

# Cycle Learning Standards for Students Education Field

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## ABSTRACT

Heutagogy is a desire to facilitate and improve student performance to be more independent. Heutagogy provides a foundation for strengthening humanistic intelligence personally so that the choice, determination, and use of technology becomes the personal responsibility of learners as a manifestation of humanistic intelligence capabilities in emergencies and the future. The SIPEJAR development model has a scaffolding feature for students based on the survey result readiness in the field of education. Based on the dominance in quantity, the Education Sector is ready to accept input from concepts and technicalities. Appreciation for Capability will automatically be given by the system in SIPEJAR as input to every student who goes through the assessment.

Keywords: cycle learning standards, heutagogy, humanistic

## 1. INTRODUCTION

The Internet has offered many resources in implementing student activities. Student activities can be carried out both by distance learning and internally on campus. Valuable supplements to the traditional student activity approach generally include e-mail between faculty and students, posting of projects on www, online registration and adding and removing students, on-line access to learning resources needed in discussions, on-line access. the line to library catalogs, submitting jobs on-line, etc.

Besides, the Internet provides a wide variety of reference materials - text, images, videos, databases, archives, and much more which can add to campus library resources and inter-library loans. Negroponte [1] states that the Internet provides a continually new medium to reach out and discover meaningful knowledge of meaning. Also, it is possible to implement collaboration either partially or completely via the Internet.

In particular, this article explains how students receive a student communication model that has a similarity project. In general, communication carried out in virtual students has been developed and refined by various studies. Even in the extreme, students never met in person. they get to know each other completely online. Online virtual environments are offered as part of regional remote project communication programs implemented by several Academic Institutions. Research generally only examines learning activities carried out in

virtual formal classes. So far, formal classes have been internet-based learning to serve learning needs or expand training without having to add special needs such as self-conditions filled with learners' conditions and learning environment conditions.

So far, research has only looked at students participating in internet-based classes from home or school or campus. Research also has not addressed the readiness of students in their virtual environment. Even though there is a lot that must be researched, including how the learner is, regarding interactions, and learning tools.

Online scaffolding provides process orientation and synchronous online chat rooms to facilitate real-time collaborative writing practice. This allows users to work synchronously on collaborative writing assignments over the Internet. The possibility of being unique requires a special examination. Such as the need to analyze and code the synchronous chat of learners with three categories, namely: (1) science-related interactions [2]; (2) students' social interactions [3]; and (3) context-related interactions [4] as a step to evaluate the effect of collaboration systems on student interactions in discussions.

The similarity Project is an effort to create the same conditions in students. Several studies have tried to identify some discussion activities. Discussion trends in research have shown collaboration between learners. Research that analyzes and encodes student synchronous discussion, among others, strengthens the existence of interactions related to articles, social interactions, and

interactions related to system operations in evaluating the effects of systems on student interactions [5].

Research shows: (1) students have positive attitudes towards the system and continuous motivation to use the system in writing assignments in the future; (2) product analysis writing suggests that learners produce better content and organization with support systems; (3) the procedural facilitation provided by the system succeeded in scaffolding learners to communicate more in the category of interaction related to articles. The limitations and directions of future research are discussed. This study analyzed and coded students' synchronous chat with three categories (article-related interactions, social interactions, and system operation-related interactions) to evaluate the system's effect on student interactions.

Learning that uses discussion in collaboration has challenges in its implementation. Several studies provide reports on the obstacles of students carrying out electronic discussion assignments in synchronous computer-mediated communication (CMC) systems (NetMeeting) [6]. Collaborating using discussion finds a strengthening of learners' awareness of the conceptions that characterize effective pedagogical interactions [7].

The basis for thinking about the discussion in several studies is that collaborative discussions are a condition for the occurrence of dialogue between teachers and students or fellow learners [6] explained that examining whether the use of synchronous CMC meets the conditions of collaboration, learners' dialogues are characterized in terms of their constructive and argumentative contributions, and by their focus on the meaning of concepts. So that research has shown that learning that occurs in learners still requires focused analysis concerning argumentation. Second, learning instruction has not met the expectations of collaboration.

Collaborative support through Capability Appreciation is needed in discussions. Learners seem to need support to focus more on what to do than argumentation in general, but they may also need support for conducting summaries, tracking their discussions, and customizing their interfaces. Text-based electronic communication appears to be sensitive to such problems which can cause meaningful interactions to be disrupted. Some research has led to learning activities using electronic discussion that require strengthening of the analysis of the procedural focus concerning argumentation [8].

