



THE DEVELOPMENT OF TEACHING MATERIAL ON ETHNOSCIENCE-BASED CHEMISTRY LEARNING INNOVATION COURSE

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INTRODUCTION

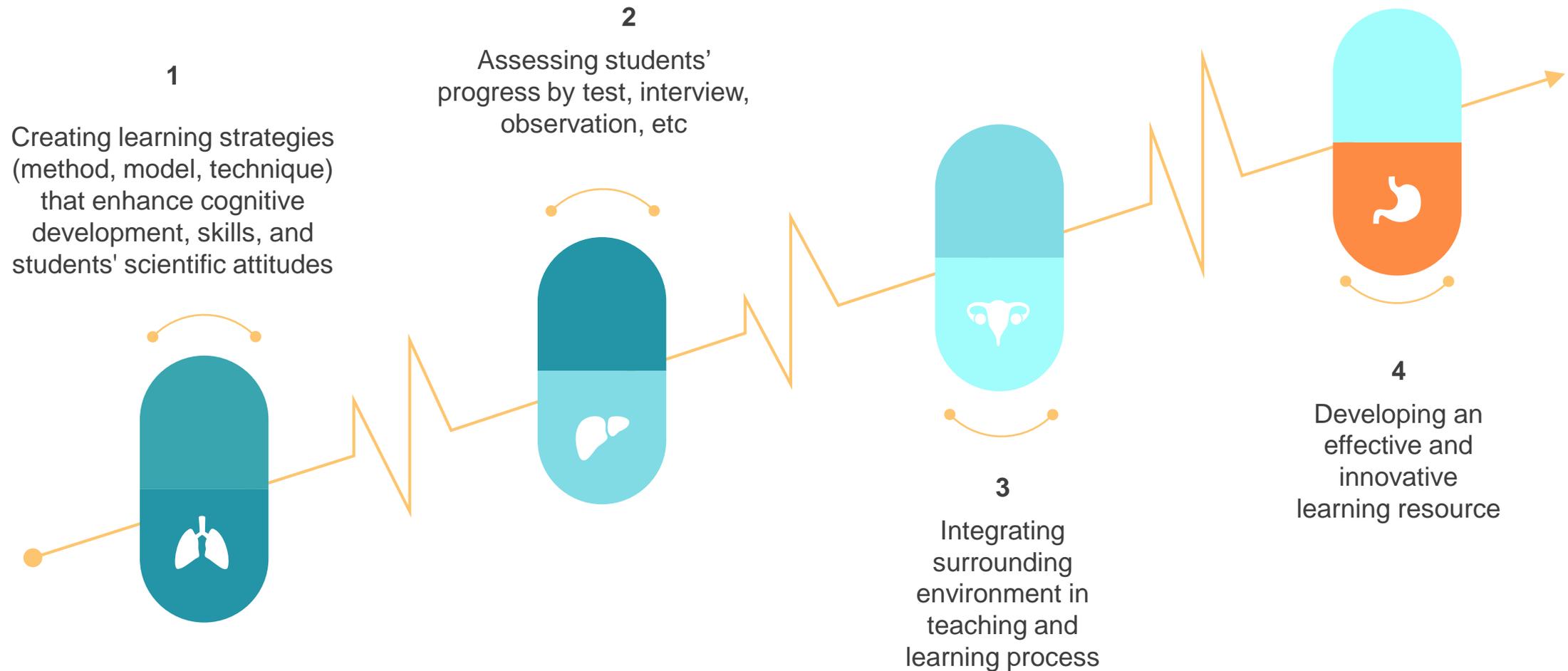


The area of South Kalimantan has a special uniqueness: most of the land consists of wetlands. The area of wetland in South Kalimantan is very wide, reaching 382,272 hectares.

Universitas Lambung Mangkurat (ULM) stands over a city dubbed: a thousand rivers city.

ULM's vision "as a leading and competitive in the field of wetlands".

FKIP ULM contributes to the environmental development of wetlands in South Kalimantan by producing innovative teachers who have several competences such as:





Why is innovative important for prospective teachers?



1. In the era of industrial revolution 4.0, being able to innovate in terms of developing learning materials, strategies and learning models is one of the main competences that teachers must have (Latip, 2018).
2. Through innovation, learning can be developed and increased to create exciting new learning (Levine-Rasky, 2009)



The think is...

One of the ways to face this era, industrial revolution 4.0 based digitalization with environmental integration, is to **develop** learning resources as part of the learning innovation.

