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The paradigms of heutagogy and cybergogy in the transdisciplinary perspective

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Abstract

Now we are entering an era where learning and teaching strategies are determined by learners. The interconnection of heutagogy independent learning strategies with internet cybergogy network learning in a transdisciplinary perspective is intended to provide a climate of learning communication between learners and instructors more broadly without being insulated by space and time. Heutagogy models provide opportunities for learners to explore knowledge and experience through more varied learning strategies so that they become more literate and relevant in the present context. This research uses the literature review method from national and international reputable journals, Elsevier, google scholar, Scopus journal, IEEE journal in searching relevant research data through the stages of review, study, structured evaluation, classification and categorization of evidence-based that has been there. In this paper, we look at the prospects and challenges of heutagogy independent learning integrated with online learning cybergogy. Several learning paradigms are proposed as a result of a literature review on the strategy of implementing heutagogy and cybergogy in a transdisciplinary perspective in Higher Education in Islamic Religious Affairs.

Keywords: *heutagogy; cybergogy; transdisciplinary; literature review*

Introduction

Heutagogy is a learning strategy that is determined by the student. Hase and Kenyon (2000) as the initial drafter of heutagogy are student-centered learning to acquire life-long learning skills. The main priority of heutagogy is the independence of students in conducting learning, determining their own strategies, developing their own teaching material more autonomously. The demands of students are more proactive in exploring data and information outside the classroom. To get information outside the classroom, students should use environmental facilities that are able to support it in gaining new knowledge (Blaschke, 2017; Hase, 2011). One of the supporting environmental facilities such as student discussion community, community members, internet network with general or special search engines, such as *Elsevier,* google scholar engine, Scopus journal engine, IEEE journal engine, genesis library journal engine.

Improving the academic quality of today's era of learning requires strengthening communication independence (*higher level of autonomy*) with others verbally, working together and instilling positive values for themselves and others (Nikoletta, 2019). Education not only provides knowledge to learners, transfers knowledge but also instills strong character education, practices to be a fair and responsible leader, honest and fair. Learn

independently provide momentum for evaluation or reflection on learning experiences during this time both in terms of successes and failures, and the experience of the past can be used as supplies a learning experience in the future.

Cybergogy a strong influence on independent learning through the Internet and social media facilities. Language learning becomes more leverage to improve the ability of learners through cybergogy (Khairul Bahri Bin Abdul Samad, 2018). Heutagogy interconnection through cybergogy provides a real opportunity to implement the learning that is directed independently by students, including learning through collaborative models and learning through communities. Learning in the global era is all connected to the internet, learners can easily use smartphone devices to support the strengthening of mastery of subject matter, pedagogical approaches that have made lecturers as learning centers (*teacher centers*) experience a shift towards learning-centered learning (*Student center*), lecturers are not the only source of knowledge, learners do not depend entirely on lecturers both in terms of learning, where to get lessons, and subject matter (Blaskche, Kenyon, & Hase, 2014).

The learner in heutagogy has a level of personality, independence and maturity to learn solid which is having a clear vision of learning, have a good understanding of the tendency of learning and learning style *(metacognitive skills)* owned. If independence and maturity of learning cannot be achieved, the learner will have difficulty determining what is learned and how to learn it, how to prove competency that has been mastered, how to know the increase in capacity and capability in accordance with the conditions and situations in the field that continue to develop in accordance with time development (*life long learning*) (Narayan & Herrington, 2014) The concept is easy and simple, but its implementation is still difficult, especially when it comes to doctrinal (*religious*) scientific issues which are feared to lead to potential chaos in their scientific mastery. The Era 4.0 generation requires students to be responsive to technological developments that provide facilities to learners in the form of an internet connection so that they can be connected to one another. Learners can make demands from heutagogy, that is the willingness to explore various cross-disciplinary resources, make learning resumes, collaborate and share with others, connect with lecturers and be able to conduct evaluations and self-reflection (muhasabah). In this research studies will be explored that lead to the potential application of heutagogy in a transdisciplinary perspective so that it can transform a field of knowledge from various perspectives (Gazal, 2019).

Materials and Methods

This research is a literature review that explores information about the application of heutagogy and cybergogy in learning in Islamic Religious Education. The main source in conducting a literature review is covering a search study to the central search engine database/journal publisher namely international reputable journals Elsevier, springer, google scholar, Scopus journal, IEEE journal. Journal study published used as a reference as much as 30 journals.

Results and Discussion

Early Concept of Heutagogy

The initial term 'heutagogy' was introduced by 2000 (Hase & Kenyon, 2001) and continued in 2003 and 2007 (Hase, 2009) as a critique of learning that only relied on lecturers as central (Teacher center). while in reality there are so many learning opportunities that can be obtained from the field, students can look for experiences in the field whose development is very dynamic and complex, data and information keep on changing.

