

Realizing a Sustainable Economic Insight, Through Inquiry Learning Based on Environmental and Natural Resources Economics Supported by Digital Learning

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ABSTRACT

This paper aims to present the results of research on the important role of learning strategies and methods, learning materials, and digital learning media in shaping the insights, attitudes and trends of environmentally sound behavior in students of the Faculty of Economics. The inquiry learning strategy is very practical for a pandemic era, has provided opportunities for students to access all digital learning sources, including accessing literature book learning resources. Literature books on Environmental and Natural Resource Economics (ENRE) have played an important role in shaping students' insights, attitudes and behavioral tendencies. Learning in the new era, apart from being colored by conventional (face-to-face) methods, has also been firmly followed by a new model of online learning (digital learning). Lecturers and students are required to adapt to new developments in online learning. The need for online learning has also demanded the provision of online infrastructure facilities. The implementation has also been felt by educators and students to be more flexible both in place and time, especially in accessing information.

Keywords: *Environmental insights, Environmental and natural resource economics (ENRE), Inquiry model learning, Learning by digital technology.*

1. INTRODUCTION

The goal of developing the personalities of the younger generation as economic actors, economic educators, and economic scientists with environmental insight, can be pursued in various ways, and one of them is through education. For universities, the Faculty of Economics, and especially in the Department of Economic Development Studies (EDS), through the Environmental and Natural Resources Economics course (ENRE) will be realized [1].

In the lecture process, the Covid-19 pandemic situation, which has been running for almost a year, has experienced various difficulties, thus giving birth to lessons. Online learning strategy (in network) is one of the alternative choices as a solution. At the beginning of the pandemic period, lectures were pursued in a new

era of a mixture of off-line (conventional methods) and on-line (new methods). Based on the lecture experience, until now the on-line way has become more and more established.

The Inquiry teaching and learning strategy is one of the strategies that are deemed appropriate in a pandemic situation, because it provides an opportunity for students to seek and find for themselves relevant information with ENRE course material. With the support of digital learning, students also have the opportunity to grow their knowledge and abilities to apply IT application developments by learning digitally.

It is felt that in this pandemic or covid-19 condition, the dynamics of online (on-line learning) have formed the awareness of the academic community that all education stakeholders feel that there are new demands

for learning systems, and IT-based teaching and learning strategies that must be supported by fulfilling all the supporting needs of the digital way. Thus also growing the demand for digital devices.

The learning process in conventional economic education, it is questioned whether in general it is characterized in addition to fulfilling the ethical behavior of environmental economics, also whether it has been supported by learning strategies oriented to IT development. Therefore, the new era must be renewed towards material that contains ethics of sustainable economic behavior, also must adapt to IT developments, as the demands of the new era of the pandemic and beyond.

The end result of the new era learning process, namely the inquiry strategy, supported by the ENRE books literature, and support for applied IT by means of digital, online, whether it can effectively form insights, attitudes, and trends in environmental-friendly economic behavior in generations young people and especially students.

1.1 Economic Learning and Sustainable Economic Messages (Environmental Friendly)

From the results of field experience it can be seen that conventionally economic learning, both in terms of material, type of subject, and learning methods are still weak in the moral message of a sustainable economy, environmentally sound economy, and the lack of application of creative, innovative learning methods.

Various types of courses that contain economic theories, in the form of science, both theory and practice, as well as the form of learning, still feel weak in the application of messages of sustainable economic moral innovation. Learning about economic theory is still strong toward the application of efficiency regardless of the environment. In fact, it should be necessary to study the application of efficiency that takes into account the costs of environmental damage, and with a more attractive learning model.

Several research results show that conventional economic learning has many weaknesses and is less attractive to students [2]. This can be sourced from teachers, learning materials, learning methods, learning media, and learning support facilities so as to reduce student interest and enthusiasm for learning [3]. Furthermore, the teacher tends to be dominant and the learning material tends to be less dynamic. In addition, the learning method is boring, the learning media is static and is not supported by the internet, and it does not take advantage of environmental facilities to support the academic climate [4]. Therefore, economic learning innovation with digital technology is needed.

Through the study of the ENRE course as a form of economic education in the Development Economics major, several innovations have been made, especially in enriching literary books, to support the inquiry learning method. With this learning step, the inquiry method can provide opportunities for students to search and find various information independently, and more freely related to course material. To create inquiry learning needs to be supported by online learning.

