UNIVERSITY STUDENT'S CRITICAL THINKING: FACING THE CHALLENGES OF SOCIETY 5.0

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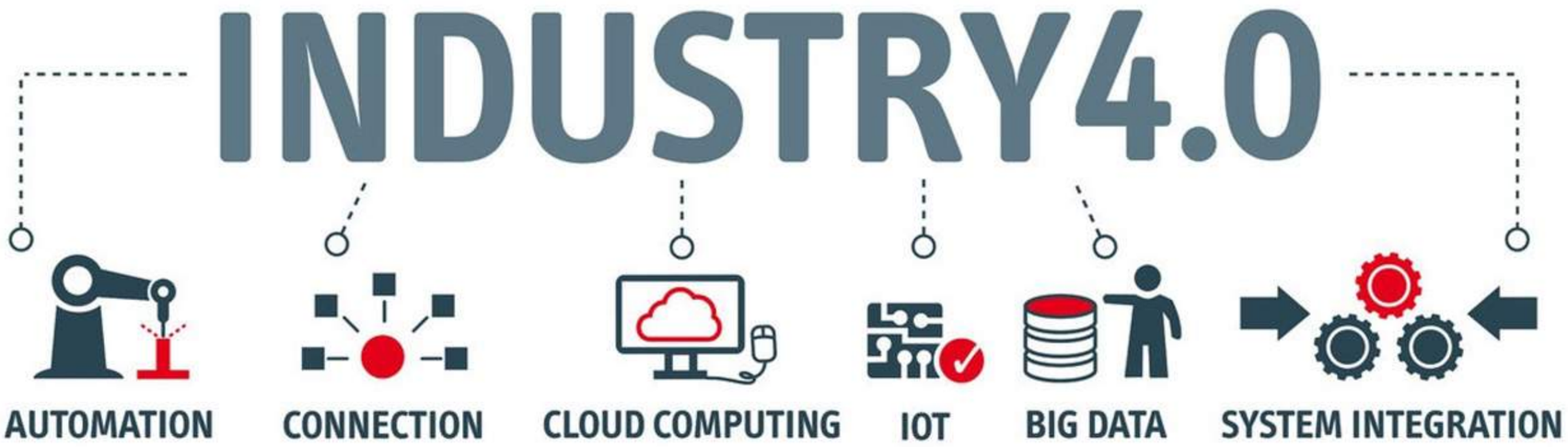
THE ESSENCE OF SOCIETY 5.0 in responding INDUSTRIAL REVOLUTION 4.0



