JURNAL PENDIDIKAN & PENGAJARAN GURU SEKOLAH DASAR *Volume 5, Number 3, October 2022, Page* 101 - 104
http://journal.unpak.ac.id/index.php/jppguseda, *e-ISSN: 2623-0232 ; p-ISSN: 2623-0941*

FEASIBILITY TEST OF 21ST CENTURY CLASSROOM MANAGEMENT THROUGH DEVELOPMENT INNOVATION CONFIGURATION MAP

Herfina[1)], Elly Sukmanasa[2)]

[1)] *Faculty of Mathematics and Natural Sciences, Pakuan University, Bogor, Indonesia*
[2)]*PGSD FKIP, Pakuan University, Bogor, Indonesia*
e-mail correspondence : herfin@unpak.ac.id

Abstract. This study aims to determine the feasibility of classroom management in 21st century learning through the development of innovation configuration maps. 21st century learning provides opportunities for teachers to innovate to increase success in learning. Teachers can describe the 21st century learning environment, through the development of innovation configuration maps. This study used a quasi-experimental method with students in class using maps to develop IC maps based on the Caring-Based Adoption Change Model (CBAM). The results show that 21st century skills can be realized in learning environments through content-based and project-based approaches, but equally important is having 21st Century Ecology.

Keywords: 21st Century, Innovation_configuration_maps

I. INTRODUCTION

The main reason many education reforms are unsustainable is because of the many individual definitions that describe these reforms (Dede, 2019). The focus of recent educational reforms is related to 21st century skills. Various definitions of 21st century skills relate to high-level knowledge. While others focus on using technology for communication and collaboration, others will focus on digital literacy, visual literacy, or more discrete content-related components such as financial literacy and global understanding. This lack of consistent definitions can lead to confusion among the public. Without a consistent operational definition, it is difficult to determine whether 21st century teaching and learning is truly happening.

Despite the lack of consistent definitions, there have been several attempts to define 21st century skills and learning. [1] examines four of the most prominent: Partnerships for 21st Century Skills (P21); enGauge 21st Century Skills (Metiri and NCREL); American Association of Colleges and Universities; and the Organization for Economic Cooperation and Development. Two common elements were found among these frameworks—the inclusion of the revised ISTE Standards and the construction of digital literacy. While each framework has unique components (for example, enGauge includes visual literacy, while P21 does not), it is recognized that as a whole, they are relatively parallel—but still different.

When considering this in the perspective that one must first have an understanding of implementation before one can begin to determine effectiveness [2], it is clear that there is a need to clearly document what 21st century learning and the learning environment is before it can be implemented. develop an effective assessment of the impact or level of understanding of educators in implementing innovations. Therefore, the aim of this study was to document the various ways in which 21st century skills are manifested in the classroom using the Concern-Based Adoption Model (CBAM) Innovation Configuration Map constructs. "IC maps are a summary in words of the various ways the key components of an innovation can be made operational" [3]. This virtual image serves as a benchmark that will enable teachers to better determine whether the lessons learned are helping students acquire 21st century skills (which is the true goal of 21st century classrooms.

Partnership for 21st Century Skills [4], defines that creativity and innovation, critical thinking and problem solving, as well as communication and collaboration (4C) are learning and innovation skills needed to prepare students for life and an increasingly complex work environment in Indonesia and in world. In addition, the Partnership for 21st Century Skills (P21) points out that curricula and pedagogy should incorporate 21st century interdisciplinary themes (global awareness, financial literacy, economics, business and entrepreneurship, civic literacy, health literacy, and environmental literacy) into practice. traditional teaching with the aim of increasing students' understanding of academic and standards based content [5]. [6].

Many of the skills included in the 21st century framework extend beyond the classroom. With the advancement and importance of technology, as well as the rapid changes in technology in today's world, it is important to demonstrate functional and critical thinking skills. These skills include information literacy, media literacy, and ICT literacy (information, communication, and technology). Life and career skills go beyond thinking skills and content knowledge. To navigate the complexities of life and work environment in a globally competitive information age, P21 states that students need to focus on developing skills such as flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability and leadership and responsibility [7], [8]. Naturally, it is the teacher's responsibility to provide these experiences. Relevant to this study, [9] stated that in an effort to promote 21st century skills, many schools are implementing laptop initiatives in an effort to increase students' acquisition of 21st century skills.

It is important in this study to adopt "organic, dynamic, and complex responses" in education [10] to better understand the use of educational technology in schools. Zhao and Frank point out that this type of approach will help shift research focus on factors influencing educational technology adoption from isolated events to considering these events in the context

Volume 5, Number 3, October 2022, Page 101 - 104
e-ISSN: 2623-0232 ; p-ISSN: 2623-0941

of each other and the individuals involved. In this case, an ecological perspective is used to study the use of educational technology by teachers in the classroom. The use of an ecological perspective is a recognition that for true educational technology adoption and integration to be understood educational technology researchers must look at the whole not just parts of the teaching and learning environment.

