TRANSITIONING FROM PEDAGOGY TO HEUTAGOGY THROUGH PROJECT ADD2CART STRATEGIES

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Abstract: **Project ADD2CART Strategies is designed to develop an android application that would function as an offline educational resource which the students can use with or without internet connection, that is accessible using their mobile phones, and provides students opportunity to evaluate their own learning through a self-paced education platform. With this Android App, the researchers investigated how it is being used in classroom whether it is suited for Heutagogy method of teaching. This study used a validated survey question by Rusli et. al, (2020) and Chan et. al (2019) and was administered through google forms. Responses were then tabulated and analyzed by Mean and SD. Interview was also given to the teachers to gather additional information and to share personal experiences of the teachers in using the Android applications Based from the data gathered from the questionnaire and interview, teachers perceived Heutagogy method of teaching through the use of an android application has high performance expectancy for both learners and teachers. Similarly, there is a high effort expectancy in Heutagogy for teachers and students as there is quite difficulty in developing the app and students are not yet used to this type of method of teaching. However, creativity, innovation and fun in lesson delivery is evident using this android-based learning application.**

Keywords: **Heutagogy; Android-based Application**

CONTEXT AND RATIONALE
In the fast-changing environment of 21st century, there is a need for teachers to adapt to the volatile, uncertain, complex and ambiguous (VUCA) world. The COVID-19 pandemic has brought so much deviations in the teaching and learning process. For the past two years, we transitioned from face-to-face learning to distance learning. Several options were given to school to deliver education via remote means and these are online distance learning, modular distance learning, TV and radio-based instructions. However, with the recent pronouncement of the DepEd Secretary, the new school year will showcase the return of learners inside the classroom. The lessons from the pandemic experiences had given the educators a wider perspective in terms of curriculum delivery by integrating different learning modalities.

The Science Department of Dasmariñas North National High School became the leader of innovations in terms of instructional delivery. The Project LODI or the Live Online Discussion which was initiated by the Department became the Community of Practice (COP) of the entire Cluster VI. Here, teachers are delivering science lessons live through unlisted livestream in YouTube to assist students in learning while they are at home. This project ran for two years and more than two hundred video materials were made available for students that aided them in studying science from Grade 7 to Grade 10. With the inclusion of RBI, the method of instruction provided by the teachers transitioned to Transmedia where lessons are being aired in different platforms.

However, these are the successes of the past. The challenges that this new normal bring are different from what we had in the previous years. Antrakusuma et. al.in 2018 mentioned that ICT has been an integral part in most aspects of life including education. Thus, new principle of teaching methods must emerge that will cope up to the current situation. Now that learners are going back to classrooms and blended modalities are being implemented, teachers must find a different teaching approach that would suit in the present set-up.