Heutagogy needs technical assistance to support the implementation of learning outside the classroom, students are conditioned to be able to learn independently, be creative and think far ahead, and the important thing is to have adequate technology and information literacy (Blaschke Lisa Marie, 2012). As time goes by, of course, technology will also continue to develop, so an adaptation of understanding to technological development is needed, namely how to understand the process of searching, storing and sharing data and information (Blaskche et al., 2014). Active participation of learners in finding experience outside the classroom to enrich their knowledge and improve their competence and capability (Hase, 2009). Lecturer in heutagogy should be required to have competence in the process of learning, providing infrastructure facilities lines of communication with the student, the learner discussion and determine what will be learned and how it will be learned (Hase & Kenyon, 2000; Eberle, 2009).

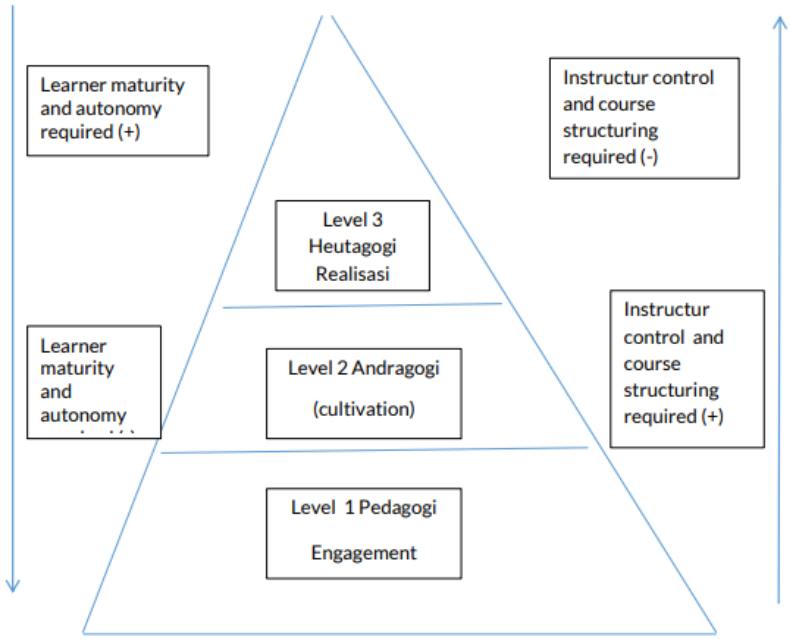

Figure 1. Levels of pedagogy, andragogy, and heutagogy (Canning, 2010).

Maturity of learners and control by the lecturer (instructor) on the learning structure becomes the need for self- evaluation (Hase & Kenyon, 2000). In the process of the heutagogy learning cycle, learners consider the problems in the field and the actions to be taken, in addition to reflecting the problem solving process and how it affects the beliefs and actions of the students themselves. The role of lecturers is very necessary for conducting a review of the results that have been made by students.

The lecturer initially functioned as a teacher who was limited by space and time in classical learning (pedagogy), currently required to change into a lecturer function as a partner for discussion and clarification of the process and achievements of students who have the freedom to develop their competencies outside the classroom and different environments using their technological tools in accordance with the challenges that will be faced in the future (Blaskche et al., 2014). According to the group of constructivist and humanist groups that the way students gain experience in their own way and can be different from other students, the results of that experience may be useful later in the coming year (Hase, 2016). In the concept of heutagogy, students and lecturers must have creative and innovative thinking during the teaching and learning process (Blaschke, 2016), and the results of such creative and innovative thinking can produce skills that can be logically accounted for (Agonács & Matos, 2017).

The Role of Cybergogy on the Success of Heutagogy

Cybergogy is a method of Education in the era of globalization through the empowerment of Information and Communication Technology (ICT) that is unlimited from space, time, culture and country (Daud, Teck, Ghani, & Ramli, 2019). Students and lecturers easily obtain material, learning modules from various references via the internet (Malek, 2017) so as to produce more interesting collaborative learning (Dailey-Hebert & Dennis, 2015). Heutagogy develops in various forms including interactive multimedia which integrates into the teaching and learning process. Lecturers make breakthrough learning strategies using interactive multimedia media with students (Leacock & Nesbit, 2007). The development of cybergogy has also developed into another form, the Massive Open Online Course (MOOC), a paradigm shift from e-learning to training. Learning that does not distinguish between geographical, socioeconomic distance and unlimited space and time is carried out online using a mobile smartphone application (Munira et al., 2019).