It is being called “**Chemistry Learning Innovation Based on Ethnoscience**”.

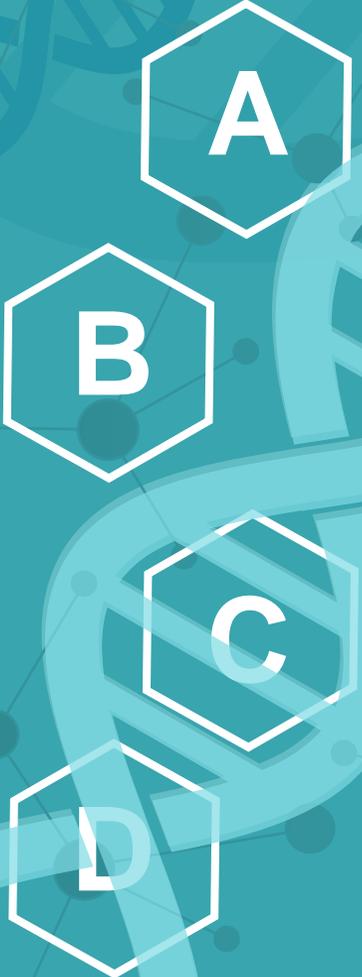


RESEARCH PROBLEMS

1. Is the teaching material of ethnoscience based-chemistry learning innovations developed valid?
2. Is the teaching material of ethnoscience based-chemistry learning innovations developed practical?
2. How is the student's response to the teaching material developed?

Method

Research and Development (R & D) research that use *Four D* (4D) method consisting of:



A

Define

Preparing of teaching materials are formulated, indicators and objectives to be achieved in each chapter, sub-chapter teaching materials, etc.

B

Design

plans for the formulation of teaching materials will be designed, the initial draft of the ethnoscience-based Learning Innovation teaching materials to be developed,

C

Develop

will evaluate and revise teaching materials based on the results of the validator's assessment, as well as the results of field tests