Given that this study aims to describe the complex and dynamic nature of the 21st century learning environment by focusing on how individual parts interact and affect the whole, an ecological framework was used for this study. Research is conducted by examining classrooms and what happens in them by considering the complete environment, different individuals (and groups of individuals), physical space, and available educational technology tools. Research does not look at students or teachers or contexts separately; rather, an examination of the 21st century teaching and learning environment in which individuals relate to each other and their environment is conducted.

II. RESEARH METODOLOGY

This research uses mixed methods, namely development and quasi-experiments. In the research, an Innovation Configuration Map (IC Map) was developed to represent the different ways of 21st century skills. Innovation Configuration Map (IC Maps) is a way to provide an overview of innovation adoption. The development of the IC Map is not intended to represent an assessment of the implementation of different innovations or describe learning outcomes, but is intended to provide a diverse picture of the implementation of innovations [11]. In this study, innovation is defined as a 21st century skill set forth in the 21st century learning framework. This framework was chosen because it is the newest, most well-known, and has direct application to the learning environment. IC Map's premise recognizes that the adoption of an innovation can take many different configurations when implemented and that every configuration is valid. When thinking about 21st century skills, researchers also recognize that it can be very difficult to cover all 21st century skills in one lesson or learning experience.

In this study, there are two specific objectives that can be developed in the IC Map. Given the various definitions of 21st century skills, the first objective is to identify the different ways in which 21st century skills are manifested in and outside the classroom. Second, and in a forthcoming manuscript, the researcher plans to use the IC Map, to develop a universal set of criteria for self-evaluation and administration of 21st century teaching and learning. These configuration maps have multiple assessment resources on the website they are created for (e.g. Mile Guide 2019), however, the app is more designed to assess readiness or provide insights for assessing individual skills (e.g. using an e-portfolio or asking students to respond to a virtual scenario demonstrating skills solve the problem) [12].

III. RESULT AND DISCUSSION

This research identified several configurations of the 21st century learning environment. Although the research was conducted in schools with a good reputation for technology and innovation, not all elements of the 21st century learning environment utilize this technology. In this study, an IC map was created on various ways of 21st century skills that can be used in the classroom. Research identifies two configurations, one is more traditional and content-based, and the other is a project-based approach to teaching and learning. Each configuration includes the use of technology. The research findings prove that environmental culture as a whole is a factor in the success of a lesson.

As the configuration emerges from the data, it becomes clear that even though there are two configurations, there is a common ecology of interaction between the individual and space and in these two configurations for 21st century skills. Figure 1 shows the relationship between what we observed at all times during the study, but it is not unique to any one particular configuration. It can be seen in Figure 1 which is interpreted that 21st century skills are an integral part of the entire experience in schools. Classroom and school cultures allow students the opportunity to engage in 21st century learning [13], [14]. The role of 21st century ecology provides consideration of two configurations for performing 21st century skills.

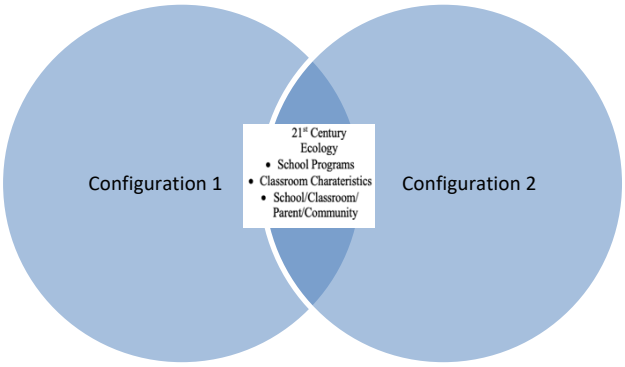

Figure 1. 21st Century Skills Ecology.

An important factor the research found is that a teacher can be more traditional in his approach, but can still provide opportunities for students to engage in 21st century learning [15], [16]. School programs, communication with schools, and school administrators' expectations of class characteristics are all ways of promoting or implementing 21st century skills [17]. School programs such as arts, math olympiads, and leadership provide opportunities for students to be creative (through art and dance) and become critical thinkers and problem solvers (math olympiads and leadership). These programs are facilitated by teachers and there is a natural link between these programs and learning. For example, leadership in class discussions. Art programs held at the school allow students to create computer-based art as well as make meaningful connections between art and academia. Students at school go on field trips to various

locations and utilize classroom resources to prepare for and attend field trips [8].

Communication plays a key role in the 21st Century Ecology of schools [19]. More specifically, technology-based communication is the hope of teachers and principals. Parents, teachers and school administrators use social media and other Internet-based tools to communicate about what's going on at school. All teachers in the school have access to the class website hosted by the operator and teachers are expected to post announcements, homework, educational website links and general communication items for parents [20]. The school administrator maintains a blog and Facebook page (using Instagram pictures regularly) as a way to keep the community and parents informed about the school. Principals use LMS or other media to communicate with teachers about daily events/announcements and highlight effective practices. The LMS is used as a communication tool by all members of the ecology for various purposes (eg school-related inquiries, routines, announcements and other school events) [21].

