



FIG WORKING WEEK 2023

28 May - 1 June 2023 Orlando Florida USA

Protecting
Our World,
Conquering
New Frontiers

Presented at the FIG Working Week 2023,
28 May - 1 June 2023 in Orlando, Florida, USA

Integrated Cadastre Mapping Training through Blended Learning Method as part of Corporate University Initiative

Challenge and Opportunity in Ministry of Agrarian Affairs and Spatial Planning/ National Land Agency Indonesia

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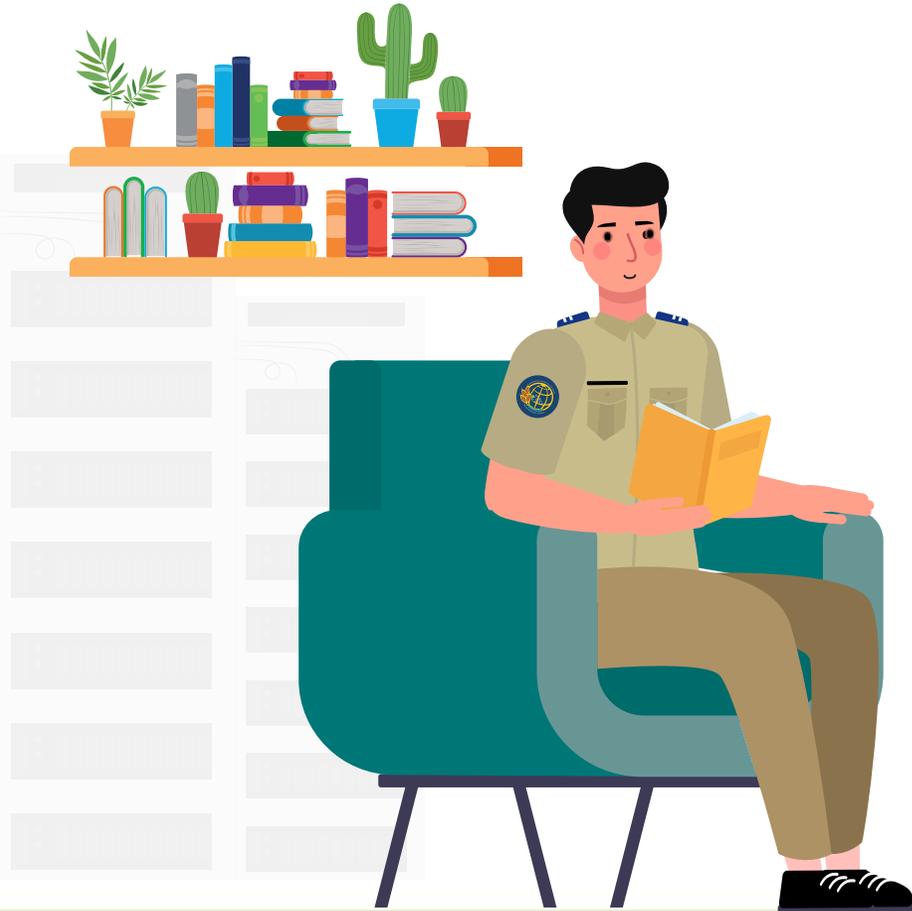


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OUTLINE

01. Overview

02. Research Methods

03. Results and Discussion

04. Conclusion

01. OVERVIEW

Why is Integrated Cadastre Mapping important?



Indonesia, with approximately 126 million land parcels, has been conducting its national land registration since 1960.



The number of land parcels will continue to increase every year due to the ongoing systematic land registration (PTSL) process. It is expected that all parcels will be registered by the year 2025.



The successful implementation of PTSL relies on four essential components: **manpower, materials, finances, and methodology.**



In order to enhance the competencies of human resources, the Ministry of ATR/BPN has adopted a comprehensive strategy, which includes the establishment of the **ATR/BPN corporate university**



Integrated Cadastre Mapping Training through **Blended Learning methodology** plays a significant role within this framework.



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The ATR/BPN corporate university serves as a systematic and all-encompassing Organizational Learning Program that supports the realization of the vision and mission of ATR/BPN. It fosters a continuous learning process throughout the career of civil servants, applying best practices to improve the performance of work units in achieving organizational goals.