Eilks [5] states that the economy of sustainable development can provide three dimensions of science education, namely individual, social, and vocational relevance. Sustainable economic education as the focus of a new educational paradigm that contains innovative structures can drive educational reforms beyond just curriculum revisions and pedagogical innovation [6]. However, the enforcement of Economic for Sustainable Development (ESD) on the teaching and learning approach is rare. In higher education, economic learning tends to limit the focus of issues related to sustainability to specific background subject matter.

Westwell and Ingle stated that, on the educator side, they are required to struggle to answer questions about how to design and evaluate curricula through which scientific knowledge does not end in an isolated environment, but follows the demands of developments in students' daily lives [7].

Kahn and Misiaszek [8] also explained that the design of education and evaluation of environmental programs must be in line with the cultural-historical aspects of human activity. Therefore, the impact of the program must be measured as the lasting and sustainable change in society which is inherent in students as human beings for future sustainability and reaching their home environment.

Based on the results of the study on the above issues, discussions on the perspectives of undergraduate students on sustainable economic education, especially about ENRE in the context of higher education are rarely conducted. Students as stakeholders have a very important role in responding to teaching and learning activities in economic class because their point of view informs pedagogical decisions for lecturers. Thus, this research tries to uncover these ideas.

In a pandemic situation, currently, online learning systems have been intensively applied, including for the ENRE course at the Department of Economics Development Studies, Faculty of Economics, State University of Malang. Online learning studies as new demands in the new era situation need to be revealed both from the point of view of educators and students.

1.2 Inquiry Learning Gives Students the Opportunity to Search and Find Information on Their Own

Banks [9], explains that inquiry learning, combined with the assessment process, and decision making, has developed high-level interconnected skills. Through Inquiry learning, students have practical expertise in developing a single set of skills, which are practically interconnected. The three of them are interrelated in supporting learning, by teachers and helping students to learn to make decisions. Inquiry learning, fostering student expertise in seeking and finding information as learning material.

2. THE AIM

Through Inquiry learning activities for the literature-based ENRE course with IT assistance so that online learning is realized, has 4 objectives, namely:

1. Obtain information on the level of achievement of mastery of ENRE material that supports the formation of sustainable economic insight and behavior.
2. Obtain information about students' perceptions of the novelty and benefits of the inquiry learning method.
3. Finding the usefulness of the ENRE literature in supporting the formation of sustainable economic insight and behavior in students.
4. Obtain information about student opinions about the benefits and results of IT learning.

3. BENEFITS

The results of this study provide 2 main benefits, namely theoretical and practical. Provide reinforcement for the Sustainable Economics learning process, especially in the ENRE lecture at the Economic Development Studies (EDS), Faculty of Economics Universitas Negeri Malang and at various universities in Indonesia in general; The ENRE books literature can produce important themes for ENRE material that can strengthen sustainable economics course material at the Faculty of Economics at various universities in Indonesia and as a basic initial step for implementing digital-based learning (online lectures) next.

4. METHODOLOGY

Subjects or respondents used in this study were undergraduate students majoring in Economic Development Studies, Faculty of Economics UM, as many as 146 students. With the characters 38.4% male and 61.6% female; from rural areas 54.8% and urban 43.2%; the origin of the department Social Studies in high school 78.8%, Science 18.5%, and Language 2.7%. Student respondents are mainly in the class of 2017 (94%), 2016 (4.8%), which are spread into 5 parallel classes.

The research approach used is mixed methods. Mixed methods are intended to include qualitative methods combined with quantitative methods.

Qualitative methods, observing the classroom learning process as in classroom action research (CAR). The learning process begins with the provision of the ENRE book literature, and students inquire about certain themes, which are then studied and explored to be poured into paper material and power point forms. After producing papers and power point, students make material presentations according to the class discussion schedule. This is where an intensive process of interaction occurs between students, to deepen and strengthen the understanding and direction of attitudes and trends in environmental-friendly economic behavior, both in the local, national and global context; The evaluation of the learning process is also focused on the level of seriousness of students in finding and finding material from literary books, as well as the course of the class discussion process. Learning evaluation is also directed at the level of convenience and barriers to digital learning with online systems, both synchronous and un-synchronous.

Quantitative methods are used to obtain an overview of perceptions about the learning process and outcomes, ENRE in terms of knowledge, attitudes and trends in sustainable economic behavior.

5. RESULTS AND DISCUSSION

The following is a group of selected material themes sourced from ENRE books literature [10][11][12][13][14][15][16][17]:

1. The concept of natural resources and economic activities,
2. The concept of environment and economic / business activities,
3. Local, national, and international environmental problems,

4. Policies on natural resource and environmental management,
5. Sustainable development,
6. Environmental disputes,
7. Moral behavior and environmental economics ethics,
8. Economic analysis of environmental issues.

