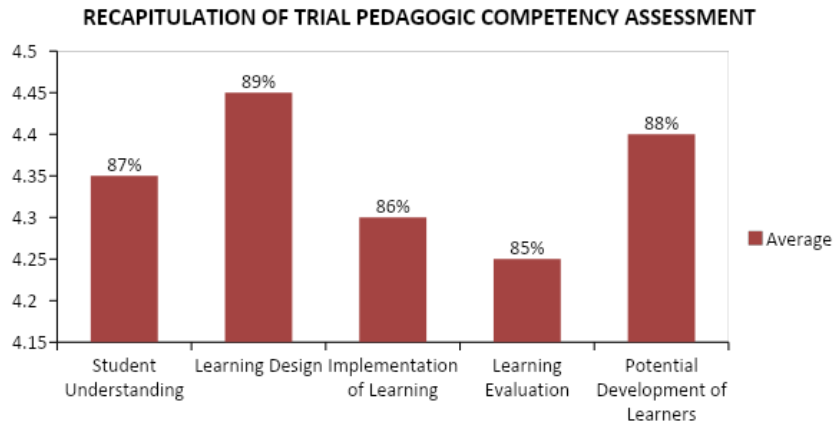


Figure 2. Pedagogic Competency Assessment Histogram

The results of students' self-assessments on aspects of student understanding are presented in Figure 3. Of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understood the participants' character. students by 85.52%. This can be explained that the ability to understand student students is very good. When referring to the existing categories, students' in-depth understanding skills are very good, as shown in Figure 3 below.

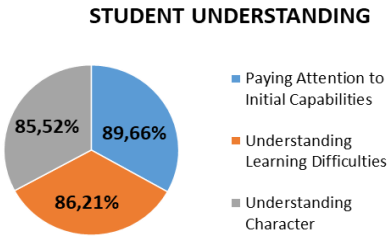


Figure 3. Diagram of Assessment of Student Understanding Aspect

While self-assessment on the aspect of learning design, four indicators of determining learning objectives obtained a percentage of 90.69%, designing learning reached 88.97%, and understanding of appropriate learning methods an achievement of 87.24%. An overview of the results of the second aspect of the self-assessment is shown in Figure 4 below.

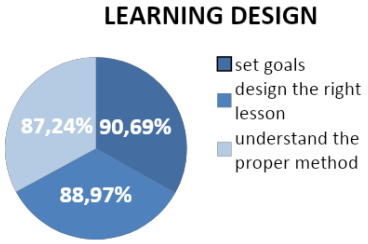


Figure 4. Learning Design Aspect Assessment Diagram

For self-assessment on the implementation aspect of learning, for the first aspect, namely optimal learning management, student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and dynamic learning implementation was 85.52%. An overview of the results of the third aspect of self-assessment can be seen in Figure 5 below.

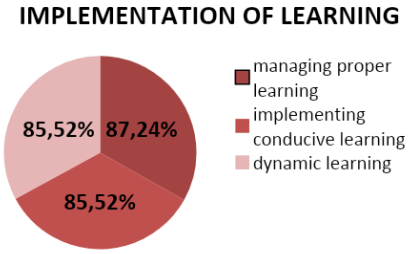


Figure 5. Diagram of the Assessment of the Implementation of Learning Implementation Aspects

For the fourth aspect of self-assessment, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student score achievement was 85.52%, the use of test and non-test assessment was 86.21% while designing remedial

programs, the student score achievement was 83.1%. The results of this aspect's self-assessment can be seen in the following diagram 6.

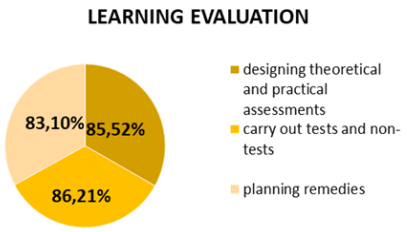


Figure 6. Learning Evaluation Aspect Assessment Diagram

The fifth aspect in students' self-assessment of the potential development of students, on the indicators of providing reinforcement and task feedback, student achievement was 90%, extracurricular assistance was 86.55%, and psychological stimulation reinforcement was 87.59%. The results of this self-assessment can be shown in Figure 7 below.

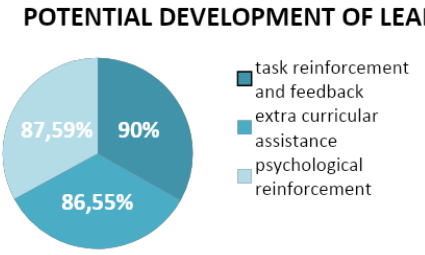


Figure 7. Diagram of Assessment of Potential Development Aspects of Learners

Discussion

The preliminary investigation stage is the stage of needs analysis or problem analysis. At this stage, data and information in the field are collected and identified according to related problems. The need for the teaching and education faculties is an instrument for self-assessment of pedagogical competence in an introductory field school program that has never existed. The assessment so far is the assessment of teaching practices carried out by tutors and supervisors. For this reason, it is necessary to design competency development and special assessments, so that candidates educators realize to have new competencies (Andryukhina et al., 2016); (Mahat et al., 2022)**.**

Furthermore, at the design stage, the design of a pedagogic competence self-assessment instrument was prepared with five aspects, namely the competence to understand students, the competence to design learning, the competence to carry out learning, the competence to evaluate learning, and the competence to develop students' potential. From each aspect, it is developed into fifteen indicators. The aspects assessed in the pedagogic competence assessment in students' understanding consist of three assessment indicators, namely understanding students' initial abilities, understanding students' initial difficulties, and understanding students' character;

aspects assessed in lesson planning include three assessment indicators, namely determining learning objectives, designing appropriate learning, and determining appropriate learning methods; while the aspects assessed in the implementation of learning include three assessment indicators, namely managing to learn, carrying out the learning process, and dynamic learning. The aspects assessed in the pedagogic competency assessment in evaluating learning include three assessment indicators namely; determining the appropriate type of evaluation, fully using test and non-test evaluations in a comprehensive manner, and designing and implementing remedial programs. While the aspects assessed in the pedagogic assessment in developing students' potential include three indicators, namely providing reinforcement and task feedback, accompanying students in extra-curricular activities, and providing psychological motivation to students.

In construction, a set of self-assessment instruments was developed to measure the pedagogic competence of prospective teacher students participating in the second school field introduction program (Yusnita et al., 2018). This stage includes designing the form of a self-assessment instrument, incorporating the substance of each aspect of the assessment, and identifying indicators for each of these aspects. One very important thing is the need for an assessment sheet for each indicator in the instrument development rubric, to check whether this self-assessment instrument needs revision or not. This self-assessment is effective for measuring self-ability and improving self-quality (Andrade & Du, 2007); self-assessment allows students to be able to assess themselves and their shortcomings (Lias et al., 2021); This self-assessment can also evoke a positive attitude of students (Zammi et al., 2018) (Zannierah et al., 2024).

At the development stage, the construction of the self-assessment instrument was validated by three experts in the field of educational evaluation, language, and teacher education. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to find out how much the content validity coefficient of the expert judgment shows that the CVI value is 0.91 (almost perfect). These results have shown that the developed self-assessment instrument already reflects indicators of pedagogic competence, especially in the second schooling field introduction program.

The next step is a test or evaluation of selected students from participants in the second school field introduction program. Based on the recapitulation of the pedagogic competency assessment in Table 4 above, it shows that the average value of the pedagogic competence of prospective teacher students participating in the second school field introduction program is 4.35. This means that 87% of the 58 students in the selected sample can be categorized as a student's pedagogic competence in the very good category.

Through several stages of development, this assessment instrument can be used by students to conduct a self-assessment of pedagogic competence in an honest and independent second schooling field introduction program. The results of the self-assessment of pedagogic competence in Table 4 and figure 2 show that for aspects of student understanding with an average score of 4.35 (87%), aspects of learning design an average of 4.45 (89%), aspects of learning implementation with an average of 4, 32 (86.4%), the evaluation aspect of learning averaged 4.25 (85%), and the aspect of developing potential learners with an average of 4.40 (88%). From these five aspects, it can be concluded that 87% of the 58 students participating in the second schooling field introduction program were very good at mastering their pedagogical competencies.

In the assessment of the first aspect, namely the aspect of student understanding presented in Figure 3, it shows that of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understand the character of students by 85.52%. This can be explained that the ability to understand student students is very good, with an average of 87.12%, based on the existing categories. Even though there are still around 12.87% of students who have not been able to understand the potential of students in learning.

Self-assessment on the second aspect, namely the aspect of learning design in figure 4, for indicators of determining learning objectives the percentage of student achievement was 90.69%, designing learning was 88.97%, and understanding appropriate learning methods with an achievement percentage of 87.24%. If the average self-assessment of this second aspect is taken, the student achievement is 87.58%, which means that there are still 12.42% of students who have not been able to make a comprehensive learning plan.

For self-assessment on the third aspect, namely the implementation of learning in figure 5, for the first aspect, namely optimal learning management, the percentage of student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and the implementation of dynamic learning was 85.52%. If the average is calculated, the competence in the implementation of learning, students get a percentage score of 86.09, which can be explained that there are still 13.91% of students who have not been able to carry out the learning process in a conducive manner.

Meanwhile for the fourth aspect of self-assessment in figure 6, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student achievement score was 85.52%, the use of test and non-test assessment was 86.21%, while designing remedial programs, the achievement score students by 83.1%. The results of this self-assessment when averaged, the student achievement is 84.94%, which can be interpreted that there are still around 15.06% of students who do not understand the design of learning evaluation.

While the fifth aspect of student self-assessment is the aspect of developing students' potential in figure 7, in the indicators of providing reinforcement and assignment feedback, student achievement is 90%, extracurricular assistance is 86.55%, and psychological stimulation reinforcement is 87.59%. The results of this self-assessment when averaged, the student competence in the fifth aspect is 88.04%, which can be explained that there are still around 11.96% of students who have not been able to optimally develop student potential.

Based on the self-assessment of prospective teacher students participating in the second schooling field introduction program, it was found that 87% of students had mastered pedagogic competencies, while 13% of students still had to learn more so that during the implementation of the schooling field introduction program they could master all aspects and assessment indicators, especially in competency assessment pedagogic.

The results of this study indicate that self-assessment instruments for pedagogic competence in the second schooling field introduction program need to be applied to train students to self-evaluate regarding students understanding abilities, learning design, learning implementation, learning evaluation, and aspects of developing students' potential. Equally important are supervisors, tutors, and managers of the school field introduction program periodically reviewing self-assessment instruments that are in line with developments in science and technology, so that faculties and universities can prepare graduates of qualified prospective teaching staff who have high competitiveness.

CONCLUSION

The aim of this research is to produce a self-assessment instrument to measure pedagogical competence in the second school field introduction program. The self-assessment instrument includes five aspects of assessment, namely student understanding, learning design, learning implementation, learning evaluation, and developing student potential. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to determine how big the content validity coefficient of the expert judgment is shows a CVI value of 0.91 (almost perfect). These results indicate that the self-assessment instrument developed reflects indicators of pedagogical competence, especially in the second school field introduction program.

The results of the self-assessment trial of pedagogical competence showed that for the

aspect of student understanding the average score was 4.35 (87%), the learning design aspect averaged 4.45 (89%), the learning implementation aspect averaged 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the student potential development aspect averaged 4.40 (88%). Based on the recapitulation of pedagogical competency assessments, it shows that the average pedagogical competency score for prospective teacher students participating in the school field introduction program II is 4.35. This means that 87% of the 58 selected sample students can be categorized as having students' pedagogical competence in the very good category.

Based on the research findings, it can be concluded that the self-assessment instrument developed has met the requirements and can be used to assess students' pedagogical competence independently. The important thing that needs to be done is extensive testing by increasing research subjects from several similar educational study programs at universities in Yogyakarta. In terms of the effectiveness of self-assessment instruments, it is very necessary to carry out continuous experiments, so that these self-assessment instruments are able to answer the challenges of the world of education, namely the realization of the quality of prospective teachers who truly master pedagogical competencies.

ACKNOWLEDGEMENT

The author would like to thank Universitas PGRI Yogyakarta for supporting the implementation of this research through a lecturer research grant from the Research and Community Service Institute for the 2023 fiscal year.

REFERENCES

Abun, D. (2021). Effect of attitude toward work, work environment on the employees' work self-efficacy. *SSRN Electronic Journal*, *10*(7), 129–141. https://doi.org/10.2139/ssrn.3958253

Andrade, H., & Du, Y. (2007). Student responses to criteriareferenced self-assessment. *Assessment and Evaluation in Higher Education*, *32*(2), 159–181. https://doi.org/10.1080/02602930600801928

Andryukhina, L. M., Dneprov, S. A., Sumina, T. G., Zimina, E. Y., Utkina, S. N., & Mantulenko, V. V. (2016). The model of monitoring of vocational pedagogical competences of professors in secondary vocational education. *International Journal of Environmental and Science Education*, *11*(14), 7016–7034.

Beumann, S., & Wegner, S. A. (2018). An outlook on self-assessment of homework assignments in higher mathematics education. *International Journal of STEM Education*, *5*(1). https://doi.org/10.1186/s40594-018-0146-z

Bright, R. L., & Gideonse, H. D. (1968). Research and development strategies. *The Journal of Experimental Education*, *37*(137–145). https://doi.org/https://doi.org/10.1080/00220973.1968.11011101

Budiastuti, E., Sugiyem, Najwa, F., & Puad, A. (2023). Social economic and education of national athletes. *Cakrawala Pendidikan*, *42*(1), 254–263. https://doi.org/10.21831/cp.v42i1.52225

Emiliasari, R. N. (2018). An Analysis Of Teachers' Pedagogical Competence In Lesson Study Of MGMP SMP Majalengka. *Eltin Journal, Journal of English Language Teaching in Indonesia*, *6*(1), 22. https://doi.org/10.22460/eltin.v6i1.p22-33

Farisi, M. I. (2012). *Development of student self-assesment as a model for evaluation and character development of paper*. UNY Press.

Grabe, W., & Stoller, F. L. (2019). Action Research Projects. In *Teaching and Researching Reading* (pp. 246–262). https://doi.org/10.4324/9781315726274-11

Hartini, S., Putra Bhakti, C., Hartanto, D., & Alfarizqi Nizamuddin Ghiffari, M. (2018). *Teacher Pedagogic Competency Development Model: A Literature Review*. https://doi.org/10.2991/aecon-18.2018.40

Hearn, J., & McMillan, J. H. (2008). Student Self-Assessment: The Key to Stronger Student Motivation and Higher Achievement. *Educational Horizons*, *87*(1), 40–49. https://www.jstor.org/stable/42923742

Irina, A. (2011). Pedagogical Competences – The Key to Efficient Education. *International Online Journal of Educational Sciences*, *3*(2), 411–423. www.iojes.net

Kartowagiran, B., Wibawa, E. A., Alfarisa, F., & Purnama, D. N. (2019). Can student assessment sheets

Commented [A5]: It is suggested to use **Mendeley** as a reference manager at styling the citations and the bibliography
Journal references published in the last five years need to be added
The quotation reference must match the bibliography
Add references from journals, minimum limit is 35 references.
In this bibliography section, include the DOI or link to the reference taken.

replace observation sheets? *Cakrawala Pendidikan*, *38*(1), 33–44. https://doi.org/10.21831/cp.v38i1.22207

König, J., Blömeke, S., Jentsch, A., Schlesinger, L., née Nehls, C. F., Musekamp, F., & Kaiser, G. (2021). The links between pedagogical competence, instructional quality, and mathematics achievement in the lower secondary classroom. *Educational Studies in Mathematics*, *107*(1), 189–212. https://doi.org/10.1007/s10649-020-10021-0

Landis, J. R., & Koch, G. G. (1977). The Measurement of Observer Agreement for Categorical Data. *Biometrics*, *33*(1), 159. https://doi.org/10.2307/2529310

Lias, N., Lindholm, T., Pohjanoksa-Mäntylä, M., Westerholm, A., & Airaksinen, M. (2021). Developing and piloting a self-assessment tool for medication review competence of practicing pharmacists based on nationally set competence criteria. *BMC Health Services Research*, *21*(1). https://doi.org/10.1186/s12913-021-07291-6

Lozano, R., Merrill, M. Y., Sammalisto, K., Ceulemans, K., & Lozano, F. J. (2017). Connecting competences and pedagogical approaches for sustainable development in higher education: A literature review and framework proposal. *Sustainability (Switzerland)*, *9*(10). https://doi.org/10.3390/su9101889

Mahat, H., Norkhaidi, S. B., Saleh, Y., Hashim, M., Nayan, N., Said, Z. M., Matnoor, M., & Hamid, N. (2022). A Study on the Responsibility of Environmental Ethics among Secondary School Students in the 21st Century. *International Journal of Educational Methodology*, *8*(3), 585–593. https://doi.org/10.12973/ijem.8.3.585

Maksymchuk, B., Matviichuk, T., Solovyov, V., Davydenko, H., Soichuk, R., Khurtenko, O., Groshovenko, O., Stepanchenko, N., Andriychuk, Y., Grygorenko, T., Duka, T., Pidlypniak, I., Gurevych, R., Kuzmenko, V., & Maksymchuk, I. (2020). Developing Healthcare Competency in Future Teachers. *Revista Romaneasca Pentru Educatie Multidimensionala*, *12*(3), 24–43. https://doi.org/10.18662/rrem/12.3/307

Martono, T., & Murtini, W. (2016). *The Effect of Pedagogic Competency, Personality… Pahrudin, et al Proceeding The 2 nd International Conference On Teacher Training and Education Sebelas Maret University The Effect of Pedagogic Competency, Personality, Professional and Social Competency Te*. *2*(1), 25002–4124. http://suarakita.com/artikel

Mâță, L., Cmeciu, D., & Ghiațău, R. M. (2013). A Reference Framework of Pedagogical Competences of Language Teachers in the Initial Training Programmes. *Procedia - Social and Behavioral Sciences*, *93*, 648–653. https://doi.org/10.1016/j.sbspro.2013.09.255

Matlab Mukhamadovna, T., Aziza Sharipovna, H., & Supkhonovna, H. N. (2020). The System Of Development Of Professional Competence In Future Primary School Teachers. *Journal of Critical Reviews*, *7*(13), 4184–4189.

Muñoz Carril, P. C., Sanmamed, M. G., & Hernández Sellés, N. (2013). Pedagogical roles and competencies of university teachers practicing in the E-learning environment. *International Review of Research in Open and Distance Learning*, *14*(3), 462–487. https://doi.org/10.19173/irrodl.v14i3.1477

Sudargini, Y., & Purwanto, A. (2020). the Effect of Teachers Pedagogic Competency on the Learning Outcomes of Students. *Journal of Industrial Engineering & Management Research (Jiemar)*, *1*(4), 2722–8878. https://doi.org/10.7777/jiemar

Supriyadi, E., Zamtinah, Soenarto, S., & Hatmojo, Y. I. (2019). A character-based assessment model for vocational high schools. *Cakrawala Pendidikan*, *38*(2), 269–280. https://doi.org/10.21831/cp.v38i2.24099

Susanto, R., Agustina, N., Azmi, Y., & Rachbini, W. (2021). Pedagogic Competency Model: Development from The Point of View of The Initial Characteristics of Teachers, Involvement with Organizations and Competency Development Strategies. *Review of International Geographical Education Online*, *11*(8), 826–841. https://doi.org/10.48047/rigeo.11.08.72

Susanto, R., Rozali, Y. A., & Agustina, N. (2019). Development of pedagogical competency models for elementary school teachers: Pedagogical knowledge, reflective ability, emotional intelligence and instructional communication pattern. *Universal Journal of Educational Research*, *7*(10), 2124–2132. https://doi.org/10.13189/ujer.2019.071010

Syahmaidi, E., Hidayat, H., Hartanto, S., & Fitri Rahmadani, A. (2021). Designing E-Training Computer Assisted Instruction Used to Pedagogic Competency in Vocational Education. *Journal of Physics: Conference Series*, *1779*(1). https://doi.org/10.1088/1742-6596/1779/1/012038

Syahrial, S., Asrial, A., Kurniawan, D. A., Chan, F., Pratama, R. A., Nugrogo, P., & Septiasari, R. (2019).

The impact of etnocontructivism in social affairs on pedagogic competencies. *International Journal of Evaluation and Research in Education*, *8*(3), 409–416. https://doi.org/10.11591/ijere.v8i3.20242

WahyuSopandi, st, & HanyHandayani, nd. (2019). *The Impact of Workshop on Implementation of Read-Answer-Discuss-Explain-And-Create (RADEC) Learning Model on Pedagogic Competency of Elementary School Teachers*.

Widoyoko, S. E. P. (2014). *Penilaian Hasil Pembelajaran di Sekolah*. Pustaka Pelajar.

Yildiz, A. (2013). The Factors Affecting Techno-Pedagogical Competencies and Critical Thinking Skills of Preservice Mathematics Teachers. In *Malaysian Online Journal of Educational Sciences* (Issue 2). https://www.researchgate.net/publication/330729272

Yusnita, Y., Eriyanti, F., Engkizar, E., Anwar, F., Putri, N. E., Arifin, Z., & Syafril, S. (2018). The Effect of Professional Education and Training for Teachers (PLPG) in Improving Pedagogic Competence and Teacher Performance. *Tadris: Jurnal Keguruan Dan Ilmu Tarbiyah*, *3*(2), 123. https://doi.org/10.24042/tadris.v3i2.2701

Zammi, M., Susilaningsih, E., & Supardi, K. I. (2018). Pengembangan Instrumen Self-Assessment untuk Meningkatkan Keterampilan Laboratorium Calon Guru Kimia. *Jurnal Profesi Keguruan*, *4*(1), 37–41. https://journal.unnes.ac.id/nju/index.php/jpk

Zannierah, S., Marzuki, S., Mokdad, M., Novianto, V., & Buyong, S. Z. (2024). *Instrument Feasibility Study on Entrepreneurial Perspective of China ' s Soft Power on Tourism Diffusion in Malaysia*. *10*(3), 109–115.

4. Bukti konfirmasi submit revisi pertama, respon kepada reviewer (5 Desember 2024)

2454 299-Developing self-assessment instruments to measure the pedagogical_to author Fix Edit.docx	December 5, 2024	Article Text
2530 299-Developing Self-Assessment Instruments to Measure The Pedagogical Competence of Prospective Teacher Students-2nd revision 1[1].docx	December 11, 2024	Article Text
2587 299-Developing+Self-Assessment+Instruments+to+Measure+The+Pedagogical+Competence-3rd+revision.docx	December 13, 2024	Article Text

Review Discussions

Add discussion

Name	From	Last Reply	Replies	Closed
Review Results	nurhamid 2024-11-29 05:47 AM	victor 2024-12-06 09:24 AM	2	☑
2nd Revision	nurhamid 2024-12-07 12:51 PM	victor 2024-12-11 10:27 AM	1	☑
3rd Revision	nurhamid 2024-12-12 10:25 AM	victor 2024-12-13 02:01 PM	1	☑

Review Results

×

Participants

Dr. Nur Hamid, M.Sc. (nurhamid)

Dr. Victor (victor)

Messages

Note	From
Dear Author, We sent the review result to your mail. You can download it here. Please revise and send in the Revision menu before December 05, 2024. Please kindly give a RED COLOR for your revision. We will reject your article if the revised results are not submitted before that date. Please pay attention. Thank you. 299-Developing self-assessment instruments to measure the pedagogical_to author.docx	nurhamid 2024-11-29 05:47 AM
4rd author Nama: SHARIFAH ZANNIERAH SYED MARZUKI Alamat email: szannierah@uitm.edu.my Institusi: Universiti Teknologi Mara Malaysia Link Google Scholar: https://scholar.google.com/citations?user=arwVVa0AAAAJ&hl=en&oi=ao IDOrchid: 0000-0002-5167-4158 ID Scopus: 55253048200 5th author Nama: Zhang Chen Alamat email: zhangchen@guc.edu.cn Institusi: Geely University of China thank you	victor 2024-12-05 11:08 AM
apakah bisa menambah author untuk tulisan kami?	victor 2024-12-06 09:24 AM

5. Bukti Resubmit Pertama

(5 Desember 2024)

Round 1 Status
Submission accepted.

