



AI-Supported Teacher Training for Ecological Thinking in STEM-Based Character Education: A Case Study of Early and Primary Schools

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ABSTRACT

Abstract explain the core of manuscript informatively and obviously including the subject matter proposed approach and solution and show key findings and conclusions. Abstract using English and bahasa. The number of words in the abstract about 150-200 words, written in one paragraph, any unfamiliar terms should be written in italic. Font type and size are Calibri 11pt. Abstract was written in single spaced and the margin was narrower than main text. Keywords need to be listed and reviewed and the main terms underlying the conduct of the research. Keywords could be single word or phrase. Keywords including 3-5 words or phrase. These keywords are required for computerization. Research and abstract title search made easy with these keywords.

The abstract is expected to have:

Objective (1 sentence):

Methods (1-2 sentences):

Results (2-3 sentences):

Discussion (1-2 sentences) answering the question why?

Conclusion and Impact (1-2 sentences):

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Keyword:

Aaa mam,

Bbb.

Second keyword.

1. INTRODUCTION

The introduction includes the background of the issue or problem as well as the urgency, rationale, and purpose of the research (which differentiates it from other studies). A review of relevant literature and hypothesis development (if any) can be included in this section. Provisions for citation (name, year, page), in making citations it is strongly emphasized to use reference manager applications such as Mendeley or zotero. This aims to avoid mistakes in citing and writing references at the end of the article.

To make it easier for you to use this template, it would be better to copy-paste (with the keep text only option and then choose the “main content” style) your original paper into this template. Make sure that your article is in accordance with the style used by the *Cakrawala dini* journal.

Recommended 4 paragraphs with each paragraph containing at least 1 reference and 4 sentences:

Paragraph 1: Explanation of the title

Paragraphs 2 and 3: Review of other people's research or theoretical concepts: What is the Problem (based on Facts in this case the results of other people's research that has been journalized) Add “however” (shortcomings or problems)

Example:

At this time, there is a lot of research on “title”. Abdul (2018) explains xxx. The research is good in terms of yyy. However, there are some problems zzzz. Kusuma (2015) expressed aaa.... From these results, there are several problems: xxxx.

In order not to be long Do not discuss per article, but better per findings (perhaps some writings have the same findings).

Paragraph 4: from the existing problems, what is still weak? (Explained based on references.) Therefore, Input the purpose of writing this article (you want to solve which one?)

In writing the introduction and discussion, indirect citation is not allowed. Example: According to Budi in Kusuma (Not allowed) please directly cite from the first source

2. METHODS

This section is used for articles derived from research results. The methods section for research papers can contain the design of steps or procedures carried out in data collection and data analysis techniques used in the research. The method should consist of research design, (approach and type) subject characteristics, data collection process and data analysis.

Please pay attention to the following

1. The metode section is enough 1 paragraph (4 sentences)
2. No need to explain the definition
3. Does not use numeric (numbering)

2.1. Presentation of the wastewater treatment plant

The treatment in this station goes through several phases shown schematically **Figure 1**.

2.2 Wastewater and industrial water purification processes in the station

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Figure 1. Schematic diagram of the physicochemical treatment process in the station of the textile industrial unit.

2.3 Mixing and equalization basin n° 1

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$$\text{NaCl} = W \times E \quad (1)$$

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2.4. Rapid mixing and neutralization basin (physicochemical treatment)

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Figure 2. Photo of mixing and equalization basin N ° 1.

2.5. Final clarification basin

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Figure 3b shows the Nam at est in massa lobortis finibus sit amet sit amet augue. Aenean iaculis, metus vel fringilla feugiat, nisl nisi ullamcorper odio, quis consectetur augue elit vel mauris.



Figure 3a. Final clarification basin.



Figure 4b. Post chlorination basin.

3. RESULTS AND DISCUSSION

3.1. Temperature

uspendisse in aliquam est, at consequat quam. Morbi porttitor orci augue. Vestibulum volutpat justo sed urna dictum, consequat condimentum nunc vestibulum. Ut nisi sem, consectetur at posuere nec, rhoncus sit amet magna. Phasellus eleifend orci dui, sit amet fringilla est malesuada non (Behera, et al., 2020). According to the results obtained in **Table 2** and **Figure 3**, Donec ac orci lacinia, imperdiet leo ut, blandit metus. Nam ut ante in velit fringilla luctus sit amet in purus. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia curae; Nam venenatis ipsum metus, eget lacinia odio gravida ac. Sed quis porttitor nisi. Nam tincidunt dapibus dui, vitae pulvinar nulla tincidunt sit amet. Nullam at mauris nulla. Aliquam ullamcorper metus eu dui auctor pulvinar. Vestibulum id ligula at lacus auctor euismod (Nolte, et al., 2020).