Then the following is the approach and analysis used in the ENRE books literature [10][11][12][13][14][15][16][17]:

1. Contemporary approach,
2. An interdependence approach to the economy, natural resources and the environment,
3. Economic management approach of natural resources and the environment,
4. Economic approach on property rights, externalities and environmental problems,
5. Ethical approach (value system) and economic system,
6. Approach to conservation of biological resources,
7. Resource, growth, and environmental modeling approaches.

The achievement of mastery of ENRE material which supports the formation of insights and sustainable economic behavior in students indicates that there has been a significant increase. The level of mastery of knowledge before and after college has grown from an unknown level of around 40% to around 80%. In other words, there has been an increase in mastery of knowledge by almost 100%.

From the perspective of insight, as many as 20 problems in question can be revealed. The students have experienced changes in the level of increased insight between before and after ENRE lectures.

1. The average increase from the uninitiated to the know for all aspects in question was 60%.
2. The lowest rate of increase from not knowing and becoming to know was 20%, especially in terms of reuse, reduce and recycle.
3. The highest increase from not knowing to knowing was 80%. Regarding knowledge of the first Earth Summit in Rio de Janeiro Brazil.

Information about students' perceptions of the novelty and relevance of the inquiry learning method shows the perception that the inquiry learning method is relatively new and relevant for the formation of sustainable economic insights.

ENRE is Closely Related to The Problem of Sustainable Economics

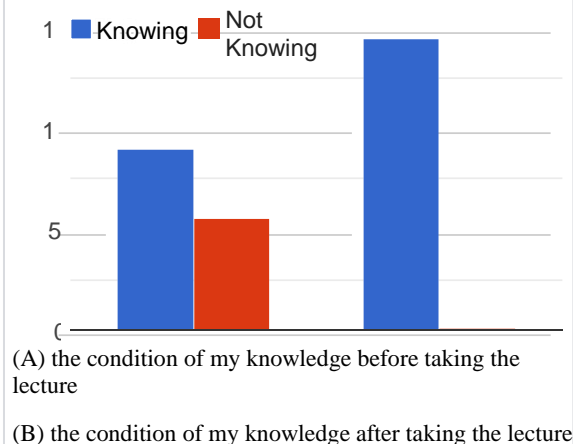
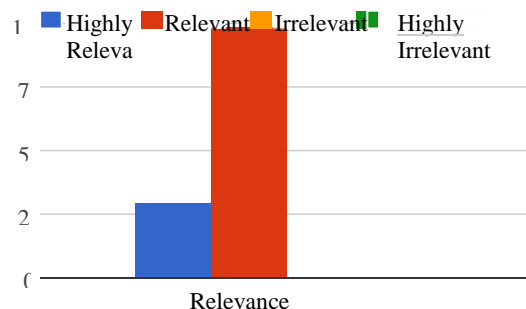


Figure 1. Increase Knowledge Attainment

Inquiry Teaching and Learning Methods



Inquiry Teaching and Learning Methods

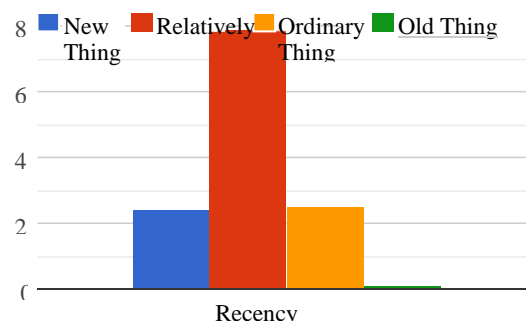


Figure 2. The novelty and relevance of the Inquiry learning method

Information regarding the relevance and usefulness of economic literature books ENRE in supporting the formation of sustainable economic insight and behavior in students is felt by students to be very relevant.