Notifications

[ijsl] Editor Decision	2024-11-29 05:47 AM
[ijsl] Editor Decision	2024-12-07 12:51 PM
[ijsl] Editor Decision	2024-12-12 10:24 AM
[ijsl] Editor Decision	2024-12-13 02:49 PM
[ijsl] Editor Decision	2024-12-13 02:49 PM

Reviewer's Attachments

Search

2403 299-Developing self-assessment instruments to measure the pedagogical_to author.docx	November 29, 2024	

Revisions

Search Upload File

2454 299-Developing self-assessment instruments to measure the pedagogical_to author Fix Edit.docx	December 5, 2024	Article Text
2530 299-Developing Self-Assessment Instruments to Measure The Pedagogical Competence of Prospective Teacher Students-2nd revision 1[1].docx	December 11, 2024	Article Text
2587 299-Developing+Self-Assessment+Instruments+to+Measure+The+Pedagogical+Competence-3rd+revision.docx	December 13, 2024	Article Text

DEVELOPING SELF-ASSESSMENT INSTRUMENTS TO MEASURE THE PEDAGOGICAL COMPETENCE OF PROSPECTIVE TEACHER STUDENTS IN THE SCHOOL FIELD INTRODUCTION PROGRAM

Abstract: *Self-assessment in the second schooling field introduction program can find out how far pedagogical competencies have been mastered by student teacher candidates. However, the assessment of the second school field introduction program was dominated by field supervisors without without student teachers' input. The objective of this study is to develop a tool for the assessment of teaching competence in partner schools. The research method used in this study is research and development that adopts the Plomp model which consists of five phases, namely the initial investigation phase, the product design phase, the realization/construction phase, the test phase, evaluation and revision, and the implementation phase. The sample for this study comprised 58 students, selected using purposive sampling. Subsequently, the data underwent descriptive statistical analysis. The results of the self-assessment indicated that 87% of students demonstrated proficiency in pedagogical competence, which encompassed five domains: understanding students, designing lessons, implementing learning, implementing learning, and developing students' potential. This study showed that self-assessment is important in the second-year teaching programme. It helps to see if students are ready to teach in an academic setting.*

Keywords: pedagogic competence, school field introduction, self-assessment instrument

Commented [A1]: The abstract consists of a statement about the background, objective of the study or focus of discussion, method or important research steps, findings and discussion, and conclusion. Abstract is written in English and Indonesian, each in one paragraph, single spacing, and in total about 150-200 words.

Commented [A2R1]: we already edit

INTRODUCTION

One of the main programs and activities at the Teaching and Education Faculty is the school field introduction program, which was formerly called the field experience program. This program aims to train prospective teacher students to master various competencies in the learning process in class. One of the important competencies that must be mastered by prospective teachers is pedagogic competence which consists of the ability to understand students, the ability to design learning, the ability to carry out learning, the ability to evaluate learning, and the ability to develop students' potential. Pedagogic competence is fundamental and a strategic key to achievement in school (Susanto et al., 2021); (Sopandi, W & Handayani, H 2019); (Syahrial et al., 2019).

Pedagogical competence training activities for prospective teachers are one of the important factors of programs and activities in the curriculum of the faculty of teacher training and education. Training prospective teachers requires careful planning, adequate training, appropriate and effective training strategies so that prospective teachers are able to carry out learning well and be responsive to the learning needs of students (Syahmaidi et al., 2021); (Sudargini & Purwanto, 2020). Through this training, it is hoped that prospective student teachers will not only learn teaching practices, but also learn to manage classes, communication skills, improve their abilities, and prepare learning tools. The development of pedagogical competence has great potential to increase student engagement in learning, both in primary and secondary education, and in further education (Lozano et al., 2017).

Pedagogical competence is a competency related to the ability to manage learning, understanding of students, use of IT, use of learning models, curriculum development, learning evaluation and developing the potential of students in the learning process at school (Pahrudin, et.al, 2016); (Hartini et al., 2018). This pedagogical competence is the foundation of teacher success in managing classroom learning practices. For this reason, teacher training programs must be optimally developed to improve the pedagogical competence of prospective teachers (Yildiz, 2013). This is because pedagogical competence is a competency that can determine

the success of the learning process and student learning outcomes(Emiliasari, 2018); (Susanto et al., 2019). To train prospective teacher students to master pedagogical competencies, they are previously equipped with micro-teaching courses, after graduating, they are continued with a school field introduction program.

Based on the results of observations, interviews, and documentation that have been carried out, there is no clear assessment rubric, so the assessment is only general and does not specifically assess the pedagogical competence of prospective teacher students who are taking field introduction courses in schools. Therefore, it is necessary to develop a self-assessment instrument for the pedagogical competence of teachers or prospective teachers on an ongoing basis (König et al., 2021). The development of this instrument is based on the faculty's need to map how much competency student teachers have achieved and to map the needs of supervisors who are relevant to increasing pedagogical competence.

Self-assessment instrument can measure and evaluate student pedagogical competence independently and honestly so that it can provide feedback from the assessment activities and can improve the quality of graduate student teacher candidates. This is in accordance with the results of research (Grabe & Stoller, 2019), which states that self-assessment can make students realistic and more accurate in assessing themselves about expected learning goals. This self-assessment is also useful for monitoring the process and results of independent learning achievement (Abun, D., et.al 2021). The competence of student teacher candidates in understanding students, designing lessons, implementing learning, evaluating learning, and developing the potential of students is very important to be given as provision when student teacher candidates are involved in school as teachers. For this reason, a good self-assessment is needed which can be used to assess the pedagogical competence of prospective teacher students as a benchmark for continuous assessment in the second schooling field introduction program. Because so far the results of the assessment still depend a lot on lecturers and students have never been involved in the assessment process. Students are considered not eligible to assess their own performance because they are considered unable to decide on the assessment (Budiastuti et al., 2023); (Beumann & Wegner, 2018). For this reason, it is very important to involve students as assessors in assessing their current performance.

In this regard, self-assessment of pedagogic competencies can be used by prospective teacher students themselves, because this instrument will make it easy for prospective teacher students to identify strengths and weaknesses in mastering the pedagogic competencies they must achieve. This self-assessment is a process that requires students to identify, assess and evaluate the quality of understanding and skills during the learning process and may be improved in the future (Hearn & McMillan, 2008); (Farisi, 2012). The use of continuous self-assessment can help student teacher candidates reflect on the achievement of pedagogical competence as a framework that describes and describes the level of teaching performance of student teacher candidates in mastering these competencies. This self-assessment also serves to collect self-information about the results of the teaching practice of prospective teacher students through measurements with clear indicators. Through this self-assessment approach, comprehensive and actual general pedagogical competencies and special skills can be found (Irina, 2011); (Mâță et al., 2013). Because the principle of this assessment must be able to encourage teachers or prospective teachers to be able to carry out better learning, so that students will progress in their learning (Kartowagiran et al., 2019).

As a teacher education and training institution that produces teaching staff, Universitas PGRI Yogyakarta has an important role in identifying the competencies of prospective teacher students through training activities, as a form of reported performance (Muñoz Carril et al., 2013). The novelty of this research is the existence of self-assessment related to pedagogical competence in the introduction to the school field program that must be taken by prospective teacher students. Because assessment is the most important component in the learning process and the quality of assessment is one of the main characteristics of good learning (Supriyadi et

al., 2019). For this reason, the faculty must create good conditions for students, to develop professional abilities and pedagogical competencies so that students are able to develop creative and innovative ideas (Matlab Mukhamadovna et al., 2020).

To find out all the components of pedagogic competency of prospective teacher students, a valid and reliable self-assessment instrument is needed (Maksymchuk et al., 2020). This makes it possible for student teachers to be able to assess their pedagogical abilities independently and continuously. Several previous studies have proven that through self-assessment instruments, student teachers can describe the competencies they have achieved and deficiencies that need to be corrected (Budiastuti et al., 2023). This proves that a self-assessment instrument for prospective teacher students regarding pedagogical competence is very necessary and is in line with the aim of this research, namely to develop a valid and reliable self-assessment instrument for prospective teacher students' pedagogic competence.

METHOD

The research method used in this study is research and development that adopts the Plomp model, with five stages, namely the initial investigation phase, the design phase, the realization/construction phase, and the test, evaluation, and revision phase, as well as implementation. Because according to (Bright, R. L., & Gideonse, 1968); (Budiastuti et al., 2023) this research and development can facilitate research that develops instructional objectives, strategies, teaching materials, and learning processes.

This self-assessment instrument is to measure the extent to which pedagogic competence is mastered in the second school field introduction program, which was developed from the adoption of the Plomp model. The development of this instrument follows the flow suggested by Plomp. The first step is problem analysis and needs analysis of the second schooling field introduction program. In this step, it was found that the assessment of pedagogic competence was limited to the assessment of teaching exercises carried out by tutors and supervising lecturers, while self-assessment from students had never existed. The results of the problem and needs analysis found a solution to design a self-assessment instrument for student teacher candidates participating in the second school field introduction program.

The second step is to make a prototype self-assessment instrument based on the instrument grid that has been prepared. This prototype is then submitted to a team of experts for assessment and validation. Based on the analysis of the results of expert validation, the results of the self-assessment instrument need to be revised from the linguistic aspect. In the third step, the construction process is carried out again on the prototype of the self-assessment instrument. After being revised, the self-assessment instrument became a new prototype, and re-validation was requested from the expert. Then the fourth step, the prototype of the self-assessment instrument was tested in a limited way on prospective teacher students participating in the second school field introduction program. The results of the trial were then analyzed, and the results did not need revision, so the prototype of the self-assessment instrument was then used in the fifth step, namely the implementation of self-assessment by 58 selected students by purposive sampling representing study programs at the Teaching and Education Faculty of the PGRI Yogyakarta University. To determine how far pedagogic competencies have been mastered by prospective teacher students, appropriate descriptive measurement criteria are used to describe these competencies. While the validity of the instrument was measured by the Kappa inter-rater technique.

The procedure for developing a self-assessment instrument is shown in Figure 1 below.

Commented [A3]: Published methods should be indicated by reference: only relevant modifications should be described. Do not repeat details of existing methods. explained in a sub-heading.

Commented [A4R3]: we already delete repeated teks

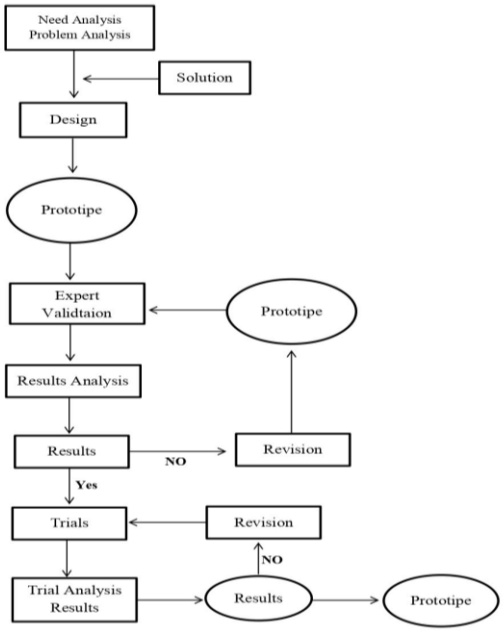


Figure 1. Procedure for preparing the self-assessment instrument

Table 1 describes the development of the pedagogic competence self-assessment instrument for prospective teacher students participating in the second schooling field introduction program. Pedagogic competency self-assessment data was collected through assessment sheets and rubrics with the categories Very Appropriate, Appropriate, Less Appropriate, Inappropriate, and Very Unsuitable.

Table 1. Pedagogic Competency Self-Assessment Instrument for Prospective Teachers

No.	Assessment Aspect	Assessment Coverage	Type of Instrument	Number of Items
1	Understanding of student	a. Pay attention to initial abilities b. understand learning difficulties c. understand the character	Self-assessment sheet	3 items
2	Learning design	a. determine learning objectives b. design lessons properly c. understand the proper method	Self-assessment sheet	3 items

3	Implementation of learning	a. managing proper learning b. implementing conducive learning c. Carry out dynamic learning	Self-assessment sheet	3 items
4	Learning evaluation	a. designing theoretical and practical assessments b. carry out test and non-test assessments c. planning remedies	Self-assessment sheet	3 items
5	Developing the potential of students	a. task reinforcement and feedback b. extracurricular assistance c. psychological reinforcement	Self-assessment sheet	3 items

Data was collected from expert judgment categorized based on the Content Validity Index (CVI), which is presented in Table 2. Meanwhile, the reliability of the instrument was measured using the Kappa inter-rater. Student teacher candidates who take part in the school field introduction program use instruments that have met the validity requirements to carry out self-assessments on aspects of pedagogic competence.

Table 2. Evaluation of the Kappa Statistical Value

Value of K	Interpretation
<0	Poor
0 – 0.20	Slight
0.21 – 0.40	Fair
0.41 – 0.60	Moderate
0.61 – 0.80	Substansial
0.81 – 1.00	Almost perfect

Source: (Landis & Koch, 1977).

While the data analysis technique used in this research is descriptive analysis, to find out the percentage of mastery of the pedagogic competencies of prospective teacher students who take part in the second school field introduction program. Measurement of the pedagogic competence of prospective teacher students is presented in Table 3 below.

Table 3. Categories of Pedagogic Competency Measurement

Score Intervals	Category
$4{,}2 < \bar{x}$	Very good
$3{,}4 < \bar{x} \leq 4{,}2$	Good
$2{,}6 < \bar{x} \leq 3{,}4$	Enough
$1{,}8 < \bar{x} \leq 2{,}6$	Not enough
$\bar{x} \leq 1{,}8$	Very less

Source:(Widoyoko, 2014)

FINDING AND DISCUSSIONS

Finding

The instrument developed in this research is used to measure the extent of pedagogical competence that prospective teachers have mastered while participating in the school field introduction program. This self-assessment instrument gives prospective teachers the freedom

to assess themselves honestly and openly regarding the pedagogical competencies they have mastered.

This pedagogical competency includes the ability to understand students, design learning, implement learning, evaluate learning, and develop students' potential. This competency is measured independently using research instruments that have been developed and used continuously.

The results of the pedagogic competency self-assessment trial show that for the aspect of student understanding with an average score of 4.35 (87%), the aspect of learning design averages 4.45 (89%), the aspect of the implementation of learning averages 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the potential development aspect of students averaged 4.40 (88%). The results of the recapitulation of the pedagogic competency assessment can be shown in Table 4 below.

Table 4. Recapitulation of Pedagogic Competency Assessment

No.	Aspect	Average	Percentage (%)
1	Student Understanding	4,35	87
2	Learning Design	4,45	89
3	Implementation of Learning	4,30	86
4	Learning Evaluation	4,25	85
5	Potential Development of Learners	4,40	88
	Average	**4,35**	**87**

Based on the recapitulation of the pedagogic competency assessment in Table 4, it can be concluded that the average value of pedagogic competence is 4.35 or 87% which can be categorized as very good pedagogic competence, which is then shown in Figure 2 below.

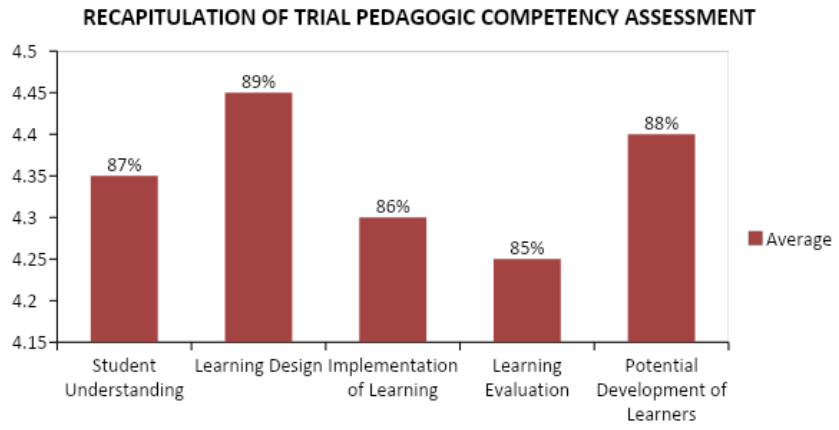


Figure 2. Pedagogic Competency Assessment Histogram

The results of students' self-assessments on aspects of student understanding are presented in Figure 3. Of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understood the participants' character. students by 85.52%. This can be explained that the ability to understand student students is very good. When referring to the existing categories, students' in-depth understanding skills are very good, as shown in Figure 3 below.

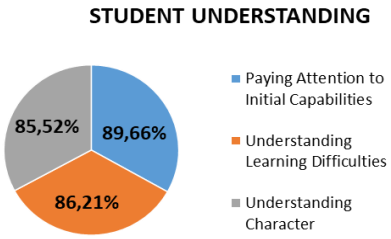


Figure 3. Diagram of Assessment of Student Understanding Aspect

While self-assessment on the aspect of learning design, four indicators of determining learning objectives obtained a percentage of 90.69%, designing learning reached 88.97%, and understanding of appropriate learning methods an achievement of 87.24%. An overview of the results of the second aspect of the self-assessment is shown in Figure 4 below.

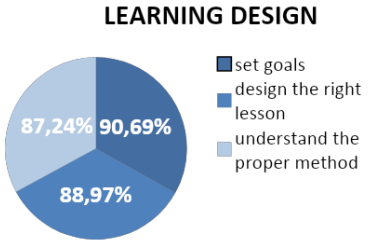


Figure 4. Learning Design Aspect Assessment Diagram

For self-assessment on the implementation aspect of learning, for the first aspect, namely optimal learning management, student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and dynamic learning implementation was 85.52%. An overview of the results of the third aspect of self-assessment can be seen in Figure 5 below.

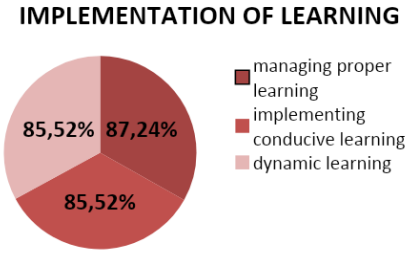


Figure 5. Diagram of the Assessment of the Implementation of Learning Implementation Aspects

For the fourth aspect of self-assessment, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student score achievement was 85.52%, the use of test and non-test assessment was 86.21% while designing remedial

programs, the student score achievement was 83.1%. The results of this aspect's self-assessment can be seen in the following diagram 6.

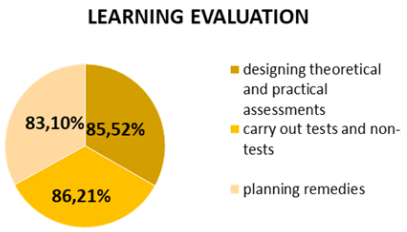


Figure 6. Learning Evaluation Aspect Assessment Diagram

The fifth aspect in students' self-assessment of the potential development of students, on the indicators of providing reinforcement and task feedback, student achievement was 90%, extracurricular assistance was 86.55%, and psychological stimulation reinforcement was 87.59%. The results of this self-assessment can be shown in Figure 7 below.

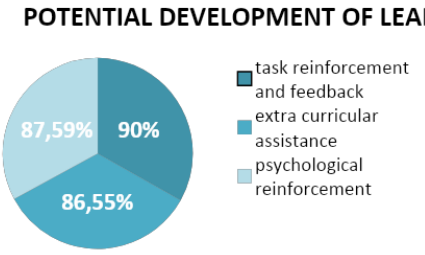


Figure 7. Diagram of Assessment of Potential Development Aspects of Learners

Discussion

The preliminary investigation stage is the stage of needs analysis or problem analysis. At this stage, data and information in the field are collected and identified according to related problems. The need for the teaching and education faculties is an instrument for self-assessment of pedagogical competence in an introductory field school program that has never existed. The assessment so far is the assessment of teaching practices carried out by tutors and supervisors. For this reason, it is necessary to design competency development and special assessments, so that candidates educators realize to have new competencies (Andryukhina et al., 2016); (Mahat et al., 2022)**.**

Furthermore, at the design stage, the design of a pedagogic competence self-assessment instrument was prepared with five aspects, namely the competence to understand students, the competence to design learning, the competence to carry out learning, the competence to evaluate learning, and the competence to develop students' potential. From each aspect, it is developed into fifteen indicators. The aspects assessed in the pedagogic competence assessment in students' understanding consist of three assessment indicators, namely understanding students' initial abilities, understanding students' initial difficulties, and understanding students' character;

aspects assessed in lesson planning include three assessment indicators, namely determining learning objectives, designing appropriate learning, and determining appropriate learning methods; while the aspects assessed in the implementation of learning include three assessment indicators, namely managing to learn, carrying out the learning process, and dynamic learning. The aspects assessed in the pedagogic competency assessment in evaluating learning include three assessment indicators namely; determining the appropriate type of evaluation, fully using test and non-test evaluations in a comprehensive manner, and designing and implementing remedial programs. While the aspects assessed in the pedagogic assessment in developing students' potential include three indicators, namely providing reinforcement and task feedback, accompanying students in extra-curricular activities, and providing psychological motivation to students.

In construction, a set of self-assessment instruments was developed to measure the pedagogic competence of prospective teacher students participating in the second school field introduction program (Yusnita et al., 2018). This stage includes designing the form of a self-assessment instrument, incorporating the substance of each aspect of the assessment, and identifying indicators for each of these aspects. One very important thing is the need for an assessment sheet for each indicator in the instrument development rubric, to check whether this self-assessment instrument needs revision or not. This self-assessment is effective for measuring self-ability and improving self-quality (Andrade & Du, 2007); self-assessment allows students to be able to assess themselves and their shortcomings (Lias et al., 2021); This self-assessment can also evoke a positive attitude of students (Zammi et al., 2018) (Zannierah et al., 2024).

At the development stage, the construction of the self-assessment instrument was validated by three experts in the field of educational evaluation, language, and teacher education. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to find out how much the content validity coefficient of the expert judgment shows that the CVI value is 0.91 (almost perfect). These results have shown that the developed self-assessment instrument already reflects indicators of pedagogic competence, especially in the second schooling field introduction program.

The next step is a test or evaluation of selected students from participants in the second school field introduction program. Based on the recapitulation of the pedagogic competency assessment in Table 4 above, it shows that the average value of the pedagogic competence of prospective teacher students participating in the second school field introduction program is 4.35. This means that 87% of the 58 students in the selected sample can be categorized as a student's pedagogic competence in the very good category.

Through several stages of development, this assessment instrument can be used by students to conduct a self-assessment of pedagogic competence in an honest and independent second schooling field introduction program. The results of the self-assessment of pedagogic competence in Table 4 and figure 2 show that for aspects of student understanding with an average score of 4.35 (87%), aspects of learning design an average of 4.45 (89%), aspects of learning implementation with an average of 4, 32 (86.4%), the evaluation aspect of learning averaged 4.25 (85%), and the aspect of developing potential learners with an average of 4.40 (88%). From these five aspects, it can be concluded that 87% of the 58 students participating in the second schooling field introduction program were very good at mastering their pedagogical competencies.

In the assessment of the first aspect, namely the aspect of student understanding presented in Figure 3, it shows that of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understand the character of students by 85.52%. This can be explained that the ability to understand student students is very good, with an average of 87.12%, based on the existing categories. Even though there are still around 12.87% of students who have not been able to understand the potential of students in learning.

Self-assessment on the second aspect, namely the aspect of learning design in figure 4, for indicators of determining learning objectives the percentage of student achievement was 90.69%, designing learning was 88.97%, and understanding appropriate learning methods with an achievement percentage of 87.24%. If the average self-assessment of this second aspect is taken, the student achievement is 87.58%, which means that there are still 12.42% of students who have not been able to make a comprehensive learning plan.