D

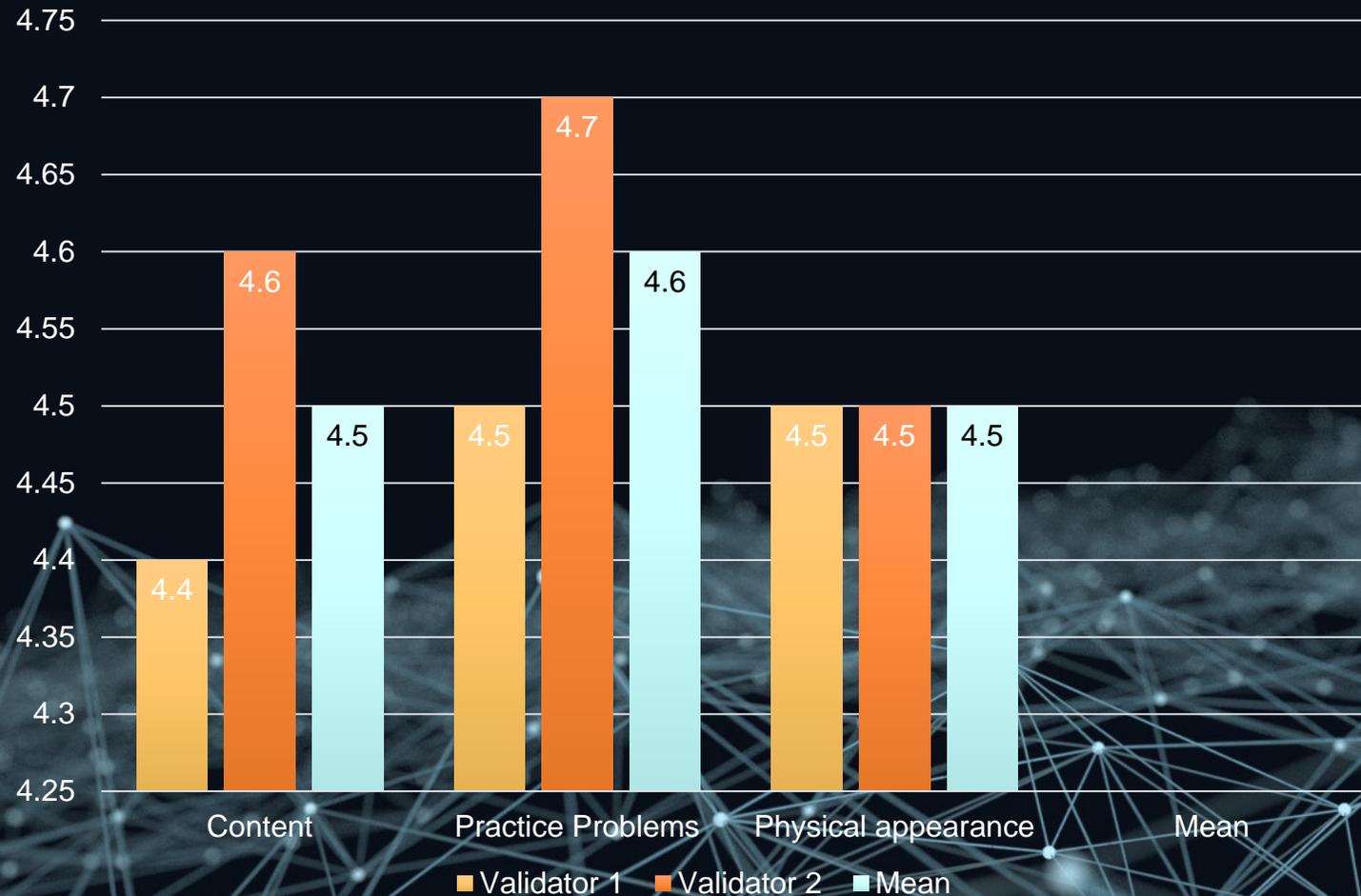
Disseminate

Sharing with other people about the developed product

CHARACTERISTICS OF THE TEACHING MATERIAL

1. Consists of 6 chapters: Basic Concept of Innovation, Innovation adoption, Innovation Innovation Decision, Curriculum Innovation, Learning Innovation, Ethnoscience.
2. Using local wisdom as the examples of the module content (the theme of “clean river” as the example of webbed learning; the theme of “learning how motorship works along the Martapura river” as the example of immersed integrated learning model and “lanting houses” as the example of networked learning)
3. Providing specific chapter “Ethnoscience” to give examples of innovation based on local wisdom of South Kalimantan which can be applied in teaching Chemistry.
4. Providing several innovative student assignment.

RESULTS AND DISCUSSION



Validity of the Teaching Material

The Validity of the teaching material was assessed by 2 validators with the results as in Fig. 1.

1. The teaching materials developed could be stated as valid with a mean score of validity of 4.52. from a maximum score of 5.00.
2. Of the three validated aspects, the quality of practice problems gets the highest score (4.6),
3. The material aspects and physical forms of teaching materials get the same relative score (4.5).

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PROGRAM STUDI PENDIDIKAN KIMIA
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN
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Practicality of The Teaching Material

student interest

clarity of words and sentences

student opinions on the content

student opinions on linguistic aspect

Picture above revealed about "Readability" that the product in all good criteria, so it can use as a resource in learning.

The Ethnics of South Kalimantan Communities and Their Relation to Scientific Science in Chemical Learning



Ethnoscience Aspect: Manufacture of sasirangan fabrics typical of South Kalimantan.

The Content and Scientific Context in Chemistry: Chemical Solution, Chemical bond: fixation

The Ethnics of South Kalimantan
Communities and Their Relation to Scientific
Science in Chemical Learning



