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# The development of game estrategia in the senior high school learning competencies: basis for digital intelligence (phase one)

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**Abstract.** This paper determined the significance of the identified learning competencies (LCs) in the Senior High School Curriculum Guide for successful learning amidst disruption. The study used a quasi-experimental research design with forty (40) respondents taken purposively for the First Quarter – First Semester of the Academic Year 2020 – 2021. The Cognitive Process Dimension was the basis to determine the significant difference of learning competencies (LC1, LC2, LC3, and LC4) in one-tailed and two-tailed at 0.05 degrees of freedom using the t-Test Paired Two Sample Means formula. Data revealed that the respondents' initial scores on the Summative Assessment were unsuccessful in the Applied Subject. The subject teacher proposed an “insertion” in the actual instructions following DepEd Order No. 8, s. 2015 through the development and application of Game Estrategia. The group who received an “insertion” revealed that the overall computed t value was -16.48, which was greater than the t critical value 1.68 one-tailed and 2.02 two-tailed at 0.05 level of significance, which means a significant difference between pretest and posttest in the Applied Subject. The study found out that the group performed very well in their posttest after giving them an “insertion.” Insistent with the Agency's effort to deliver quality education, the concept of “insertion” through technology aid may improve the teaching-learning process for the identified learning competencies (LCs) in the Curriculum Guide of Secondary Public Schools. The study humbly recommended joint advocacies of the School Administrators, the Subject Teachers, and the Technical Working Group (TWG) to develop, enhance, and sustain Game Estrategia's objectives in Basic Education. Aside from the modules regularly provided by the Secondary Public Schools, teachers can tap the promising benefits of today's technology as alternatives to attain successful learning every day.

## 1. Introduction

The pandemic has compelled a new definition and approach in the education system. Every country gets affected, and all the people connected in the academe sector shattered. The prevailing health crisis is inevitable as it altered the way how people live their ordinary lives. The Covid-19 or Novel Coronavirus has become part of our life's story and will retell in history [1].

In our journey towards discovering solutions through effective yet reliable Anti-Covid-19 vaccines, this becomes our only hope to save lives and protect humanities from the wrath of these catastrophes. No one can predict that it will happen until we realize that it cannot avoid in split seconds and now part of everyone's life's story.



The United Nations (UNs) reported in its Sustainable Development Goals (SDGs) in the next five (5) years the 17 loci towards in the pursuit of a progressive people's quality life.

The SDGs platform enunciated the importance of providing and sustaining equitable quality education and life learning opportunities for all (SDG No. 4). However, the apparent challenge towards its real achievement is the prevailing health crisis that each nation is currently facing today. Indeed, the academe sector has forecasted 2 to 3 years of adjustments as a springboard to revert educational institutions to their normal operations in moderating the pandemic's impact globally on stakeholders concerned, such as the parents, teachers, and learners.

The learning institutes in the world have to be prepared to provide appropriate mechanisms and devise school strategies to combat this pandemic's raging effects globally. Aside from altering the ways of delivering instructions on their level, it also put the whole enterprise into a test to avoid business closure or resort to shutdown operation because of expenses. The schools are avenues of knowledge accumulation and intellectual exchanges as the child prepares himself for the outside world's adversities. The actual learning occurs where teachers and facilitators provide experiential learning to learners who envisioned a brighter future.

The school is where teachers and learners meet. The teaching-learning process is performed through learning tasks and activity engagements to explore and grasp life experiences in today's generation challenges [2]. It considers teachers as the prime movers of wisdom and knowledge frontiers. It is where the teachers become the windows through which learners could see their future. Therefore, there is a continuous flow of perpetual knowledge [3].

However, how these intentions will achieve if the situation hampers successful attainment?

The Department of Education Philippines initiated an "insertion" in the actual teaching-learning process. Suppose there is no classroom engagement where teachers and learners necessary to convene. In that case, an "insertion" is highly needed in the Philippine education system to warrant a continuous learning process amidst disruption.

On October 05, 2020, the Agency under the leadership of Sec. Briones implemented a modular approach learning modality as an "insertion" in the Philippine education system's actual learning delivery. It provides a realistic teaching approach in place of the clamor of "academic freeze" in the education sector. Circulated over the social media platforms was the call for a temporary "academic freeze" because of the threat to public health safety and the environment.

However, the Agency firmly stands in its belief that "education is a continuous process." No one could stop someone who wants to enroll and learn to develop more holistically.

Observing how the modular approaches implemented in Basic Education, there were numerous debates and opinions enrolled over social media discussing stakeholders' sentiments. We can read comments and feedback posted over the internet on how the modular approach became a helpful tool and, at the same time, a burden each day to the lives of teachers, parents, and learners.

One study is conducted in Basic Education with the end objective to interpret the opinions, suggestions, and sentiments of all stakeholders concerning the modular approach in Basic Education. There have appeared opinions such as how education achieved in the absence of professionals or trained guardians who will guide and supervise learners while studying at home. The other one is will there be an assurance of today's education set-up that could warrant quality education to produce globally competitive individuals?

From the initial module distribution and retrieval in the country, which began in October 2020, observations emerged the following themes: 1) independent scoring, 2) authentic assessment, 3) incompletely answered modules or sometimes no answers in some parts of the modules, 4) absence of professionals to objectively guide children at home, and 5) often busy schedules or working parents and guardians.

