CENTRAL TEACHING INNOVATION FUND

FINAL REPORT

[Integration of Andragogy and Peeragogy learning methods to improve real case-based learning at UT Corporate Master Class: case of Technopreneurship course, TECHNOPRENEURSHIP N190-2MMELA]

COURSE REPRESENTATIVES (CR)

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Academic Development Center

2024/2025

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A. Title Page

Title of Proposal	: Integration of *Andragogy* and *Peeragogy* learning methods to improve real case-based learning at UT Corporate Master Class: case of Technopreneurship course
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Date: May 19, 2025

Course Representative	Head of Program Study	Dean of Faculty
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1. PROJECT SUMMARY

1.1. LECTURER'S ASPIRATION

Teaching adult students in master program is a challenging task because they already have previous experience and knowledge within themselves. Students' knowledge levels can range from Factual to metacognitive according to their experiences and previous assignments (Anderson & Krathwohl et al, 2016). In terms of cognitive domain, Bloom's Taxonomy, students also vary from Low-Order Thinking Skills (LOTS) and Higher-Order Thinking Skills (HOTS) (Anderson & Kratwohl, 2001). Therefore, it is a challenge to increase the level of knowledge and cognitive domain of students without sacrificing the interest and excitement of other students who already have a higher level of knowledge and cognitive domain. Therefore, innovative teaching and learning methods must be developed so that all students can achieve their learning goals, namely increasing the cognitive domain and level of knowledge for students who have limited work experience and exposure as well as restructuring knowledge for students who have work experience and high exposure so that it is easier for them to accessing knowledge to improve thinking performance.

1.2. BACKGROUND

The corporate class master's program is a master's program that is specifically designed to meet the needs and requirements of a company as well as mandatory government requirements. In this case study, the corporate class master's program was a Multi-Discipline Master's Program (MDMP) which combined professional and academic strengths (Baskoro et. al., 2024). It was designed to develop corporate master students to become "T" shaped person by improving cognitive domain towards Higher-Order Thinking Skills (HOTS) as well as improving knowledge level up to metacognitive (Baskoro et. al., 2024, Baskoro & Mariza, 2024)

1.3. OBJECTIVES

To develop the cognitive domain and level of knowledge, a combination of Adragogy and Peeragogy teaching and learning methods was applied. (Baskoro et. al., 2024). The combined teaching method of andragogy and peeragogy was applied in Technopreneurship course with Learning Outcomes (CMPK) being the ability to apply the Business Model Canvas (BMC) in developing a near-real business. Andragogy (Self-directed Adults learning) is a method of learning that encourages learners to be independent/self-directed learning process to solve problems. The learning process is influenced by backgrounds, prior knowledge and experience. Therefore, the purpose of learning is for competency development. Peeragogy (Co-learning & Co-Creating) is a learning method that focuses on co-learning and co-creating using case/problem/project-based learning

(Baskoro et. al., 2024).

The expected impact was that students will learn and absorb HOTS cognitive domain and metacognitive knowledge levels using the coaching method with senior students as their coaches or mentors.

1.4. KEY ACTIVITIES

To achieve CMPK, the ability to apply the Business Model Canvas (BMC) in developing a near-real business, the following objectives were implemented in class:

1. A teaching and learning process gathered in a group led by a group leader
2. The groups were coached by the senior students
3. Each groups developed a near-real business case studies with its mentor
4. The group leader grades the performance of its members
5. The coaches assessed the overall teaching and learning performance and provided recommendations for improving teaching and learning.

2. TEACHING INNOVATION IMPLEMENTATION

2.1 Project Activities

- Steps taken to implement the project.
    1. Developing concept
    2. Developing class scenarios
    3. Executing scenarios in class
    4. Controlling class according to the scenarios
    5. Class evaluation

- Timeline and key milestones.

Preparation	Meet 1	Meet 2	Meet 3	Meet 4	Meet 5	Meet 6	Meet 7	Evaluation
Concept & Scenarios	Introd-uction	Execution scenarios in class					Final	Evaluation

2.2 Challenges & Solutions

- Challenges faced during implementation.
  During the implementation of the concept in the classroom, there were technical challenges especially related to the distribution of students in terms of experience, professional position, seniority, age, and gender. This condition has caused a gap in students' prior knowledge, which led to one-way communication.