To support the infrastructure of the ATR/BPN corporate university, the Directorate General of Land and Spatial Surveys and Mapping plays a crucial role through its Business Institute known as SPPR Institute. This institute is responsible for identifying competency development needs, developing learning resources, and conducting post-implementation evaluations of competency development programs.



The primary objective of Integrated Cadastre Mapping is to ensure accurate and precise cadaster surveying and mapping by integrating photogrammetric and terrestrial methods using the land administration system (Geo KKP).



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Conditions Before and After the Integrated Cadastre Mapping Training

ISSUES BEFORE THE TRAINING



Civil servants have low motivation and are still burdened with routine workloads in their respective land offices.



The quality of survey and mapping data is unclear, with residuals and anomalies present.



Improvement in measurement data and mapping control is necessary.

EXPECTED CONDITIONS AFTER THE TRAINING



The implementation reveals constraints, such as spatial data quality and a low level of competency among land surveyors.



Civil servant competency development and improvement in ATR/BPN performance are the primary objectives of the entire learning process at ATR/BPN CorpU.

02. RESEARCH METHODS

Methods

Qualitative
Descriptive



The Data Analysis Technique

Qualitative
Descriptive



Data

Primary Data :

- Participants evaluation results
- Evaluation of training
- Teacher evaluations
- Field observation

Secondary Data :

- Attendance Lists Of Participants
- Documentation Of Activities



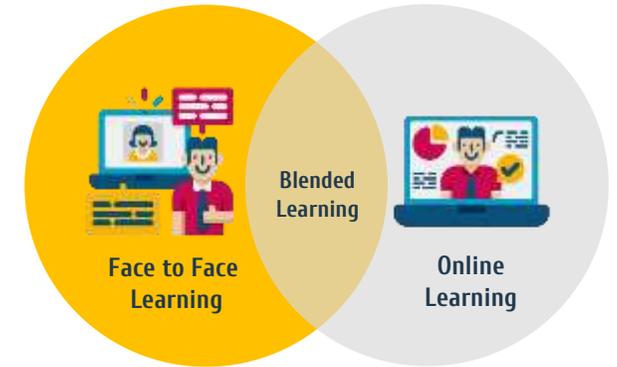
03. RESULT AND DISCUSSION

Blended Learning, in general, refers to a learning method that combines traditional (face-to-face) approaches with online media-based learning methods (e-learning). Blended learning practices enable interactions of both 'same-time different-place' and 'different-time different-place' nature.



The term "Blended Learning" was initially coined to describe the integration of e-learning with supplementary training solutions, such as job assistance, on-the-job training, or mentoring. It offers an alternative to classroom-based training, providing access to learning for students who are unable to physically attend classes.

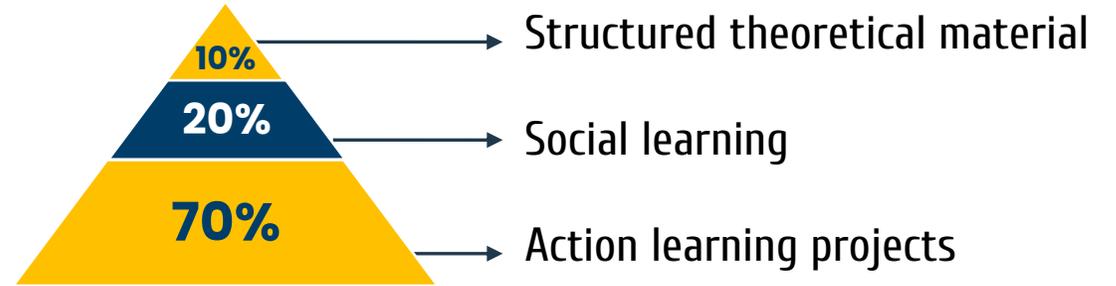
There are various statements about Blended Learning, and one example is the statement by Littlejohn and Pegler (2007). According to them, Blended Learning encompasses two learning settings: asynchronous learning and synchronous learning. Synchronous learning refers to a learning process that takes place simultaneously between learners and tutors/supervisors, even if they are not physically in the same location.



03. RESULT AND DISCUSSION

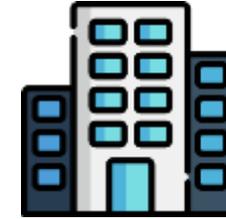


The Integrated Cadastre Mapping Training utilizes the 10:20:70 Learning Methodology.



