

## EDUCARE: A VIDEO PRODUCTION FOR TEACHERS IN RESPONSE TO EDUCATION 4.0 IN CAVITE PROVINCE

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### ABSTRACT

*Trainings and seminars in education have spoken much on the advent of Education 4.0 and have advanced to Education 5.0. It implies that education is towards artificial intelligence or machine learning. The digital technology grew fast. Gadget dependence was very evident even to learners. Informal and non-formal education took place on the internet through gadgets such as smartphones, tablets, etc. Influences of social media is high including the young ones and adults, even to professionals. It is projected that the main problem arising is on the attitude, skills and knowledge of teachers adapting advanced digital technology towards the goal of education 5.0. This study explored on attitude, skills, and knowledge KSA model of business resolving the so-called education institution and industry gap. Bloom's domain of learning and the structured functional theory were applied, leading to the conception of 4C shells of mind, specifically, critical thinking, creative thinking, communication skills and character. Teachers from different legislative districts of province of Cavite served as respondents utilizing survey questionnaire thru google forms. Percentage, base and rate, and ranking principles were used. Descriptive statistics, such measures of central tendency, measures of position and measures of variation were determined and analyzed. Inferential tools such as Z-test, Analysis of Variance, Tukey's Honestly Significant Difference test, Levene's test of homogeneity were employed. The results were evaluated using 8 Scale Balanced Value-Agreement Equivalence. The proponents found out that the teachers have a very high positive attitude in adapting digital advancements in terms of sex, age, type of service school and grade level. Attitude was quite affected by lack of knowledge on the advancements on digital technology. Also, the teachers utilized different digital technology in giving activities to their respective learners. Hence, the study recommended more trainings and workshops, face to face or online, for teachers. An additional teacher's skill, lesson video production, must be developed. This can enhance their critical and creative thinking, communication skills and character. Its development, also, leads to a magazine of lesson "magazsson" production seen to empower the attitude, skills, and knowledge of teachers. In line, a classroom studio "classtudio" must be designed and provided to strengthen the lesson video and production skills and abilities meeting the goal of teaching as a science and art.*

*Keywords: Education 4.0, GMA Cavite, EDUCARE, Video Production, Teachers, Lecture Video, Technology*

## INTRODUCTION

The Education 4.0, as perceived by the proponents, is a stage in education system where teachers, students and the learning processes are seen and observed virtually at a distance. It is an approach of education towards industrial revolution 4.0 empowering artificial intelligence. Huh, AI? Big word! But what is Education 4.0 really about? What does it aim? Why is it needed? How is it done? The concept may be broad yet still can be broken into pieces, that in a piece we can start in order to establish a meaningful branch. Who needs it? The teachers?

According to PhilStar Global (2019), the generation Z or iGen are technology dependent because they were raised or are being raised in the world with smartphones making it as important as the air and water. In 2018, 79 countries seen in Global Connectivity Index (CGI), the Philippines ranked 57th fast-growing digital population in the world with 63% being internet users with an average of 10 hours a day spending time where 47% is spent on social media.

As read in the TEANIG ng CALABARZON (2019), students and teachers must be equipped with technology and gadgets, making learning easy to access. In UNESCO's Incheon Declaration and Framework for Action for the implementation of Sustainable Development Goal 4 under its vision rationale and principle, no 6 expresses that education systems must be authentic in responding to rapid change and advancements in labor markets and technology. How can teachers be technologically advanced, as well as their students? How do these advancements take place in the field of education?

Also, as stated in the paper release by TESDA citing World Economic 2016, from 2018 to 2020 artificial intelligence and machine learning will be more evident. Look around now, people are much dependent on gadgets. As Dr Bert J. Tuga (2019) in his talk last PAFTE CALABARZON's 12th Annual Seminar and Quiz Bee, he was quoted "Technology will never replace the teachers in the classrooms because there is humanity in every teacher [which technology cannot replicate], but teachers who do not know how to use technology will be replaced by those who do." Based on the proponents' teaching experiences, teaching in high school requires a lot of paper works. One needs to prepare for the lesson plan that varies from one school to another.

Other skills of a teacher are seen in instructional material designing, test constructs, lesson presentations, student care and monitoring, and assessment and evaluation. Should schools need teachers for extra and co-curricular activities, huh! Teachers really have to be flexible and multi-tasking.