As part of the preparation for the coming school year, the science group conducted LAC sessions prior to the opening of classes. The activity led to the birth of a new project called ADD2CART Strategies or the App Development and Digitalization through Curriculum Advancement by Reinventing Teaching Strategies. The department was able to contextualize science lessons by creating an android application which learners can use even without internet connections. With the integration of technology, teachers can maximize the time during face-to-face classes and learners can still continue studying at home during distance learning schedules. This new method of teaching strategy consolidates the principles of teaching prior to pandemic and the teaching approaches during the pandemic. Slowly, we are integrating Heutagogy in our method of teaching where learners are being taught to become self-determined rather than self-directed. Heutagogy is supported by two key educational philosophies which are humanism and constructivism. Humanism in a sense that the learners are treated as the center of the educational process while constructivism put the learners at the heart of the educational experience just like what Bruner, Dewey, Piaget and Vygotsky explained (https://www. teachthought.com/education/shifting-from-pedagogy-to-heutagogy-in-education/).In a study by Rusli et. al in 2020, it was found out that majority of the students agreed that Heutagogy model of teaching through online learning can increase creativity, fun, willingness and ability in the learning process as they can study anytime and anywhere without any limitations of space and time. Skills such as creating, exploring, researching and organizing tasks are being developed among students as this is a requirement in Heutagogical method of teaching (Mohammad et. al, 2019). The Heutagogical approach can be viewed as an evolution from Pedagogy to Andragogy toHeutagogy. In Heutagogy less instruction and control are being employed to learners as they are more mature and more self-determined to learn as compared to Pedagogy where there is more teachers' control and instructions given to learners who have less maturity and has lessself-determination in terms of learning as shown in the figure below (Canning, 2010; Blaschke, 2014).
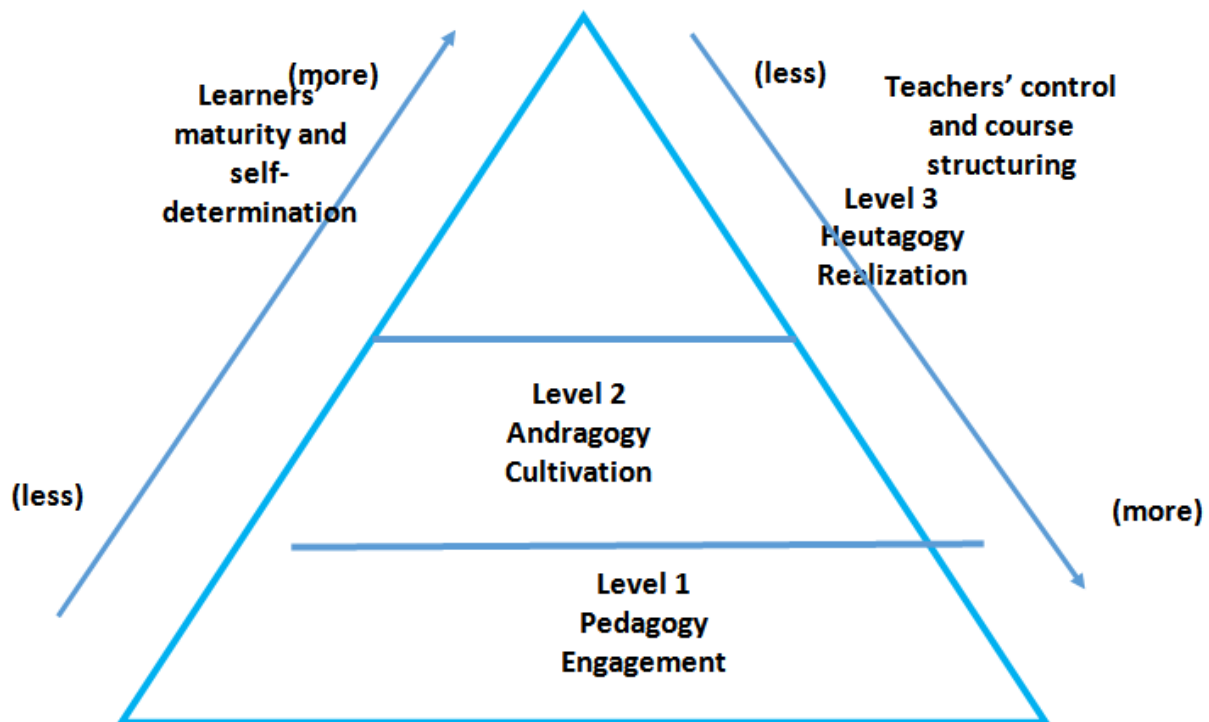

Figure 1. Progression from pedagogy to andragogy then to heutagogy (based on Canning, 2010)

Familiarity with this term may seem questionable as of the moment for there are few trainings and seminars conducted at the school level touching Heutagogy. Now, the integration of technology in the method of teaching is much higher than ever before, giving the students a wide array of sources of information and giving them more choices as to where to learn, when to learn, and how to learn. Thus, a study is needed in order to maximize Heutagogy in the teaching and learning process in the context of technology integration. This novel idea led to the conduct of this action research.

INNOVATION, INTERVENTION, STRATEGY
Project ADD2CART Strategies or the App Development and Digitalization through Curriculum Advancement by Reinventing Teaching Strategiesis a teaching strategy/ technique introduced and implemented in all grade levels in science and served as an intervention to blended learning approach being employed for the current school year. An Android Application was created and developed by science teachers in order to provide learners autonomy in terms of learning and opportunities to learn on their own at their own pace. This Android App is an offline educational resource which the students can use with or without internet connection, that is accessible using their mobile phones, and provides students opportunity to evaluate their own learning through a self-paced education platform. Lessons were made interactive through H5P-based activities (gamification) that would motivate students to engage and learn

ACTION RESEARCH QUESTIONS

This paper attempts to explore science teachers' capacity to use heutagogy as a teaching strategy. Specifically, it aims to answer the following:
1. What are the teachers' understanding of Heutagogy and its application in the teaching and learning process through Android-based learning integration?
2. Are the teachers ready to transition from Pedagogy to Heutagogy through an Android-based learning application?