Ethnoscience Aspect: *“Mandai” as a bichemistry product of South Kalimantan.*

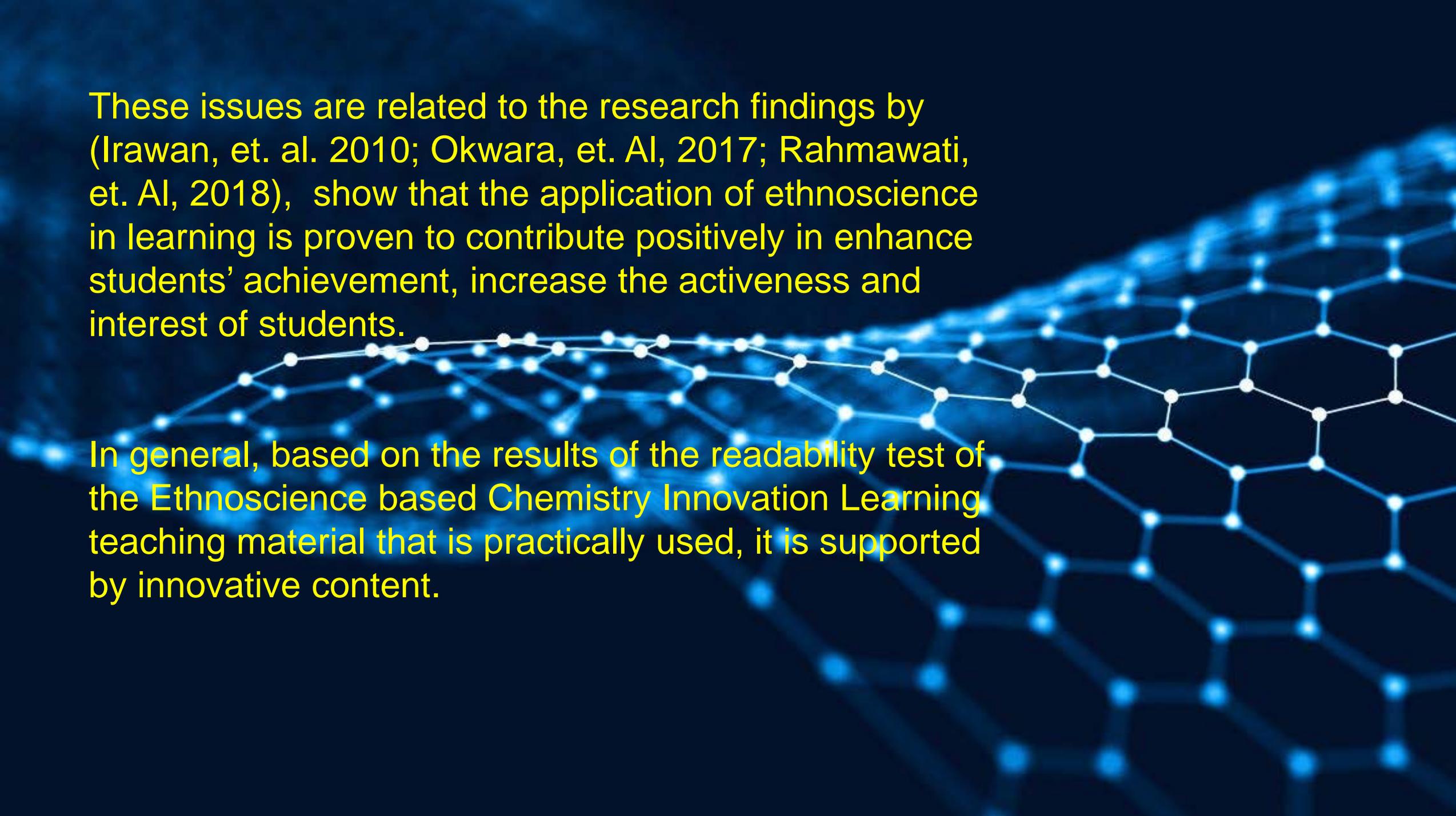
The Content and Scientific Context in Chemistry:
Biochemistry (fermentation)

The Ethnics of South Kalimantan Communities and Their Relation to Scientific Science in Chemical Learning



Ethnoscience Aspect: Making “hintalu jaruk”, salted egg version of the Banjar community. Chemical solutions: acids, bases, and salts

The Content and Scientific Context in Chemistry: Solution Chemistry: acid, base, and salt; as well as their benefits in life.



These issues are related to the research findings by (Irawan, et. al. 2010; Okwara, et. Al, 2017; Rahmawati, et. Al, 2018), show that the application of ethnoscience in learning is proven to contribute positively in enhance students' achievement, increase the activeness and interest of students.

In general, based on the results of the readability test of the Ethnoscience based Chemistry Innovation Learning teaching material that is practically used, it is supported by innovative content.

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It is expected that by using this teaching material, students not only know about theory of innovation and chemical content but also they can innovatively applying local wisdom values to learn chemical knowledge

Conclusion

The developed teaching material is valid for use in the Chemistry Learning Innovation Course with an average validation score of 4.5. The developed teaching material is practical with a mean score of lecturer's activities of 4.3 and student's activities average score of 4.5. It has a good level of readability and response from the students.

The use of chemistry-based ethnoscience innovations examples that are typical of South Kalimantan such as making *hintalu jaruk* (salted eggs), *lanting* houses, *kelotok* vessels, etc. attract students to learn the instructional material developed and apply them in chemistry classroom activities.

A blue wireframe graphic of a hand, rendered in a low-poly, mesh-like style. The hand is positioned centrally, with fingers slightly curled. The background is a dark blue gradient, also featuring a faint wireframe pattern. The text "Thank You" is written in a bold, yellow, sans-serif font, centered over the palm of the hand.

Thank You