While the *Peeragogy* method requires peer-to-peer learning through multi-way communication. Similarly, the *Andragogy* method requires communication without distance between students which means an egalitarian principle. The egalitarian principle means that every student is equal regardless of background, social and professional status, gender, etc. This may be awkward for students if their superiors are studying in the same class and subject.

- How these challenges were addressed.

  To overcome these challenges therefore class has been designed as the following (Fig. 1):

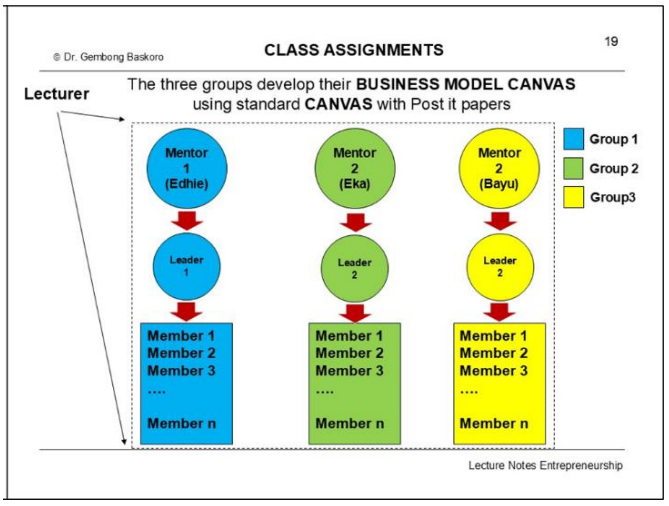

Figure 1. Class Design

The seniors/ superiors with position of directors at the company assigned as Mentors. While group leaders were students with position of General Manager at the company. The rest will be the mentees or group members.

3. OUTCOMES

This subsection details how the success and effectiveness of the teaching innovation will be assessed, including:

- **Metrics to measure outcomes.**
  Student Engagement:
  The combination of *Andragogy* and *Peeragogy* learning methods has significantly improved student engagement. This was seen in class dynamics and discussions because there was no distance between students even though they were in different professional positions in the company. Students were able to freely engage each other.

- **Learning Outcome:**

1. *Student Grade*

No	COURSES	SKS	GRADE (in number of Person)						
			A	A-	B+	B	B-	C	D
1	Technopreneurship	2	20	4	0	0	0	0	0
2	Algorithm Programming	2	11	6	3	2	2	0	0
3	Machine Dynamics	2	1	11	9	3	0	0	0
4	Quality, Reliability, and Maintenance	2	24	0	0	0	0	0	0
5	Industrial Electronics	2	13	11	0	0	0	0	0
6	Finance Engineering	2	24	0	0	0	0	0	0