In the lesson presentation, teachers usually borrow presentations from the internet, somehow, making the teachers' skills stagnant. Should it be that way around? New ideas are coming, but how are our teachers now? Are they really willing to adopt new trends in teaching styles? Are they ready? Can they still teach effectively and efficiently despite excessive paper works?

## OBJECTIVES OF THE STUDY

This study aims to assess the attitude, skills, and knowledge toward technological advancements of teachers, specifically, subject to 1) describe the demographics; 2) assess the response of teachers in personalized video production, if introduced as a teaching tool towards Education 4.0; 3) determine teacher's attitude, skill and knowledge towards video production; 4.) determine the significant difference on the SKAs of teachers towards video production in terms of age, sex, type of school and academic level of instruction; 5) enumerate digital activities that teachers are using; 6) provide a design of video production for teachers

## METHODOLOGY

This study is quantitative, as evident in the use of a survey questionnaire, quantification, and descriptive and inferential statistics. This used simple random sampling in gathering data, making it probabilistic in nature. This is purposive with criteria where respondents must be (a) a teacher or professor, and (b) teaching in schools located in Cavite Province.

This research had 114 respondents and used variables namely: (a) age is a continuous, independent and ratio data, used in order to determine differences on age ranges, (b) sex is a nominal and independent variable, identifying significant difference on male and female, (c) type of school is a nominal and independent variable, identifying significant difference on private and public schools, (d) teaching level is nominal and

independent variable, identifying significant difference on the academic teaching instruction modes, that is, elementary, high school, senior high school, collegiate, under graduate and post graduate teachers and professors, (e) attitude measurement is continuous, independent and interval data, used to assess and evaluate on appreciation of respondents on video production, (f) skill measurement is continuous, independent and interval data, used to assess and evaluate on what they can do, (g) knowledge measurement is continuous, independent and interval, used to assess and evaluate what they know, and (h) ASK measurement is continuous, independent and interval, used to assess and evaluate the over-all assessment on ASK. To ensure homogeneity, the ASK variables are quantified using a 0-based measure and a balanced eight-scaled equivalence table in order to distinguish further one observation from the other. For nominal data, a balanced four scaled equivalence table was used.

## RESULTS AND DISCUSSION

### 1. The Demographics

A total of 114 respondents were surveyed; 33.63% are males and 67.54% are females, 49.13% are teaching in private educational institutions, and 50.88% are in public. In terms of the level of teaching instruction, 17.54.18% of the respondents are teaching from kinder to grade 6, 45.61% grades 7 to 10, 16.67% senior high school, 14.91% college, and (5.26% graduate studies. In terms of legislative districts of Cavite Province, 7.89% of the respondents were from District 1, 0% from district 2, 3.51% from district 3, 42.11% from district 4, 39.47% from district 5, 1.75% from district 6, 0.91% from district 7 and 4.55% from district 8. The age of the respondents with ranges 20 to 29 was 38.60%, 30 to 39 was 36%, 40 to 49 was 15.79% and 50 and above was 11 9.65%.

### 2. Response of teachers in personalized video production, if introduced as a teaching tool towards Education 4.0

The attitude of the respondents is dispersed at standard deviation of 12.32 whose mean is at 75.44% evaluated as lower very high with lowest actual value of 16% and highest actual value of 100%. The median is 76% and mode is

67%. The first quartile lies at 67% while the third quartile lies at 84% yielding a yellow to red code lower boundary at 33% and no outlier in the upper boundary is detected. The skewness of -0.7560 and kurtosis of 3.7561 show that the curve is described as leptokurtic skewed to the right.

The skill of the respondents is dispersed at a standard deviation of 12.52 whose mean is at 69.48% evaluated as an upper high with a lowest actual value of 42% and highest actual value of 100%. The median and the mode are both 67%. The first quartile lies at 62% while the third quartile lies at 75.25% yielding a yellow to red code lower boundary at 35.5% and no red code outlier in the upper boundary is detected. The skewness of 0.7387 and kurtosis of 0.0981 show that the curve is described as mesokurtic skewed to the left.

The knowledge of the respondents is dispersed at a standard deviation of 13.45 whose mean is at 58.54% evaluated as a lower high with the lowest actual value of 13% and a highest actual value of 100%. The median is at 58% while the mode is at 67%. The first quartile lies at 49% while the third quartile lies at 67% yielding a yellow to red code lower boundary at 13% and no red code outlier in the upper boundary is detected. The skewness of 0 and kurtosis of 1.5088 show that the curve is described as mesokurtic skewed to the left.