The application of the cybergogy approach is a mobile application. Figure 1 shows that there are 3 factors of an online learning environment that can form engaged learning, namely social factors, cognitive factors, emotive factors. The cybergogy and heutagogy approaches that involve more than 1 environmental element will further improve the quality of teaching and learning. the ability and skills of students are getting better to prepare their capabilities to face the future (Dailey-Hebert & Dennis, 2015).

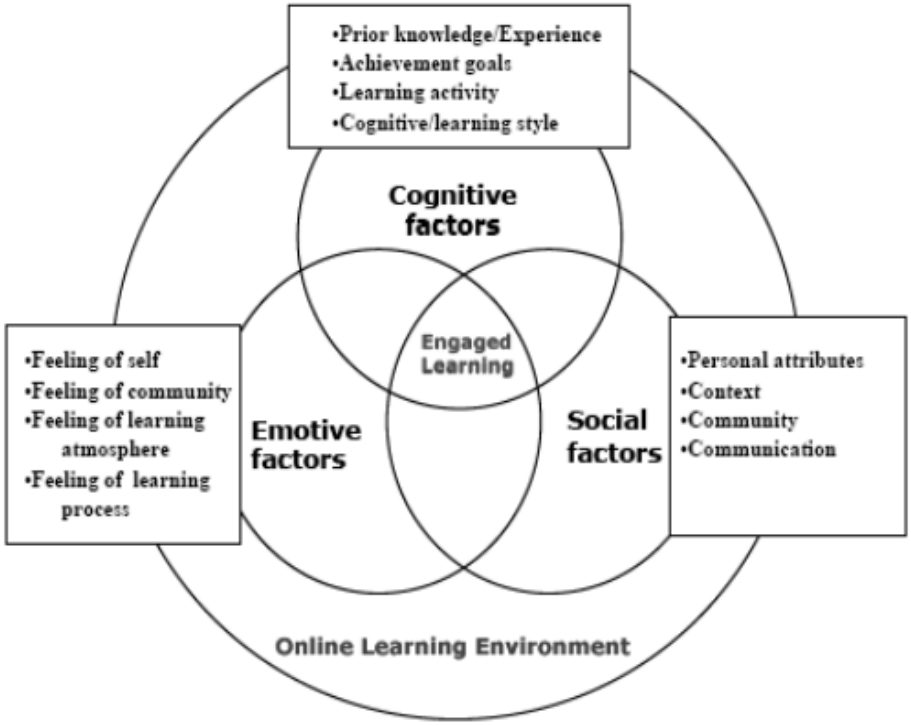

Figure 2. Cybergogy model of engaged learning (Wang et al., 2008).

Cybergogy and heutagogy approaches that involve more than 1 supporting factor will further improve the quality of teaching and learning. the ability and skills of students are getting better to prepare their capabilities to face the future.

Heutagogy learning gives learners full freedom to develop their abilities outside the classroom and is fully supported by a cybergogy approach that facilitates students learning autonomously using information and communication technology, but it must still be ensured that their involvement from the intellectual, behavioral and emotional side can be controlled properly (Wang & Kang, 2006). Online shared learning can be developed collaboratively by empowering each student's experience, learning to build teamwork, encouraging each other, motivating, and inviting active and constructive learning engagement, fostering self-confidence and curiosity so that the culture of discussion is warm and enlighten can occur (Kang et al., 2009; Wang, Shen, & Novak, 2008; Shen, Wang, & Pan, 2008; Wang, Novak, & Pacino, 2009; Shen et al., 2009; Scope, 2009; Cronin, McMahon & Waldron, 2009).

Other research conducted by Nikoleta Agonacs and Jaoa Filipe Matos (Agonács & Matos, 2017) said that heutagogy has been applied or implemented in different learning environments but never in a Massive Open Online Course (MOOC) environment. MOOC is a quite unique environment for students because it requires high autonomy and improved

skills. The MOOC model like this certainly accommodates heutagogical principles well, which is a chosen MOOC student; the idea of providing open access to content; sharing and recycling knowledge, and non-linear learning. This is a characteristic possessed by MOOC and heutagogy (Nugroho, Santosa, & Fauziati, 2019).

Cybergogy approach in teaching and learning directs learners that learning can be done anywhere and anytime in accordance with their respective conditions in accessing computers and the internet, the availability of highly complete and heterogeneous subject matter on the internet can be accessed easily by learners. With technology 4.0 era teaching and learning communication services between lecturers and students have been facilitated using e-learning, collaborative learning strategies can be facilitated with video and audio sharing or blogging, web GitHub also facilitates learners in teamwork communication to compile a joint project. Cybergogy also facilitates learning through communities by activating participants in building discussions, conveying ideas, negotiating and finding solutions with the community (Bilfaqih & Qomarudin, 2015).