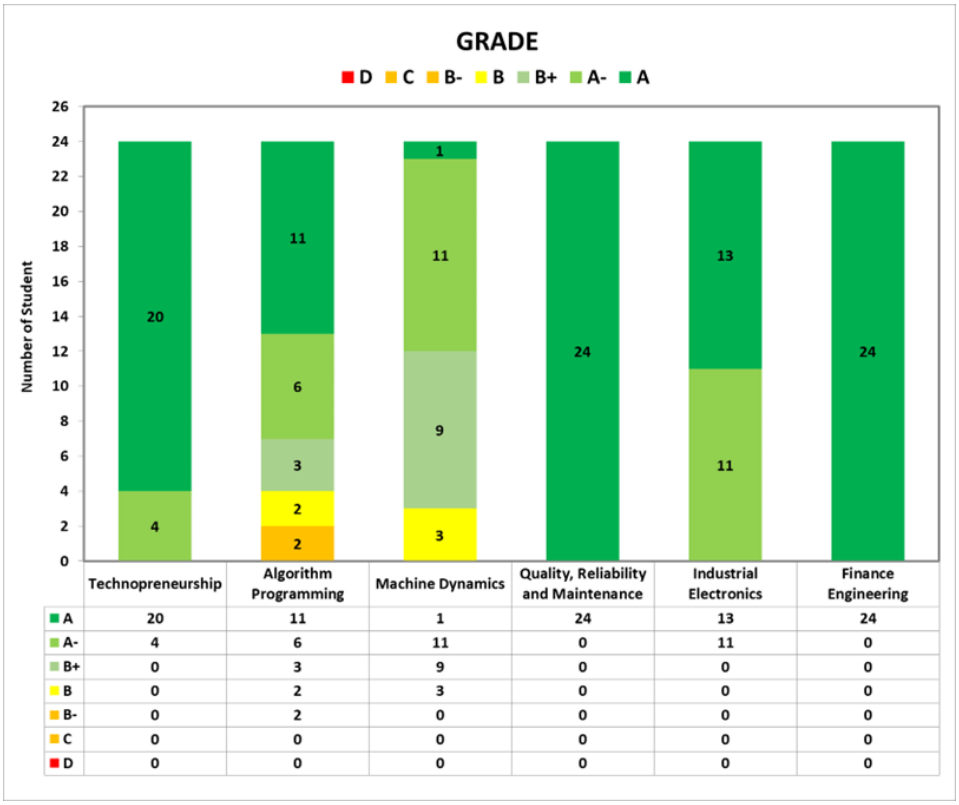

Figure 2. Grade

2. *Class Attendance*

NO	COURSE	SKS	ABSENTEEISM (In Percentage)			
			Permission	Sickness	Absent	To
1	Technopreneurship	2	25,0%	8,3%	0,0%	33
2	Algorithm Programming	2	41,7%	0,0%	0,0%	41
3	Machine Dynamics	2	33,3%	8,3%	0,0%	41
4	Quality, Reliability, and Maintenance	2	12,5%	8,3%	4,2%	25
5	Industrial Electronics	2	25,0%	8,3%	8,3%	41
6	Finance Engineering	2	37,5%	4,2%	8,3%	50
AVERAGE			**29,2%**	**6,3%**	**3,5%**	**38**

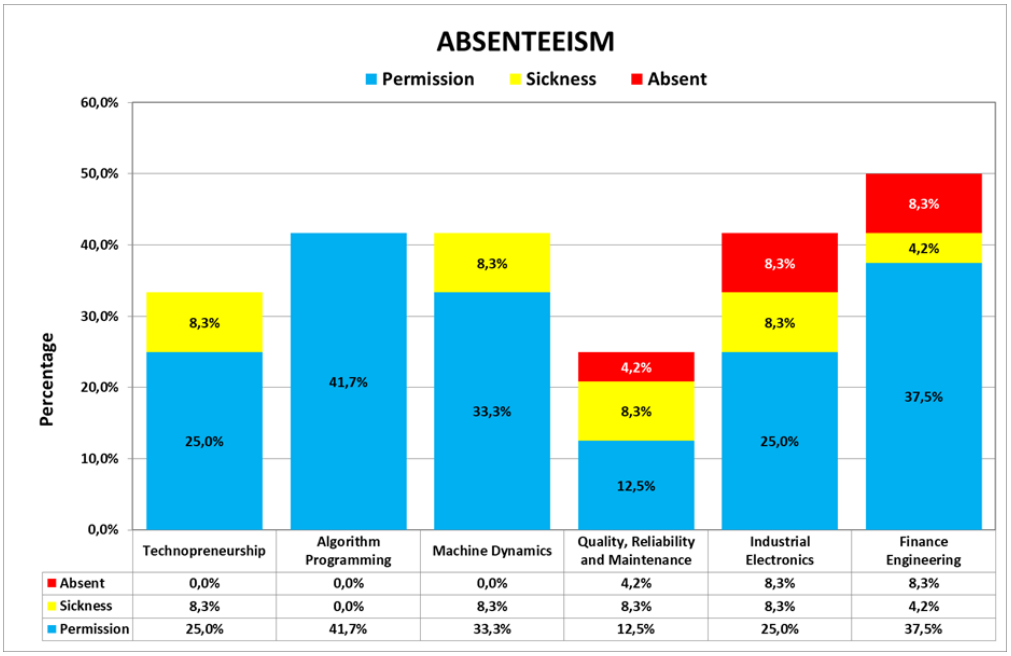

Figure 3. Class Attendance

- **Publication**

  Gembong Baskoro, *"Designing a Master Program to Cope with the New and Next Normal (VUCA World, Industry 4.0, and Covid 19): a case study"*, International Conference on Management of Technology, Innovation, and Project (MOTIP) 2020, IPTEK Proceedings Series No. (X) (2020), ISSN (2354-6026), July 2020 (Best Paper Award)