ACTION RESEARCH METHODS
a. Participants and/or Other Sources of Data and Information
The participants of this research are the science teachers of Dasmariñas North National High School from Grade 7 to Grade 10.

b. Data Gathering Methods
A survey questionnaire based from Rusli et. al, (2020) and Chan et. al (2019) was created in google forms and was given to allscience teachers. Likert scale was used to gather data and was analyzed through Mean and SD. Interview was also conducted in order to capture information directly from science teachers regarding their view on how to utilize the Android-based app and the teaching strategies they are using in blended learning.

DISCUSSION OF RESULTS AND REFLECTION
From the questionnaire data, it showed that most of the participants were female teachers as compared to only two male teachers as shown in figure 1.
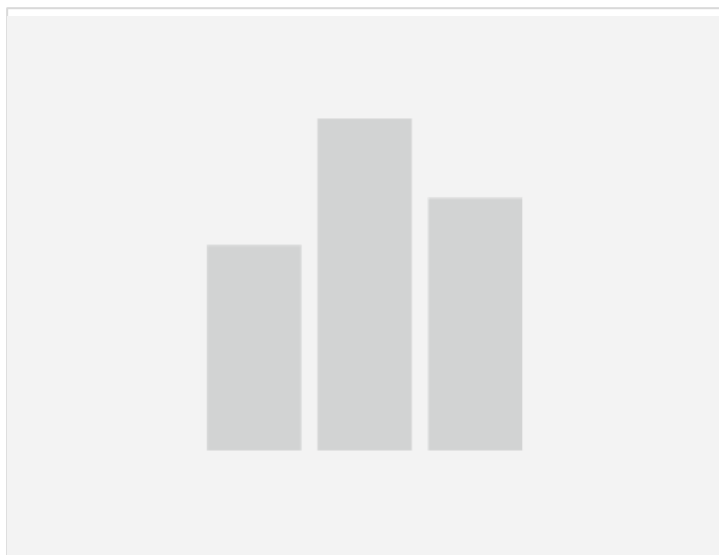

Figure 1. Gender of the respondents

The data showed that the average age of the participants were 38.15 years old and only 16% of the participants finished their Masters' Degree. Similarly, most of the participants are already familiar in using the internet as they

have been using the internet for more than 5 years with more than 6 hours of internet use per day. Also, most of the

respondents have good computer skills as seen on table 1.

Table 1. Respondents' profile

Average age of the participants	38.15 years old
Qualifications: • Bachelors' Degree • Masters' Degree	 16% 84%
Frequency of using the internet	More than 6 hours
No. of years in using the internet	More than 5 years
Internet connection	Very Good
Computer knowledge	Good

Table 2. Perception of teachers in Heutagogy as regards to Performance Expectancy

	Performance Expectancy	Mean	SD
1	The learning system needs to keep up with the times.	3.74	0.45
2	The current learning needs to follow a learning system that leads to the adoption to new methodologies and strategies in teaching.	3.89	0.32
3	Digital learning system is a new and innovative tool for learning.	3.84	0.37
4	In my class I can become learning facilitator or consultant and not a provider of information.	3.42	0.51
5	I allow flexibility in terms of where, when and how my students will acquire learning.	3.84	0.37
6	Heutagogy (self-determinedlearning) approach makes it possible to improve the learning process of students.	3.58	0.51
7	Using Heutagogy Approach (self-determined learning) would increase the quality of teaching and learning process.	3.58	0.51
8	Using Heutagogy Approach (self-determined learning) would save learners' and teachers' time.	3.58	0.51
9	In ADD2CART App learners can access information without being limited by distance, space and time, it can be anywhere and anytime.	3.89	0.32
10	ADD2CART App can enhance my teaching in class.	3.79	0.42
		3.72	**0.43**

3.26-4.00 high performance expectancy
2.51-3.25 moderately high-performance expectancy
1.76-2.50 moderately low performance expectancy
1.00-1.75 low performance expectancy

Data in Table 2 revealed that there is high performance expectancy (Over-all Mean = 3.72) when teachers are using the Heutagogy form of teaching-learning process. This is due to the fact that most of the students will be the one responsible for learning while the teacher will serve as the facilitator and not as provider of information. Teachers also strongly agree that ADD2CART strategies can provide students access to information without being limited by

distance, space and time which is a positive indication that this strategy is useful for blended learning approach.