Overall, ASK self-evaluation of the respondents is dispersed at a standard deviation of 9.59 whose mean is at 67.80% evaluated as an upper high with a lowest actual value of 39% and highest actual value of 94%. The median is at 66% while the mode is at 64%. The first quartile lies at 61.25% while the third quartile lies at 73% yielding a yellow to red code lower boundary at 40% and yellow to red code upper boundary at 95%. The skewness of 0.4599 and kurtosis of 0.6173 show that the curve is described as leptokurtic skewed to the left. Since red code outliers are seen in the attitude and knowledge, those outliers must be removed, and as a rule of balance, once outliers are removed, value/values at the opposite end must also be removed. Outlier in skill is seen in respondent 95 and consequently respondent 35. Also, knowledge has outlier seen in respondent 75 and consequently respondent 71 were removed. The resulting data set has produced an approximated normal curve on attitude, skill, knowledge and overall ratings. No outliers were detected.



The new data set is changed to a total of 110 respondents, of which 32.73% were males and 67.27% were females, 47.27% were teaching in private educational institutions and 52.73% in public. In terms of level of teaching instruction, 18.18% of the respondents were teaching from kinder to grade 6, 47.27% grades 7 to 10, 15.45% senior high school, 15.45% college and 3.64% graduate studies. The age of the respondents was based on the range grouped as 20 to 29 is 39.09%, 30 to 39 is 35.45%, 40 to 49 is 16.36% and 50 and above is 9.09%.

**3. Teacher’s attitude, skill and knowledge towards video production**

**Table 1**  
*Differences On Teacher’s ASK*

	p-Value	Alpha	Interpretation
ASK Assessment	-31.71	0.01	Accept alternative < 95%

With the new data set, using z-test, the claim that the ASK self-assessment of the respondents with a mean average greater than or equal to 95% at a mean of 67.94% yielded a z-value of -31.712 whose p-value is approximately 0.0000 compared with the critical value at 1% of -2.327 implied that the mean average is less than 95% with a critical boundary at 69.9223% evaluated as upper high.

**4. Significant difference on the SKAs of teachers towards video production in terms of age, sex, type of school and academic level of instruction**

**Table 2**  
*Differences On Teacher’s ASK*

Groups	p-Value	Alpha	Interpretation
ASK Test of Homogeneity	0.99176	0.01	No Significant difference
Age Range	0.61767	0.01	No Significant difference
Sex	2.57583	0.01	NO significant difference
Type of School	0.32915	0.01	NO significant difference
Level of Instruction	0.94773	0.01	NO significant difference
Attitude, skills, and knowledge	0.0000	0.01	Difference is Significant

Using the new data set, where outliers were not detected, the Levene’s test of

homogeneity is applied. Table 1 shows that at 1% level of significance and critical value of 3.02284, the test yielded an F-value of 0.00827 with p-value of 0.99176 has shown that NO significant difference exists between the variances leading to the variable’s homogeneity. Applying the unbalanced ANOVA test, it has shown that at 1% level of significance and critical value of 3.9719; the test yielded an F-value of 0.59805 with p-value of 0.61767 has shown that NO significant difference found between the ASK self-evaluation in terms of age. Also, it has shown that at 1% level of significance and critical value of 2.57583; the test yielded a P(Z<=z) two tail of 0.54914 which is greater than 0.01 level of significance has shown that there is NO significant difference between the ASK self-evaluation in terms of sex.

It has shown that at 1% level of significance and critical value of 2.57583; the test yielded a P(Z<=z) two tail of 0.32915 which is greater than 0.01 level of significance has shown that there is NO significant difference between the ASK self-evaluation in terms of type of school. It has shown that at 1% level of significance and critical value of 3.50317; the test yielded an F-value of 0.18112 with p-value of 0.94773 has shown that there is NO significant difference between the ASK self-evaluation in terms of level of instruction. Another, it has shown that at 1% level of significance and critical value of 4.67064; the test yielded an F-value of 58.0892 with p-value of 2.588 x 10<sup>-22</sup> has shown that there is significant difference between the ASK self-evaluation Applying HSD Tukey’s test with q(3,327,0.01) = 3.924, HSD = 2.98583, attitude has mean of 75.7364, skill has a mean of 69.4818 and knowledge has a mean of 58.6273. It has shown that there is significant difference between attitude and skill, there is significant difference between attitude and knowledge, and there is significant difference between skill and knowledge.