4. BUDGET REALIZATION *(if applicable)*

No Budget for this activity

5. SEMESTER LEARNING PLAN

Semester Learning Plan (SLP) as attached

Appendices

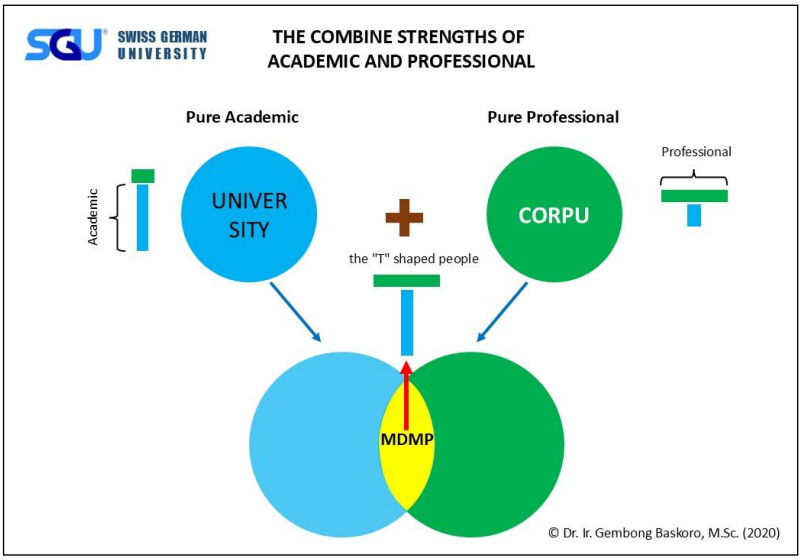

Figure 4. Concept of Multi-Disciplinary Master Program (MDMP)