For self-assessment on the third aspect, namely the implementation of learning in figure 5, for the first aspect, namely optimal learning management, the percentage of student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and the implementation of dynamic learning was 85.52%. If the average is calculated, the competence in the implementation of learning, students get a percentage score of 86.09, which can be explained that there are still 13.91% of students who have not been able to carry out the learning process in a conducive manner.

Meanwhile for the fourth aspect of self-assessment in figure 6, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student achievement score was 85.52%, the use of test and non-test assessment was 86.21%, while designing remedial programs, the achievement score students by 83.1%. The results of this self-assessment when averaged, the student achievement is 84.94%, which can be interpreted that there are still around 15.06% of students who do not understand the design of learning evaluation.

While the fifth aspect of student self-assessment is the aspect of developing students' potential in figure 7, in the indicators of providing reinforcement and assignment feedback, student achievement is 90%, extracurricular assistance is 86.55%, and psychological stimulation reinforcement is 87.59%. The results of this self-assessment when averaged, the student competence in the fifth aspect is 88.04%, which can be explained that there are still around 11.96% of students who have not been able to optimally develop student potential.

Based on the self-assessment of prospective teacher students participating in the second schooling field introduction program, it was found that 87% of students had mastered pedagogic competencies, while 13% of students still had to learn more so that during the implementation of the schooling field introduction program they could master all aspects and assessment indicators, especially in competency assessment pedagogic.

The results of this study indicate that self-assessment instruments for pedagogic competence in the second schooling field introduction program need to be applied to train students to self-evaluate regarding students understanding abilities, learning design, learning implementation, learning evaluation, and aspects of developing students' potential. Equally important are supervisors, tutors, and managers of the school field introduction program periodically reviewing self-assessment instruments that are in line with developments in science and technology, so that faculties and universities can prepare graduates of qualified prospective teaching staff who have high competitiveness.

CONCLUSION

The aim of this research is to produce a self-assessment instrument to measure pedagogical competence in the second school field introduction program. The self-assessment instrument includes five aspects of assessment, namely student understanding, learning design, learning implementation, learning evaluation, and developing student potential. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to determine how big the content validity coefficient of the expert judgment is shows a CVI value of 0.91 (almost perfect). These results indicate that the self-assessment instrument developed reflects indicators of pedagogical competence, especially in the second school field introduction program.

The results of the self-assessment trial of pedagogical competence showed that for the

aspect of student understanding the average score was 4.35 (87%), the learning design aspect averaged 4.45 (89%), the learning implementation aspect averaged 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the student potential development aspect averaged 4.40 (88%). Based on the recapitulation of pedagogical competency assessments, it shows that the average pedagogical competency score for prospective teacher students participating in the school field introduction program II is 4.35. This means that 87% of the 58 selected sample students can be categorized as having students' pedagogical competence in the very good category.

Based on the research findings, it can be concluded that the self-assessment instrument developed has met the requirements and can be used to assess students' pedagogical competence independently. The important thing that needs to be done is extensive testing by increasing research subjects from several similar educational study programs at universities in Yogyakarta. In terms of the effectiveness of self-assessment instruments, it is very necessary to carry out continuous experiments, so that these self-assessment instruments are able to answer the challenges of the world of education, namely the realization of the quality of prospective teachers who truly master pedagogical competencies.

ACKNOWLEDGEMENT

The author would like to thank Universitas PGRI Yogyakarta for supporting the implementation of this research through a lecturer research grant from the Research and Community Service Institute for the 2023 fiscal year.

REFERENCES

Abun, D. (2021). Effect of attitude toward work, work environment on the employees' work self-efficacy. *SSRN Electronic Journal*, *10*(7), 129–141. https://doi.org/10.2139/ssrn.3958253

Andrade, H., & Du, Y. (2007). Student responses to criteriareferenced self-assessment. *Assessment and Evaluation in Higher Education*, *32*(2), 159–181. https://doi.org/10.1080/02602930600801928

Andryukhina, L. M., Dneprov, S. A., Sumina, T. G., Zimina, E. Y., Utkina, S. N., & Mantulenko, V. V. (2016). The model of monitoring of vocational pedagogical competences of professors in secondary vocational education. *International Journal of Environmental and Science Education*, *11*(14), 7016–7034.

Beumann, S., & Wegner, S. A. (2018). An outlook on self-assessment of homework assignments in higher mathematics education. *International Journal of STEM Education*, *5*(1). https://doi.org/10.1186/s40594-018-0146-z

Bright, R. L., & Gideonse, H. D. (1968). Research and development strategies. *The Journal of Experimental Education*, *37*(137–145). https://doi.org/https://doi.org/10.1080/00220973.1968.11011101

Budiastuti, E., Sugiyem, Najwa, F., & Puad, A. (2023). Social economic and education of national athletes. *Cakrawala Pendidikan*, *42*(1), 254–263. https://doi.org/10.21831/cp.v42i1.52225

Emiliasari, R. N. (2018). An Analysis Of Teachers' Pedagogical Competence In Lesson Study Of MGMP SMP Majalengka. *Eltin Journal, Journal of English Language Teaching in Indonesia*, *6*(1), 22. https://doi.org/10.22460/eltin.v6i1.p22-33

Farisi, M. I. (2012). *Development of student self-assesment as a model for evaluation and character development of paper*. UNY Press.

Grabe, W., & Stoller, F. L. (2019). Action Research Projects. In *Teaching and Researching Reading* (pp. 246–262). https://doi.org/10.4324/9781315726274-11

Hartini, S., Putra Bhakti, C., Hartanto, D., & Alfarizqi Nizamuddin Ghiffari, M. (2018). *Teacher Pedagogic Competency Development Model: A Literature Review*. https://doi.org/10.2991/aecon-18.2018.40

Hearn, J., & McMillan, J. H. (2008). Student Self-Assessment: The Key to Stronger Student Motivation and Higher Achievement. *Educational Horizons*, *87*(1), 40–49. https://www.jstor.org/stable/42923742

Irina, A. (2011). Pedagogical Competences – The Key to Efficient Education. *International Online Journal of Educational Sciences*, *3*(2), 411–423. www.iojes.net

Kartowagiran, B., Wibawa, E. A., Alfarisa, F., & Purnama, D. N. (2019). Can student assessment sheets

Commented [A5]: It is suggested to use **Mendeley** as a reference manager at styling the citations and the bibliography
Journal references published in the last five years need to be added
The quotation reference must match the bibliography
Add references from journals, minimum limit is 35 references.
In this bibliography section, include the DOI or link to the reference taken.

replace observation sheets? *Cakrawala Pendidikan*, *38*(1), 33–44. https://doi.org/10.21831/cp.v38i1.22207

König, J., Blömeke, S., Jentsch, A., Schlesinger, L., née Nehls, C. F., Musekamp, F., & Kaiser, G. (2021). The links between pedagogical competence, instructional quality, and mathematics achievement in the lower secondary classroom. *Educational Studies in Mathematics*, *107*(1), 189–212. https://doi.org/10.1007/s10649-020-10021-0

Landis, J. R., & Koch, G. G. (1977). The Measurement of Observer Agreement for Categorical Data. *Biometrics*, *33*(1), 159. https://doi.org/10.2307/2529310

Lias, N., Lindholm, T., Pohjanoksa-Mäntylä, M., Westerholm, A., & Airaksinen, M. (2021). Developing and piloting a self-assessment tool for medication review competence of practicing pharmacists based on nationally set competence criteria. *BMC Health Services Research*, *21*(1). https://doi.org/10.1186/s12913-021-07291-6

Lozano, R., Merrill, M. Y., Sammalisto, K., Ceulemans, K., & Lozano, F. J. (2017). Connecting competences and pedagogical approaches for sustainable development in higher education: A literature review and framework proposal. *Sustainability (Switzerland)*, *9*(10). https://doi.org/10.3390/su9101889

Mahat, H., Norkhaidi, S. B., Saleh, Y., Hashim, M., Nayan, N., Said, Z. M., Matnoor, M., & Hamid, N. (2022). A Study on the Responsibility of Environmental Ethics among Secondary School Students in the 21st Century. *International Journal of Educational Methodology*, *8*(3), 585–593. https://doi.org/10.12973/ijem.8.3.585

Maksymchuk, B., Matviichuk, T., Solovyov, V., Davydenko, H., Soichuk, R., Khurtenko, O., Groshovenko, O., Stepanchenko, N., Andriychuk, Y., Grygorenko, T., Duka, T., Pidlypniak, I., Gurevych, R., Kuzmenko, V., & Maksymchuk, I. (2020). Developing Healthcare Competency in Future Teachers. *Revista Romaneasca Pentru Educatie Multidimensionala*, *12*(3), 24–43. https://doi.org/10.18662/rrem/12.3/307

Martono, T., & Murtini, W. (2016). *The Effect of Pedagogic Competency, Personality… Pahrudin, et al Proceeding The 2 nd International Conference On Teacher Training and Education Sebelas Maret University The Effect of Pedagogic Competency, Personality, Professional and Social Competency Te*. *2*(1), 25002–4124. http://suarakita.com/artikel

Mâță, L., Cmeciu, D., & Ghiațău, R. M. (2013). A Reference Framework of Pedagogical Competences of Language Teachers in the Initial Training Programmes. *Procedia - Social and Behavioral Sciences*, *93*, 648–653. https://doi.org/10.1016/j.sbspro.2013.09.255

Matlab Mukhamadovna, T., Aziza Sharipovna, H., & Supkhonovna, H. N. (2020). The System Of Development Of Professional Competence In Future Primary School Teachers. *Journal of Critical Reviews*, *7*(13), 4184–4189.

Muñoz Carril, P. C., Sanmamed, M. G., & Hernández Sellés, N. (2013). Pedagogical roles and competencies of university teachers practicing in the E-learning environment. *International Review of Research in Open and Distance Learning*, *14*(3), 462–487. https://doi.org/10.19173/irrodl.v14i3.1477

Sudargini, Y., & Purwanto, A. (2020). the Effect of Teachers Pedagogic Competency on the Learning Outcomes of Students. *Journal of Industrial Engineering & Management Research (Jiemar)*, *1*(4), 2722–8878. https://doi.org/10.7777/jiemar

Supriyadi, E., Zamtinah, Soenarto, S., & Hatmojo, Y. I. (2019). A character-based assessment model for vocational high schools. *Cakrawala Pendidikan*, *38*(2), 269–280. https://doi.org/10.21831/cp.v38i2.24099

Susanto, R., Agustina, N., Azmi, Y., & Rachbini, W. (2021). Pedagogic Competency Model: Development from The Point of View of The Initial Characteristics of Teachers, Involvement with Organizations and Competency Development Strategies. *Review of International Geographical Education Online*, *11*(8), 826–841. https://doi.org/10.48047/rigeo.11.08.72

Susanto, R., Rozali, Y. A., & Agustina, N. (2019). Development of pedagogical competency models for elementary school teachers: Pedagogical knowledge, reflective ability, emotional intelligence and instructional communication pattern. *Universal Journal of Educational Research*, *7*(10), 2124–2132. https://doi.org/10.13189/ujer.2019.071010

Syahmaidi, E., Hidayat, H., Hartanto, S., & Fitri Rahmadani, A. (2021). Designing E-Training Computer Assisted Instruction Used to Pedagogic Competency in Vocational Education. *Journal of Physics: Conference Series*, *1779*(1). https://doi.org/10.1088/1742-6596/1779/1/012038

Syahrial, S., Asrial, A., Kurniawan, D. A., Chan, F., Pratama, R. A., Nugrogo, P., & Septiasari, R. (2019).

The impact of etnocontructivism in social affairs on pedagogic competencies. *International Journal of Evaluation and Research in Education*, *8*(3), 409–416. https://doi.org/10.11591/ijere.v8i3.20242

WahyuSopandi, st, & HanyHandayani, nd. (2019). *The Impact of Workshop on Implementation of Read-Answer-Discuss-Explain-And-Create (RADEC) Learning Model on Pedagogic Competency of Elementary School Teachers*.

Widoyoko, S. E. P. (2014). *Penilaian Hasil Pembelajaran di Sekolah*. Pustaka Pelajar.

Yildiz, A. (2013). The Factors Affecting Techno-Pedagogical Competencies and Critical Thinking Skills of Preservice Mathematics Teachers. In *Malaysian Online Journal of Educational Sciences* (Issue 2). https://www.researchgate.net/publication/330729272

Yusnita, Y., Eriyanti, F., Engkizar, E., Anwar, F., Putri, N. E., Arifin, Z., & Syafril, S. (2018). The Effect of Professional Education and Training for Teachers (PLPG) in Improving Pedagogic Competence and Teacher Performance. *Tadris: Jurnal Keguruan Dan Ilmu Tarbiyah*, *3*(2), 123. https://doi.org/10.24042/tadris.v3i2.2701

Zammi, M., Susilaningsih, E., & Supardi, K. I. (2018). Pengembangan Instrumen Self-Assessment untuk Meningkatkan Keterampilan Laboratorium Calon Guru Kimia. *Jurnal Profesi Keguruan*, *4*(1), 37–41. https://journal.unnes.ac.id/nju/index.php/jpk

Zannierah, S., Marzuki, S., Mokdad, M., Novianto, V., & Buyong, S. Z. (2024). *Instrument Feasibility Study on Entrepreneurial Perspective of China ' s Soft Power on Tourism Diffusion in Malaysia*. *10*(3), 109–115.

6. Bukti Resubmit Kedua

(11 Desember 2024)

Round 1 Status
Submission accepted.

Notifications

[ijsl] Editor Decision	2024-11-29 05:47 AM
[ijsl] Editor Decision	2024-12-07 12:51 PM
[ijsl] Editor Decision	2024-12-12 10:24 AM
[ijsl] Editor Decision	2024-12-13 02:49 PM
[ijsl] Editor Decision	2024-12-13 02:49 PM

Reviewer's Attachments

Search

2403 299-Developing self-assessment instruments to measure the pedagogical_to author.docx	November 29, 2024	

Revisions

Search Upload File

2454 299-Developing self-assessment instruments to measure the pedagogical_to author Fix Edit.docx	December 5, 2024	Article Text
2530 299-Developing Self-Assessment Instruments to Measure The Pedagogical Competence of Prospective Teacher Students-2nd revision 1[1].docx	December 11, 2024	Article Text
2587 299-Developing+Self-Assessment+Instruments+to+Measure+The+Pedagogical+Competence-3rd+revision.docx	December 13, 2024	Article Text

Please kindly give a RED COLOR for your revision.

Reviewer Comments

Author(s)
If there are contributions from authors from abroad, it is more recommended.
Abstract
The abstract consists of 150 words; it explains the background and objectives of the research, the methodology used, and the research results.
Introduction
You need to raise the problem in the research, provide essential data that explains the research problem, and define your research objectives.
Methods
You must add a detailed methodology and write per sub-chapter, including research design, population and sample, data collection, data analysis, and several things regarding the author's method.
Results and Discussion
Display your research results here, then add a discussion explaining your research with previous research. At this stage, you must bring out the novelty of your research that differentiates it from previous research.
Conclusion
The conclusion is just 1-2 paragraphs that stand alone; at this stage, you can conclude the essence of your research.
References
Writing references using APA Style 6, referencing at least 35 articles from international journals in the last seven years. Check each reference against the source (author's name, volume, issue, year, DOI Number, and link to each online article and book).

Developing Self-Assessment Instruments to Measure The Pedagogical Competence of Prospective Teacher Students

[i] Esti Setiawati, [ii] Abdulnassir Yassin, [iii] Sharifah Zannierah Syed Marzuki [iv] Zhang Chen [v] Victor Novianto

Abstract:
This research aims to develop a self-assessment of the pedagogical competence of prospective teacher students in the school field introduction program. The research method used is research and development with the Plomp model which consists of five stages, namely the initial investigation stage, product design stage, realization/construction stage, testing, evaluation and revision stage, and implementation stage. The sample was determined purposively, totaling 58 students. At the testing stage, experts judge the instruments based on the Content Validity Index. The reliability of the instrument was measured using inter-rater Kappa, and data collected from student teachers was analyzed using descriptive statistical methods. The research results show 1)the Content Validity Index content of the self-assessment instrument is 0.91 which is in the almost perfect category, 2)The reliability index is more than 0.70, which means it meets the recommended criteria, 3)Self-assessment showed that 87.08% of students mastered pedagogic competence which consisted of five aspects.

Keywords: pedagogic competence, school field introduction, self-assessment instrument

INTRODUCTION

One of the main programs and activities at the Teaching and Education Faculty is the school field introduction program, which was formerly called the field experience program.

This program aims to train prospective teacher students to master various competencies in the learning process in class. One of the important competencies that must be mastered by prospective teachers is pedagogic competence which consists of the ability to understand students, the ability to design learning, the ability to carry out learning, the ability to evaluate learning, and the ability to develop students' potential. Pedagogic competence is fundamental and a strategic key to achievement in school (Susanto, Agustina, Azmi, & Rachbini, 2021); (Sopandi & Handayani, 2019); (Syahrial et al., 2019).

Pedagogical competence training activities for prospective teachers are one of the important factors of programs and activities in the curriculum of the faculty of teacher training and education. Training prospective teachers requires careful planning, adequate training, appropriate and effective training strategies so that prospective teachers are able to carry out learning well and be responsive to the learning needs of students (Syahmaidi, Hidayat, Hartanto, & Fitri Rahmadani, 2021); (Sudargini & Purwanto, 2020). Through this training, it is hoped that prospective student teachers will not only learn teaching practices, but also learn to manage classes, communication skills, improve their abilities, and prepare learning tools. The development of pedagogical competence has great potential to increase student engagement in learning, both in primary and secondary education, and in further education (Lozano, Merrill, Sammalisto, Ceulemans, & Lozano, 2017).

Pedagogical competence is a competency related to the ability to manage learning, understanding of students, use of IT, use of learning models, curriculum development, learning evaluation and developing the potential of students in the learning process at school (Pahrudin, Martono, & Murtini, 2016); (Hartini, Putra Bhakti, Hartanto, & Alfarizqi Nizamuddin Ghiffari, 2018). This pedagogical competence is the foundation of teacher success in managing classroom learning practices. For this reason, teacher training programs must be optimally developed to improve the pedagogical competence of prospective teachers (Yildiz, 2018). This is because pedagogical competence is a competency that can determine the success of the learning process and student learning outcomes (Emiliasari, 2018); (Susanto, Rozali, & Agustina, 2019). To train prospective teacher students to master pedagogical competencies, they are previously equipped with micro-teaching courses, after graduating, they are continued with a school field introduction program.

Based on the results of observations, interviews, and documentation that have been carried out, there is no clear assessment rubric, so the assessment is only general and does not specifically assess the pedagogical competence of prospective teacher students who are taking field introduction courses in schools. Therefore, it is necessary to develop a self-assessment instrument for the pedagogical competence of teachers or prospective teachers on an ongoing basis (König et al., 2021). The development of this instrument is based on the faculty's need to map how much competency student teachers have achieved and to map the needs of supervisors who are relevant to increasing pedagogical competence.

The implementation of the school field introduction program has been going on for decades in the teaching and education faculties, but no instrument for student self-assessment on pedagogical competency attainment has yet been found. What is common so far is general assessment from field supervisors and tutors at schools. This finding is a concern in the increasingly developing world of evaluation, because one form of assessment that can improve student performance is self-assessment of what the student has achieved.

Self-assessment instrument can measure and evaluate student pedagogical competence independently and honestly so that it can provide feedback from the assessment activities and can improve the quality of graduate student teacher candidates. This is in accordance with the results of research (Grabe & Stoller, 2019), which states that self-assessment can make students realistic and more accurate in assessing themselves about expected learning goals. This self-assessment is also useful for monitoring the process and results of independent learning achievement (Abun, Magallanes, Marlene, Fredoline, & Madamba, 2021). The competence of

student teacher candidates in understanding students, designing lessons, implementing learning, evaluating learning, and developing the potential of students is very important to be given as provision when student teacher candidates are involved in school as teachers. For this reason, a good self-assessment is needed which can be used to assess the pedagogical competence of prospective teacher students as a benchmark for continuous assessment in the second schooling field introduction program. Because so far the results of the assessment still depend a lot on lecturers and students have never been involved in the assessment process. Students are considered not eligible to assess their own performance because they are considered unable to decide on the assessment (Budiastuti, Sugiyem, & Puad, 2023); (Beumann & Wegner, 2018). For this reason, it is very important to involve students as assessors in assessing their current performance.

In this regard, self-assessment of pedagogic competencies can be used by prospective teacher students themselves, because this instrument will make it easy for prospective teacher students to identify strengths and weaknesses in mastering the pedagogic competencies they must achieve. This self-assessment is a process that requires students to identify, assess and evaluate the quality of understanding and skills during the learning process and may be improved in the future (Hearn & McMillan, 2008); (Farisi, 2012). The use of continuous self-assessment can help student teacher candidates reflect on the achievement of pedagogical competence as a framework that describes and describes the level of teaching performance of student teacher candidates in mastering these competencies. This self-assessment also serves to collect self-information about the results of the teaching practice of prospective teacher students through measurements with clear indicators. Through this self-assessment approach, comprehensive and actual general pedagogical competencies and special skills can be found (Suciu & Mata, 2011); (Mâţă, Cmeciu, & Ghiaţău, 2013). Because the principle of this assessment must be able to encourage teachers or prospective teachers to be able to carry out better learning, so that students will progress in their learning (Kartowagiran, Wibawa, Alfarisa, & Purnama, 2019).

As a teacher education and training institution that produces teaching staff, Universitas PGRI Yogyakarta has an important role in identifying the competencies of prospective teacher students through training activities, as a form of reported performance (Muñoz Carril, Sanmamed, & Hernández Sellés, 2013). The novelty of this research is the existence of self-assessment related to pedagogical competence in the introduction to the school field program that must be taken by prospective teacher students. Because assessment is the most important component in the learning process and the quality of assessment is one of the main characteristics of good learning (Supriyadi, Zamtinah, Soenarto, & Hatmojo, 2019). For this reason, the faculty must create good conditions for students, to develop professional abilities and pedagogical competencies so that students are able to develop creative and innovative ideas (Matlab Mukhamadovna, Aziza Sharipovna, & Supkhonovna, 2020).

To find out all the components of pedagogic competency of prospective teacher students, a valid and reliable self-assessment instrument is needed (Maksymchuk et al., 2020). This makes it possible for student teachers to be able to assess their pedagogical abilities independently and continuously. Several previous studies have proven that through self-assessment instruments, student teachers can describe the competencies they have achieved and deficiencies that need to be corrected (Budiastuti et al., 2023). This proves that a self-assessment instrument for prospective teacher students regarding pedagogical competence is very necessary and is in line with the aim of this research, namely to develop a valid and reliable self-assessment instrument for prospective teacher students' pedagogic competence.

METHOD

The research method used in this study is research and development that adopts the Plomp model, with five stages, namely the initial investigation phase, the design phase, the

realization/construction phase, and the test, evaluation, and revision phase, as well as implementation. Because according to (Bright, R. L., & Gideonse, 1968); (Budiastuti et al., 2023) this research and development can facilitate research that develops instructional objectives, strategies, teaching materials, and learning processes.

The population of this research is prospective teacher students who are taking introductory courses in the school field II program. The sample selected in this study was 58 prospective teacher students taken by purposive sampling, representing nine study programs.

This self-assessment instrument is to measure the extent to which pedagogic competence is mastered in the second school field introduction program, which was developed from the adoption of the Plomp model. The development of this instrument follows the flow suggested by Plomp. The first step is problem analysis and needs analysis of the second schooling field introduction program. In this step, it was found that the assessment of pedagogic competence was limited to the assessment of teaching exercises carried out by tutors and supervising lecturers, while self-assessment from students had never existed. The results of the problem and needs analysis found a solution to design a self-assessment instrument for student teacher candidates participating in the second school field introduction program.