INDUSTRIAL REVOLUTION 4.0

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TECHNOLOGICAL-CENTERED

SOCIETY 5.0

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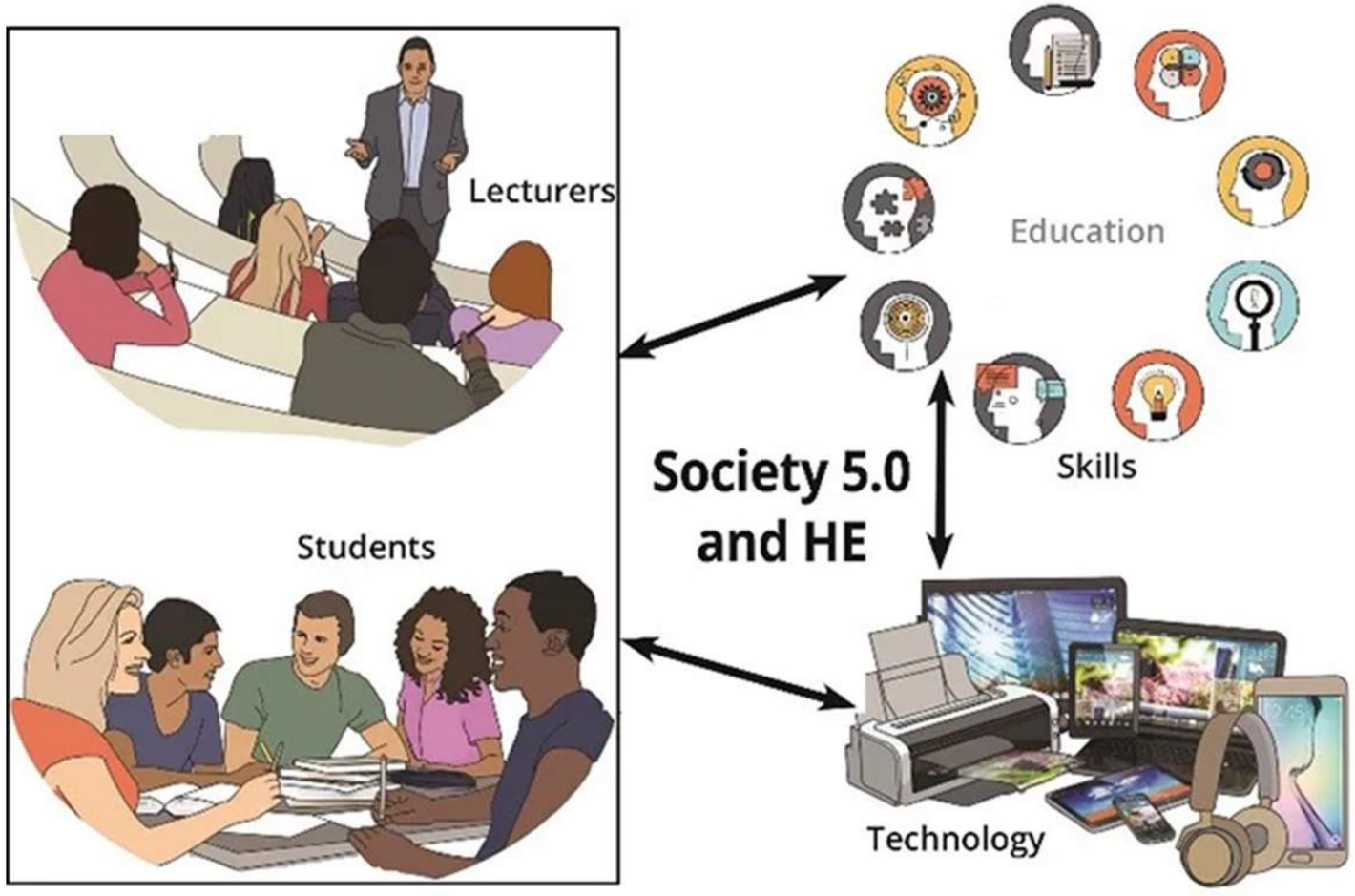
TECHNOLOGY & HUMAN BEING

In short,

Nowadays, technology evolves at such a rapid pace that society faces challenges. This transformation is the result of the Industry 4.0 era, in which the growth of Information and Communication Technology (ICT) has been fast. People in many nations are experiencing changes as a result of the rise of Artificial Intelligence (AI) in the era of Industry 4.0. To prepare for these developments, Japan proposed Society 5.0, also known as a Super Smart Society, in 2016 (UNESCO, 2023; Deguchi et.al., 2020; Salimova et.al., 2019; Hayashi, 2019)

Previous Study

ICT can assist people strengthen their intellectual abilities, **critical thinking skills**, problem-solving abilities, and communication abilities (Adil, 2021; Ellitan, 2020; Gladden, 2019; Mansbach, 2015; Sá et al., 2021; Wahyudi, 2019).



HOW

DOES EDUCATION IN SOCIETY 5.0 EXIST ?

Education in society 5.0

Education has evolved swiftly alongside the advancement of technology (Gürdür Broo et al., 2021)

Why Education?

Creating “**the best warriors**” as **human resources** who are always able to challenge with any situation in this technological era.

As we have to prepare the most qualified human resources to deal with technological era nowadays, this paper is trying to figure out things related to:

How do education system and the existence of technological advancement walk together to support students' critical thinking?

In the society 5.0 era, characterized by advanced technology and complex global challenges, students in HE need to develop their critical thinking skills for several reasons.

What are the reasons ?

that students in HE need to develop their critical thinking skills

Problem solving

Critical thinking skills enable students to analyze complex problem, break them down into manageable components, and develop innovative solutions, which are crucial in addressing contemporary societal issues.

Information Overload

In the digital age, there is an abundance of information, much of it unfiltered or biased. Critical thinking helps students evaluate sources, discern credible information from misinformation, and make informed decisions.

What are the reasons?

Adaptability

Rapid technological advancements mean that job roles and industries evolve quickly. Critical thinking fosters adaptability by teaching students to learn how to learn, allowing them to stay relevant in an ever-changing job market.

Ethical Considerations

Society 5.0 raises ethical dilemmas related to privacy, artificial intelligence, and more. Critical thinking skills empower students to navigate these dilemmas, make ethical choices, and contribute to responsible technological development.