Actually, heutagogy success is not only determined by the role of technology, but it is more important is the change of mindset to look for opportunities to gain knowledge in the community through a social network. Students' collaborative and participatory activities can be created through social networks by sharing knowledge and experiences from the contributors involved so that students can collect their learning outcomes and learning experiences (Shaari & Jamaludin, 2017).

Opportunities and Challenges of Heutagogy in Transdisciplinary Perspectives

The transdisciplinary approach can be interpreted as an effort to communicate a variety of different scientific disciplines between Natural Sciences, Social Sciences and religious sciences. in accordance with the 2009 charter agreement at Convento da Arrabida Portugal, it was stated that the purpose of transdisciplinary is for the benefit of mankind and its environment in the life of the nation and state. (Dalam, Islam, & Putra, 2019) In transdisciplinary education, there is a demand for openness between disciplines. the importance of humanity is everything, the scientific linearity of an expert is not a barrier to ways of thinking, acting and acting. There is no absolute truth (except, God's revelation) because the truth of human science always grows and develops according to the times so that

one's wisdom in decision making is largely determined by how much it has the ability to communicate between disciplines (Hasan, 2007).

The transdisciplinary approach according to J. G. Wissema is an openness of insight in thinking is strongly influenced by a person's past and present experiences, the extent and extent of their relationships and heterogeneity. this will automatically affect the future life in the ability to solve problems, innovate, imagine, carry out both scientific and skill transformation, technological literacy and an entrepreneurial spirit (Wissema, 2009).

In Islamic education, Transdisciplinarity also carries out the process of integrating various scientific disciplines both in learning, teaching and research to solve humanitarian problems with dynamics that continue to develop and complex along with the development of the era in the disruptive era. bearing in mind the complexity of the problems in the community, it is necessary to have sufficient provisions for students in learning to solve problems through education in a transdisciplinary approach (Mawardi, 2013) Efforts to align public knowledge, social and religion (spiritual values) must continue to be developed in a structured, holistic and comprehensive manner by involving all human resources across disciplines (lecturers, students, university management, the general public) in a discussion group, research group, learning teaching team (Freigang, Schlenker, & Köhler, 2018).

Transdisciplinary perspective in learning is needed in the era of the industrial revolution 4.0 where sources of knowledge are scattered everywhere and can be accessed at any time by all learners both in villages and cities, on campus and outside the campus. The transformation of one field of science to another becomes a necessity so that communication between disciplines can be achieved. This scientific transformation becomes important so that students' capabilities become more complex in their perspectives and insights. Completing transdisciplinary study materials is very useful for learners to make more comprehensive decisions in the future. Preparing learners to have broad insights or views regarding an issue is seen from many scientific disciplines expected to be able to prepare a superior generation in the future. Learners in the learning process will recognize knowledge across disciplines that involve many elements both from academics and practitioners so they are able to explore new knowledge (Aldiab, Chowdhury, Kootsookos, & Alam, 2017).

Studying in the era of the Industrial Revolution 4.0 is a heutagogical practice that gives students the freedom to design their learning, has a choice of learning menus with the

aim of achieving capabilities in the future. In order to achieve this capability, several things to note are that students are given the opportunity to learn across disciplines of science and technology naturally, can access the convergence of science and technology through the internet in their hands, and the learning system gives students as much space as possible to look for gain transdisciplinary learning experience (Freigang et al., 2018). Some of the implementations of transdisciplinary perspective independent learning is the study of linguistics integrated with Islamic values at IAIN Sheikh Nurjati (Gazal, 2019).

Developing and building public trust in technology Education in Indonesia requires the development of science and technology that is not enough just to provide information, both natural sciences, science, humanities, and religion. But it requires a storefront of science and technology that is operational and can be implemented. It takes a massive movement to make it happen, namely by MOOC so that it can be enjoyed by many people, can provide inspiration and share experiences with others. All fields of science and technology if accommodated in MOOC will make it easier for students to develop their knowledge, learning across disciplines of science. This needs to be realized considering that in a global society all things can be accessed easily through the internet by elaborating various fields of science, increasing knowledge competencies so as to be able to harmonize the science and technology presented in a transdisciplinary manner.

Conclusion

The conclusion of this literature study is that learning in the 4.0 era became a necessity to change the paradigm of the era of pedagogy, andragogy, and heutagogy. Learner are given the freedom of various opportunities both offline and online to search for and develop learning resources, sources of knowledge. One of the keys to learning is to produce outcomes that can be accepted by the people of today and the future that require improvement in learning improvement that starts from curriculum planning that considers the transdisciplinary communication with other fields of science both natural sciences, social humanities and religion. Students or learners are given the opportunity to search for and develop their knowledge through assignments to find data in the field to enrich their knowledge. Students or learners relate to direct people to add to his experience, conveying the problems and the solutions found in society community, both the internet community, community colleges, community employment, community practitioners, community volunteers and others in information technology.

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