The second step is to make a prototype self-assessment instrument based on the instrument grid that has been prepared. This prototype is then submitted to a team of experts for assessment and validation. Based on the analysis of the results of expert validation, the results of the self-assessment instrument need to be revised from the linguistic aspect. In the third step, the construction process is carried out again on the prototype of the self-assessment instrument. After being revised, the self-assessment instrument became a new prototype, and re-validation was requested from the expert. Then the fourth step, the prototype of the self-assessment instrument was tested in a limited way on prospective teacher students participating in the second school field introduction program. The results of the trial were then analyzed, and the results did not need revision, so the prototype of the self-assessment instrument was then used in the fifth step, namely the implementation of self-assessment by 58 selected students by purposive sampling representing study programs at the Teaching and Education Faculty of the PGRI Yogyakarta University. To determine how far pedagogic competencies have been mastered by prospective teacher students, appropriate descriptive measurement criteria are used to describe these competencies. While the validity of the instrument was measured by the Kappa inter-rater technique.

The procedure for developing a self-assessment instrument is shown in Figure 1 below.

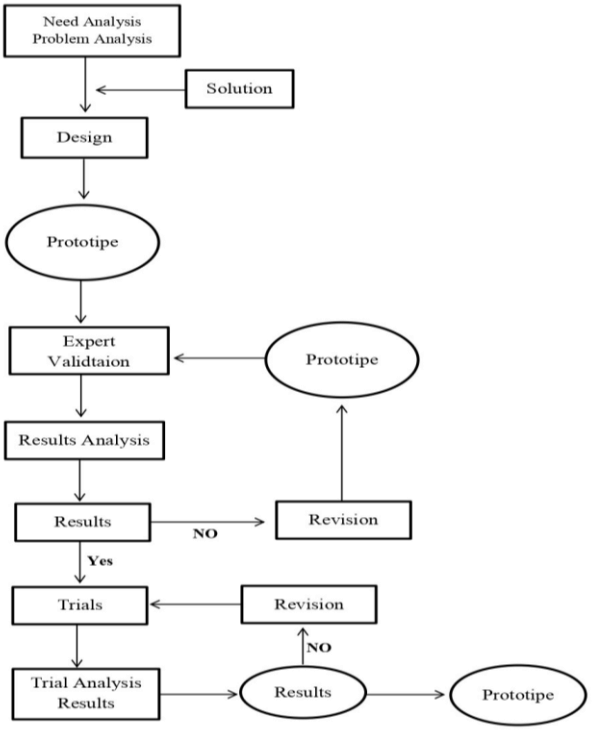


Figure 1. Procedure for preparing the self-assessment instrument

Table 1 describes the development of the pedagogic competence self-assessment instrument for prospective teacher students participating in the second schooling field introduction program. Pedagogic competency self-assessment data was collected through assessment sheets and rubrics with the categories Very Appropriate, Appropriate, Less Appropriate, Inappropriate, and Very Unsuitable.

Table 1. Pedagogic Competency Self-Assessment Instrument for Prospective Teachers

No.	Assessment Aspect	Assessment Coverage	Type of Instrument	Number of Items
1	Understanding of student	a. Pay attention to initial abilities b. understand learning difficulties c. understand the character	Self-assessment sheet	3 items
2	Learning design	a. determine learning objectives b. design lessons properly c. understand the proper method	Self-assessment sheet	3 items
3	Implementation of learning	a. managing proper learning b. implementing conducive learning c. Carry out dynamic learning	Self-assessment sheet	3 items
4	Learning evaluation	a. designing theoretical and practical assessments b. carry out test and non-test assessments c. planning remedies	Self-assessment sheet	3 items
5	Developing the potential of students	a. task reinforcement and feedback b. extracurricular assistance c. psychological reinforcement	Self-assessment sheet	3 items

Data was collected from expert judgment categorized based on the Content Validity Index (CVI), which is presented in Table 2. Meanwhile, the reliability of the instrument was measured using the Kappa inter-rater. Student teacher candidates who take part in the school field introduction program use instruments that have met the validity requirements to carry out self-assessments on aspects of pedagogic competence. Student self-assessment data regarding pedagogical competence is collected through valid and reliable self-assessment instruments.

Table 2. Evaluation of the Kappa Statistical Value

Value of K	Interpretation
<0	Poor
0 – 0.20	Slight
0.21 – 0.40	Fair
0.41 – 0.60	Moderate
0.61 – 0.80	Substansial
0.81 – 1.00	Almost perfect

Source: (Landis & Koch, 1977).

While the data analysis technique used in this research is descriptive analysis, to find out the percentage of mastery of the pedagogic competencies of prospective teacher students who take part in the second school field introduction program. Measurement of the pedagogic competence of prospective teacher students is presented in Table 3 below.

Table 3. Categories of Pedagogic Competency Measurement

Score Intervals	Category
$4{,}2 < \bar{x}$	Very good
$3{,}4 < \bar{x} \leq 4{,}2$	Good
$2{,}6 < \bar{x} \leq 3{,}4$	Enough
$1{,}8 < \bar{x} \leq 2{,}6$	Not enough
$\bar{x} \leq 1{,}8$	Very less

Source:(Widoyoko, 2014)

FINDING AND DISCUSSIONS

Finding

The instrument developed in this research is used to measure the extent of pedagogical competence that prospective teachers have mastered while participating in the school field introduction program. This self-assessment instrument gives prospective teachers the freedom to assess themselves honestly and openly regarding the pedagogical competencies they have mastered.

This pedagogical competency includes the ability to understand students, design learning, implement learning, evaluate learning, and develop students' potential. This competency is measured independently using research instruments that have been developed and used continuously.

The results of the pedagogic competency self-assessment trial show that for the aspect of student understanding with an average score of 4.35 (87%), the aspect of learning design averages 4.45 (89%), the aspect of the implementation of learning averages 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the potential development aspect of students averaged 4.40 (88%). The results of the recapitulation of the pedagogic competency assessment can be shown in Table 4 below.

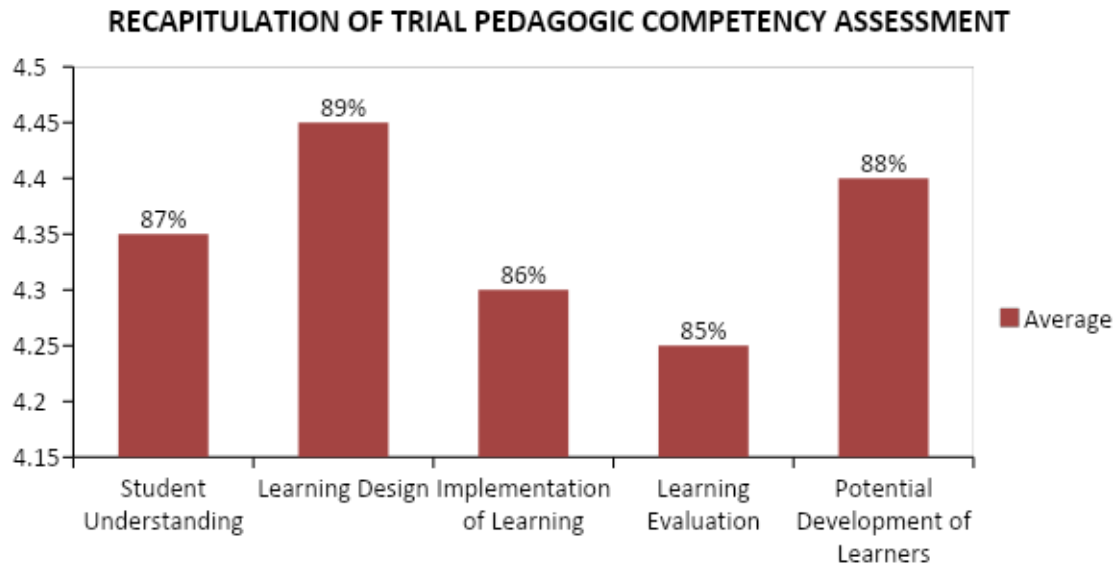
Table 4. Recapitulation of Pedagogic Competency Assessment

No.	Aspect	Average	Percentage (%)
1	Student Understanding	4,35	87
2	Learning Design	4,45	89
3	Implementation of Learning	4,30	86

4	Learning Evaluation	4,25	85
5	Potential Development of Learners	4,40	88
	Average	**4,35**	**87**

Based on the recapitulation of the pedagogic competency assessment in Table 4, it can be concluded that the average value of pedagogic competence is 4.35 or 87% which can be categorized as very good pedagogic competence, which is then shown in Figure 2 below.

Figure 2. Pedagogic Competency Assessment Histogram



The results of students' self-assessments on aspects of student understanding are presented in Figure 3. Of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understood the participants' character. students by 85.52%. This can be explained that the ability to understand student students is very good. When referring to the existing categories, students' in-depth understanding skills are very good, as shown in Figure 3 below.

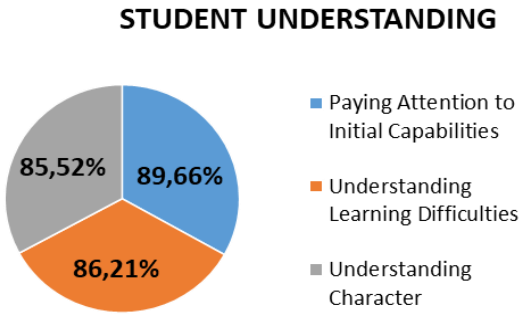


Figure 3. Diagram of Assessment of Student Understanding Aspect

While self-assessment on the aspect of learning design, four indicators of determining learning objectives obtained a percentage of 90.69%, designing learning reached 88.97%, and understanding of appropriate learning methods an achievement of 87.24%. An overview of the results of the second aspect of the self-assessment is shown in Figure 4 below.

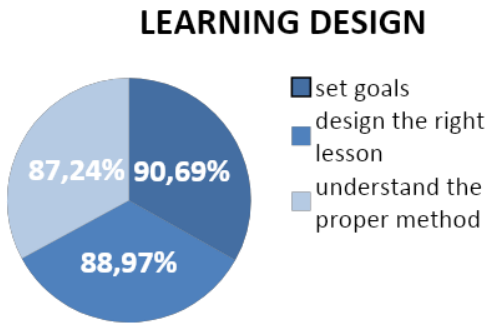


Figure 4. Learning Design Aspect Assessment Diagram

For self-assessment on the implementation aspect of learning, for the first aspect, namely optimal learning management, student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and dynamic learning implementation was 85.52%. An overview of the results of the third aspect of self-assessment can be seen in Figure 5 below.

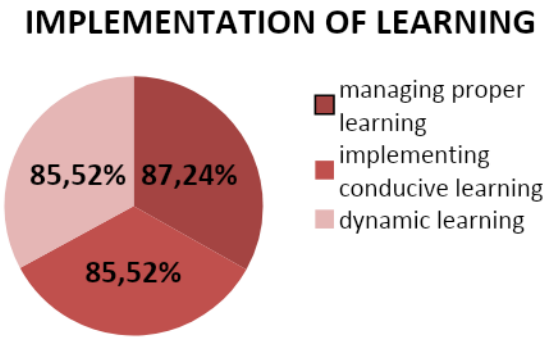


Figure 5. Diagram of the Assessment of the Implementation of Learning Implementation Aspects

For the fourth aspect of self-assessment, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student score achievement was 85.52%, the use of test and non-test assessment was 86.21% while designing remedial programs, the student score achievement was 83.1%. The results of this aspect's self-assessment can be seen in the following diagram 6.

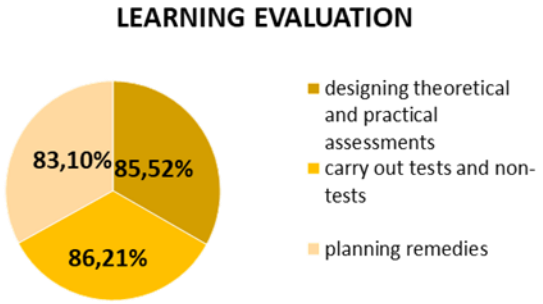


Figure 6. Learning Evaluation Aspect Assessment Diagram

The fifth aspect in students' self-assessment of the potential development of students, on

the indicators of providing reinforcement and task feedback, student achievement was 90%, extracurricular assistance was 86.55%, and psychological stimulation reinforcement was 87.59%. The results of this self-assessment can be shown in Figure 7 below.

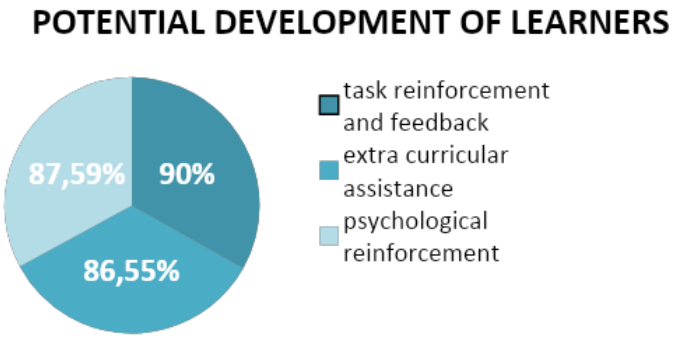


Figure 7. Diagram of Assessment of Potential Development Aspects of Learners

Previous research (Budiastuti et al., 2023) shows that self-assessment of students' work attitudes in the fashion design practicum course, with a research sample of 15 students, shows that the instrument meets the requirements for perfect validity and reliability with an index of 0.70 in the good category. The results of the self-assessment showed that out of fifteen students, fourteen students were declared to have good practicum performance. If the results of this research are compared with research conducted by the author, there are many findings of increased innovation, where the research sample used is much larger, representing nine study programs, and the validity test involves more evaluation experts. So it can be concluded that the pedagogical competency self-assessment instrument that has been produced can be used by students who are taking part in a wider spectrum of school field introduction programs.

Discussion

The preliminary investigation stage is the stage of needs analysis or problem analysis. At this stage, data and information in the field are collected and identified according to related problems. The need for the teaching and education faculties is an instrument for self-assessment of pedagogical competence in an introductory field school program that has never existed. The assessment so far is the assessment of teaching practices carried out by tutors and supervisors. For this reason, it is necessary to design competency development and special assessments, so that candidates educators realize to have new competencies (Andryukhina et al., 2016); (Mahat et al., 2022)**.**

Furthermore, at the design stage, the design of a pedagogic competence self-assessment instrument was prepared with five aspects, namely the competence to understand students, the competence to design learning, the competence to carry out learning, the competence to evaluate learning, and the competence to develop students' potential. From each aspect, it is developed into fifteen indicators. The aspects assessed in the pedagogic competence assessment in students' understanding consist of three assessment indicators, namely understanding students' initial abilities, understanding students' initial difficulties, and understanding students' character; aspects assessed in lesson planning include three assessment indicators, namely determining learning objectives, designing appropriate learning, and determining appropriate learning methods; while the aspects assessed in the implementation of learning include three assessment indicators, namely managing to learn, carrying out the learning process, and dynamic learning. The aspects assessed in the pedagogic competency assessment in evaluating learning include three assessment indicators namely; determining the appropriate type of evaluation, fully using

test and non-test evaluations in a comprehensive manner, and designing and implementing remedial programs. While the aspects assessed in the pedagogic assessment in developing students' potential include three indicators, namely providing reinforcement and task feedback, accompanying students in extra-curricular activities, and providing psychological motivation to students.

In construction, a set of self-assessment instruments was developed to measure the pedagogic competence of prospective teacher students participating in the second school field introduction program (Yusnita et al., 2018). This stage includes designing the form of a self-assessment instrument, incorporating the substance of each aspect of the assessment, and identifying indicators for each of these aspects. One very important thing is the need for an assessment sheet for each indicator in the instrument development rubric, to check whether this self-assessment instrument needs revision or not. This self-assessment is effective for measuring self-ability and improving self-quality (Andrade & Du, 2007); self-assessment allows students to be able to assess themselves and their shortcomings (Lias, Lindholm, Pohjanoksa-Mäntylä, Westerholm, & Airaksinen, 2021); This self-assessment can also evoke a positive attitude of students (Zammi, Susilaningsih, & Supardi, 2018) (Zannierah, Marzuki, Mokdad, Novianto, & Buyong, 2024).

At the development stage, the construction of the self-assessment instrument was validated by three experts in the field of educational evaluation, language, and teacher education. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to find out how much the content validity coefficient of the expert judgment shows that the CVI value is 0.91 (almost perfect). These results have shown that the developed self-assessment instrument already reflects indicators of pedagogic competence, especially in the second schooling field introduction program.

The next step is a test or evaluation of selected students from participants in the second school field introduction program. Based on the recapitulation of the pedagogic competency assessment in Table 4 above, it shows that the average value of the pedagogic competence of prospective teacher students participating in the second school field introduction program is 4.35. This means that 87% of the 58 students in the selected sample can be categorized as a student's pedagogic competence in the very good category.

Through several stages of development, this assessment instrument can be used by students to conduct a self-assessment of pedagogic competence in an honest and independent second schooling field introduction program. The results of the self-assessment of pedagogic competence in Table 4 and figure 2 show that for aspects of student understanding with an average score of 4.35 (87%), aspects of learning design an average of 4.45 (89%), aspects of learning implementation with an average of 4, 32 (86.4%), the evaluation aspect of learning averaged 4.25 (85%), and the aspect of developing potential learners with an average of 4.40 (88%). From these five aspects, it can be concluded that 87% of the 58 students participating in the second schooling field introduction program were very good at mastering their pedagogical competencies.

In the assessment of the first aspect, namely the aspect of student understanding presented in Figure 3, it shows that of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understand the character of students by 85.52%. This can be explained that the ability to understand student students is very good, with an average of 87.12%, based on the existing categories. Even though there are still around 12.87% of students who have not been able to understand the potential of students in learning.

Self-assessment on the second aspect, namely the aspect of learning design in figure 4, for indicators of determining learning objectives the percentage of student achievement was 90.69%, designing learning was 88.97%, and understanding appropriate learning methods with an achievement percentage of 87.24%. If the average self-assessment of this second aspect is taken,

the student achievement is 87.58%, which means that there are still 12.42% of students who have not been able to make a comprehensive learning plan.

For self-assessment on the third aspect, namely the implementation of learning in figure 5, for the first aspect, namely optimal learning management, the percentage of student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and the implementation of dynamic learning was 85.52%. If the average is calculated, the competence in the implementation of learning, students get a percentage score of 86.09, which can be explained that there are still 13.91% of students who have not been able to carry out the learning process in a conducive manner.

Meanwhile for the fourth aspect of self-assessment in figure 6, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student achievement score was 85.52%, the use of test and non-test assessment was 86.21%, while designing remedial programs, the achievement score students by 83.1%. The results of this self-assessment when averaged, the student achievement is 84.94%, which can be interpreted that there are still around 15.06% of students who do not understand the design of learning evaluation.

While the fifth aspect of student self-assessment is the aspect of developing students' potential in figure 7, in the indicators of providing reinforcement and assignment feedback, student achievement is 90%, extracurricular assistance is 86.55%, and psychological stimulation reinforcement is 87.59%. The results of this self-assessment when averaged, the student competence in the fifth aspect is 88.04%, which can be explained that there are still around 11.96% of students who have not been able to optimally develop student potential.

Based on the self-assessment of prospective teacher students participating in the second schooling field introduction program, it was found that 87% of students had mastered pedagogic competencies, while 13% of students still had to learn more so that during the implementation of the schooling field introduction program they could master all aspects and assessment indicators, especially in competency assessment pedagogic.

The results of this study indicate that self-assessment instruments for pedagogic competence in the second schooling field introduction program need to be applied to train students to self-evaluate regarding students understanding abilities, learning design, learning implementation, learning evaluation, and aspects of developing students' potential. Equally important are supervisors, tutors, and managers of the school field introduction program periodically reviewing self-assessment instruments that are in line with developments in science and technology, so that faculties and universities can prepare graduates of qualified prospective teaching staff who have high competitiveness.

CONCLUSION

The aim of this research is to produce a self-assessment instrument to measure pedagogical competence in the second school field introduction program. The self-assessment instrument includes five aspects of assessment, namely student understanding, learning design, learning implementation, learning evaluation, and developing student potential. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to determine how big the content validity coefficient of the expert judgment is shows a CVI value of 0.91 (almost perfect). These results indicate that the self-assessment instrument developed reflects indicators of pedagogical competence, especially in the second school field introduction program.

The results of the self-assessment trial of pedagogical competence showed that for the aspect of student understanding the average score was 4.35 (87%), the learning design aspect averaged 4.45 (89%), the learning implementation aspect averaged 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the student potential development aspect averaged 4.40 (88%). Based on the recapitulation of pedagogical competency assessments, it shows that

the average pedagogical competency score for prospective teacher students participating in the school field introduction program II is 4.35. This means that 87% of the 58 selected sample students can be categorized as having students' pedagogical competence in the very good category.

ACKNOWLEDGEMENT

The author would like to thank Universitas PGRI Yogyakarta for supporting the implementation of this research through a lecturer research grant from the Research and Community Service Institute for the 2023 fiscal year.

REFERENCES

Abun, D., Magallanes, T., Marlene, T. N., Fredoline, J. P., & Madamba, M. B. (2021). Effect of attitude toward work, work environment on the employees' work self-efficacy. *International Journal of Research in Business and Social Science (2147- 4478)*, *10*(7), 129–141. https://doi.org/10.20525/ijrbs.v10i7.1459

Andrade, H., & Du, Y. (2007). Student responses to criteriareferenced self-assessment. *Assessment and Evaluation in Higher Education*, *32*(2), 159–181. https://doi.org/10.1080/02602930600801928

Andryukhina, L. M., Dneprov, S. A., Sumina, T. G., Zimina, E. Y., Utkina, S. N., & Mantulenko, V. V. (2016). The model of monitoring of vocational pedagogical competences of professors in secondary vocational education. *International Journal of Environmental and Science Education*, *11*(14), 7016–7034.

Beumann, S., & Wegner, S. A. (2018). An outlook on self-assessment of homework assignments in higher mathematics education. *International Journal of STEM Education*, *5*(1). https://doi.org/10.1186/s40594-018-0146-z

Bright, R. L., & Gideonse, H. D. (1968). Research and development strategies. *The Journal of Experimental Education*, *37*(137–145). https://doi.org/https://doi.org/10.1080/00220973.1968.11011101

Budiastuti, E., Sugiyem, & Puad, F. N. A. (2023). Developing Self-Assessment Instruments To Measure Students' Performance Characters in Making Dresses Using A High-Order Thinking Skills Approach. *Cakrawala Pendidikan*, *42*(1), 254–263. https://doi.org/10.21831/cp.v42i1.52225

Emiliasari, R. N. (2018). AN ANALYSIS OF TEACHERS' PEDAGOGICAL COMPETENCE IN LESSON STUDY OF MGMP SMP MAJALENGKA. *ELTIN JOURNAL, Journal of English Language Teaching in Indonesia*, *6*(1), 22. https://doi.org/10.22460/eltin.v6i1.p22-33

Farisi, M. I. (2012). *Development of student self-assesment as a model for evaluation and character development of paper*. Yogyakarta: UNY Press.