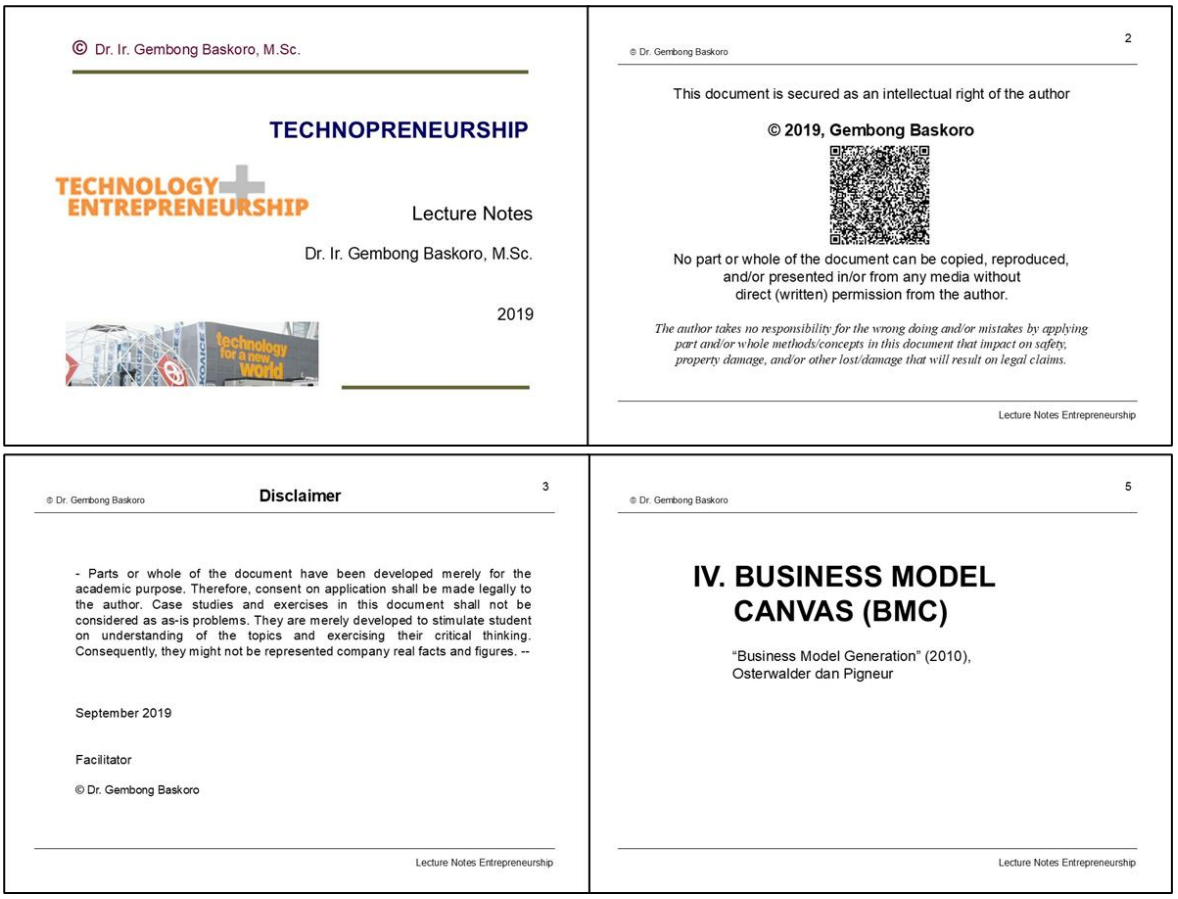

Figure 5. Technopreneurship Course with topic of Business Model Canvas (BMC)

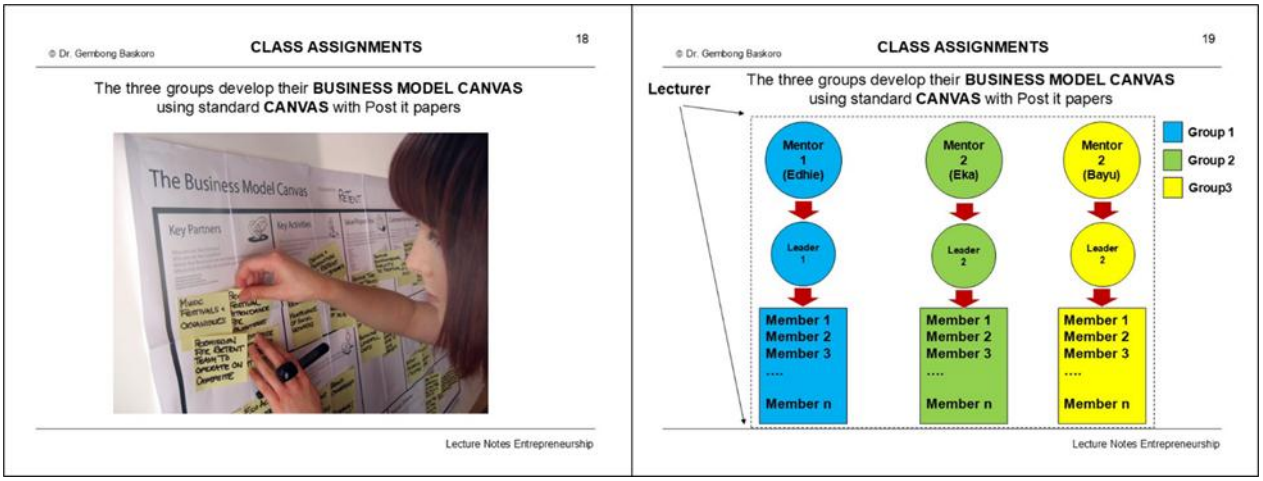

Figure 6. Group Assignment

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INDIVIDUAL ASSIGNMENTS

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Each of you to make an Essay or (Conference) Paper from one of the topic below

- **Business Strategy**
- **Business Model Canvas**
- **Business Plan**

The paper will be graded as **FINAL EXAM**

DUE: November 5, 2019

Lecture Notes Entrepreneurship

Figure 6. Individual Assignment and Exam

Class dynamic:

Group 1, Mentor Edhie

Group 2, Mentor Eka

Group 3, Mentor Bayu

The Dynamic of Technopreneurship class
Discussion between lecturer-mentors and class visit by UT CEO

References

Anderson LW, Kratwohl DR. A Taxonomy for Learning, Teaching and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. Leslie Owen Wilson; 2016.