The pedagogical shift has entered the changing era. The spirit of education activists is how learning should be student-centered learning. As well as Rodgers and Freiberg [9] explained that the power to learn is truly in the hands of the learner and not just the teacher. Rogers and Freiberg [9] also realize that humans grow up from early childhood and do have potential but have not been anticipated by the education system so far. Criticism is

that the learning that has been carried out so far is only a way to meet the target demand for graduate users it ends up confusing learning activities that must be independent learning [10], [11]. The learning system that becomes the teacher's autonomy can interfere with the natural abilities of students during the Covid-19 pandemic which demands complete learning independence in an online system.

It is necessary for learning activities to think about how to: (1) explore learners [12]; (2) constructing constructive scaffolding [13]; and (3) making connections between learning resources and media so that they can be used for personal learning [14]. The heutagogical approach is designed to be implemented as a continuation of the humanistic view of how people learn in student-centered learning [15] as well as some recent research on student-centered learning environments as opposed to teacher-centered learning [16]–[18].

Capability appreciation in the form of video strengthens the ability to collaborate according to the characteristics of learners. Videos are increasingly being used in education and training but can cause specific difficulties in terms of the user's learning process, due to the temporary nature of the information conveyed [19]. To overcome the potential for cognitive overload, learner controls can be provided. Beginners may not be relevant enough for them to know when to stop the video.

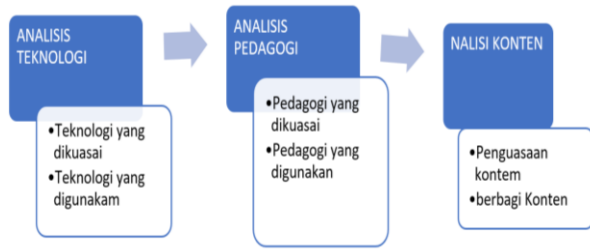
Given that procedural learning involves memorizing an organized and separate sequence of behaviors. Research Biard et. al. [19] have tested the assumption that providing control buttons is insufficient for novice learners, and that it interferes with procedural steps making them less effective. when it comes to clinical skills learning. So that Capability Appreciation requires segmentation in the learning video content. So that segmented learning videos are a way to strengthen the representation of procedures in memory for beginner learners and reduce cognitive load.

## **2. METHODS**

The study was conducted through a survey of 168 student respondents at the Faculty of Education, State University of Malang. The results of the characteristic analysis show that some learning using collaboration is not able to meet learning expectations. If understood as a learner's character, students who are students of the Faculty of Education, State University of Malang, seem to need support to focus on what must be done rather than general or global tendencies.

Students need concrete support in the form of an overview, to track their discussions, and to organize their interfaces. Text-based electronic communication seems unable to build sensitivity to activeness in solving problems (Figure 1). So that it causes meaningful

interactions in discussions to be disturbed. So, it is necessary to develop capability appreciation.



**Figure 1 Construction Analysis**

### 3. RESULT AND DISCUSSION

Capability Creation (AK) is based on the premise that learning and learning activities depend on the direction the learner asks. So, learning and learning at the State University of Malang Educational Technology does not only focus on enumerating problems because every study will continue to find problems. Learning in Educational Technology must still try to appreciate what is best for students, and to be able to find, construct knowledge, attitudes, and skills of students based on contexts that students find more and better (Figure 2, Figure 3, Figure 4). Then it can strengthen student discoveries to build a future where the best inventions become the construction of knowledge, attitudes, and skills that are more general in the future.



**Figure 2 Improve Learning**



**Figure 3 Assist in Coordination**



**Figure 4 Teaching on Target**

AK applied in Educational Technology does not eliminate or ignore the problem. Instead, AK will shift the frame of reference used to define what happened. Instead of looking for or what is wrong or needs fixing (problem-based learning approaches), learning and learning activities continue to focus on what is right and what works based on context and strive to do more and better (learner reinforcement-based approach).

In short, AK suggests students make changes by paying attention to what students want instead of just focusing on solving a problem. AI is based on the following assumptions based on life:

- In every society, organization, or group, there is something that is constantly changing dynamically.
- What society focuses on will become the reality of society.
- Reality is created in the present, and there are many realities.
- Curiosity and the actions of an organization or society will influence society in some way.
- People are more confident and comfortable to travel to the (unknown) future when they carry on the past (the known).
- If society brings part (not the whole) of the past that has been repaired to the front, society has the confidence to be the best compared to the past.
- It's important to appreciate differences.
- The language (whether written, spoken, signs, etc.) that we use will create our current reality.