Grabe, W., & Stoller, F. L. (2019). Action Research Projects. In *Teaching and Researching Reading* (pp. 246–262). Licoln. https://doi.org/10.4324/9781315726274-11

Hartini, S., Putra Bhakti, C., Hartanto, D., & Alfarizqi Nizamuddin Ghiffari, M. (2018). *Teacher Pedagogic Competency Development Model: A Literature Review*. Atlantis Press. https://doi.org/10.2991/aecon-18.2018.40

Hearn, J., & McMillan, J. H. (2008). Student Self-Assessment: The Key to Stronger Student Motivation and Higher Achievement. *Educational Horizons*, *87*(1), 40–49. Retrieved from https://www.jstor.org/stable/42923742

Kartowagiran, B., Wibawa, E. A., Alfarisa, F., & Purnama, D. N. (2019). Can student assessment sheets replace observation sheets? *Cakrawala Pendidikan*, *38*(1), 33–44. https://doi.org/10.21831/cp.v38i1.22207

König, J., Blömeke, S., Jentsch, A., Schlesinger, L., née Nehls, C. F., Musekamp, F., & Kaiser, G. (2021). The links between pedagogical competence, instructional quality, and mathematics achievement in the lower secondary classroom. *Educational Studies in Mathematics*, *107*(1), 189–212. https://doi.org/10.1007/s10649-020-10021-0

Landis, J. R., & Koch, G. G. (1977). The Measurement of Observer Agreement for Categorical Data. *Biometrics*, *33*(1), 159. https://doi.org/10.2307/2529310

Lias, N., Lindholm, T., Pohjanoksa-Mäntylä, M., Westerholm, A., & Airaksinen, M. (2021). Developing and piloting a self-assessment tool for medication review competence of practicing pharmacists based on nationally set competence criteria. *BMC Health Services Research*, *21*(1). https://doi.org/10.1186/s12913-021-07291-6

Lozano, R., Merrill, M. Y., Sammalisto, K., Ceulemans, K., & Lozano, F. J. (2017). Connecting competences and pedagogical approaches for sustainable development in higher education: A literature review and framework proposal. *Sustainability (Switzerland)*, *9*(10). https://doi.org/10.3390/su9101889

Mahat, H., Norkhaidi, S. B., Saleh, Y., Hashim, M., Nayan, N., Said, Z. M., … Hamid, N. (2022). A Study on the Responsibility of Environmental Ethics among Secondary School Students in the 21st Century. *International Journal of Educational Methodology*, *8*(3), 585–593. https://doi.org/10.12973/ijem.8.3.585

Maksymchuk, B., MATVIICHUK, T., SOLOVYOV, V., DAVYDENKO, H., SOICHUK, R., KHURTENKO, O., … MAKSYMCHUK, I. (2020). Developing Healthcare Competency in Future Teachers. *Revista Romaneasca Pentru Educatie Multidimensionala*, *12*(3), 24–43. https://doi.org/10.18662/rrem/12.3/307

Mâţă, L., Cmeciu, D., & Ghiaţău, R. M. (2013). A Reference Framework of Pedagogical Competences of Language Teachers in the Initial Training Programmes. *Procedia - Social and Behavioral Sciences*, *93*, 648–653. https://doi.org/10.1016/j.sbspro.2013.09.255

Matlab Mukhamadovna, T., Aziza Sharipovna, H., & Supkhonovna, H. N. (2020). THE SYSTEM OF DEVELOPMENT OF PROFESSIONAL COMPETENCE IN FUTURE PRIMARY SCHOOL TEACHERS. *Journal of Critical Reviews*, *7*(13), 4184–4189.

Muñoz Carril, P. C., Sanmamed, M. G., & Hernández Sellés, N. (2013). Pedagogical roles and competencies of university teachers practicing in the E-learning environment. *International Review of Research in Open and Distance Learning*, *14*(3), 462–487. https://doi.org/10.19173/irrodl.v14i3.1477

Pahrudin, P., Martono, T., & Murtini, W. (2016). The Effect of Pedagogic Competency, Personality, Professional and Social Competency Teacher to Study Achievement of Economic Lesson in State Senior High School of East Lombok District Academic Year 2015/2016. *International Conference On Teacher Training and Education Sebelas Maret University*, *2*(1), 332–345. Retrieved from http://suarakita.com/artikel

Sopandi, W., & Handayani, H. (2019). The Impact of Workshop on Implementation of Read-Answer-Discuss-Explain-And-Create (RADEC) Learning Model on Pedagogic Competency of Elementary School Teachers. *International Conference of Innovation in Education (ICoIE)*, *178*(ICoIE 2018), 7–11. https://doi.org/10.2991/icoie-18.2019.3

Suciu, A. I., & Mata, L. (2011). Pedagogical Competences – The Key to Efficient Education. *International Online Journal of Educational Sciences*, *3*(2), 411–423. Retrieved from www.iojes.net

Sudargini, Y., & Purwanto, A. (2020). the Effect of Teachers Pedagogic Competency on the Learning Outcomes of Students. *Journal of Industrial Engineering & Management Research (Jiemar)*, *1*(4), 2722–8878. https://doi.org/10.7777/jiemar

Supriyadi, E., Zamtinah, Soenarto, S., & Hatmojo, Y. I. (2019). A character-based assessment model for vocational high schools. *Cakrawala Pendidikan*, *38*(2), 269–280. https://doi.org/10.21831/cp.v38i2.24099

Susanto, R., Agustina, N., Azmi, Y., & Rachbini, W. (2021). Pedagogic Competency Model: Development from The Point of View of The Initial Characteristics of Teachers, Involvement with Organizations and Competency Development Strategies. *Review of International Geographical Education Online*, *11*(8), 826–841. https://doi.org/10.48047/rigeo.11.08.72

Susanto, R., Rozali, Y. A., & Agustina, N. (2019). Development of pedagogical competency models for elementary school teachers: Pedagogical knowledge, reflective ability, emotional intelligence and instructional communication pattern. *Universal Journal of Educational Research*, *7*(10), 2124–2132. https://doi.org/10.13189/ujer.2019.071010

Syahmaidi, E., Hidayat, H., Hartanto, S., & Fitri Rahmadani, A. (2021). Designing E-Training Computer Assisted Instruction Used to Pedagogic Competency in Vocational Education. *Journal of Physics: Conference Series*, *1779*(1). IOP Publishing Ltd. https://doi.org/10.1088/1742-6596/1779/1/012038

Syahrial, S., Asrial, A., Kurniawan, D. A., Chan, F., Pratama, R. A., Nugrogo, P., & Septiasari, R. (2019). The impact of etnocontructivism in social affairs on pedagogic competencies. *International Journal of Evaluation and Research in Education*, *8*(3), 409–416. https://doi.org/10.11591/ijere.v8i3.20242

Widoyoko, S. E. P. (2014). *Penilaian Hasil Pembelajaran di Sekolah*. Yogyakarta: Pustaka Pelajar.

Yildiz, A. (2018). The Factors Affecting Techno-Pedagogical Competencies and Critical Thinking Skills of Preservice Mathematics Teachers. *MOJES: Malaysian Online Journal of Educational Sciences*, *5*(2), 66–81. Retrieved from https://vmis.um.edu.my/index.php/MOJES/article/view/12625

Yusnita, Y., Eriyanti, F., Engkizar, E., Anwar, F., Putri, N. E., Arifin, Z., & Syafril, S. (2018). The Effect of Professional Education and Training for Teachers (PLPG) in Improving Pedagogic Competence and Teacher Performance. *Tadris: Jurnal Keguruan Dan Ilmu Tarbiyah*, *3*(2), 123. https://doi.org/10.24042/tadris.v3i2.2701

Zammi, M., Susilaningsih, E., & Supardi, K. I. (2018). Pengembangan Instrumen Self-Assessment untuk Meningkatkan Keterampilan Laboratorium Calon Guru Kimia. *Jurnal Profesi Keguruan*, *4*(1), 37–41. Retrieved from https://journal.unnes.ac.id/nju/index.php/jpk

Zannierah, S., Marzuki, S., Mokdad, M., Novianto, V., & Buyong, S. Z. (2024). *Instrument Feasibility Study on Entrepreneurial Perspective of China ' s Soft Power on Tourism Diffusion in Malaysia*. *10*(3), 109–115.

[i] Universitas PGRI Yogyakarta, esti@upy.ac.id

[ii] Islamic University in Uganda, nasiryasin681@gmail.com

[iii] Universiti Teknologi Mara Malaysia, szannierah@uitm.edu.my

[iv] Geely University of China, zhangchen@guc.edu.cn

[v] Universitas PGRI Yogyakarta, victor@upy.ac.id

7. Bukti Resubmit Kedua

(13 Desember 2024)

Round 1 Status
Submission accepted.

Notifications

[ijsl] Editor Decision	2024-11-29 05:47 AM
[ijsl] Editor Decision	2024-12-07 12:51 PM
[ijsl] Editor Decision	2024-12-12 10:24 AM
[ijsl] Editor Decision	2024-12-13 02:49 PM
[ijsl] Editor Decision	2024-12-13 02:49 PM

Reviewer's Attachments

Search

2403 299-Developing self-assessment instruments to measure the pedagogical_to author.docx	November 29, 2024	

Revisions

Search Upload File

2454 299-Developing self-assessment instruments to measure the pedagogical_to author Fix Edit.docx	December 5, 2024	Article Text
2530 299-Developing Self-Assessment Instruments to Measure The Pedagogical Competence of Prospective Teacher Students-2nd revision 1[1].docx	December 11, 2024	Article Text
2587 299-Developing+Self-Assessment+Instruments+to+Measure+The+Pedagogical+Competence-3rd+revision.docx	December 13, 2024	Article Text

Developing Self-Assessment Instruments to Measure The Pedagogical Competence of Prospective Teacher Students

Esti Setiawati[1*], Abdulnassir Yassin[2], Sharifah Zannierah Syed Marzuki[3], Zhang Chen[4], Victor Novianto[5]

[1,5]Universitas PGRI Yogyakarta, Indonesia
[2]Islamic University in Uganda, Republic of Uganda
[3]Universiti Teknologi Mara Malaysia, Malaysia
[4]Geely University of China, China

*e-mail: esti@upy.ac.id

Commented [A1]: Please correct name, affiliation, and corresponding email

Commented [A2R1]: insyaallah ok

Abstract:
This research aims to develop a self-assessment of the pedagogical competence of prospective teacher students in the school field introduction program. The research method used is research and development with the Plomp model which consists of five stages, namely the initial investigation stage, product design stage, realization/construction stage, testing, evaluation and revision stage, and implementation stage. The sample was determined purposively, totaling 58 students. At the testing stage, experts judge the instruments based on the Content Validity Index. The reliability of the instrument was measured using inter-rater Kappa, and data collected from student teachers was analyzed using descriptive statistical methods. The research results show 1)the Content Validity Index content of the self-assessment instrument is 0.91 which is in the almost perfect category, 2)The reliability index is more than 0.70, which means it meets the recommended criteria, 3)Self-assessment showed that 87.08% of students mastered pedagogic competence which consisted of five aspects.

Keywords: pedagogic competence, school field introduction, self-assessment instrument

Abstrak:
Penelitian ini bertujuan untuk mengembangkan penilaian diri kompetensi pedagogik mahasiswa calon guru dalam program pengenalan lapangan sekolah. Metode penelitian yang digunakan adalah penelitian dan pengembangan dengan model Plomp yang terdiri dari lima tahap, yaitu tahap investigasi awal, tahap desain produk, tahap realisasi/konstruksi, tahap tes, evaluasi dan revisi, dan tahap implementasi. Sampel ditentukan secara purposive yang berjumlah 58 siswa. Pada tahap pengujian, para ahli menilai instrumen berdasarkan Indeks Validitas Isi. Reliabilitas instrumen diukur dengan menggunakan inter-rater Kappa, dan data yang dikumpulkan dari guru-guru siswa dianalisis dengan metode statistik deskriptif. Hasil penelitian menunjukkan 1) Indeks Validitas Isi instrumen penilaian diri sebesar 0,91 yang termasuk dalam kategori hampir sempurna, 2) Indeks reliabilitas lebih dari 0,70 yang berarti memenuhi kriteria yang direkomendasikan, 3) Penilaian diri menunjukkan bahwa 87,08% mahasiswa menguasai kompetensi pedagogik yang terdiri dari lima aspek.

Kata kunci: kompetensi pedagogik, pengenalan lapangan sekolah, instrumen penilaian diri

1. Introduction

One of the main programs and activities at the Teaching and Education Faculty is the school field introduction program, which was formerly called the field experience program. This program aims to train prospective teacher students to master various competencies in the learning process in class. One of the important competencies that must be mastered by prospective teachers is pedagogic competence which consists of the ability to understand students, the ability to design learning, the ability to carry out learning, the ability to evaluate learning, and the ability to develop students' potential. Pedagogic competence is fundamental

and a strategic key to achievement in school (Susanto, Agustina, Azmi, & Rachbini, 2021); (Sopandi & Handayani, 2019); (Syahrial et al., 2019).

Pedagogical competence training activities for prospective teachers are one of the important factors of programs and activities in the curriculum of the faculty of teacher training and education. Training prospective teachers requires careful planning, adequate training, appropriate and effective training strategies so that prospective teachers are able to carry out learning well and be responsive to the learning needs of students (Syahmaidi, Hidayat, Hartanto, & Fitri Rahmadani, 2021); (Sudargini & Purwanto, 2020). Through this training, it is hoped that prospective student teachers will not only learn teaching practices, but also learn to manage classes, communication skills, improve their abilities, and prepare learning tools. The development of pedagogical competence has great potential to increase student engagement in learning, both in primary and secondary education, and in further education (Lozano, Merrill, Sammalisto, Ceulemans, & Lozano, 2017).

Pedagogical competence is a competency related to the ability to manage learning, understanding of students, use of IT, use of learning models, curriculum development, learning evaluation and developing the potential of students in the learning process at school (Pahrudin, Martono, & Murtini, 2016); (Hartini, Putra Bhakti, Hartanto, & Alfarizqi Nizamuddin Ghiffari, 2018). This pedagogical competence is the foundation of teacher success in managing classroom learning practices. For this reason, teacher training programs must be optimally developed to improve the pedagogical competence of prospective teachers (Yildiz, 2018). This is because pedagogical competence is a competency that can determine the success of the learning process and student learning outcomes (Emiliasari, 2018); (Susanto, Rozali, & Agustina, 2019). To train prospective teacher students to master pedagogical competencies, they are previously equipped with micro-teaching courses, after graduating, they are continued with a school field introduction program.

Based on the results of observations, interviews, and documentation that have been carried out, there is no clear assessment rubric, so the assessment is only general and does not specifically assess the pedagogical competence of prospective teacher students who are taking field introduction courses in schools. Therefore, it is necessary to develop a self-assessment instrument for the pedagogical competence of teachers or prospective teachers on an ongoing basis (König et al., 2021). The development of this instrument is based on the faculty's need to map how much competency student teachers have achieved and to map the needs of supervisors who are relevant to increasing pedagogical competence.

The implementation of the school field introduction program has been going on for decades in the teaching and education faculties, but no instrument for student self-assessment on pedagogical competency attainment has yet been found. What is common so far is general assessment from field supervisors and tutors at schools. This finding is a concern in the increasingly developing world of evaluation, because one form of assessment that can improve student performance is self-assessment of what the student has achieved.

Self-assessment instrument can measure and evaluate student pedagogical competence independently and honestly so that it can provide feedback from the assessment activities and can improve the quality of graduate student teacher candidates. This is in accordance with the results of research (Grabe & Stoller, 2019), which states that self-assessment can make students realistic and more accurate in assessing themselves about expected learning goals. This self-assessment is also useful for monitoring the process and results of independent learning achievement (Abun, Magallanes, Marlene, Fredoline, & Madamba, 2021). The competence of student teacher candidates in understanding students, designing lessons, implementing learning, evaluating learning, and developing the potential of students is very important to be given as provision when student teacher candidates are involved in school as teachers. For this reason, a good self-assessment is needed which can be used to assess the pedagogical competence of prospective teacher students as a benchmark for continuous assessment in the

second schooling field introduction program. Because so far the results of the assessment still depend a lot on lecturers and students have never been involved in the assessment process. Students are considered not eligible to assess their own performance because they are considered unable to decide on the assessment (Budiastuti, Sugiyem, & Puad, 2023); (Beumann & Wegner, 2018). For this reason, it is very important to involve students as assessors in assessing their current performance.

In this regard, self-assessment of pedagogic competencies can be used by prospective teacher students themselves, because this instrument will make it easy for prospective teacher students to identify strengths and weaknesses in mastering the pedagogic competencies they must achieve. This self-assessment is a process that requires students to identify, assess and evaluate the quality of understanding and skills during the learning process and may be improved in the future (Hearn & McMillan, 2008); (Farisi, 2012). The use of continuous self-assessment can help student teacher candidates reflect on the achievement of pedagogical competence as a framework that describes and describes the level of teaching performance of student teacher candidates in mastering these competencies. This self-assessment also serves to collect self-information about the results of the teaching practice of prospective teacher students through measurements with clear indicators. Through this self-assessment approach, comprehensive and actual general pedagogical competencies and special skills can be found (Suciu & Mata, 2011); (Mâță, Cmeciu, & Ghiațău, 2013). Because the principle of this assessment must be able to encourage teachers or prospective teachers to be able to carry out better learning, so that students will progress in their learning (Kartowagiran, Wibawa, Alfarisa, & Purnama, 2019).

The phenomenon of teacher learning is a complex one, entwined with a multitude of factors, including beliefs and experiences (Samusevica & Striguna, 2017); (Eka Tuah et al., 2021). As a teacher education and training institution that produces teaching staff, Universitas PGRI Yogyakarta has an important role in identifying the competencies of prospective teacher students through training activities, as a form of reported performance (Muñoz Carril, Sanmamed, & Hernández Sellés, 2013). The novelty of this research is the existence of self-assessment related to pedagogical competence in the introduction to the school field program that must be taken by prospective teacher students. Because assessment is the most important component in the learning process and the quality of assessment is one of the main characteristics of good learning (Supriyadi, Zamtinah, Soenarto, & Hatmojo, 2019). For this reason, the faculty must create good conditions for students, to develop professional abilities and pedagogical competencies so that students are able to develop creative and innovative ideas (Matlab Mukhamadovna, Aziza Sharipovna, & Supkhonovna, 2020).

To find out all the components of pedagogic competency of prospective teacher students, a valid and reliable self-assessment instrument is needed (Maksymchuk et al., 2020). This makes it possible for student teachers to be able to assess their pedagogical abilities independently and continuously. Several previous studies have proven that through self-assessment instruments, student teachers can describe the competencies they have achieved and deficiencies that need to be corrected (Budiastuti et al., 2023). This proves that a self-assessment instrument for prospective teacher students regarding pedagogical competence is very necessary and is in line with the aim of this research, namely to develop a valid and reliable self-assessment instrument for prospective teacher students' pedagogic competence.

2. Methods

The research method used in this study is research and development that adopts the Plomp model, with five stages, namely the initial investigation phase, the design phase, the realization/construction phase, and the test, evaluation, and revision phase, as well as implementation. Because according to (Bright, R. L., & Gideonse, 1968); (Budiastuti et al., 2023) this research and development can facilitate research that develops instructional objectives,

Commented [A3]: You must add a detailed methodology and write per sub-chapter, including research design, population and sample, data collection, data analysis, and several things regarding the author's method.

Commented [A4R3]: methodologi red 1
population red 2
data collection red 3
data analysis red 4

strategies, teaching materials, and learning processes.

The population of this research is prospective teacher students who are taking introductory courses in the school field II program. The sample selected in this study was 58 prospective teacher students taken by purposive sampling, representing nine study programs.

This self-assessment instrument is to measure the extent to which pedagogic competence is mastered in the second school field introduction program, which was developed from the adoption of the Plomp model. The development of this instrument follows the flow suggested by Plomp. The first step is problem analysis and needs analysis of the second schooling field introduction program. In this step, it was found that the assessment of pedagogic competence was limited to the assessment of teaching exercises carried out by tutors and supervising lecturers, while self-assessment from students had never existed. The results of the problem and needs analysis found a solution to design a self-assessment instrument for student teacher candidates participating in the second school field introduction program.

The second step is to make a prototype self-assessment instrument based on the instrument grid that has been prepared. This prototype is then submitted to a team of experts for assessment and validation. Based on the analysis of the results of expert validation, the results of the self-assessment instrument need to be revised from the linguistic aspect. In the third step, the construction process is carried out again on the prototype of the self-assessment instrument. After being revised, the self-assessment instrument became a new prototype, and re-validation was requested from the expert. Then the fourth step, the prototype of the self-assessment instrument was tested in a limited way on prospective teacher students participating in the second school field introduction program. The results of the trial were then analyzed, and the results did not need revision, so the prototype of the self-assessment instrument was then used in the fifth step, namely the implementation of self-assessment by 58 selected students by purposive sampling representing study programs at the Teaching and Education Faculty of the PGRI Yogyakarta University. To determine how far pedagogic competencies have been mastered by prospective teacher students, appropriate descriptive measurement criteria are used to describe these competencies. While the validity of the instrument was measured by the Kappa inter-rater technique.

The procedure for developing a self-assessment instrument is shown in Figure 1 below.

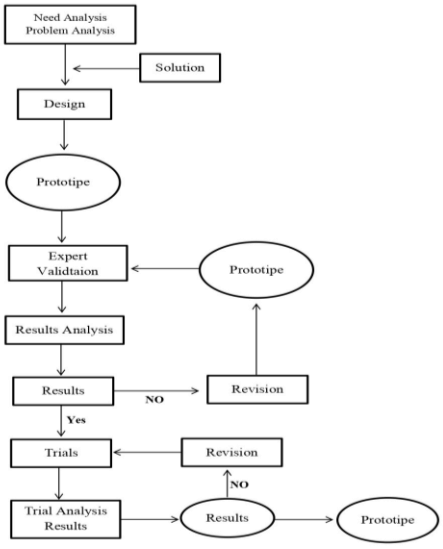


Figure 1. Procedure for preparing the self-assessment instrument

Table 1 describes the development of the pedagogic competence self-assessment instrument for prospective teacher students participating in the second schooling field introduction program. Pedagogic competency self-assessment data was collected through assessment sheets and rubrics with the categories Very Appropriate, Appropriate, Less Appropriate, Inappropriate, and Very Unsuitable.

Table 1. Pedagogic Competency Self-Assessment Instrument for Prospective Teachers

No.	Assessment Aspect	Assessment Coverage	Type of Instrument	Number of Items
1	Understanding of student	a. Pay attention to initial abilities b. understand learning difficulties c. understand the character	Self-assessment sheet	3 items
2	Learning design	a. determine learning objectives b. design lessons properly c. understand the proper method	Self-assessment sheet	3 items
3	Implementation of learning	a. managing proper learning b. implementing conducive learning c. Carry out dynamic learning	Self-assessment sheet	3 items
4	Learning evaluation	a. designing theoretical and practical assessments b. carry out test and non-test assessments c. planning remedies	Self-assessment sheet	3 items
5	Developing the potential of students	a. task reinforcement and feedback b. extracurricular assistance c. psychological reinforcement	Self-assessment sheet	3 items

Data was collected from expert judgment categorized based on the Content Validity Index (CVI), which is presented in Table 2. Meanwhile, the reliability of the instrument was measured using the Kappa inter-rater. Student teacher candidates who take part in the school field introduction program use instruments that have met the validity requirements to carry out self-assessments on aspects of pedagogic competence. Student self-assessment data regarding pedagogical competence is collected through valid and reliable self-assessment instruments.

Table 2. Evaluation of the Kappa Statistical Value

Value of K	Interpretation
<0	Poor
0 – 0.20	Slight
0.21 – 0.40	Fair
0.41 – 0.60	Moderate
0.61 – 0.80	Substansial
0.81 – 1.00	Almost perfect

Source: (Landis & Koch, 1977).

While the data analysis technique used in this research is descriptive analysis, to find out the percentage of mastery of the pedagogic competencies of prospective teacher students who take part in the second school field introduction program. Measurement of the pedagogic competence of prospective teacher students is presented in Table 3 below.

Table 3. Categories of Pedagogic Competency Measurement

Score Intervals	Category
$4{,}2 < \bar{x}$	Very good
$3{,}4 < \bar{x} \leq 4{,}2$	Good
$2{,}6 < \bar{x} \leq 3{,}4$	Enough
$1{,}8 < \bar{x} \leq 2{,}6$	Not enough
$\bar{x} \leq 1{,}8$	Very less

Source:(Widoyoko, 2014)

3. Results and Discussion

Results

The instrument developed in this research is used to measure the extent of pedagogical competence that prospective teachers have mastered while participating in the school field introduction program. This self-assessment instrument gives prospective teachers the freedom to assess themselves honestly and openly regarding the pedagogical competencies they have mastered.