The learning experience for participants in the basic level training has been well-structured to ensure easy and measurable knowledge acquisition. Participants are required to complete the entire series of activities in order to take the competency test and successfully complete the Basic Level Integrated Cadastre Mapping Training. To pass the training, participants must obtain a minimum score of 70.00.

We have a total of 3,689 participants enrolled in the Basic and Advanced Integrated Cadastre Mapping Training.



HR Breakthrough

- Online education, through self-learning;
- Marathon training for Integrated Cadaster Mapping (by PPSDM for 3105 trainee);
- Increased competence and certification of Integrated Cadaster Mapping Basic, and Advance

Technology Breakthrough

- Using Learning Management System for each Trainee
- The use of the application in the GeoKKP
- Use of big data

Institutional Breakthrough

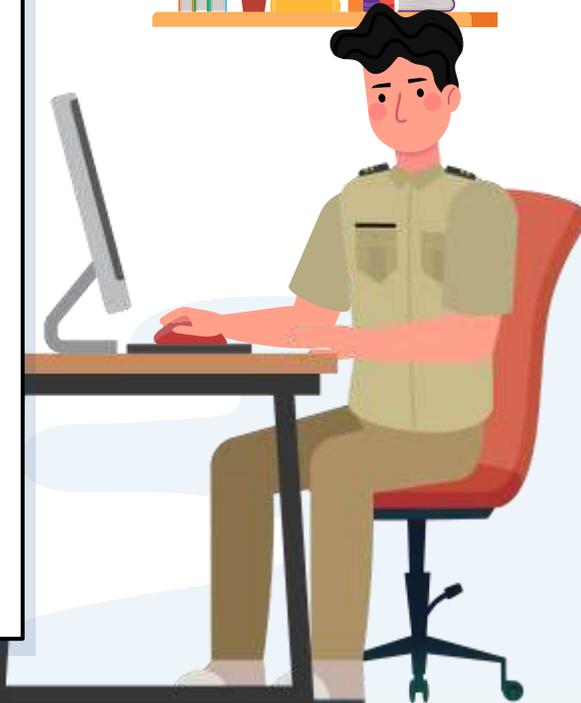
- Strengthening Cadaster integration mapping in Regional Office/Land Office;
- Strengthening the role of universities and professional surveyor in the preparation of Cadaster Mapping Integrated in Geo KKP
- The use of Cadastre Mapping Training as a basis for licensing and granting of surveyor

Basic Level Integrated Cadastre Mapping Training Purposes

Provide participants with knowledge and skills related to the integration of cadastre mapping and surveys, including understanding the precise accuracy requirements as per applicable cadastre mapping and survey regulations.

Advance Level Integrated Cadastre Mapping Training Purposes

Equip participants with knowledge and skills regarding the process of integrating land parcel measurement mapping using both Photogrammetric and terrestrial methods within the GeoKKP system.



Learning Stage Basic Level Integrated Cadastre Mapping Training

- 1 Participants log in to the LMS Ppsdm.atrbpn.go.id



- 2 E-Learning with LMS



- 3 Competency Test



Learning Stage Advanced Level Integrated Cadastre Mapping Training

- 1 Participants log in to the LMS Ppsdm.atrbpn.go.id



- 2 E-Learning with LMS



- 3 Distance Learning



- 4 Experiential Learning (Action Learning Project)



- 5 Mentoring



- 6 Project Submissions



Training Curriculum Basic Level Integrated Cadastre Mapping Training

Days	Material	Lesson Hours
1	Overview of Training Policy	1
	Institute Substantive Technical Content	1
	Basic Concepts of Measurement Accuracy and Mapping Accuracy	
	Mindset Changes in Integrated Cadastre Mapping	1
	Level of Accuracy of Measuring Instruments, Measurement Results, and Maps	1
2	How to find out the Accuracy of Observation, Measurement, and Mapping Results (determining points and tolerance points)	1
	Metadata and Implications of Measurement Accuracy and Land Boundary Mapping	1
	Retrieval of Field Data, Depiction of Measurement Results, and Boundary Returns	1
3	Integration of Cadastre Measurement Result Mapping	
	Base Map	1
	Base Map Utilization	1
	Measurement Result Mapping Integration	1
Total		10