Table 1. The COD and BOD values for the last week of the month (final clarification output).

FINAL CLARIFICATION OUTPUT									
Day N°1		Day N°2		Day N°3		Day N°4		Day N°5	
COD	COD	COD	COD	COD	COD	COD	COD	COD	COD
mg/	mg/	mg/	mg/	mg/	mg/	mg/	mg/	mg/	mg/
130	36	162	44	153	28	160	32	167	39

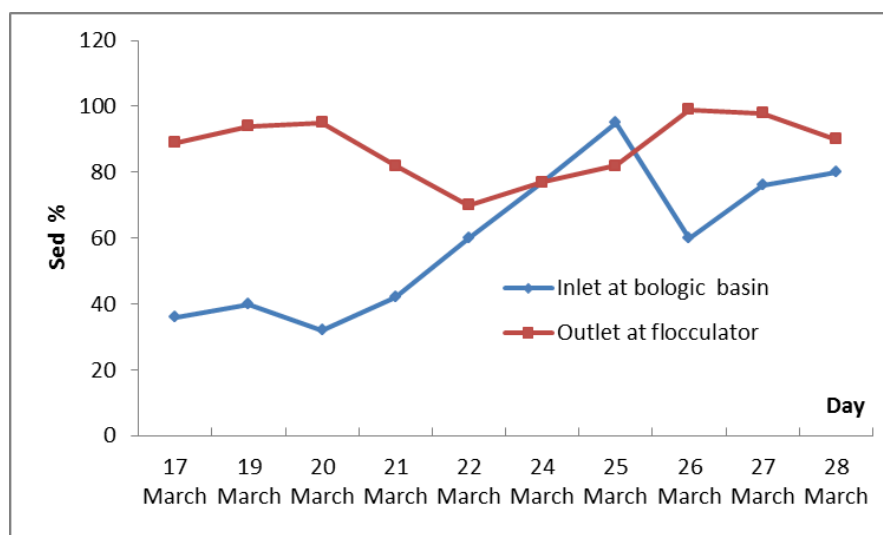


Figure 4. Daily variation in the sedimentation of the sludge at the outlet of the WWTP flocculator.

The discussion in the article aims to: (1) answer the formulation of the problem and research questions; (2) show how the findings were obtained; (3) interpret the findings; (4) relate the research findings to established knowledge structures; and (5) generate new theories or modify existing theories.

4. CONCLUSION

The conclusion is written in one paragraph, which summarizes the results and discussion and answers the objectives of the research/publication. Emphasize the novelty of the discovery or development. This section may include suggestions for practical activities or further research based on the novelty found.

Note the following:

1. The conclusion must answer the research objectives or hypothesis.
2. Conclusions must describe innovations or improvements to existing science.
3. Write the conclusion briefly and clearly. Do not discuss again in the conclusion. It usually contains one paragraph of conclusion and/or one paragraph of implication or practical application (if any).
4. Don't repeat the abstract, or don't just list the research results.
5. Do not use Bullet/Numbering, if forced to be in paragraph form.

5. ACKNOWLEDGMENT

Nulla aliquet facilis dignissim. Integer quis justo at mauris blandit viverra id at neque. Nunc sed consectetur nisi. Praesent dictum feugiat cursus. The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

7. REFERENCES

- Khechekhouche, A., Benhaoua, B., Manokar, M., Sathyamurthy, R., and Driss, Z. (2020). Sand dunes effect on the productivity of a single slope solar distiller. *Heat and Mass Transfer*, 56(4), 1117-1126.
- Khechekhouche, A., Benhaoua, B., Driss, Z., Attia, M. E. H., and Manokar, M. (2020 A). polluted groundwater treatment in southeastern algeria by solar distillation. *Algerian Journal of Environmental and Sciences*, 6(1).1207-1211.
- Khechekhouche, A., Bouchmel, F., Kaddour, Z., Salim, K., and Miloudi, A. (2020 C). Performance of a wastewater treatment plant in south-eastern Algeria. *International journal of Energetica*, 5(2), 47-51.
- Belbahloul, M., Abdeljalil, Z., and Abdellah, A. (2014). Comparison of the efficacy of two biofloculants in water treatment. *International Journal of Scientific Engineering and Technology*. 3(6), 734-737.
- Behera, B., and Sethi, N. (2020). Analysis of household access to drinking water, sanitation, and waste disposal services in urban areas of Nepal. *Utilities Policy*, 62(2020), 100996.

Notes:

The references should be from articles that have been published in journals. We do not recommend taking literature from **books or proceedings**. We recommend that references should be from the **last 5 years**. Cite from articles that have been published in journal of Didactic studies (Min. 3).

Use the reference manager application: **zotero/mendeley**.