This pedagogical competency includes the ability to understand students, design learning, implement learning, evaluate learning, and develop students' potential. This competency is measured independently using research instruments that have been developed and used continuously.

The results of the pedagogic competency self-assessment trial show that for the aspect of student understanding with an average score of 4.35 (87%), the aspect of learning design averages 4.45 (89%), the aspect of the implementation of learning averages 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the potential development aspect of students averaged 4.40 (88%). The results of the recapitulation of the pedagogic competency assessment can be shown in Table 4 below.

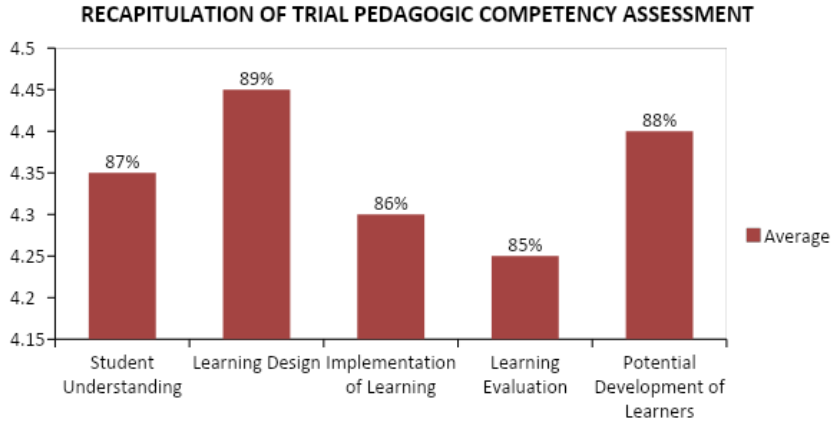
Table 4. Recapitulation of Pedagogic Competency Assessment

No.	Aspect	Average	Percentage (%)
1	Student Understanding	4,35	87
2	Learning Design	4,45	89
3	Implementation of Learning	4,30	86
4	Learning Evaluation	4,25	85
5	Potential Development of Learners	4,40	88
	Average	**4,35**	**87**

Based on the recapitulation of the pedagogic competency assessment in Table 4, it can be concluded that the average value of pedagogic competence is 4.35 or 87% which can be categorized as very good pedagogic competence, which is then shown in Figure 2 below.

Figure 2. Pedagogic Competency Assessment Histogram

The results of students' self-assessments on aspects of student understanding are presented in Figure 3. Of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students'



learning difficulties, and understood the participants' character. students by 85.52%. This can be explained that the ability to understand student students is very good. When referring to the existing categories, students' in-depth understanding skills are very good, as shown in Figure 3 below.

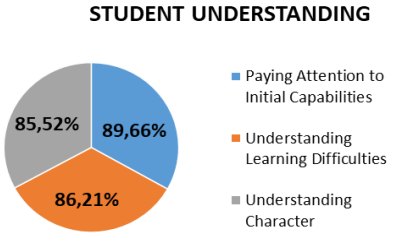


Figure 3. Diagram of Assessment of Student Understanding Aspect

While self-assessment on the aspect of learning design, four indicators of determining learning objectives obtained a percentage of 90.69%, designing learning reached 88.97%, and understanding of appropriate learning methods an achievement of 87.24%. An overview of the results of the second aspect of the self-assessment is shown in Figure 4 below.

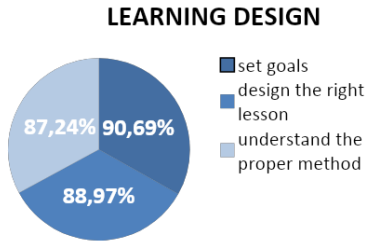


Figure 4. Learning Design Aspect Assessment Diagram

For self-assessment on the implementation aspect of learning, for the first aspect, namely optimal learning management, student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and dynamic learning implementation was 85.52%. An overview of the results of the third aspect of self-assessment can be seen in Figure 5 below.

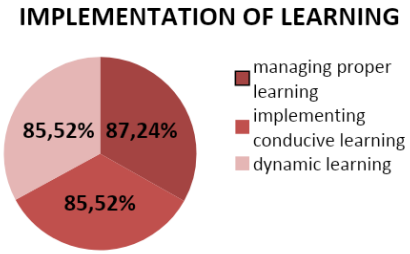


Figure 5. Diagram of the Assessment of the Implementation of Learning Implementation Aspects

For the fourth aspect of self-assessment, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student score achievement was 85.52%, the use of test and non-test assessment was 86.21% while designing remedial programs, the student score achievement was 83.1%. The results of this aspect's self-assessment can be seen in the following diagram 6.

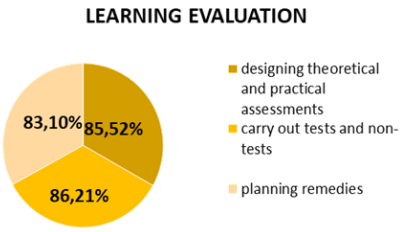


Figure 6. Learning Evaluation Aspect Assessment Diagram

The fifth aspect in students' self-assessment of the potential development of students, on

the indicators of providing reinforcement and task feedback, student achievement was 90%, extracurricular assistance was 86.55%, and psychological stimulation reinforcement was 87.59%. The results of this self-assessment can be shown in Figure 7 below.

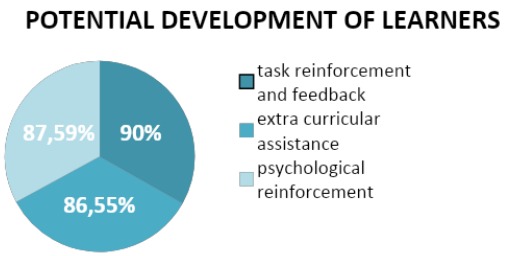


Figure 7. Diagram of Assessment of Potential Development Aspects of Learners

Previous research (Budiastuti et al., 2023) shows that self-assessment of students' work attitudes in the fashion design practicum course, with a research sample of 15 students, shows that the instrument meets the requirements for perfect validity and reliability with an index of 0.70 in the good category. The results of the self-assessment showed that out of fifteen students, fourteen students were declared to have good practicum performance. If the results of this research are compared with research conducted by the author, there are many findings of increased innovation, where the research sample used is much larger, representing nine study programs, and the validity test involves more evaluation experts. So it can be concluded that the pedagogical competency self-assessment instrument that has been produced can be used by students who are taking part in a wider spectrum of school field introduction programs.

Discussion

The preliminary investigation stage is the stage of needs analysis or problem analysis. At this stage, data and information in the field are collected and identified according to related problems. The need for the teaching and education faculties is an instrument for self-assessment of pedagogical competence in an introductory field school program that has never existed. The assessment so far is the assessment of teaching practices carried out by tutors and supervisors. For this reason, it is necessary to design competency development and special assessments, so that candidates educators realize to have new competencies (Andryukhina et al., 2016); (Mahat et al., 2022)**.**

Furthermore, at the design stage, the design of a pedagogic competence self-assessment instrument was prepared with five aspects, namely the competence to understand students, the competence to design learning, the competence to carry out learning, the competence to evaluate learning, and the competence to develop students' potential. From each aspect, it is developed into fifteen indicators. The aspects assessed in the pedagogic competence assessment in students' understanding consist of three assessment indicators, namely understanding students' initial abilities, understanding students' initial difficulties, and understanding students' character; aspects assessed in lesson planning include three assessment indicators, namely determining learning objectives, designing appropriate learning, and determining appropriate learning methods; while the aspects assessed in the implementation of learning include three assessment indicators, namely managing to learn, carrying out the learning process, and dynamic learning. The aspects assessed in the pedagogic competency assessment in evaluating learning include three assessment indicators namely; determining the appropriate type of evaluation, fully using

test and non-test evaluations in a comprehensive manner, and designing and implementing remedial programs. While the aspects assessed in the pedagogic assessment in developing students' potential include three indicators, namely providing reinforcement and task feedback, accompanying students in extra-curricular activities, and providing psychological motivation to students.

In construction, a set of self-assessment instruments was developed to measure the pedagogic competence of prospective teacher students participating in the second school field introduction program (Yusnita et al., 2018). This stage includes designing the form of a self-assessment instrument, incorporating the substance of each aspect of the assessment, and identifying indicators for each of these aspects. One very important thing is the need for an assessment sheet for each indicator in the instrument development rubric, to check whether this self-assessment instrument needs revision or not. This self-assessment is effective for measuring self-ability and improving self-quality (Andrade & Du, 2007); self-assessment allows students to be able to assess themselves and their shortcomings (Lias, Lindholm, Pohjanoksa-Mäntylä, Westerholm, & Airaksinen, 2021); This self-assessment can also evoke a positive attitude of students (Zammi, Susilaningsih, & Supardi, 2018) (Zannierah, Marzuki, Mokdad, Novianto, & Buyong, 2024).

At the development stage, the construction of the self-assessment instrument was validated by three experts in the field of educational evaluation, language, and teacher education. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to find out how much the content validity coefficient of the expert judgment shows that the CVI value is 0.91 (almost perfect). These results have shown that the developed self-assessment instrument already reflects indicators of pedagogic competence, especially in the second schooling field introduction program.

The next step is a test or evaluation of selected students from participants in the second school field introduction program. Based on the recapitulation of the pedagogic competency assessment in Table 4 above, it shows that the average value of the pedagogic competence of prospective teacher students participating in the second school field introduction program is 4.35. This means that 87% of the 58 students in the selected sample can be categorized as a student's pedagogic competence in the very good category.

Through several stages of development, this assessment instrument can be used by students to conduct a self-assessment of pedagogic competence in an honest and independent second schooling field introduction program. The results of the self-assessment of pedagogic competence in Table 4 and figure 2 show that for aspects of student understanding with an average score of 4.35 (87%), aspects of learning design an average of 4.45 (89%), aspects of learning implementation with an average of 4, 32 (86.4%), the evaluation aspect of learning averaged 4.25 (85%), and the aspect of developing potential learners with an average of 4.40 (88%). From these five aspects, it can be concluded that 87% of the 58 students participating in the second schooling field introduction program were very good at mastering their pedagogical competencies.

In the assessment of the first aspect, namely the aspect of student understanding presented in Figure 3, it shows that of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understand the character of students by 85.52%. This can be explained that the ability to understand student students is very good, with an average of 87.12%, based on the existing categories. Even though there are still around 12.87% of students who have not been able to understand the potential of students in learning.

Self-assessment on the second aspect, namely the aspect of learning design in figure 4, for indicators of determining learning objectives the percentage of student achievement was 90.69%, designing learning was 88.97%, and understanding appropriate learning methods with an achievement percentage of 87.24%. If the average self-assessment of this second aspect is taken,

the student achievement is 87.58%, which means that there are still 12.42% of students who have not been able to make a comprehensive learning plan.

For self-assessment on the third aspect, namely the implementation of learning in figure 5, for the first aspect, namely optimal learning management, the percentage of student achievement was 87.24%, while the implementation of the learning process reached 85.52%, and the implementation of dynamic learning was 85.52%. If the average is calculated, the competence in the implementation of learning, students get a percentage score of 86.09, which can be explained that there are still 13.91% of students who have not been able to carry out the learning process in a conducive manner.

Meanwhile for the fourth aspect of self-assessment in figure 6, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student achievement score was 85.52%, the use of test and non-test assessment was 86.21%, while designing remedial programs, the achievement score students by 83.1%. The results of this self-assessment when averaged, the student achievement is 84.94%, which can be interpreted that there are still around 15.06% of students who do not understand the design of learning evaluation.

While the fifth aspect of student self-assessment is the aspect of developing students' potential in figure 7, in the indicators of providing reinforcement and assignment feedback, student achievement is 90%, extracurricular assistance is 86.55%, and psychological stimulation reinforcement is 87.59%. The results of this self-assessment when averaged, the student competence in the fifth aspect is 88.04%, which can be explained that there are still around 11.96% of students who have not been able to optimally develop student potential.

Based on the self-assessment of prospective teacher students participating in the second schooling field introduction program, it was found that 87% of students had mastered pedagogic competencies, while 13% of students still had to learn more so that during the implementation of the schooling field introduction program they could master all aspects and assessment indicators, especially in competency assessment pedagogic.

The results of this study indicate that self-assessment instruments for pedagogic competence in the second schooling field introduction program need to be applied to train students to self-evaluate regarding students understanding abilities, learning design, learning implementation, learning evaluation, and aspects of developing students' potential. Equally important are supervisors, tutors, and managers of the school field introduction program periodically reviewing self-assessment instruments that are in line with developments in science and technology, so that faculties and universities can prepare graduates of qualified prospective teaching staff who have high competitiveness.

4. Conclusion

The aim of this research is to produce a self-assessment instrument to measure pedagogical competence in the second school field introduction program. The self-assessment instrument includes five aspects of assessment, namely student understanding, learning design, learning implementation, learning evaluation, and developing student potential. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to determine how big the content validity coefficient of the expert judgment is shows a CVI value of 0.91 (almost perfect). These results indicate that the self-assessment instrument developed reflects indicators of pedagogical competence, especially in the second school field introduction program.

The results of the self-assessment trial of pedagogical competence showed that for the aspect of student understanding the average score was 4.35 (87%), the learning design aspect averaged 4.45 (89%), the learning implementation aspect averaged 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the student potential development aspect averaged 4.40 (88%). Based on the recapitulation of pedagogical competency assessments, it shows that

the average pedagogical competency score for prospective teacher students participating in the school field introduction program II is 4.35. This means that 87% of the 58 selected sample students can be categorized as having students' pedagogical competence in the very good category.

Acknowledgement

The author would like to thank Universitas PGRI Yogyakarta for supporting the implementation of this research through a lecturer research grant from the Research and Community Service Institute for the 2023 fiscal year.

5. References

Abun, D., Magallanes, T., Marlene, T. N., Fredoline, J. P., & Madamba, M. B. (2021). Effect of attitude toward work, work environment on the employees' work self-efficacy. *International Journal of Research in Business and Social Science (2147- 4478)*, *10*(7), 129–141. https://doi.org/10.20525/ijrbs.v10i7.1459

Andrade, H., & Du, Y. (2007). Student responses to criteriareferenced self-assessment. *Assessment and Evaluation in Higher Education*, *32*(2), 159–181. https://doi.org/10.1080/02602930600801928

Andryukhina, L. M., Dneprov, S. A., Sumina, T. G., Zimina, E. Y., Utkina, S. N., & Mantulenko, V. V. (2016). The model of monitoring of vocational pedagogical competences of professors in secondary vocational education. *International Journal of Environmental and Science Education*, *11*(14), 7016–7034.

Beumann, S., & Wegner, S. A. (2018). An outlook on self-assessment of homework assignments in higher mathematics education. *International Journal of STEM Education*, *5*(1). https://doi.org/10.1186/s40594-018-0146-z

Bright, R. L., & Gideonse, H. D. (1968). Research and development strategies. *The Journal of Experimental Education*, *37*(137–145). https://doi.org/https://doi.org/10.1080/00220973.1968.11011101

Budiastuti, E., Sugiyem, & Puad, F. N. A. (2023). Developing Self-Assessment Instruments To Measure Students' Performance Characters in Making Dresses Using A High-Order Thinking Skills Approach. *Cakrawala Pendidikan*, *42*(1), 254–263. https://doi.org/10.21831/cp.v42i1.52225

Eka Tuah, Y. A., Sudira, P., Mutohhari, F., & Kusuma, W. M. (2021). The Competency of Pedagogic and Professional of Vocational Teachers in Implementing 21st Century Skill-Based Learning. *Jurnal Pendidikan Dan Pengajaran*, *54*(2), 244. https://doi.org/10.23887/jpp.v54i2.35336

Emiliasari, R. N. (2018). An Analysis Of Teachers' Pedagogical Competence In Lesson Study Of Mgmp Smp Majalengka. *ELTIN JOURNAL, Journal of English Language Teaching in Indonesia*, *6*(1), 22. https://doi.org/10.22460/eltin.v6i1.p22-33

Farisi, M. I. (2012). *Development of student self-assesment as a model for evaluation and character development of paper*. Yogyakarta: UNY Press.

Grabe, W., & Stoller, F. L. (2019). Action Research Projects. In *Teaching and Researching Reading* (pp. 246–262). Licoln. https://doi.org/10.4324/9781315726274-11

Hartini, S., Putra Bhakti, C., Hartanto, D., & Alfarizqi Nizamuddin Ghiffari, M. (2018). *Teacher Pedagogic Competency Development Model: A Literature Review*. Atlantis Press. https://doi.org/10.2991/aecon-18.2018.40

Hearn, J., & McMillan, J. H. (2008). Student Self-Assessment: The Key to Stronger Student Motivation and Higher Achievement. *Educational Horizons*, *87*(1), 40–49. Retrieved from https://www.jstor.org/stable/42923742

Kartowagiran, B., Wibawa, E. A., Alfarisa, F., & Purnama, D. N. (2019). Can student assessment sheets replace observation sheets? *Cakrawala Pendidikan*, *38*(1), 33–44. https://doi.org/10.21831/cp.v38i1.22207

König, J., Blömeke, S., Jentsch, A., Schlesinger, L., née Nehls, C. F., Musekamp, F., & Kaiser, G. (2021). The links between pedagogical competence, instructional quality, and mathematics achievement in the lower secondary classroom. *Educational Studies in Mathematics*, *107*(1),

Commented [A5]: Please refine the references according to APA Style 6. Ensure that you include at least 35 articles from international journals published within the last seven years. Carefully verify each reference for accuracy, checking the author's name, volume, issue, year, DOI number, and providing links to each online article and book.

Commented [A6R5]: we already used APA style 6 and editing refference

Commented [A7R5]: and we already add articles ass refference

189–212. https://doi.org/10.1007/s10649-020-10021-0
Landis, J. R., & Koch, G. G. (1977). The Measurement of Observer Agreement for Categorical Data. *Biometrics*, *33*(1), 159. https://doi.org/10.2307/2529310
Lias, N., Lindholm, T., Pohjanoksa-Mäntylä, M., Westerholm, A., & Airaksinen, M. (2021). Developing and piloting a self-assessment tool for medication review competence of practicing pharmacists based on nationally set competence criteria. *BMC Health Services Research*, *21*(1). https://doi.org/10.1186/s12913-021-07291-6
Lozano, R., Merrill, M. Y., Sammalisto, K., Ceulemans, K., & Lozano, F. J. (2017). Connecting competences and pedagogical approaches for sustainable development in higher education: A literature review and framework proposal. *Sustainability (Switzerland)*, *9*(10). https://doi.org/10.3390/su9101889
Mahat, H., Norkhaidi, S. B., Saleh, Y., Hashim, M., Nayan, N., Said, Z. M., … Hamid, N. (2022). A Study on the Responsibility of Environmental Ethics among Secondary School Students in the 21st Century. *International Journal of Educational Methodology*, *8*(3), 585–593. https://doi.org/10.12973/ijem.8.3.585
Maksymchuk, B., Matviichuk, T., Solovyov, V., Davydenko, H., Soichuk, R., Khurtenko, O., Maksymchuk, I. (2020). Developing Healthcare Competency in Future Teachers. *Revista Romaneasca Pentru Educatie Multidimensionala*, *12*(3), 24–43. https://doi.org/10.18662/rrem/12.3/307
Mâță, L., Cmeciu, D., & Ghiațău, R. M. (2013). A Reference Framework of Pedagogical Competences of Language Teachers in the Initial Training Programmes. *Procedia - Social and Behavioral Sciences*, *93*, 648–653. https://doi.org/10.1016/j.sbspro.2013.09.255
Matlab Mukhamadovna, T., Aziza Sharipovna, H., & Supkhonovna, H. N. (2020). The System Of Development Of Professional Competence In Future Primary School Teachers. *Journal of Critical Reviews*, *7*(13), 4184–4189.
Muñoz Carril, P. C., Sanmamed, M. G., & Hernández Sellés, N. (2013). Pedagogical roles and competencies of university teachers practicing in the E-learning environment. *International Review of Research in Open and Distance Learning*, *14*(3), 462–487. https://doi.org/10.19173/irrodl.v14i3.1477
Pahrudin, P., Martono, T., & Murtini, W. (2016). The Effect of Pedagogic Competency, Personality, Professional and Social Competency Teacher to Study Achievement of Economic Lesson in State Senior High School of East Lombok District Academic Year 2015/2016. *International Conference On Teacher Training and Education Sebelas Maret University*, *2*(1), 332–345. Retrieved from http://suarakita.com/artikel
Samusevica, A., & Striguna, S. (2017). The Development of Teachers' Pedagogical Competence in The Process of Self-Education at The University. *International Conference on Lifelong Learning and Leadership*, *3*(2), 39–46.
Sopandi, W., & Handayani, H. (2019). The Impact of Workshop on Implementation of Read-Answer-Discuss-Explain-And-Create (RADEC) Learning Model on Pedagogic Competency of Elementary School Teachers. *International Conference of Innovation in Education (ICoIE)*, *178*(ICoIE 2018), 7–11. https://doi.org/10.2991/icoie-18.2019.3
Suciu, A. I., & Mata, L. (2011). Pedagogical Competences – The Key to Efficient Education. *International Online Journal of Educational Sciences*, *3*(2), 411–423. Retrieved from www.iojes.net
Sudargini, Y., & Purwanto, A. (2020). the Effect of Teachers Pedagogic Competency on the Learning Outcomes of Students. *Journal of Industrial Engineering & Management Research (Jiemar)*, *1*(4), 2722–8878. https://doi.org/10.7777/jiemar
Supriyadi, E., Zamtinah, Soenarto, S., & Hatmojo, Y. I. (2019). A character-based assessment model for vocational high schools. *Cakrawala Pendidikan*, *38*(2), 269–280. https://doi.org/10.21831/cp.v38i2.24099
Susanto, R., Agustina, N., Azmi, Y., & Rachbini, W. (2021). Pedagogic Competency Model: Development from The Point of View of The Initial Characteristics of Teachers, Involvement with Organizations and Competency Development Strategies. *Review of International Geographical Education Online*, *11*(8), 826–841. https://doi.org/10.48047/rigeo.11.08.72
Susanto, R., Rozali, Y. A., & Agustina, N. (2019). Development of pedagogical competency models for elementary school teachers: Pedagogical knowledge, reflective ability, emotional

intelligence and instructional communication pattern. *Universal Journal of Educational Research*, *7*(10), 2124–2132. https://doi.org/10.13189/ujer.2019.071010

Syahmaidi, E., Hidayat, H., Hartanto, S., & Fitri Rahmadani, A. (2021). Designing E-Training Computer Assisted Instruction Used to Pedagogic Competency in Vocational Education. *Journal of Physics: Conference Series*, *1779*(1). IOP Publishing Ltd. https://doi.org/10.1088/1742-6596/1779/1/012038

Syahrial, S., Asrial, A., Kurniawan, D. A., Chan, F., Pratama, R. A., Nugrogo, P., & Septiasari, R. (2019). The impact of etnocontructivism in social affairs on pedagogic competencies. *International Journal of Evaluation and Research in Education*, *8*(3), 409–416. https://doi.org/10.11591/ijere.v8i3.20242

Widoyoko, S. E. P. (2014). *Penilaian Hasil Pembelajaran di Sekolah*. Yogyakarta: Pustaka Pelajar.