What are the reasons?

Innovation and Entrepreneurship

Critical thinking encourages creativity and the ability to identify opportunities for innovation and entrepreneurship, essential skills for driving economic growth and societal progress.

Global Perspective

In a globalized world, critical thinking helps students understand diverse perspectives, cultures, and global issues, fostering cross-cultural collaboration and empathy

Overall, critical thinking skills are foundational in preparing students to thrive in the Society 5.0 era, where complex problems and rapid change are the norm.

Yet,

in this case most of lecturers still have limited ideas on to how to adapt activities to promote student's critical thinking skill.

Results and Discussions

Observation and interview result

It's not uncommon for some lecturers to have limited ideas or experience in adapting activities to promote students' critical thinking. There could be several reasons for this:

1. **Traditional Teaching Method:** The lecturers have been trained in traditional teaching methods that focus more on content delivery and less on fostering critical thinking. Shifting to a more student-centered, critical thinking-oriented approach can be challenging without proper activity and support.
2. **Lack of Resources:** The lecturers have not willingness in joining workshops, or professional development opportunities that could help them learn new pedagogical techniques.
3. **Time Constraints:** Balancing research, administrative duties, and teaching can leave limited time for lecturers to explore and implement innovative teaching strategies.
4. **Resistance to Change:** Like any profession, some lecturers may be resistant to change, especially if they have been teaching in a particular way for a long time.

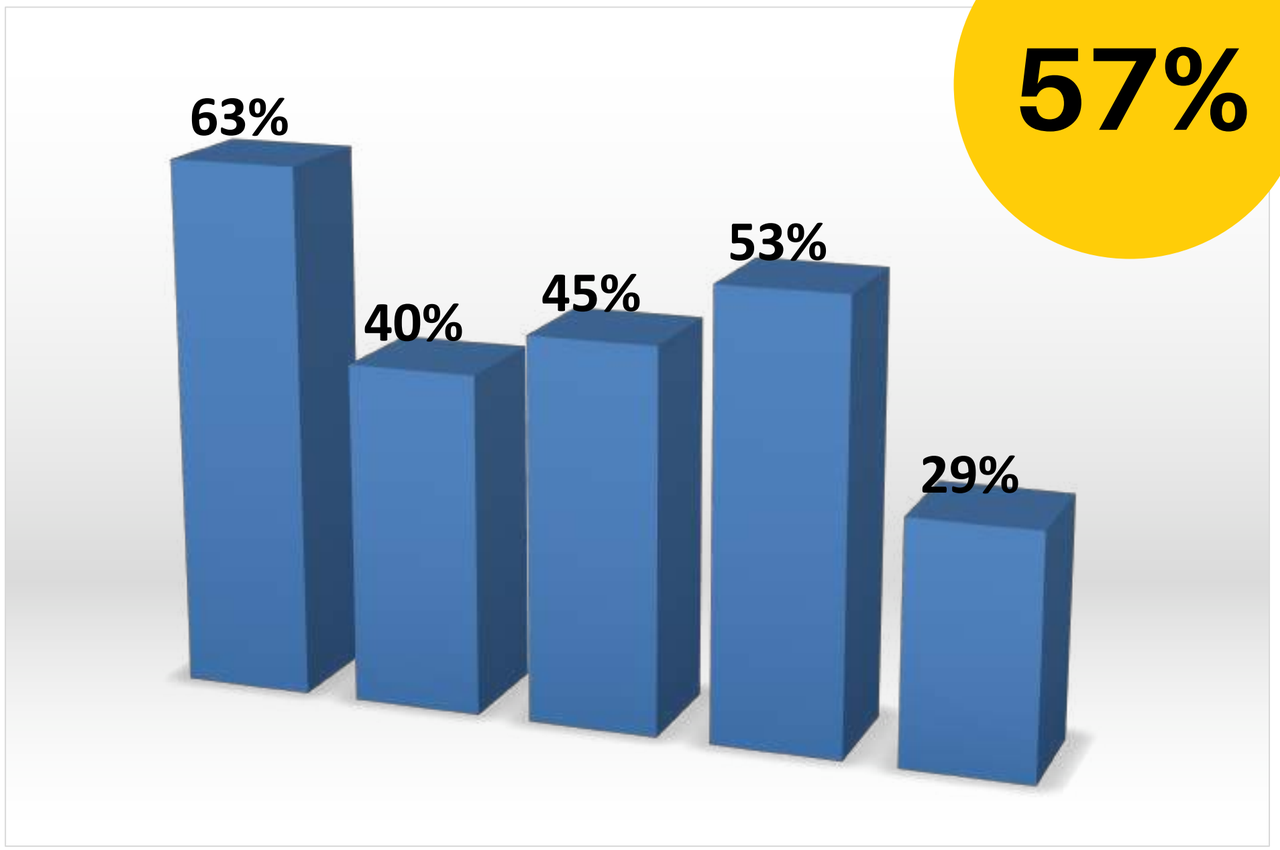
Aspects	Indicator	Statement items
Inferences	Inference is a conclusion drown from observed or supposed facts.	31, 32, 33, 34, 35, 36
Assumptions	An assumption is something which is presupposed or taken for granted.	11, 12, 13, 14, 15, 16, 17. 18, 19, 20, 21
Deductions	Statement provided followed by a series of suggested conlusions.	22, 23, 24, 25, 26, 27, 28, 29, 30
Interpreting Information	Questions consist of a passage of information followed a series of conclusion.	37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50
Arguments	Each questions followed by a series of arguments (strong and weak arguments).	1, 2, 3, 4, 5, 6, 7, 8, 9, 10