The AK process applied in the Educational Technology of the State University of Malang focuses on structured communication and participation in the learning process to make changes. AK will try to find previous success stories (from various references such as journals, proceedings, books, newspapers, social media, etc.) which are then shared throughout the organization. Every learner will become a member of the community and be recognized as a member of the learning community who contributes to constructing success. Confidence and commitment to building success, starting from penetrating systems that strengthen self-confidence and togetherness in the community (class).

Collaboration is an important key in 21st-century learning. In a globally connected world, the exchange of ideas is becoming more frequent, and more and more students are collaborating on similar projects [20], [21]. The right conditions and information content and written in good procedures will strengthen the audience's understanding, especially regarding the same particular project [22]. The management of conditions and information content owned by certain students are intended to solve problems for the students themselves.

Students will convey information and technical ideas accurately and efficiently to the project at hand [23]. Projects on students are an attempt to do work collaboratively. So logically a lot of the thoughts or works that are made are done more collaboratively, rather than individually [24], [25]. As a case, it can be seen that the completion of the same project in similar project development is about the maintenance of an information system carried out by students. This is done by 6 parallel classes and 4 different generations. This is because in the information age, providing information in written form is part of a technical job in all careers [23].

Every development of the ability to convey information via video or written requires specific skills. Especially technical written information, apart from requiring skills in information manipulation and also the ability to abstract content [26], they also need to have the capabilities as defined by the object which he writes as "core competencies" for individuals to survive in an interconnected world. The main competencies include: (1) using tools interactively (both language and technology), (2) interacting in heterogeneous groups, and (3) acting independently.

Similarity Project is a description of the learning environment adapted to the workplace environment. So, collaborating teams often require people to use real-time communication tools (such as chat, video conferencing, webinars) as an attempt to construct direct feedback of various kinds or to make decisions. However, procedural learning is often associated with traditional learning when viewed from collaborative and communicative education [27]. Procedural learning is often associated with monotonous learning behavior, less interaction, and less dialogue with other learners [28].

Procedural learning is also considered only to have a systematic nature such as the case of the process of how to do writing activities that use technical tutorials to help novice writers [22]. SAINTEK students, who have various levels of Indonesian proficiency, use Indonesian to produce collaborative writing techniques. Students need scaffolding on how to collaborate with students who are less proficient, apart from getting scaffolding on how to do activities technically. This is done similarly to rice [21] who argues that the main challenge presented in the information is how to create new teaching strategies to overcome coordinative, polycontextuality, cross-

disciplinary work that connects activities separated by time, space, organization, and goals together. In the context of Capability Appreciation, there is a great need for learners to build interactive, multi-task, and multi-user learning environments in which the developed web system can help practice and collaborate in synchronous interactions effectively and efficiently.

The learning environment for Capability Appreciation is a feature of online discussions. Online discussion is a feature that is often used in learning [29]. Advances in computer technology have made researchers and lecturers try to provide support for collaborative activities to increase views on cases of similar projects in the field of social co-authoring (for example, [21], [30], [31]).

Rice [21] proposes a collaborative method that can be implemented in practice discussions in Web 2.0. Through online discussions, it has helped student collaboration to better address the similar project context. Online discussion is not only a practical tool but also the emergence of a dialogical situation [21]. In particular, learning will provide Capability Appreciation in strengthening individual knowledge and towards how to strengthen knowledge collectively.

Collaboration has been established in the humanities field. The conditions found were Similarity Project observations in the field of novel writing [30]. However, as stated by Gorsky and Caspi [32], collaboration still needs to be coupled with the procedural strengthening of learners to be more involved in online discussions and web-based tools. Although it does not always lead to better learning outcomes, but rather the need to know the main factors in online interactions in procedures that can improve learning.

Collaboration learning in the condition of a similarity project requires procedural learning and is included in the online discussion feature vehicle. Larsen-Freeman [33] argues that group configuration is not the main one as a collaborative learning constructor to be unique, but procedural instruction in collaborating between learner and learner or learner and teacher is important. Nunan (1992) also suggests an important question to consider in collaborative learning that is the pattern of class organization and types of class assignments, in which students are given procedural knowledge of how to negotiate to mean.

In some cases of similarity in the humanities field, Capability Appreciation is following how to solve it together in the field of language (Nunan, 1992). The online discussion feature is a recommendation for the future on how to improve collaborative procedures in synchronous environmental interactions. Englert, et al (2007) also share the same view of the need for technology to provide facilities and procedural encouragement that has led to an increase in writing projects. So, to expand computer-supported

collaboration capabilities, the study proposes a scaffolding procedure in a similarity project supported by technology and online synchronous discussion.