Yildiz, A. (2018). The Factors Affecting Techno-Pedagogical Competencies and Critical Thinking Skills of Preservice Mathematics Teachers. *MOJES: Malaysian Online Journal of Educational Sciences*, *5*(2), 66–81. Retrieved from https://vmis.um.edu.my/index.php/MOJES/article/view/12625

Yusnita, Y., Eriyanti, F., Engkizar, E., Anwar, F., Putri, N. E., Arifin, Z., & Syafril, S. (2018). The Effect of Professional Education and Training for Teachers (PLPG) in Improving Pedagogic Competence and Teacher Performance. *Tadris: Jurnal Keguruan Dan Ilmu Tarbiyah*, *3*(2), 123. https://doi.org/10.24042/tadris.v3i2.2701

Zammi, M., Susilaningsih, E., & Supardi, K. I. (2018). Pengembangan Instrumen Self-Assessment untuk Meningkatkan Keterampilan Laboratorium Calon Guru Kimia. *Jurnal Profesi Keguruan*, *4*(1), 37–41. Retrieved from https://journal.unnes.ac.id/nju/index.php/jpk

Zannierah, S., Marzuki, S., Mokdad, M., Novianto, V., & Buyong, S. Z. (2024). *Instrument Feasibility Study on Entrepreneurial Perspective of China ' s Soft Power on Tourism Diffusion in Malaysia*. *10*(3), 109–115.

8. Bukti konfirmasi artikel accepted dan Invoice Artikel (13 Desember 2024)

UNIVERSITAS PGRI YOGYAKARTA
Humanis, Glokal, Entrepreneur

esti setiawati <esti@upy.ac.id>

Accepted for Publication

3 messages

Nur Hamid <elnur.hamid@walisongo.ac.id> Fri, Dec 13, 2024 at 2:50 PM
To: victornovianto@gmail.com, esti@upy.ac.id, Nasiryasin681@gmail.com

Dear Author,

We are delighted to inform you that your manuscript has successfully met the publication requirements. To initiate the publication process, we kindly request your prompt settlement of the publication fee (APC) amounting to **Rp. 2,500,000 or USD 160**. Further details can be found at https://ijsl.pubmedia.id/index.php/ijsl/apc. For your convenience, the payment method guidelines are available via https://idpublishing.org/services/208. Kindly ensure that the payment is made before **December 14, 2024**. Once the payment is completed, we would appreciate it if you could attach the proof of payment to this email to expedite our verification process. We appreciate your attention to this matter and look forward to your prompt response.

--
Dr. Nur Hamid, M.Sc.
Department of Islamic Community Development
Head of Quality Assurance Center
Universitas Islam Negeri Walisongo Semarang, Indonesia

- Editor in Chief, International Journal of Social Learning (Sinta 2 & Sherpa Romeo)
- Associate Editor, Cogent Social Science, Taylor & Francis (Scopus Q2 & ESCI Web of Science)
- Editorial Board, Educational Technology and Society (Scopus Q1 & SSCI Web of Science)

---

esti setiawati <esti@upy.ac.id> Fri, Dec 13, 2024 at 3:10 PM
To: Nur Hamid <elnur.hamid@walisongo.ac.id>
Cc: victornovianto@gmail.com, Nasiryasin681@gmail.com

Thank you for your information.
[Quoted text hidden]

Victor Novianto <victornovianto@gmail.com> Fri, Dec 13, 2024 at 4:16 PM
To: esti setiawati <esti@upy.ac.id>
Cc: Nur Hamid <elnur.hamid@walisongo.ac.id>, Nasiryasin681@gmail.com

Dear Editor,
Alhamdulilah Please be advised that proof of payment for accepted articles is attached to this message.
Best Regards
[Quoted text hidden]

receipt_675bf957c7d2a.pdf
335K

KWITANSI

Number: 13123891

Sudah terima dari *Received from*	**Victor Novianto**
Instansi *Institution*	**universitas PGRI Yogyakarta**
Banyaknya Uang *Amount Received*	**Rp2.500.000,00**
Terbilang *Amount in Words*	**two million five hundred thousand rupiah**
Untuk Pembayaran *In Payment Of*	**Biaya Publish Jurnal - IJSL Journal - 1 package(s)**

Best Regards,
Indonesian Journal Publisher
Yogyakarta, 13 Desember 2024

Andri P Kesmawan
President Director

Notices/Terms:

Payment has been created via MANDIRI VA H2H
NPWP: 94.923.475.1-543.000

9. Bukti Pembayaran Biaya Publikasi

(13 Desember 2024)

BANK BPD DIY

TRANSFER BI FAST
BERHASIL

WAKTU TRANSAKSI	NO RESI
13 Desember 2024 16:17	094646

PENGIRIM	ESTI SETIAWATI
REK. SUMBER	001221xxx660
BANK TUJUAN	BANK MANDIRI
PENERIMA	NORMA AGUSTIN PALUPI
REK. PENERIMA	1370010799597
TUJUAN TRANSAKSI	Transfer Dana
KETERANGAN	Pembayaran publish artikel IJSL
JUMLAH	Rp2.550.000,00
BIAYA ADMIN	Rp2.500,00
TOTAL	Rp2.552.500,00

10. Bukti konfirmasi artikel published online dan Artikel Terpublikasi di International Journal of Social Learning (IJSL) Vol. 5 No. 1 (2024)

(24 Desember 2024)

This version has been published and can not be edited.

Galleys

- pdf

International Journal of Social Learning
December 2024, Vol. 5 (1), 73-89
e-ISSN 2774-4426 and p-ISSN 2774-8359
DOI: https://doi.org/10.47134/ijsl.v5i1.299

Developing Self-Assessment Instruments to Measure The Pedagogical Competence of Prospective Teacher Students

Esti Setiawati[1*], Abdulnassir Yassin[2], Sharifah Zannierah Syed Marzuki[3], Zhang Chen[4], Victor Novianto[5]

[1,5]*Universitas PGRI Yogyakarta, Indonesia*
[2]*Islamic University in Uganda, Republic of Uganda*
[3]*Universiti Teknologi Mara Malaysia, Malaysia*
[4]*Geely University of China, China*

*e-mail: esti@upy.ac.id

ABSTRACT

This research aims to develop a self-assessment of the pedagogical competence of prospective teacher students in the school field introduction program. The research method used is research and development with the Plomp model, which consists of five stages: initial investigation, product design, realization/construction, testing, evaluation and revision, and implementation. The sample was determined purposively, totaling 58 students. At the testing stage, experts judge the instruments based on the Content Validity Index. The instrument measured instrument's reliability was measured, and data collected from student teachers was analyzed using descriptive statistical methods. The research results show 1) The Content Validity Index content of the self-assessment instrument is 0.91, which is in the almost perfect category; 2) The reliability inmost more than 0.70, which 2 means it meets the recommended criteria; 3) The Self-assessment showed that 87.08% of study; 3 mastered pedagogic compe which consisted of five aspects.

***Keywords*:**

Pedagogic Competence; School Field Introduction; Self-Assessment Instrument.

ABSTRAK

Penelitian ini bertujuan untuk mengembangkan penilaian diri kompetensi pedagogik mahasiswa calon guru dalam program pengenalan lapangan

Submitted: 2024-01-21; Accepted: 2024-12-13; Published: 2024-12-24
***Corresponding author:** esti@upy.ac.id

sekolah. Metode penelitian yang digunakan adalah penelitian dan pengembangan dengan model Plomp yang terdiri dari lima tahap, yaitu tahap investigasi awal, tahap desain produk, tahap realisasi/konstruksi, tahap tes, evaluasi dan revisi, dan tahap implementasi. Sampel ditentukan secara purposive yang berjumlah 58 siswa. Pada tahap pengujian, para ahli menilai instrumen berdasarkan Indeks Validitas Isi. Reliabilitas instrumen diukur dengan menggunakan inter-rater Kappa, dan data yang dikumpulkan dari guru-guru siswa dianalisis dengan metode statistik deskriptif. Hasil penelitian menunjukkan 1) Indeks Validitas Isi instrumen penilaian diri sebesar 0,91 yang termasuk dalam kategori hampir sempurna, 2) Indeks reliabilitas lebih dari 0,70 yang berarti memenuhi kriteria yang direkomendasikan, 3) Penilaian diri menunjukkan bahwa 87,08% mahasiswa menguasai kompetensi pedagogik yang terdiri dari lima aspek.

***Kata kunci*:**

Kompetensi Pedagogik; Pengenalan Lapangan Sekolah; Instrumen Penilaian Diri.

1. Introduction

One of the main programs and activities at the Teaching and Education Faculty is the school field introduction program, formerly called the field experience program. This program aims to train prospective teacher students to master various competencies in the learning process in class. One of the important competencies that prospective teachers have is mastic competence, which consists of the ability to understand students, the ability to design learning, the ability to carry out learning, the ability to evaluate learning, and the ability to develop students' potential. Pedagogic competence is fundamental and a strategic key to achievement in school (Susanto, Agustina, Azmi, & Rachbini, 2021); (Sopandi & Handayani, 2019); (Syahrial et al., 2019).

Pedagogical competence training activities for prospective teachers are one of the important factors of programs and activities in the faculty's curriculum of teacher training and education. Training prospective teachers requires careful planning, adequate training, and approved private and effective training strategies so that prospective teachers can carry out learning well and be responsive to the learning needs of students (Syahmaidi, Hidayat, Hartanto, & Fitri Rahmadani, 2021); (Sudargini & Purwanto, 2020). Through this training, it is hoped that prospective student teachers will learn teaching practices and manage class addition skills, improve handling abilities, and prepare learning tools. The development of pedagogical competence has great potential to increase student engagement in learning, both in primary and secondary education and in further education (Lozano, Merrill, Sammalisto, Ceulemans, & Lozano, 2017). Pedagogical competence is a competency related to the ability to manage learning, understanding of students, use of IT, use of learning models, curriculum development, learning evaluation, and developing the potential of students in the learning process at school (Pahrudin, Martono, & Murtini, 2016); (Hartini, Putra Bhakti, Hartanto, & Alfarizqi Nizamuddin Ghiffari, 2018). This pedagogical competence is the foundation of teacher success in managing classroom learning practices. For this reason, teacher training programs must be optimally

developed to improve the pedagogical competence of prospective teachers (Yildiz, 2018). This is because pedagogical competence is a competency that can determine the success of the learning process and student learning outcomes (Emiliasari, 2018); (Susanto, Rozali, & Agustina, 2019). To train prospective teacher students to master pedagogical competencies, they are previously equipped with micro-teaching courses, and after graduating, they are continued with a school field introduction program.

Based on the observations, interviews, and documentation that have been carried out, there is no clear assessment rubric, so the assessment is only general. It does not specifically assess the pedagogical competence of prospective teacher students taking field introduction courses in schools. Therefore, it is necessary to develop a self-assessment instrument for the pedagogical competence of teachers or prospective teachers on an ongoing basis (König et al., 2021). The development of this instrument is based on the faculty's need to map how much competency student teachers have achieved and the needs of supervisors who are relevant to increasing pedagogical competence. The implementation of the school field introduction program has been going on for decades in the teaching and education faculties. Still, no instrument for student self-assessment on pedagogical competency attainment has been found. So far, general assessment from field supervisors and school tutors is common. This finding is a concern in the increasingly developing world of evaluation because one form of assessment that can improve student performance is self-assessment of what the student has achieved.

Self-assessment instruments can measure and evaluate student pedagogical competence independently and honestly to provide feedback from the assessment activities and improve the quality of graduate student teacher candidates. This is by the results of research (Grabe & Stoller, 2019), which states that self-assessment can make students realistic and more accurate in assessing themselves about expected learning goals. This self-assessment is also useful for monitoring the process and results of independent learning achievement (Abun, Magallanes, Marlene, Fredoline, & Madamba, 2021). The competence of student teacher candidates in understanding students, designing lessons, implementing learning, evaluating learning, and developing students' potential is very important to be given as provision when student teacher candidates are involved in school as teachers. For this reason, a good self-assessment is needed, which can be used to assess the pedagogical competence of prospective teacher students as a benchmark for continuous assessment in the second schooling field introduction program. Because so far, the assessment results still depend a lot on lecturers and students who have never been involved in the assessment process. Students are not eligible to assess their performance because they cannot decide on the assessment (Budiastuti, Sugiyem, & Puad, 2023); (Beumann & Wegner, 2018). For this reason, it is very important to involve students as assessors in assessing their current performance.

In this regard, self-assessment of pedagogic competencies can be used by prospective teacher students themselves because this instrument will make it easy for prospective teacher students to identify strengths and weaknesses in mastering the pedagogic competencies they must achieve. This self-assessment is a process that requires students to identify, assess, and evaluate the quality of understanding and skills during the learning process and may be improved in the future (Hearn & McMillan, 2008); (Farisi, 2012). Continuous self-assessment can help student-teacher candidates

reflect on the achievement of pedagogical competence as a framework that describes and describes the level of teaching performance of student-teacher candidates in mastering these competencies. This self-assessment also collects self-information about the results of the teaching practice of prospective teacher students through measurements with clear indicators. Through this self-assessment approach, comprehensive and actual general pedagogical competencies and special skills can be found (Suciu & Mata, 2011); (Mâţă, Cmeciu, & Ghiaţău, 2013) because the principle of this assessment must be able to encourage teachers or prospective teachers to be able to carry out better learning so that students will progress in their learning (Kartowagiran, Wibawa, Alfarisa, & Purnama, 2019).

The phenomenon of teacher learning is complex, entwined with many factors, including beliefs and experiences (Samusevica & Striguna, 2017); (Eka Tuah et al., 2021). As a teacher education and training institution that produces teaching staff, Universitas PGRI Yogyakarta has an important role in identifying the competencies of prospective teacher students through training activities as a form of reported performance (Muñoz Carril, Sanmamed & Hernández Sellés, 2013). The novelty of this research is the existence of self-assessment related to pedagogical competence in the introduction to the school field program that prospective teacher students must take. Because assessment is the most important component in the learning process and the quality of assessment is one of the main characteristics of good learning (Supriyadi, Zamtinah, Soenarto, & Hatmojo, 2019). For this reason, the faculty must create good conditions for students to develop professional abilities and pedagogical competencies so that students can develop creative and innovative ideas (Matlab Mukhamadovna, Aziza Sharipovna, & Supkhonovna, 2020).

A valid and reliable self-assessment instrument is needed to discover all the components of the pedagogic competency of prospective teacher students (Maksymchuk et al., 2020). This makes it possible for student teachers to assess their pedagogical abilities independently and continuously. Several previous studies have proven that through self-assessment instruments, student teachers can describe the competencies they have achieved and deficiencies that need to be corrected (Budiastuti et al., 2023). This proves that a self-assessment instrument for prospective teacher students regarding pedagogical competence is very necessary and is in line with the aim of this research, namely to develop a valid and reliable self-assessment instrument for prospective teacher students' pedagogic competence.

2. Methods

The research method used in this study is research and development that adopts the Plomp model, with five stages, namely the initial investigation phase, the design phase, the realization/construction phase, and the test, evaluation, and revision phase, as well as implementation. According to (Bright, R. L., & Gideonse, 1968) (Budiastuti et al., 2023), this research and development can facilitate research that develops instructional objectives, strategies, teaching materials, and learning processes.

The population of this research is prospective teacher students taking introductory courses in the school field II program. The sample selected in this study was 58 prospective teacher students taken by purposive sampling, representing nine study programs.

This self-assessment instrument measures the extent to which pedagogic competence is mastered in the second school field introduction program, developed by adopting the Plomp model. The development of this instrument follows the flow suggested by Plomp. The first step is problem analysis and needs analysis of the second schooling field introduction program. This step found that the assessment of pedagogic competence was limited to the assessment of teaching exercises carried out by tutors and supervising lecturers. At the same time, self-assessment from students had never existed. The problem and needs analysis results found a solution to design a self-assessment instrument for student teacher candidates participating in the second school field introduction program.

The second step is to make a prototype self-assessment instrument based on the instrument grid that has been prepared. This prototype is then submitted to a team of experts for assessment and validation. Based on the analysis of the expert validation, the results of the self-assessment instrument need to be revised from the linguistic aspect. In the third step, the construction process is carried out again on the prototype of the self-assessment instrument. After being revised, the self-assessment instrument became a new prototype, and re-validation was requested from the expert. Then, the fourth step, the prototype of the self-assessment instrument, was tested in a limited way on prospective teacher students participating in the second school field introduction program. The results of the trial were then analyzed, and the results did not need revision, so the prototype of the self-assessment instrument was then used in the fifth step, namely the implementation of self-assessment by 58 selected students by purposive sampling representing study programs at the Teaching and Education Faculty of the PGRI Yogyakarta University. To determine how far prospective teacher students have mastered pedagogic competencies, appropriate descriptive measurement criteria are used to describe these competencies. The Kappa inter-rater technique measured the validity of the instrument. The procedure for developing a self-assessment instrument is shown in Figure 1 below.

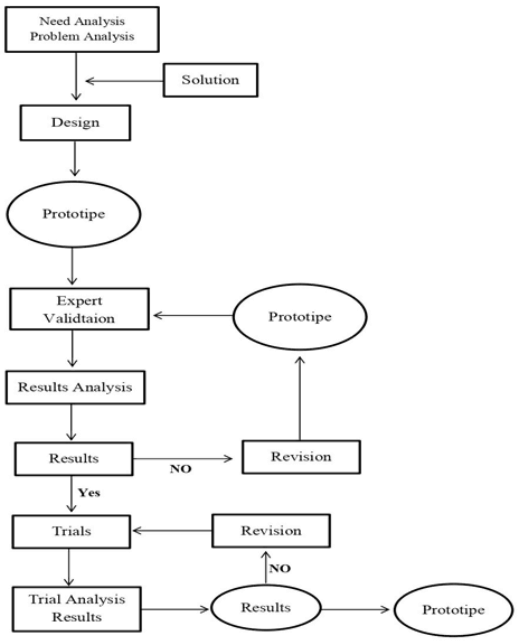


Figure 1. Procedure for Preparing The Self-Assessment Instrument

Table 1 describes the development of the pedagogic competence self-assessment instrument for prospective teacher students participating in the second schooling field introduction program. Pedagogic competency self-assessment data was collected through assessment sheets and rubrics with the categories Very Appropriate, Appropriate, Less Appropriate, Inappropriate, and Very Unsuitable.

Table 1. Pedagogic Competency Self-Assessment Instrument for Prospective Teachers

No.	Assessment Aspect	Assessment Coverage	Type of Instrument	Number of Items
1	Understanding of student	a. Pay attention to initial abilities b. understand learning difficulties c. understand the character	Self-assessment sheet	3 items
2	Learning design	a. determine learning objectives b. design lessons properly c. understand the proper method	Self-assessment sheet	3 items
3	Implementation of learning	a. managing proper learning b. implementing conducive learning c. Carry out dynamic learning	Self-assessment sheet	3 items
4	Learning evaluation	a. designing theoretical and practical assessments b. carry out test and non-test assessments c. planning remedies	Self-assessment sheet	3 items
5	Developing the potential of students	a. task reinforcement and feedback b. extracurricular assistance c. psychological reinforcement	Self-assessment sheet	3 items

Data was collected from expert judgment categorized based on the Content Validity Index (CVI), which is presented in Table 2. Meanwhile, the reliability of the instrument was measured using the Kappa inter-rater. Student teacher candidates who participate in the school field introduction program use instruments that have met the validity requirements to carry out self-assessments on aspects of pedagogic competence. Student self-assessment data regarding pedagogical competence is collected through valid and reliable self-assessment instruments.

Table 2. Evaluation of the Kappa Statistical Value

Value of K	Interpretation
<0	Poor
0 – 0.20	Slight
0.21 – 0.40	Fair
0.41 – 0.60	Moderate

0.61 – 0.80	Substansial
0.81 – 1.00	Almost perfect

Source: (Landis & Koch, 1977).

While the data analysis technique used in this research is descriptive analysis to present the percentage of mastery of the pedagogic competencies of prospective teacher students who take part in the second school field introduction program, measurement of the pedagogic competence of prospective teacher students is presented in Table 3 below.

Table 3. Categories of Pedagogic Competency Measurement

Score Intervals	Category
$4{,}2 < \bar{x}$	Very good
$3{,}4 < \bar{x} \leq 4{,}2$	Good
$2{,}6 < \bar{x} \leq 3{,}4$	Enough
$1{,}8 < \bar{x} \leq 2{,}6$	Not enough
$\bar{x} \leq 1{,}8$	Very less

Source:(Widoyoko, 2014)

3. Results and Discussion

The instrument developed in this research measures the extent of pedagogical competence prospective teachers have mastered while participating in the school field introduction program. This self-assessment instrument allows prospective teachers to assess themselves honestly and openly regarding the pedagogical competencies they have mastered.

This pedagogical competency includes understanding students, designing learning, implementing learning, evaluating learning, and developing students' potential. This competency is measured independently using research instruments developed and used continuously.

The results of the pedagogic competency self-assessment trial show that for the aspect of student understanding with an average score of 4.35 (87%), the aspect of learning design averages 4.45 (89%), the aspect of the implementation of learning averages 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the potential development aspect of students averaged 4.40 (88%). The results of the recapitulation of the pedagogic competency assessment can be shown in Table 4 below.

Table 4. Recapitulation of Pedagogic Competency Assessment

No.	Aspect	Average	Percentage (%)
1	Student Understanding	4,35	87
2	Learning Design	4,45	89
3	Implementation of Learning	4,30	86
4	Learning Evaluation	4,25	85
5	Potential Development of Learners	4,40	88
	Average	**4,35**	**87**

Based on the recapitulation of the pedagogic competency assessment in Table 4, it can be concluded that the average value of pedagogic competence is 4.35 or 87%, which can be categorized as very good pedagogic competence, shown in Figure 2 below.

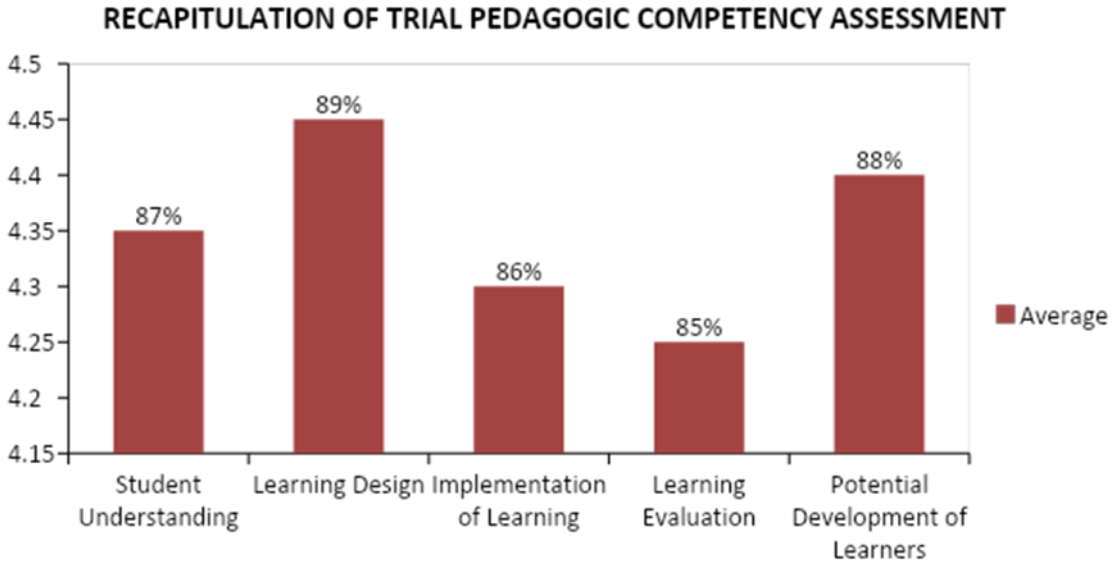


Figure 2. Pedagogic Competency Assessment Histogram

The results of students' self-assessments on aspects of student understanding are presented in Figure 3. Of the 58 students participating in the second schooling field introduction program, 89.66% understood the potential of students, 86.21% understood students' learning difficulties, and the participant's character. Students by 85.52%. This can be explained by the ability to understand student students is very good. Students' in-depth understanding skills are very good when referring to the existing categories, as shown in Figure 3 below.