**4. Digital activity by teachers**

Using the original data set, set theory principles and percentage base rate principle, it has shown that 81 (71.05%) respondents use activity compilation to students. Also, 67 (58.77%) use DIY projects, 61 (53.51%) use film making, 52 (45.61%) use model, 50 (43.86%) use module presentation, 50 (43,86) use music video, 90 (78.95%) use report presentation, 75 (65.79%) use video clips, 56 (49.12%) use video documentary

and 2 others are specified as games, role playing, reality applications (virtual, augmented and mixed), movie trailer, radio dramas, scrapbooks, and vlog. Cumulatively, it has shown that 12 (10.53%) respondents used all of the given activities, 23 (20.18%) used 8 or more, 39 (34.21%) used 7 or more, 49 (42.98 %) used 6 or more, 61 (53.51%) used 6 or more, 61 (53.51%) used 5 or more, 84 (73.68%) used 4 or more, 97 (85.09%) used 3 or more, 103 (90.35%) used 2 or more, 114 (100%) used 1 or more and NONE (0%) did not use any.

### 5. Design of video production for teachers

Using thematic evaluation, mean response and ranking, it has shown that the least is on the participation of respondents in seminars and trainings at a mean of 2.370 evaluated as upper disagree, followed by knowledge on elements of video production at a mean of 2.480 evaluated as upper disagree, knowledge on essentials of video production at a mean of 2.540 evaluated as lower agree, readings on video production at a mean of 2.590 evaluated as lower agree, participation on seminars in Education 4.0 at a mean of 2.630 evaluated as lower agree.

Sixth to tenth lowest are knowledge on paid video editors at a mean of 2.690 evaluated as lower agree, readings on Education 4.0 have a mean of lower agree, willingness to shoulder expenses in creating video has a mean of 2.730 evaluated as lower agree, reading on guidelines in creating video has a mean of 2.780 evaluated as lower agree and encounter on processes of video production has a mean of 2.790 evaluated as lower agree. Five indicators found which include (1) an attitude that accepts the fact that adaptation on technology is necessary with a mean average of 3.600 evaluated as lower strongly agree, (2) believing that digital materials are essential in the learning process in Philippine education has a mean of 3.480 evaluated as lower strongly agree, (3) believing that current generation learners are gadget dependents has a mean of 3.470 evaluated as lower strongly agree, (4) believing that the video production must be incorporated to BSEd, BEEd and BPEd programs has a mean of 3.440 evaluated as lower strongly agree, (5) has the skill to select appropriate pictures relevant to an idea or concept has a mean of 3.400 evaluated as lower strongly agree.

### CONCLUSION

The Fourth Industrial Revolution is indeed to come and the new normal in education has boomed and shook the Philippine education in this CoViD19 pandemic. Teachers struggled and had exerted much time and efforts in order to ensure quality education. This research has shown that teachers and professors have a positive attitude in the use of new digital technologies. Less rejections are still seen to arise. Above averagely, they can create and apply digital technology though still needs to be developed and enhanced. Skills needs much empowerment. Also, holistically, teachers and professors are more than half ready in video production and digital technology. The attitude, skill and knowledge are the same in terms of age, sex, public or private faculty and academic level of instruction. The digital technology-based activities are, evidently, given by the faculty to students. And most given activity is report presentation using MS PowerPoint application and video clips.

### RECOMMENDATION

In this sense, the College of Education in The University of Perpetual Help System Jonelta in General Mariano Alvarez Cavite has designed a module, lesson video and classtudio for teachers. The lesson video on how to create a lesson video for learners has considered the results of the conducted survey holding on the principles "Maximum output at a minimum cost" and "learning with fun". It has also foreseen the advantages and enhancements that can be made to those teachers that will create their own personalized lesson video. It will make the teachers think more critically leading to creative thinking. From basic output to more comprehensive and concise contents. This will open opportunities for them to think and find ways on how to make their output more self-learned to learners. Thus, education 4.0 teachers must be equipped with critical thinking, creative thinking, communication skills and character.