In the interview conducted, one teacher mentioned that "students can learn on their own by using the ADD2CART application" which targeted one of the objectives of this teaching innovation. Heutagogy or self-directed learning can provide learners opportunities to own their learning and become more responsible in their studies. The App also

provide teachers with additional learning resource which teachers are using inside the classroom most especially with the Grade 10 teachers as all of its students were provided with Android tablet by the LGU.

Although, there are still some students who has low level of maturity and autonomy when it comes to self-directed learning especially in lower grade levels and those struggling learners as mentioned by another interviewee.

This would pose difficulty in the actual teaching-learning process. One teacher even mentioned that "students are not yet ready for this type of method of teaching". However, this would also provide opportunities for teachers to grow and learn in terms of teaching methodologies and strategies especially when they are provided with facilities and infrastructure to support this kind of teaching-learning process.

Table 3. Perception of teachers in Heutagogy as regards to Effort Expectancy

	Effort Expectancy	Mean	SD
1	Using ADD2CART App makes learning fun and easy.	3.84	0.37
2	It is easy for me to become skillful at using ADD2CART App in my teaching.	3.68	0.48
3	By using ADD2CART App in teaching, I am able to teach easily in class.	3.79	0.42
4	Developing ADD2CART App makes me creative and innovative in preparing the lesson.	3.89	0.32
5	I can get the job done easily by using ADD2CART App.	3.58	0.51
6	Using heutagogy approach (self-determined learning) in teaching and learning is easy.	3.58	0.51
7	It is easy for learners to become skillful at using heutagogy approach (self-directed learning) in my teaching.	3.53	0.51
8	By using Heutagogy Approach (self-determined learning) in teaching and learning process, I am able to teach easily in class.	3.58	0.51
9	Learners can understand the lessons more easily when using Heutagogy (self-determined learning) in my teaching.	3.63	0.50
10	Learners find Heutagogy (self-determined learning) fun and an easy way of learning.	3.58	0.51
		3.67	**0.46**

3.26-4.00 high effort expectancy
2.51-3.25 moderately high effort expectancy
1.76-2.50 moderately low effort expectancy
1.00-1.75 low effort expectancy

Table 3 showed that teachers have high effort expectancy perception (Over-all Mean = 3.67) when using Heutagogy as a method of teaching when using the ADD2CART application. This is a positive perception when applied to teaching-learning process as this would indicate that teachers can use the Application extensively and exhaustively.

Based from the conducted interview, one teacher mentioned that the App itself can serve as visual aid materials for there are illustrations, pictures, and even video materials which

they can use for the development of the lesson. Another mentioned that the App is being used as an activity where students are divided into smaller groups especially in sections where not all students are having their gadgets such as smartphones or tablets.

There are also ways to improve the ADD2CART App so it can maximize Heutagogy as a strategy for teaching and learning. Teachers mentioned that the App should be "more informative and detailed" so that less discussion will be provided by teachers. Internet infrastructure inside the classroom could also benefit both the teachers and the students for they will be able to explore wide sources of information to be used in self-determined learning.

ACTION PLAN

Proposed Program and Activities	Objectives	Persons Involved	Time Table	Success Indicators
Enhancement of ADD2CART	To be able to maximize the use	Head Teacher Science Teachers	SY 2022-2023	Creation of Quarterly Android

Application	of teacher-made Android App inside the classroom			App per grade level Class Observation integrating the use of the Android App
Adaptation of Project ADD2CART	To be able to conduct school-wide/ division - wide benchmarking, adaptation and implementation of Project ADD2CART	Head Teachers All DNNHS Teachers Division Personnel	SY 2022-2023	Benchmarking activities Adaptation of other schools of the App

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