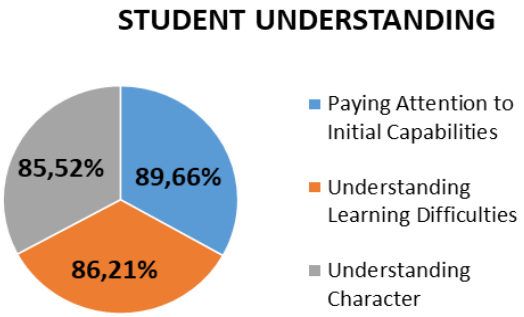


Figure 3. Diagram of Assessment of Student Understanding Aspect

While self-assessment on learning design, four indicators of determining learning objectives obtained a percentage of 90.69%; designing learning reached 88.97%, and understanding of appropriate learning methods achieved 87.24%. An overview of the results of the second aspect of the self-assessment is shown in Figure 4 below.

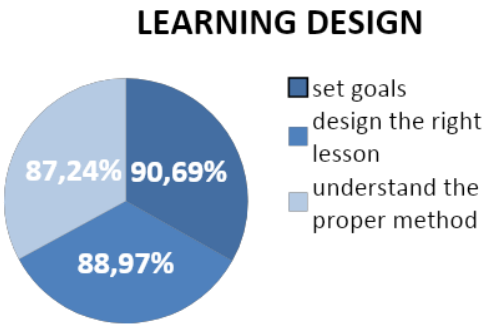


Figure 4. Learning Design Aspect Assessment Diagram

For self-assessment on the implementation aspect of learning, for the first aspect, namely optimal learning management, student achievement was 87.24%. In comparison, the implementation of the learning process reached 85.52%, and dynamic learning implementation was 85.52%. An overview of the results of the third aspect of self-assessment can be seen in Figure 5 below.

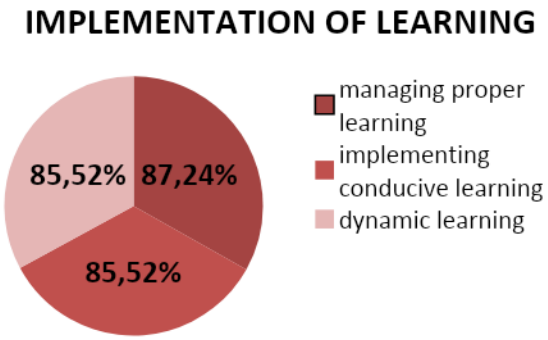


Figure 5. Diagram of the Assessment of the Implementation of Learning Implementation Aspects

For the fourth aspect of self-assessment, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student score achievement was 85.52%, the use of test and non-test assessment was 86.21% while designing remedial programs, the student score achievement was 83.1%. This aspect's self-assessment results can be seen in the following diagram 6.

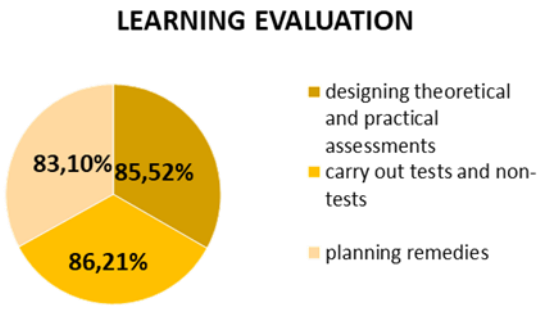


Figure 6. Learning Evaluation Aspect Assessment Diagram

The fifth aspect in students' self-assessment of the potential development of students, on the indicators of providing reinforcement and task feedback, student achievement was 90%, extracurricular assistance was 86.55%, and psychological stimulation reinforcement was 87.59%. The results of this self-assessment can be shown in Figure 7 below.

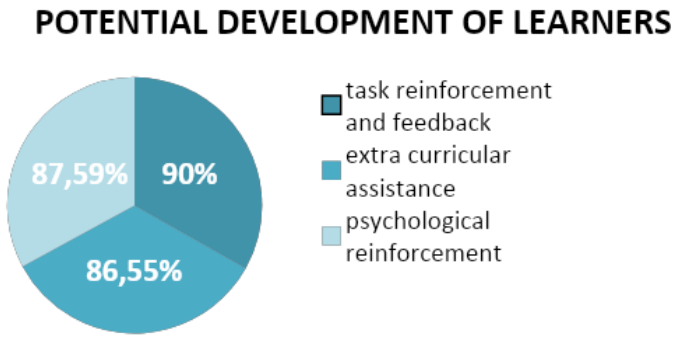


Figure 7. Diagram of Assessment of Potential Development Aspects of Learners

Previous research (Budiastuti et al., 2023) shows that self-assessment of students' work attitudes in the fashion design practicum course, with a research sample of 15 students, shows that the instrument meets the requirements for perfect validity and reliability with an index of 0.70 in the good category. The self-assessment results showed that fourteen out of fifteen students were declared to have good practicum performance. Suppose the results of this research are compared with research conducted by the author. In that case, there are many findings of increased innovation, where the research sample used is much larger, representing nine study programs, and the validity test involves more evaluation experts. So, it can be concluded that the pedagogical competency self-assessment instrument produced can be used by students in a wider spectrum of school field introduction programs.

The preliminary investigation stage is the stage of needs analysis or problem analysis. At this stage, data and information in the field are collected and identified according to related problems. The need for the teaching and education faculties is an instrument for self-assessment of pedagogical competence in an introductory field school program that has never existed. So far, the assessment of

teaching practices carried out by tutors and supervisors. For this reason, it is necessary to design competency development and special assessments so that candidate educators realize new competencies (Andryukhina et al., 2016); (Mahat et al., 2022).

Furthermore, at the design stage, the design of a pedagogic competence self-assessment instrument was prepared with five aspects, namely the competence to understand students, the competence to design learning, the competence to carry out learning, the competence to evaluate learning, and the competence to develop students' potential. From each aspect, it is developed into fifteen indicators. The aspects assessed in the pedagogic competence assessment in students' understanding consist of three assessment indicators, namely understanding students' initial abilities, understanding students' initial difficulties, and understanding students' character; aspects assessed in lesson planning include three assessment indicators, namely determining learning objectives, designing appropriate learning, and determining appropriate learning methods; while the aspects assessed in the implementation of learning include three assessment indicators, namely managing to learn, carrying out the learning process, and dynamic learning. The aspects assessed in the pedagogic competency assessment in evaluating learning include three assessment indicators: determining the appropriate type of evaluation, fully comprehensively using test and non-test evaluations, and designing and implementing remedial programs. The aspects assessed in the pedagogic assessment in developing students' potential include three indicators: providing enforcement and task feedback, accompanying students in extra-curricular activities, and providing psychological motivation to students (Ismuratova, Slambekova, Kazhimova, Alimbekova, & Karimova, 2018).

In construction, a set of self-assessment instruments was developed to measure the pedagogic competence of prospective teacher students participating in the second school field introduction program (Yusnita et al., 2018). This stage includes designing the form of a self-assessment instrument, incorporating the substance of each aspect of the assessment, and identifying indicators for each of these aspects. One very important thing is the need for an assessment sheet for each indicator in the instrument development rubric to check whether this self-assessment instrument needs revision. This self-assessment is effective for measuring self-ability and improving self-quality (Andrade & Du, 2007); self-assessment allows students to be able to assess themselves and their shortcomings (Lias, Lindholm, Pohjanoksa-Mäntylä, Westerholm, & Airaksinen, 2021); This self-assessment can also evoke a positive attitude of students (Zammi, Susilaningsih, & Supardi, 2018) (Zannierah, Marzuki, Mokdad, Novianto, & Buyong, 2024).

At the development stage, the construction of the self-assessment instrument was validated by three experts in educfieldsal evaluation, language, and teacher education. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to find out how much the content validity coefficient of the expert judgment shows that the CVI value is 0.91 (almost perfect). These results have shown that the developed self-assessment instrument already reflects indicators of pedagogic competence, especially in the second schooling field introduction program (Lapoule & Lynch, 2018).

The next step is testing or evaluating selected students from the second school field introduction program participants. Based on the recapitulation of the pedagogic competency assessment in Table 4 above, it average value of the pedagogic competence of prospective teacher students participating

in the second school field introduction program is 4.35. This means that 87% of the 58ents in the selected sample can be categorized as a student's pedagogic competence in the very good category.

Through several stages of development, this assessment instrument can be used by students to conduct a self-assessment of pedagogic competence in an honest and independent second schooling field introduction program. The results of the self-assessment of pedagogic competence in Table 4 and Figure 2 show that for aspects of student understanding with an average score of 4.35 (87%), aspects of learning design with an average of 4.45 (89%), aspects of learning implementation with an average of 4, 32 (86.4%), the evaluation aspect of learning averaged 4.25 (85%), and the aspect of developing potential learners with an average of 4.40 (88%). From these five aspects, it can be concluded that 87% of the 58 students participating in the second schooling field introduction program were very good at mastering their pedagogical competencies.

In the assessment of the first aspect, namely the aspect of student understanding presented in Figure 3, it shows that of the 58 students participating in the second schooling field introduction program, 89.66% were able to understand the potential of students, 86.21% understood students' learning difficulties, and understand the character of students by 85.52%. This can be explained by the fact that the ability to understand student students is very good, with an average of 87.12%, based on the existing inventories, even though there are still around 12.87% of students who have not been able to understand the potential of students in learning.

Self-assessment on the second aspect, namely the aspect of learning design in Figure 4, for indicators of determining learning objectives, the percentage of student achievement was 90.69%, designing learning was 88.97%, and understanding appropriate learning methods with an achievement percentage of 87.24%. If the average self-assessment of this second aspect is taken, the student achievement is 87.58%, which means that there are still 12.42% of students who have not been able to make a comprehensive learning plan.

For self-assessment on the third aspect, namely the implementation of learning in Figure 5, for the first aspect, namely optimal learning management, the percentage of student achievement was 87.24%. In comparison, the implementation of the learning process reached 85.52%, and the implementation of dynamic learning was 85.52%. If the average is calculated, the competence in the implementation of learning, students get a percentage score of 86.09; it explained that there are still 13.91% of students who have not been able to carry out the learning process in a conducive manner (Dimaculangan, Hadji Abas, & Quinto, 2022).

Meanwhile, for the fourth aspect of self-assessment in Figure 6, namely the design of learning evaluation, in the first aspect, namely the use of theoretical and practical assessment, the student achievement score was 85.52%, the use of test and non-test assessment was 86.21, while designing remedial programs, the achievement score students by 83.1%. When the results of this self-assessment are averaged, the student achievement is 84.94%, which can be interpreted that there are still around 15.06% of students who do not understand the design of learning evaluation.

The fifth aspect of student self-assessment is the rasping students' potential in Figure 7; in the indicators of providing reinforcement and assignment feedback, student achievement is 90%, extracurricular assistance is 86.55%, and psychological stimulation reinforcement is 87.59%. The results of this self-assessment, when averaged, the student competence in the fifth aspect is 88.04%,

which can explain that there are still around 11.96% of students who have not been able to develop student potential optimally.

Based on the self-assessment of prospective teacher students participating in the second schooling field introduction program, it was found that 87% of students had mastered pedagogic competencies. In comparison, 13% of students still had to learn more so that during the implementation of the schooling field introduction program they could master all aspects and assessment indicators, especially in competency assessment pedagogic.

The results of this study indicate that self-assessment instruments for pedagogic competence in the second schooling field introduction program need to be applied to train students to self-evaluate regarding students understanding abilities, learning design, learning implementation, learning evaluation, and aspects of developing students' potential. Equally important are supervisors, tutors, and managers of the school field introduction program periodically reviewing self-assessment instruments that align with developments in science and technology so that faculties and universities can prepare graduates of qualified prospective teaching staff with high competitiveness.

4. Conclusion

This research aims to produce a self-assessment instrument to measure pedagogical competence in the second school field introduction program. The self-assessment instrument includes five assessment aspects: student understanding, learning design, learning implementation, learning evaluation, and developing student potential. The results of the validation test of the self-assessment instrument with the Content Validity Index (CVI) to determine how big the content validity coefficient of the expert judgment shows a CVI value of 0.91 (almost perfect). These results indicate that the self-assessment instrument developed reflects indicators of pedagogical competence, especially in the second school field introduction program.

The results of the self-assessment trial of pedagogical competence showed that for the aspect of student understanding, the average score was 4.35 (87%), the learning design aspect averaged 4.45 (89%), the learning implementation aspect averaged 4.32 (86.4%), the learning evaluation aspect averaged 4.25 (85%), and the student potential development aspect averaged 4.40 (88%). Based on the recapitulation of pedagogical competency assessments, it shows that the average pedagogical competency score for prospective teacher students participating in the school field introduction program II is 4.35. This means 87% of the 58 selected sample students can be categorized as having students' pedagogical competence in the very good category.

5. References

Abun, D., Magallanes, T., Marlene, T. N., Fredoline, J. P., & Madamba, M. B. (2021). Effect of attitude toward work environment on the employees' work self-efficacy. International Journal of Research in Business and Social Science (2147- 4478), 10(7), 129–141. https://doi.org/10.20525/ijrbs.v10i7.1459.

Andrade, H., & Du, Y. (2007). Student responses to criteria referenced self-assessment. Assessment and Evaluation in Higher Education, 32(2), 159–181.

https://doi.org/10.1080/02602930600801928.

Andryukhina, L. M., Dneprov, S. A., Sumina, T. G., Zimina, E. Y., Utkina, S. N., & Mantulenko, V. V. (2016). The model of monitoring of vocational pedagogical competencies of professors in secondary vocational education. International Journal of Environmental and Science Education, 11(14), 7016–7034.

Beumann, S., & Wegner, S. A. (2018). An outlook on self-assessment of homework assignments in higher mathematics education. International Journal of STEM Education, 5(1). https://doi.org/10.1186/s40594-018-0146-z.

Bright, R. L., & Gideonse, H. D. (1968). Research and development strategies. The Journal of Experimental Education, 37(137–145). https://doi.org/https://doi.org/10.1080/00220973.1968.11011101.

Budiastuti, E., Sugiyem, & Puad, F. N. A. (2023). Developing Self-Assessment Instruments To Measure Students' Performance Characters in Making Dresses Using A High-Order Thinking Skills Approach. Cakrawala Pendidikan, 42(1), 254–263. https://doi.org/10.21831/cp.v42i1.52225.

Dimaculangan, K. A., Hadji Abas, H., & Quinto, C. S. (2022). Narrative Study of Teaching Strategies and Challenges Encountered by Teachers in Synchronous Online Classes. International Journal of Social Learning (IJSL), 2(2), 201–216. https://doi.org/10.47134/ijsl.v2i2.113.

Eka Tuah, Y. A., Sudira, P., Mutohhari, F., & Kusuma, W. M. (2021). The Competency of Pedagogic and Professional Vocational Teachers in Implementing 21st Century Skill-Based Learning. Jurnal Pendidikan Dan Pengajaran, 54(2), 244. https://doi.org/10.23887/jpp.v54i2.35336.

Emiliasari, R. N. (2018). An Analysis Of Teachers' Pedagogical Competence In Lesson Study Of Mgmp Smp Majalengka. ELTIN JOURNAL, Journal of English Language Teaching in Indonesia, 6(1), 22. https://doi.org/10.22460/eltin.v6i1.p22-33.

Farisi, M. I. (2012). Development of student self-assessment as a model for evaluation and character development of paper. Yogyakarta: UNY Press.

Grabe, W., & Stoller, F. L. (2019). Action Research Projects. In Teaching and Researching Reading (pp. 246–262). Licoln. https://doi.org/10.4324/9781315726274-11.

Hartini, S., Putra Bhakti, C., Hartanto, D., & Alfarizqi Nizamuddin Ghiffari, M. (2018). Teacher Pedagogic Competency Development Model: A Literature Review. Atlantis Press. https://doi.org/10.2991/aecon-18.2018.40.

Hearn, J., & McMillan, J. H. (2008). Student Self-Assessment: The Key to Stronger Student Motivation and Higher Achievement. Educational Horizons, 87(1), 40–49. Retrieved from https://www.jstor.org/stable/42923742.

Ismuratova, S. I., Slambekova, T. S., Kazhimova, K. R., Alimbekova, A. A., & Karimova, R. E. (2018). Model of forming future specialists' research competence. Espacios, 39(35), 24–34. https://doi.org/https://www.revistaespacios.com/a18v39n35/a18v39n35p24.pdf.

Kartowagiran, B., Wibawa, E. A., Alfarisa, F., & Purnama, D. N. (2019). Can student assessment sheets replace observation sheets? Cakrawala Pendidikan, 38(1), 33–44. https://doi.org/10.21831/cp.v38i1.22207.

König, J., Blömeke, S., Jentsch, A., Schlesinger, L., née Nehls, C. F., Musekamp, F., & Kaiser, G. (2021). The links between pedagogical competence, instructional quality, and mathematics achievement in the lower secondary classroom. Educational Studies in Mathematics, 107(1), 189–212. https://doi.org/10.1007/s10649-020-10021-0.

Landis, J. R., & Koch, G. G. (1977). The Measurement of Observer Agreement for Categorical Data. Biometrics, 33(1), 159. https://doi.org/10.2307/2529310.

Lapoule, P., & Lynch, R. (2018). The case study method: exploring the link between teaching and research. Journal of Higher Education Policy and Management, 40(5), 485–500. https://doi.org/10.1080/1360080X.2018.1496515.

Lias, N., Lindholm, T., Pohjanoksa-Mäntylä, M., Westerholm, A., & Airaksinen, M. (2021). Developing and piloting a self-assessment tool for medication review competence of practicing pharmacists based on nationally set competence criteria. BMC Health Services Research, 21(1). https://doi.org/10.1186/s12913-021-07291-6.

Lozano, R., Merrill, M. Y., Sammalisto, K., Ceulemans, K., & Lozano, F. J. (2017). Connecting competences and pedagogical approaches for sustainable development in higher education: A literature review and framework proposal. Sustainability (Switzerland), 9(10). https://doi.org/10.3390/su9101889.

Mahat, H., Norkhaidi, S. B., Saleh, Y., Hashim, M., Nayan, N., Said, Z. M., … Hamid, N. (2022). A Study on the Responsibility of Environmental Ethics among Secondary School Students in the 21st Century. International Journal of Educational Methodology, 8(3), 585–593. https://doi.org/10.12973/ijem.8.3.585.

Maksymchuk, B., Matviichuk, T., Solovyov, V., Davydenko, H., Soichuk, R., Khurtenko, O., Maksymchuk, I. (2020). Developing Healthcare Competency in Future Teachers. Revista Romaneasca Pentru Educatie Multidimensionala, 12(3), 24–43. https://doi.org/10.18662/rrem/12.3/307.

Mâţă, L., Cmeciu, D., & Ghiaţău, R. M. (2013). A Reference Framework of Pedagogical Competences of Language Teachers in the Initial Training Programmes. Procedia - Social and Behavioral Sciences, 93, 648–653. https://doi.org/10.1016/j.sbspro.2013.09.255.

Matlab Mukhamadovna, T., Aziza Sharipovna, H., & Supkhonovna, H. N. (2020). The System Of Development Of Professional Competence In Future Primary School Teachers. Journal of Critical Reviews, 7(13), 4184–4189.

Muñoz Carril, P. C., Sanmamed, M. G., & Hernández Sellés, N. (2013). Pedagogical roles and competencies of university teachers practicing in the E-learning environment. International Review of Research in Open and Distance Learning, 14(3), 462–487. https://doi.org/10.19173/irrodl.v14i3.1477.

Pahrudin, P., Martono, T., & Murtini, W. (2016). The Effect of Pedagogic Competency, Personality, Professional and Social Competency Teacher to Study Achievement of Economic Lesson in State Senior High School of East Lombok District Academic Year 2015/2016. International Conference On Teacher Training and Education Sebelas Maret University, 2(1), 332–345. Retrieved from http://suarakita.com/artikel.

Samusevica, A., & Striguna, S. (2017). The Development of Teachers' Pedagogical Competence in The Process of Self-Education at The University. International Conference on Lifelong Learning

and Leadership, 3(2), 39–46.

Sopandi, W., & Handayani, H. (2019). The Impact of Workshop on Implementation of Read-Answer-Discuss-Explain-And-Create (RADEC) Learning Model on Pedagogic Competency of Elementary School Teachers. International Conference of Innovation in Education (ICoIE), 178(ICoIE 2018), 7–11. https://doi.org/10.2991/icoie-18.2019.3.

Suciu, A. I., & Mata, L. (2011). Pedagogical Competences – The Key to Efficient Education. International Online Journal of Educational Sciences, 3(2), 411–423. Retrieved from www.iojes.net.

Sudargini, Y., & Purwanto, A. (2020). the Effect of Teachers Pedagogic Competency on the Learning Outcomes of Students. Journal of Industrial Engineering & Management Research (Jiemar), 1(4), 2722–8878. https://doi.org/10.7777/jiemar.

Supriyadi, E., Zamtinah, Soenarto, S., & Hatmojo, Y. I. (2019). A character-based assessment model for vocational high schools. Cakrawala Pendidikan, 38(2), 269–280. https://doi.org/10.21831/cp.v38i2.24099.

Susanto, R., Agustina, N., Azmi, Y., & Rachbini, W. (2021). Pedagogic Competency Model: Development from The Point of View of The Initial Characteristics of Teachers, Involvement with Organizations and Competency Development Strategies. Review of International Geographical Education Online, 11(8), 826–841. https://doi.org/10.48047/rigeo.11.08.72.

Susanto, R., Rozali, Y. A., & Agustina, N. (2019). Development of pedagogical competency models for elementary school teachers: Pedagogical knowledge, reflective ability, emotional intelligence and instructional communication pattern. Universal Journal of Educational Research, 7(10), 2124–2132. https://doi.org/10.13189/ujer.2019.071010.

Syahmaidi, E., Hidayat, H., Hartanto, S., & Fitri Rahmadani, A. (2021). Designing E-Training Computer Assisted Instruction Used to Pedagogic Competency in Vocational Education. Journal of Physics: Conference Series, 1779(1). IOP Publishing Ltd. https://doi.org/10.1088/1742-6596/1779/1/012038.

Syahrial, S., Asrial, A., Kurniawan, D. A., Chan, F., Pratama, R. A., Nugrogo, P., & Septiasari, R. (2019). The impact of etnocontructivism in social affairs on pedagogic competencies. International Journal of Evaluation and Research in Education, 8(3), 409–416. https://doi.org/10.11591/ijere.v8i3.20242.

Widoyoko, S. E. P. (2014). Penilaian Hasil Pembelajaran di Sekolah. Yogyakarta: Pustaka Pelajar.

Yildiz, A. (2018). The Factors Affecting Techno-Pedagogical Competencies and Critical Thinking Skills of Preservice Mathematics Teachers. MOJES: Malaysian Online Journal of Educational Sciences, 5(2), 66–81. Retrieved from https://vmis.um.edu.my/index.php/MOJES/article/view/12625.

Yusnita, Y., Eriyanti, F., Engkizar, E., Anwar, F., Putri, N. E., Arifin, Z., & Syafril, S. (2018). The Effect of Professional Education and Training for Teachers (PLPG) in Improving Pedagogic Competence and Teacher Performance. Tadris: Jurnal Keguruan Dan Ilmu Tarbiyah, 3(2), 123. https://doi.org/10.24042/tadris.v3i2.2701.

Zammi, M., Susilaningsih, E., & Supardi, K. I. (2018). Pengembangan Instrumen Self-Assessment untuk Meningkatkan Keterampilan Laboratorium Calon Guru Kimia. Jurnal Profesi Keguruan,

4(1), 37–41. Retrieved from https://journal.unnes.ac.id/nju/index.php/jpk.

Zannierah, S., Marzuki, S., Mokdad, M., Novianto, V., & Buyong, S. Z. (2024). Instrument Feasibility Study on Entrepreneurial Perspective of China ' s Soft Power on Tourism Diffusion in Malaysia. 10(3), 109–115.