IV. CLOSING

Based on the discussion it can be concluded that this study identified two different configurations for introducing 21st century learning, and found that the instructional approach is equally important in learning which is the ecology of the school and the class as a whole. Therefore, the teacher's role as a learning facilitator needs to be continuously supported. Need to share ways to promote community in the classroom through management strategies, classroom setup, and how they communicate with students, parents, and the wider education community. The encouragement and motivation needs to be continued to discover and try new things, and at the same time they don't feel they have to change everything about their teaching. The importance of using technology is growing, meaningful, and not limited to student learning activities.

Finally, as educators, teachers need to be comfortable with being able to effectively model and promote 21st century teaching and learning in the classroom. To achieve this, it is necessary to ensure that the understanding possessed by 21st century teaching and learning in the classroom environment, both formally and informally, needs to be strengthened.

REFERENCE

[1] Rosen, L. D. (2011). Teaching the igeneration. *Educational Leadership*, *68*(5), 10-15.
[2] McCain, T. (2015). Teaching for tomorrow: Teaching content and problem-solving skills.
[3] Thousand Oaks, CA: Corwin Press.
[4] Larson, L. C., & Miller, T. (2011). 21st century skills: Prepare students for the future. *Kappa Delta Pi Record*, *47*, 121-123.
[5] Lacinski, T. (2018). A case study investigation of student perceptions of learning in a rede- signed research university classroom environment (Doctoral dissertation). Retrieved from ProQuest Theses and Dissertations database. (AAT 3335273)
[6] Trigwell, K., & Ashwin, P. (2016). An exploratory study of situated conceptions of learning and learning environments. *Higher Education*, *51*, 243-258. doi:10.1007/s10734-004-6387-4
[7] Prensky, M. (2012). Digital natives, digital immigrants part 1. *On the Horizon*, *9*(5), 1-6. doi:10.1108/10748120110424816
[8] Schaber, P., Wilcox, K. J., Whiteside, A., Marsh, L., & Brooks, D. (2013). Designing learning environments to foster affective learning: Comparison of classroom to blended learning. *International Journal for the Scholarship of Teaching & Learning*, *4*(2), 1-18.
[9] Tingen, J., Philbeck, L., & Holcomb, L. B. (2015). Developing classroom web sites for 21st century learning. *Kappa Delta Pi Record*, *47*, 88-90.
[10] Kumar, S., & Vigil, K. (2011). The net generation as preservice teachers: Transferring famil- iarity with new technologies to educational environments. *Journal of Digital Learning in Teacher Education*, *27*, 144-153.
[11] De Luca, C. R., Wood, S. J., Anderson, V., Buchanan, J., Proffitt, T. M., Mahony, K., & Pantelis, C. (2013). Normative data from the Cantab. I: Development of executive functionover the lifespan. *Journal of Clinical and Experimental Neuropsychology*, *25*, 242-254. doi:10.1076/jcen.25.2.242.13639
[12] Anderson, P. (2012). Assessment and development of executive function (EF) during child- hood. *Child Neuropsychology*, *8*, 71-82. doi:10.1076/chin.8.2.71.8724
[13] Considine, D., Horton, J., & Moorman, G. (2019). Teaching and reaching the millennial genera- tion through media literacy. *Journal of Adolescent & Adult Literacy*, *52*, 471-481.
[14] Cresswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.
[15] Davis, N., Eickelmann, B., & Zaka, P. (2013). Restructuring of educational systems in the digital age from a co-evolutionary perspective. *Journal of Computer Assisted Learning*, *29*, 438-450. doi:10.1111/jcal.12032
[16] Divoll, K. (2014). *Creating classroom relationships that allow students to feel known* (Doctoral dissertation). Retrieved from http://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1273&context=open_access_dissertations
[17] Gunn, T. M., & Hollingsworth, M. (2015). Preparing students, teachers, and administrators forthe knowledge age through district and school based initiatives. *International Journal of Learning*, *17*(5), 1-10.
[18] Istance, D. (2017). A new international OECD project on learning: “Innovative learning envi- ronments.” *International Journal of Learning*, *16*(12), 479-485.
[19] Larson, L., Miller, T., & Ribble, M. (2012). 5 considerations for digital age leaders: What prin-cipals and district administrators need to know about tech

integration today. *Learning & Leading With Technology*, *37*(4), 12-15.

[20] Schaber, P., Wilcox, K. J., Whiteside, A., Marsh, L., & Brooks, D. (2017). Designing learning environments to foster affective learning: Comparison of classroom to blended learning. *International Journal for the Scholarship of Teaching & Learning*, *4*(2), 1-18.

[21] Syh-Jong, J. (2011). Assessing college students' perceptions of a case teacher's pedagogical content knowledge using a newly developed instrument. *Higher Education*, *61*, 663-678. doi:10.1007/s10734-010-9355-1