Anderson LW, Kratwohl DR. Bloom's Taxonomy Revised: Understanding the New Version of Bloom's Taxonomy. New York: Longman; 2001.

Baskoro, G. Designing a Master Program to Cope with the New and Next Normal (VUCA World, Industry 4.0, and Covid 19): a case study, International Conference on Management of Technology, Innovation, and Project (MOTIP) 2020, IPTEK Proceedings Series No. (X) (2020), ISSN (2354-6026), July 2020 (Best Paper Award)
https://doi.org/10.12962/j23546026.y2020i3.11078

Baskoro G, Sarwono E, Handajani ET, Hendriana D. Graduate Study with Online Education in the Post-Pandemic Era: An Experiential Case Study in International Conference on Engineering Management and Sustainable Innovative Technology, KnE Social Sciences, pages 165–180. ; 2024.
https://doi.org/10.18502/kss.v9i10.15723

Baskoro G, Mariza I. The Needs to Develop Human Resources from T- to X-Shaped Person to Attain and Maintain Industrial Sustainability and Competitiveness, International Conference on Digital, Social, and Science, Vol.1 No. 1; 2024; ISSN 3063-3303. https://doi.org/10.62201/icodss.v1i01.150

SWISS GERMAN UNIVERSITY	**Semester Lecturing Plan** **(Rencana Pembelajaran Semester)** **Technopreneurship** **(N190-2MMELA)**	No. Doc: N190-2MMELA Date : 15 January 2021 Page :1

Course Identity:

Course Name : Technopreneurship
Course Code : N190-2MMELA
Rumpun MK (Cluster) : Mechanical Engineering
Study Program
Faculty : Engineering and IT
Semester : 2
Credits/ECTS : 2
Course Status : Mandatory
OFSE : No

Prerequisite/s : No
Applied for Batch Year :

Primary References: T. N. Duening, R. D. Hisrich, and M. A. Lechter, Technology Entrepreneurship, 2nd Edition Elsevier, 2015

Additional References:
John Bessant and Joe Tidd, Innovation and Entrepreneurship, 3rd Edition Wiley 2015
Mark W Johnson, Seizing The Whitespace, HBS Publishing, 2010
Nancy Richter, Paul Jackson, Thomas Schildhauer, Entrepreneurial Innovation and Leadership, Palgrave Macmillan, 2018

Learning Outcomes (Capaian Pembelajaran Program Studi) - CPPS – orientasi pada 4 ranah SKPI	Code N190-2MMELA	Description This course focuses on a entrepreneurial spirit, concept, and strategy especially related to technology base. This course will not teach the students to be able to develop new theories. The focus to ensure students are able to assess and develop business ideas as well as a business plan that requires marketing strategy, business strategy, team management, and an effective communication skill.
Subject Learning Outcome (Capaian Pembelajaran Mata Kuliah – CPMK) – orientasi pada taksonomi bloom		a) To be able to analize and develop hidsight, insight, and foresight wrt Technopreneurship b) To be able to develop concept and roadmap for implementation of Technopreneurship c) To be able to develop business plan
Subject Description	This course elaborates entrepreneurial spirit, concept, and strategy especially related to technology base.	
Subject Contents	Overview of Technopreneurship, Character of Technopreneur, Determine Opportunity , Decisiveness (Ketegasan), Communication, Leadership and Motivation, Creativity and Innovation , Protecting IP, Quality Function Deployment, Marketing and Sales Strategy, Case Study and presentation of Business Plan, Finance, Performance Assessment, Organization Development and Behaviour.	