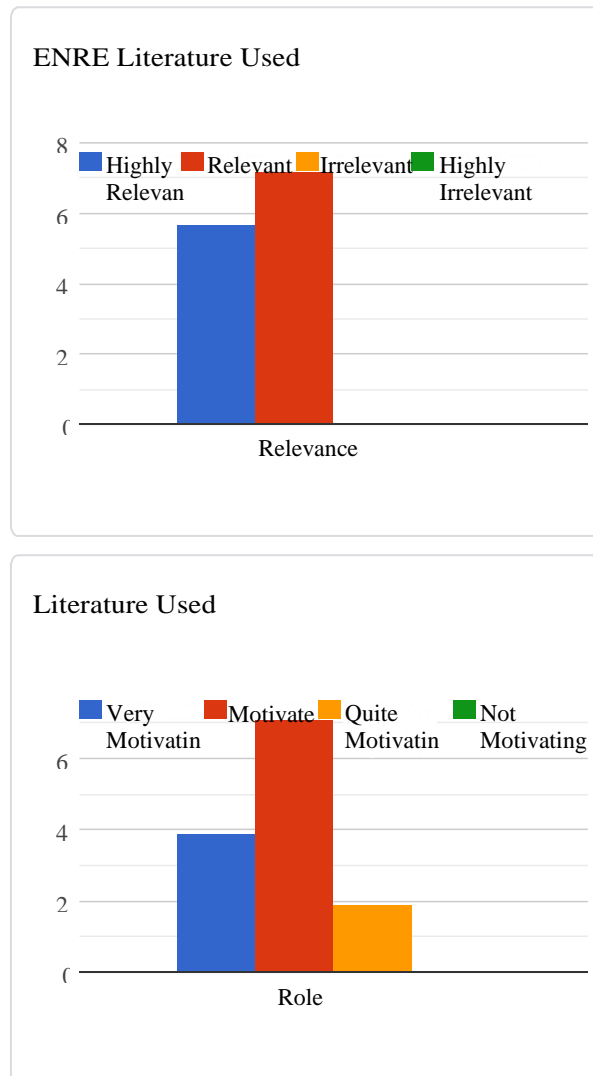


Figure 3. Relevance and usefulness of literature.

Based on the achievements of ENRE lectures, it can be seen that there has been a change in student attitudes from being very disagreeing / negative to being very agreeing or very positive.

1. The rate of change in attitude on average reaches a change rate of 70%.
2. The lowest rate of change in attitude is 10%, namely towards the use of nuclear energy in the direction of disagreeing.
3. Meanwhile, the highest average change rate of 90% is mainly about reducing the use of plastics (see attachment).

Information about student opinions regarding the benefits and outcomes of IT learning, was felt by

students that online learning methods could motivate higher learning.

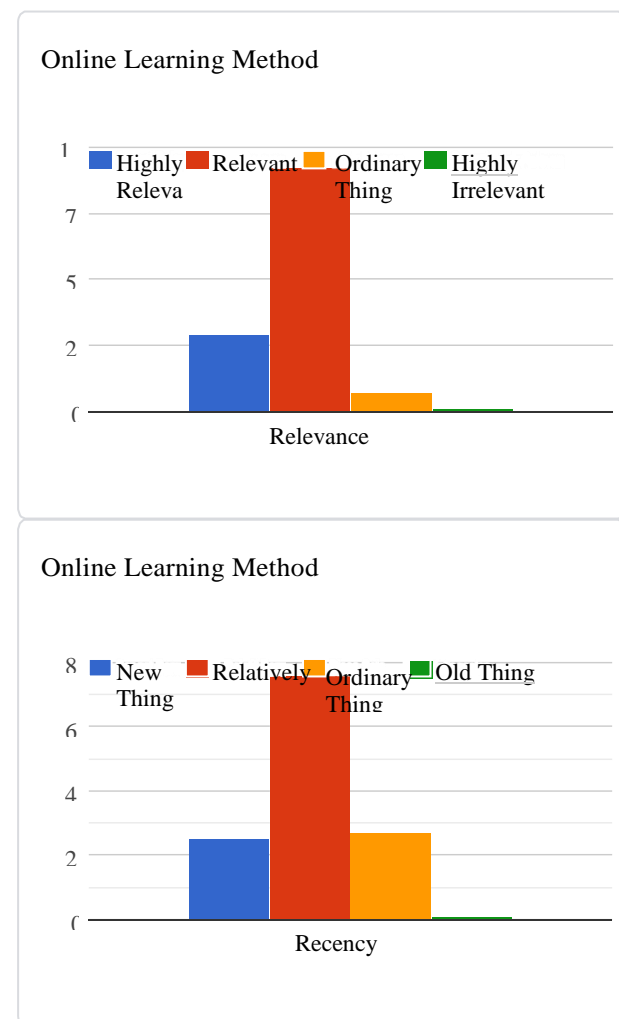


Figure 4. Benefits and learning outcomes of online methods

6. CONCLUSION

ENRE Learning has been proven to be able to increase students' knowledge, attitudes and trends in environmental economic behavior. Therefore, the ENRE course must be implemented more intensively in the Department of Economics Development Studies. ENRE literature books must be studied by students in lectures more intensively. The inquiry learning method has also been proven to provide opportunities for students to explore and find information, course material is more extensive and in-depth, can create learning resources about anything, anytime and anywhere. By utilizing IT through online learning, students can freely explore information, freely by utilizing gadget and laptop media which are supported by adequate internet.

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