Also, the lesson video can be done in English, Filipino or mother tongue languages. This will enhance and develop teachers' written and oral communication skills including pictographic representations through lecture boarding, scripting, and recording. This will allow them to hear and see themselves and make a self-

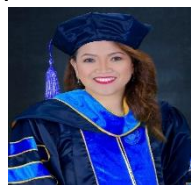
assessment and evaluation on how their gestures, expressions, pronunciation of words, mastery on content and others be improved.

This personalized lesson video is flexible for further improvement and corrections considering the feedbacks since the material is already available. From the created lesson script, a module in form of magazine of lesson, Magazsson, can be formed making it parallel to the lesson video. Also, a design for classtudio room is created where both pre-service and in-service teachers may use in producing their personalized lecture video. This will be composed of constructible equipment that are subject to further agronomical research. This research has opened continuing research for further improvement on its processes and use meeting the taste of the new generation learners. And the Department has a plan to spearhead the utilization and diffusion of this research output to other local schools, also, globally through e-workshops.

## REFERENCES

- Aldahdouh, T., Nokelainen, P., Korhonen, V., (2020). Technology and social media usage in higher education: the influence of individual innovativeness. <https://journals.sagepub.com/doi/full/10.1177/2158244019899441>,
- Alpert, F., (2016) Revitalizing the live lecture class with instructor-created videos <https://journals.sagepub.com/doi/pdf/10.1177/2158244016680686>
- Belecina R., Baccay, E. Mateo, E., (2016). Statistics and probability. Rex Publishing Company, Inc., Quezon City.
- Fraenkel, J., Wallen, N., Hyun, H. (2012). How to design and evaluate research in education. McGraw Hill, New York.
- Leavy, P., (2017). Research design: Quantitative, qualitative, mixed methods, arts based and community based participatory research. The Guilford Press, New York.
- Lumen Learning, (N.D.). Reading: Structural-functional theory. <https://courses.lumenlearning.com/alamo-sociology/chapter/functionalism/>,
- Mundy, M-A., Kupczynski, L., & Kee, R., (2012). Teacher's perceptions of technology use in the schools. <https://journals.sagepub.com/doi/full/10.1177/2158244012440813>, 2012
- Murthy, R.S., Mani, M., (2013). Discerning rejection of technology. <https://journals.sagepub.com/doi/full/10.1177/2158244013485248>
- TEANIG ng CALABARZON, (2019). <https://depedcalabarzon.ph/wp-content/uploads/2016/08/Vol-4.21.pdf>.
- Technical Education and Skills Development Authority. Technological change is coming, (2016). The fourth industrial revolution. <https://www.tesda.gov.ph/Uploads/File/planning2017/LMIR/4th%20IR%20LMIR%20January%203%20FULL.pdf>
- The Official Province of Cavite, (2020), <https://cavite.gov.ph/home/>
- The Philippine Star, (2019). Education 4.0: Rebooting Phl teacher education. <https://www.thefreelibrary.com/Education+4.0%3a+Rebooting+Phl+teacher+education.a0595000554>
- UNESCO (2015). Institute. Education 2030: Incheon declaration and framework for action towards inclusive and equitable quality education and lifelong learning for all. <https://iite.unesco.org/publications/education-2030-incheon-declaration-framework-action-towards-inclusive-equitable-quality-education-lifelong-learning/>

## AUTHORS' PROFILE



**Dr. Bethel Zurbano – Hernandez** is the Dean of the College of Arts, Sciences and Education at the University of Perpetual Help System – JONELTA in GMA Cavite. She has the leadership, training, and motivation necessary to successfully carry out the proposed research project and a broad background in research, with specific training and expertise on language as well as strategies and methodologies of teachings. She is also a Graduate School Guest Lecturer in the Philippine Christian University Manila, Batangas State University Batangas City, De La Salle University Dasmarias and Western Colleges, Inc. As she inspires herself to be an effective encourager and motivator to graduate school students, she also aims to produce

researches related to her field and co-authors with students with related subjects as their best output.

She believes that management is made and leadership is born. She has been given opportunities to present papers and researchers both local and abroad, and became one of the officers of the Philippine Association for Teachers and Educators in the Region 4 CALABARZON. Since then, she was never out of opportunities to embrace those that are being offered, which helped her grow professionally and personally and made her confident and be of help in any capacity.



**Asst. Prof. Primo P. Villanueva, Jr., LPT.**, was a graduate of a Bachelor of Science in Mathematics minor in Computer Application at the Polytechnic University of the Philippines, Sta.

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