The instrument of questionnaires was adapted from Glaser & Watson (2015)

Critical Thinking Rubric

64 University Students

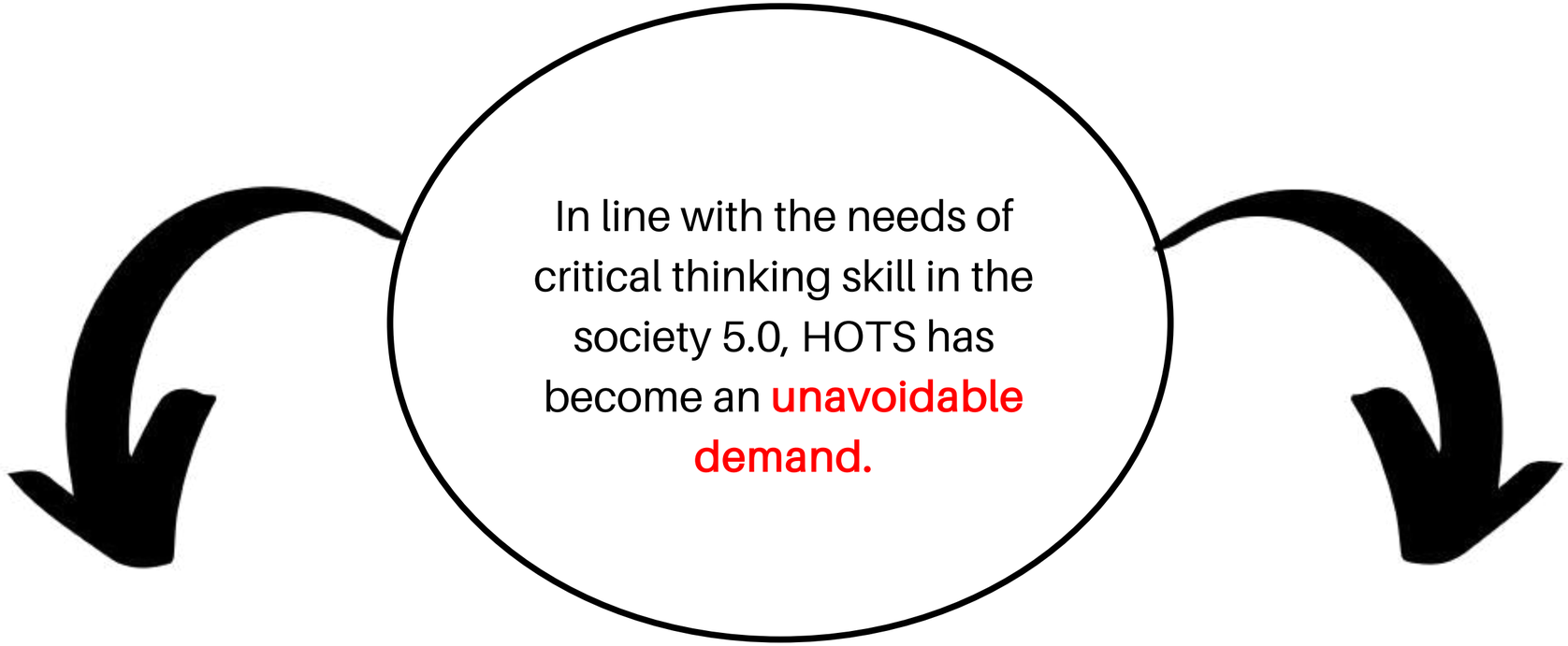
Results and Discussions



It shows that the student's scoring of critical thinking was **57%** which is divided into five categories, **63%** of students can interpret the information, **40%** of students give their assumption to evaluate the issue, **45%** of students dig information by doing analysis, **53%** can argue their ideas, and **29%** of students do a synthesize by giving their argument.

Results and Discussions

1. Critical thinking is a skill that should become nature to students. The students need to practice as much as possible (Psychometric Success, 2023).
2. Therefore, to develop student's critical thinking in the society 5.0 in education, the students must be accustomed to think critically, think creatively, and be able to solve problems faced by each individual by applying Higher Order Thinking Skills (HOTS) in the process of learning whereby during the transfer process (Ramadhani, et.al., 2021; Herianto, 2023).
3. Students not only recall and understand the knowledge and skills taught but also are able to interpret the knowledge and skills and apply them in real life. As a result, learning may now take place everywhere and is not only limited to the classroom.



HOTS-based learning requires lecturers to be aware of carrying out learning with students.

The learning process provides a very open space for lecturers and students to think broadly based on the appropriate curriculum framework through the HOTS basis.

To address this challenge, universities and educational institutions can take several steps:

- **Professional Development:** Offer workshops, seminars, and training sessions specifically focused on enhancing lecturers' abilities to design activities that promote critical thinking.
- **Mentorship Programs:** Pair less-experienced lecturers with mentors who have a proven track record of promoting critical thinking in their classrooms.
- **Curriculum Redesign:** Encourage and support faculty members to redesign their courses to incorporate more critical thinking activities and assessments.
- **Resources and Materials:** Provide lecturers with resources, templates, and sample activities that can be easily adapted for their courses.
- **Peer Collaboration:** Encourage lecturers to collaborate with colleagues to share ideas, strategies, and best practices for fostering critical thinking.

Some ideas for lecturers

Lecturers can adapt activities to develop students' critical thinking skills through various teaching strategies and techniques:

- **Socratic Questioning:** Encourage discussion by asking open-ended questions that promote critical thinking. Challenge students to analyze, evaluate, and justify their responses.
- **Problem-Based Learning (PBL):** Present students with real-world problems or case studies relevant to the subject matter. In small groups, they must work collaboratively to identify solutions, fostering critical analysis and creativity.
- **Debate and Discussion:** Organize debates or group discussions on controversial topics. Assign students roles with different viewpoints to encourage them to critically examine and defend their positions.
- **Critical Reading and Analysis:** Assign readings or articles related to the course material and ask students to critically analyze the author's arguments, evidence, and biases.

Some ideas for lecturers

Lecturers can adapt activities to develop students' critical thinking skills through various teaching strategies and techniques:

- **Reflection Journals:** Have students keep journals or blogs to reflect on what they've learned, how it relates to real-life experiences, and any questions or concerns they have. Encourage them to think critically about their own learning process.
- **Case Studies:** Use case studies that require students to apply course concepts to real-world scenarios. They must analyze the situation, propose solutions, and justify their choices.
- **Group Projects:** Assign group projects that involve problem-solving, research, and critical analysis. Encourage peer review and evaluation to enhance critical thinking through diverse perspectives.
- **Role-Playing:** Create role-playing scenarios where students take on different roles related to the subject matter. This helps them explore issues from various angles and think critically about decision-making.

Some ideas for lecturers

Lecturers can adapt activities to develop students' critical thinking skills through various teaching strategies and techniques:

- **Concept Mapping:** Ask students to create concept maps or diagrams to visually represent complex ideas and their interconnections, helping them see relationships and think critically about the subject.
- **Guided Inquiry:** Provide guided inquiry activities where students must formulate their research questions, find and evaluate sources, and draw conclusions based on evidence.
- **Real-World Applications:** Connect course content to real-world applications and current events. Encourage students to critically analyze how theories and concepts relate to practical situations.
- **Peer Evaluation:** Incorporate peer review and evaluation into assignments. This promotes critical assessment of others' work and helps students refine their own thinking and communication skills.

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Thank You.