#### 4. CONCLUSION

Education in the contemporary era requires teachers to change pedagogical practice, into heutagogy. The transition to heutagogy on learning is very important for educational reform in line with the needs and demands of humanistic intelligence in the 21st century in the concept of freedom in learning. The following are some of the main requirements for this transition:

The overall approach to learning practices needs to be changed through empowering facilitators who understand the philosophy of learner-centered learning. Facilitators need to understand that students can learn for life and are competent, are learners who have the knowledge, and are creative innovators. Students are not like a walking library that can only store information for retrieval. These expectations cannot be achieved through traditional teaching and learning practices.

At the curriculum level, explicitly builds aspects: (1) declarative; (2) procedural knowledge and most importantly; and (3) conceptual. So that systematically the curriculum can build students to have humanistic intelligence independently so that they can: (1) remember independently of their choice of focus points; (2) explain and be able to exchange ideas with learners or other people; (3) apply knowledge, attitudes, and skills independently. right, until; and (4) innovate and continue to be creative. A curriculum based on information transfer and reproduction, while not sufficient for developing education. Society needs intelligent learners with abilities and able to work innovatively with knowledge, not only knowing a lot.

When conditions are in an emergency or normal situation there is an increasing need for technology. The problem is that the time remains the same, only 24 hours. Therefore, the challenge is how learning becomes broader or deeper with a specific focus in a shorter time. Heutagogy is a learning service that prioritizes independence. The concept of heutagogy is not only concerned with curriculum content, but also skills using knowledge, as well as other knowledge and skills necessary for modern life, work, study, adapt, and socialization.

Humanistic intelligence, from knowledge, attitudes to skills, needs to be the main goal in education. So that the most important thing in constructing the current and future generations is to become part of an independent society. Capabilities in the form of creativity, problem-solving abilities, thinking skills, lifelong learning, and collaboration skills are provisions that are continuously strengthened. Stakeholders and facilitators must provide strong interventions, align educational professionals to

transform heutagogical learning practices, and enhance a nation's learning-centered culture.

#### REFERENCES

- [1] N. Negroponte, *Being Digital New York: Alfred A. Knopf*, 1995.
- [2] J. Frejtd, "When Children Do Science: Collaborative Interactions in Preschoolers' Discussions About Animal Diversity," *Res. Sci. Educ.*, pp. 1–22, 2019.
- [3] E. P. Smith, "Teachers' and Students' Perspectives About Patterns of Interaction in Blended Learning Discussions," Walden University, 2019.
- [4] M. Alles, T. Seidel, and A. Gröschner, "Establishing a positive learning atmosphere and conversation culture in the context of a video-based teacher learning community," *Prof. Dev. Educ.*, vol. 45, no. 2, pp. 250–263, 2019.
- [5] S.-W. Yeh, J.-J. Lo, and J.-J. Huang, "Scaffolding collaborative technical writing with procedural facilitation and synchronous discussion," *Int. J. Comput.-Support. Collab. Learn.*, vol. 6, no. 3, pp. 397–419, 2011.
- [6] A. L. Veerman, J. E. Andriessen, and G. Kanselaar, "Learning through synchronous electronic discussion," *Comput. Educ.*, vol. 34, no. 3–4, pp. 269–290, 2000.
- [7] M. Petrenko, "Theoretic bases of pedagogical interaction," *Procedia-Soc. Behav. Sci.*, vol. 214, pp. 407–413, 2015.
- [8] R. I. Nicolson and A. J. Fawcett, "Procedural learning difficulties: reuniting the developmental disorders?," *TRENDS Neurosci.*, vol. 30, no. 4, pp. 135–141, 2007.
- [9] C. R. Rogers and H. J. Freiberg, *Freedom to learn*. Prentice Hall, 1994.
- [10] R. L. Ackoff and D. Greenberg, *Turning Learning Right Side Up: Putting Education Back on Track (paperback)*. Pearson Prentice Hall, 2008.
- [11] D. Greenberg and R. L. Ackoff, "Ethics and morality—a dialogue," *Syst. Res. Behav. Sci.*, vol. 28, no. 1, pp. 3–14, 2011.
- [12] Z. Xie and J. Yang, "Autonomous Learning of Elementary Students at Home During the COVID-19 Epidemic: A Case Study of the Second Elementary School in Daxie, Ningbo, Zhejiang Province, China," *Ningbo Zhejiang Prov. China March 15 2020*, 2020.
- [13] M. A. Al Mamun, G. Lawrie, and T. Wright, "Instructional design of scaffolded online learning modules for self-directed and inquiry-based learning environments," *Comput. Educ.*, vol. 144, p. 103695, 2020.
- [14] A. KewalRamani *et al.*, "Student Access to Digital Learning Resources outside of the Classroom. NCES 2017-098.," *Natl. Cent. Educ. Stat.*, 2018.
- [15] C. R. Rogers and H. J. Freiberg, "Freedom to learn, Charles E.," *Merrill Columb. OH*, 1969.
- [16] S. Tharayil *et al.*, "Strategies to mitigate student resistance to active learning," *Int. J. STEM Educ.*, vol. 5, no. 1, p. 7, 2018.
- [17] A. B. Wilson *et al.*, "Breaking with tradition: A scoping meta-analysis analyzing the effects of student-centered learning and computer-aided instruction on student performance in anatomy," *Anat. Sci. Educ.*, 2018.