Training Curriculum Advanced Level Integrated Cadastre Mapping Training

Days	Material	Lessons Hour	Method
1	Institution Substantive Technical Content Lectures	2	Distance learning-synchronous
	Overview of Training Policy	1	
	Submission of Practical Assignments	1	
2	Mapping Using Drone	2	Distance learning-Asynchronous
	Making a Work Map	2	
	Measurement of Allied Points and Boundary Points of Land	2	
	Block Adjustments	1	
	Integration of Complete Block Photogrammetry and Terrestrial Mapping Results with the GeoKKP Application	3	
3	Base Map Accuracy Test Obtained from satellite imagery/Aerial Photography/Drone	2	Distance learning-synchronous
	Utilization of Base Map for parcel Identification or Measurement	2	
	Block Adjustments	2	
4-5	Photogrammetric Practice 1: Base Map Accuracy Test obtained from satellite imagery/Aerial Photography/Drone	16	Off-Campus
	Terrestrial Practice 1: Creating a Work Map		

6	Practice, Rounding, Mentoring, and Submitting report	8	Distance learning-synchronous
7-8	Photogrammetric Practice 2: Utilizing a Base Map for Supplementation Identification or Measurement	16	Off-Campus
	Terrestrial Practice 2: Measurement of common ground points and boundary points of land parcels		
	Practice 3 Terrestrial: Block Adjustment		
9	Practice, Rounding, Mentoring, and Submitting report	8	Distance learning-synchronous
10	Photogrammetric Practice 3: Integration of complete block Terrestrial mapping results with the KKP Geo Application	8	Off-Campus
11	Practice 4 Terrestrial: Integration of complete block Terrestrial mapping results with the KKP Geo Application	7	Distance learning-synchronous
12	Practice, Roundup, and Mentoring	7	Off-Campus
Total		90	

Training Evaluation

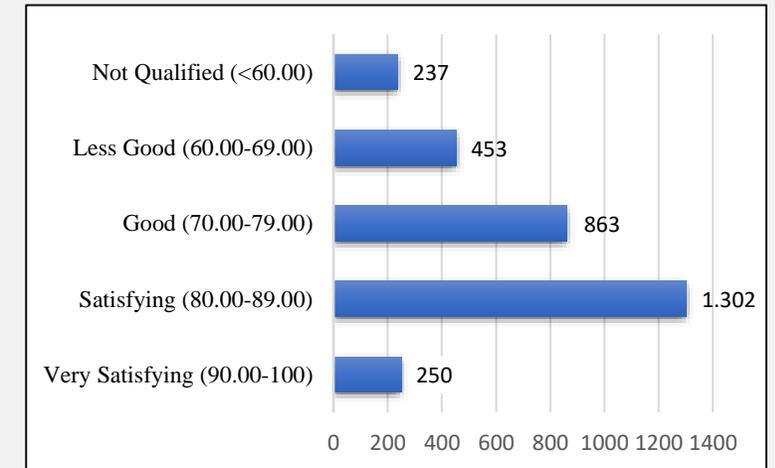
Basic Level Integrated Cadastre Mapping Training

Participants are required to complete the entire series of activities in order to be eligible to take the competency test and be considered as having completed the Basic Level Integrated Land Sector Mapping Training. To pass the training, participants must achieve a minimum score of 70.00

Evaluation of Basic Level Integrated Land Sector Mapping Training

Number of participants	Passed	Not pass	Pass Percentage
3689	2415	479	87%

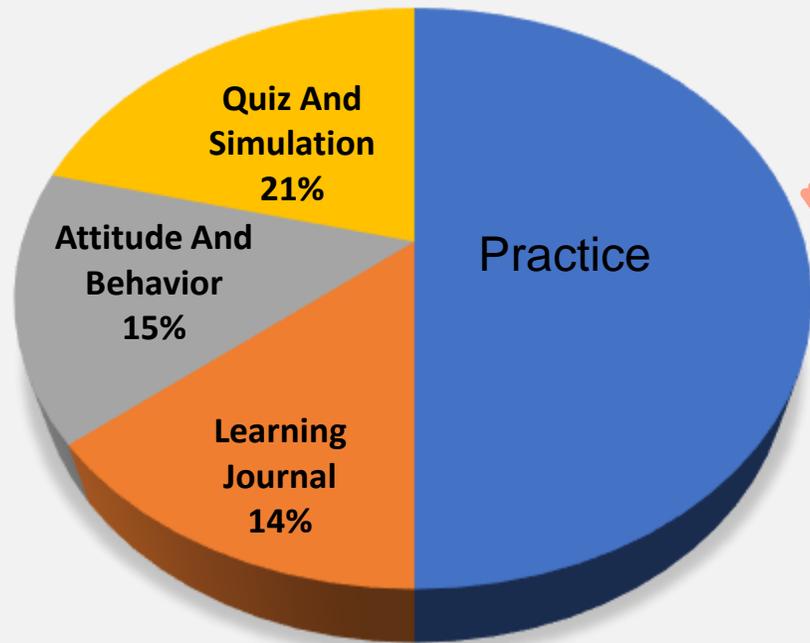
Details of Basic Level Integrated Mapping Training Evaluation Qualifications