SWISS GERMAN UNIVERSITY	**Semester Lecturing Plan** **(Rencana Pembelajaran Semester)** **Technopreneurship** **(N190-2MMELA)**	No. Doc: N190-2MMELA Date : 15 January 2021 Page :2

Week	**Planned final ability** (Kemampuan Akhir yang Diharapkan) 3	**Study Materials/ Content** (Bahan Kajian) 4	**Learning Method and Time Allocation** (Metode Pembelajaran) 5 & 6	**Learning Experience (Pengalaman Pembelajaran)** 7	**Assessment Indicator** (Indikator Penilaian) 8	**Assessment Weight** (Bobot Penilaian) 8	**Reference** 9
1	• Student understand the big picture of the need of technological entrepreneur. • Student understand value of entrepreneur in technology area.	• Introduction and Overview of Technopreneurship	• Lecture • Class discussion	• Projector • White Board • Homeworks	• Class discussion participation • Homework		• Handbook • Class notes
2	• Understand the need of Character for an entrepreneur	• Character of Technopreneur	• Lecture • Class discussion	• Projector • White Board • Homeworks	• Class discussion participation • Homework		• Handbook • Class notes
3	• Ability to do SWOT analysis and define opportunity of business	• Determine Opportunity	• Lecture • Class discussion	• Projector • White Board • Homeworks	• Class discussion participation • Homework		• Handbook • Class notes
4	• Understand the importance of decisiveness to decide a problem	• Decisiveness (Ketegasan)	• Lecture • Exercise • Class discussion	• Projector • White Board • Homeworks	• Class discussion participation • Homework		• Handbook • Class notes

5	• Understand the importance and the method of communication	• Communication	• Lecture • Exercise • Class discussion	• Projector • White Board • Homeworks	• Class discussion participation • Homework		• Handbook • Class notes
6	• Understand the concept of lead-ership, the importance of leadership for an entrepreneur • Understand the motvation theory and able to define ways to motivate people	• Leadership • Entrepreneurial teams • Motivation	• Lecture • Exercise • Class discussion	• Projector • White Board • Homeworks	• Class discussion participation • Homework		• Handbook • Class notes
7	• Understand the importance of creativity and the concept of innova-tion as a strategy in technopreneurship	• Creativity and Innovation • What is creativity • Who is creative • How to enable creativity	• Presentation • Class discussion	• Projector • White Board	• Presentation • Class discussion participation		• Handbook • Class notes
8	• Understand the importance of IP. • Understand type of IP • Understand how to do record keeping	• IP Protection • Record Keeping • Patents • Copyright • Trademarrks	• Presentation • Class discussion	• Projector • White Board	• Presentation • Class discussion participation		• Handbook • Class notes
9	• Student able to define product that meets customer needs and requirments	• Quality Function Deployment	• Lecture • Exercise • Class discussion	• Projector • White Board • Assignment	• Class discussion participation		• Class Notes
10	• Understand the concept of sales and marketing. • Understand the concept of finance and able to read and analyze financial	• Marketing and Sales Strategy • Finance	• Lecture • Class discussion	• Projector • White Board • Thesis proposal submission	• Class discussion participation • Thesis proposal submission		• Class Notes

	report.						
11	• Understand the behavior of org-anzation and bale to develop a sustainable organization.	• Organization Development and Behaviour	• Presentation • Questions and answers • Discussion	• Projector • White Board	• Presentation • Questions and answers		Class Notes

Notes:

1) **Discovery learning** is an active process of inquiry-based instruction that encourages learners to build on prior knowledge through experience and to search for new information and relationships based on their interests.
2) **Reaction to a video** is an example of **active learning** because most students love to watch movies. The video helps the student to understand what they are learning at the time in an alternative presentation mode.
3) **Small group discussion** is an example of **active learning** because it allows students to express themselves in the classroom. It is more likely for students to participate in small group discussions than in a normal classroom lecture because they are in a more comfortable setting amongst their peers, and from a sheer numbers perspective, by dividing the students up more students will get opportunities to speak out.
4) **Instructional simulation,** also called an educational simulation, is a simulation of some type of reality (system or environment) but which also includes instructional elements that help a learner explore, navigate or obtain more information about that system or environment that cannot generally be acquired from mere experimentation.
5) **Cooperative learning** is the instructional use of small groups so that students work together to maximize their own and each other's learning. Cooperative learning may be contrasted with competitive and individualistic learning. The key difference between these teaching approaches is the way students' learning goals are structured

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