- [18] M. Y. Zarouk, F. Restivo, and M. Khaldi, "Student-Centered Learning Environment for Self-Regulated Project-Based Learning in Higher Education: A Qualification/Selection Study," *Learn. Inq. High. Educ. Curr. Res. Future Chall. INHERE 2018*, 2018.
- [19] N. Biard, S. Cojean, and E. Jamet, "Effects of segmentation and pacing on procedural learning by video," *Comput. Hum. Behav.*, vol. 89, pp. 411–417, 2018.
- [20] Y. Hernández-González, C. García-Moreno, M. Á. Rodríguez-García, R. Valencia-García, and F. García-Sánchez, "A semantic-based platform for R&D project funding management," *Comput. Ind.*, vol. 65, no. 5, pp. 850–861, 2014.
- [21] J. A. Rice, "Devising collective knowledges for the technical writing classroom: A course-based approach to using Web 2.0 writing technologies in collaborative work," *IEEE Trans. Prof. Commun.*, vol. 52, no. 3, pp. 303–315, 2009.
- [22] J. Kelly, "'What's with the Musty, Old Tent?' Using Technical Writing to Promote Peer- and Self-Evaluation," *Read. Writ. Q.*, vol. 19, no. 4, pp. 363–376, 2003.
- [23] R. A. Reis, "Bite-Size Morsels Introduce Technical Writing the Easy Way.," *Tech Dir.*, vol. 57, no. 2, pp. 43–45, 1997.
- [24] A. H. Duin, "Computer-supported collaborative writing: The workplace and the writing classroom," *J. Bus. Tech. Commun.*, vol. 5, no. 2, pp. 123–150, 1991.
- [25] A. L. Oliver, K. Montgomery, and S. Barda, "The multi-level process of trust and learning in university–industry innovation collaborations," *J. Technol. Transf.*, pp. 1–22, 2019.
- [26] J. Johnson-Eilola, "Relocating the value of work: Technical communication in a post-industrial age," *Tech. Commun. Q.*, vol. 5, no. 3, pp. 245–270, 1996.
- [27] M. Carter, C. M. Anson, and C. R. Miller, "Assessing technical writing in institutional contexts: Using outcomes-based assessment for programmatic thinking," *Tech. Commun. Q.*, vol. 12, no. 1, pp. 101–114, 2003.
- [28] E. Nagelhout, "Pre-professional practices in the technical writing classroom: Promoting multiple literacies through research," *Tech. Commun. Q.*, vol. 8, no. 3, pp. 285–299, 1999.
- [29] S. Palmer, D. Holt, and S. Bray, "Does the discussion help? The impact of a formally assessed online discussion on final student results," *Br. J. Educ. Technol.*, vol. 39, no. 5, pp. 847–858, 2008.
- [30] I. Elola, "Collaborative writing: Fostering foreign language and writing conventions development," *Lang. Learn. Technol.*, vol. 14, no. 3, pp. 51–71, 2010.
- [31] K. Parker and J. Chao, "Wiki as a teaching tool," *Interdiscip. J. E-Learn. Learn. Objects*, vol. 3, no. 1, pp. 57–72, 2007.
- [32] P. Gorsky and A. Caspi, "Dialogue: A theoretical framework for distance education instructional systems," *Br. J. Educ. Technol.*, vol. 36, no. 2, pp. 137–144, 2005.
- [33] D. Larsen-Freeman, *Techniques and principles in language teaching*. Oxford University, 2000.