Training Evaluation

Advance Level Integrated Cadastre Mapping Training

The assessment of participant graduation focuses on several aspects with the following assessment criteria:



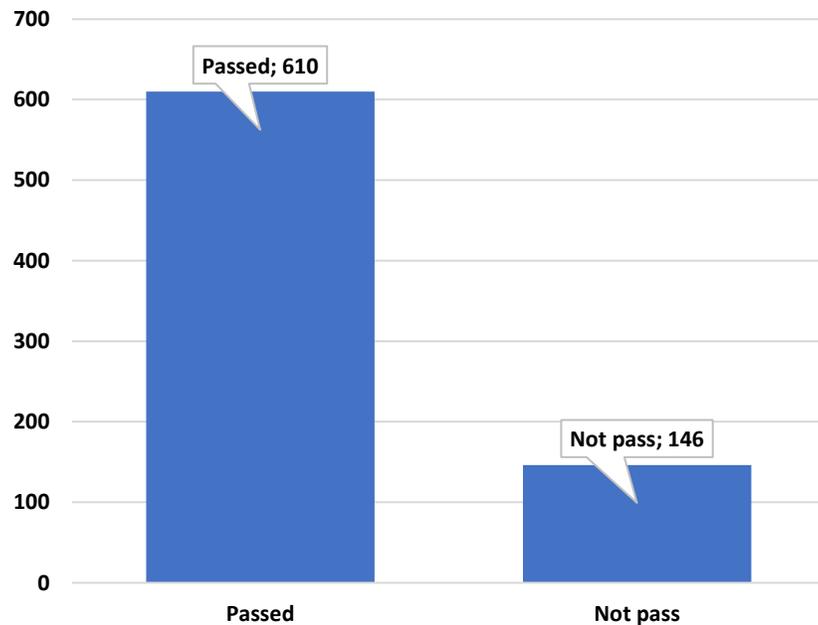
- Evaluation of Advanced Integrated Land Sector Mapping Training:

Data by Year	Number of participants	Passed	Not pass	Pass Percentage
2022	40	36	4	90%
2023	716	574	142	80%
Totally	756	610	146	81%

Training Evaluation

Advance Level Integrated Cadastre Mapping Training

- Evaluation of advanced integrated land sector mapping training



- Evaluation of training implementation

In 2022 and 2023, the Advanced Integrated Cadastre Mapping Training has been completed with a total of 756 participants, accounting for twenty nine percent (29%) of the total participants. It is expected to be completed by the end of 2023, with a target of two batches comprising 2,600 participants.

- Positive comments and suggestions from the participants

1. Participants expressed that the training program is an integral part of ATR/BPN's strategic actions to enhance Cadastre survey and mapping and improve the quality of spatial data.
2. They appreciated the ease of understanding and user-friendliness of the e-learning platform.
3. The alignment of training materials with learning objectives, effective teaching methods employed by the instructors, and the friendly approach of the organizing committee were highlighted as indicators with the highest scores in the evaluation of training implementation by the participants.

04. CONCLUSIONS



- The implementation reveals the presence of constraints such as spatial data quality and low-level competency among land surveyors.
- ATR/BPN CorpU has been selected as a strategic tool that integrates diverse learning resources, processes, and human resources within ATR/BPN. This enables the attainment of optimal performance by continually enhancing the knowledge, skills, and behavioral resources of human personnel in the land offices.
- The development of civil servant competencies and the improvement of ATR/BPN performance are the primary objectives of the entire learning process at ATR/BPN CorpU
- Further enhancements to the existing IT infrastructure at the Center for Human Resource Development (PPSDM) are deemed necessary.
- To enhance the competency of civil servant land surveyors, it is recommended to implement microlearning and webinars as part of the blended learning training approach.



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THANK YOU

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