Because of the prevailing set-up in Basic Education, the development of learners' knowledge can be considered "half-baked" or cannot vouch for successful learning on their part. Therefore, the hanging question is, is it advisable to continue with the modular learning approach, or it only accumulates costs and wastage of resources of the Agency?

Since successful learning puts into question during these challenging times, teachers who are prime movers of experiential learning need to provide immediate remediation, enrichment, and exercises (REE), and strategic interventions to address the loopholes in the present learning modality executed by the DepEd Philippines.

One possible solution is today's technology, where it can "insert" in the successful attainment of experiential learning in Basic Education. Using powerful technologies nowadays can bring new excitement from learners to instill interest when studying lessons. With the present challenges of the technology package in the education system, where it lures learners with many game applications, it could also be the teacher's instrument to bring learners into the home study to ensure learners' attachment while having fun studying weekly lessons.

Besides, technology welcomes the emerging context of "digital intelligence" in this 21st-century teaching environment: the era of what we call now Artificial Intelligence (AI) or the Robotics Age. The promising benefits of technology can bring excitement, fun, and different learning experiences compared to the traditional chalk talk discussions. Extant confirmed that through the aid of technology in the education sector, there was continuous learning achieved. Some common examples of technology applications that are easily and freely accessible are Flicker, Soduko, Brain Twister, Bookworm, and Word Dictionary, among others.

The most well-known Google Apps Playstore and Android applications have thousands of game apps inspired by core subjects (English, Mathematics, and Science). Learners can download these educational game applications using their smartphones, where some are free of charge through Wifi connectivity. From the usual Webster and Merriam Dictionaries and Daily Bible Verses, learners can also freely download educational apps such as reviewers, hand-outs, and some reliable video clips and Instructional Materials (IMs) necessary to enhance experiential learning while at the convenience of their homes.

Through the aid of modern technology and innovation, learning becomes more intense, more joyful, and more excited, which positioned technology now as "teachnology." Young ones can manipulate through their fingertips the available technology knowledge in the world required in their lessons. The information will pop-out right in front of the screen of computers, tablets, or smartphones in just a mouse-click away.

We can witness a baby enjoys singing the ABC rhymes while watching it over Youtube as it further enhances his speech and communication skills. Likewise, it is promising to hear two little kids' conversations while playing where they both achieved fluency in the English language at an early age.

Technology honed learners' digital intelligence because of conversations (oral), and narratives (written) rounded 24/7. They can reach out to friends and love ones living even in far distances as they continue to exchange life experiences and stories such as the latest trends or what is hit in the market, keeping abreast with the current events even in the absence of physical contact.

Technologies welcome "digital intelligence" as long as they use for learning resources (LRs) to access the vastly available knowledge but not abuse and divert from its intended purposes. The usefulness of technologies can improve the quality of life but not of misapplication. Digitization is supposed to be done with the minimum expectation that all the learning activities shall deliver in moderation.

Technology is here to stay. For techy minds, technology could engage learners in knowledge accumulation. While he is making fun and enjoyment with friends, he learns from technology's many applications, games, and puzzles [4]. These manipulations become a requirement from a facilitator of learning that embraces today's generation of education paradigm. Technology capacitates learning modalities, especially for challenged and struggling learners considered in the education sector's distressed situations, to deliver and achieve successful learning every day [5].

This study structured the significance of "insertion" in the actual learning process while the learners engaged in home studying due to the pandemic. Suppose learners get attached to emerging game apps in the country such as the Mobile Legends, Wild Drift, and League of Legends that took

away their study interests. In that case, the game apps could encourage learners' attention to the track and refuel interests in studying essential lessons to attain life learning [6–8].

This study encouraged teachers and educators-alike to develop their game app platforms to provide quality education [9]. The technology promises convenience and better access to multifaceted learning resources that will increase the learner's learning competencies to succeed best in life.

The canvass compels successful learning every day because a teacher's profession's success shall also depend upon the knowledge, information, and experiential learning feed to his learners' heart and mind necessary to arm them in this world full of aridities.

## 2. Limitations

The study dealt only with the Senior High School learners who failed the Summative Assessment for the First Quarter – First Semester of 2020 – 2021.

The researchers test only the Game Estrategia's significance in the actual teaching process with the identified learning competencies (LCs) and learners who initially obtained failed scores.

Further, the study did not examine and compare similar or different group interests in the Senior High School Department.

## 3. Objectives of the study

This study examined the significance of the Cognitive Process Dimension of Summative Assessment given to the selected Senior High School learners. It provided “insertion” on the teaching-learning process to achieve the expectation of the identified learning competency (LC) in Basic Education.

Specifically, it sought answers to the following questions; 1) How is the Cognitive Process Dimension of the Summative Assessment determined? 2) What is the pretest score on the identified learning competency (LC)? 3) How the “insertion” achieved the expectation of a learning competency (LC)? and 4) What is the implication of Game Estrategia in Basic Education?

## 4. Materials and methods

This study was a quasi-experimental research methodology. The study used the Game Estrategia as a learning application to determine the significant difference in the identified learning competencies (LCs) where the learner initially failed. The forty (40) respondents selected through purposive sampling where the data presented using the t-Test Paired Two Sample Means.

The game app was designed in a user-friendly environment that served as an "insertion" to increase the chances of passing the learning competency (LC). The game app was assessed and validated by a Senior High School IT expert.

Game app inserted in the teaching-learning process due to the prevailing health crisis where learners stayed at home while studying their lessons in their modules.

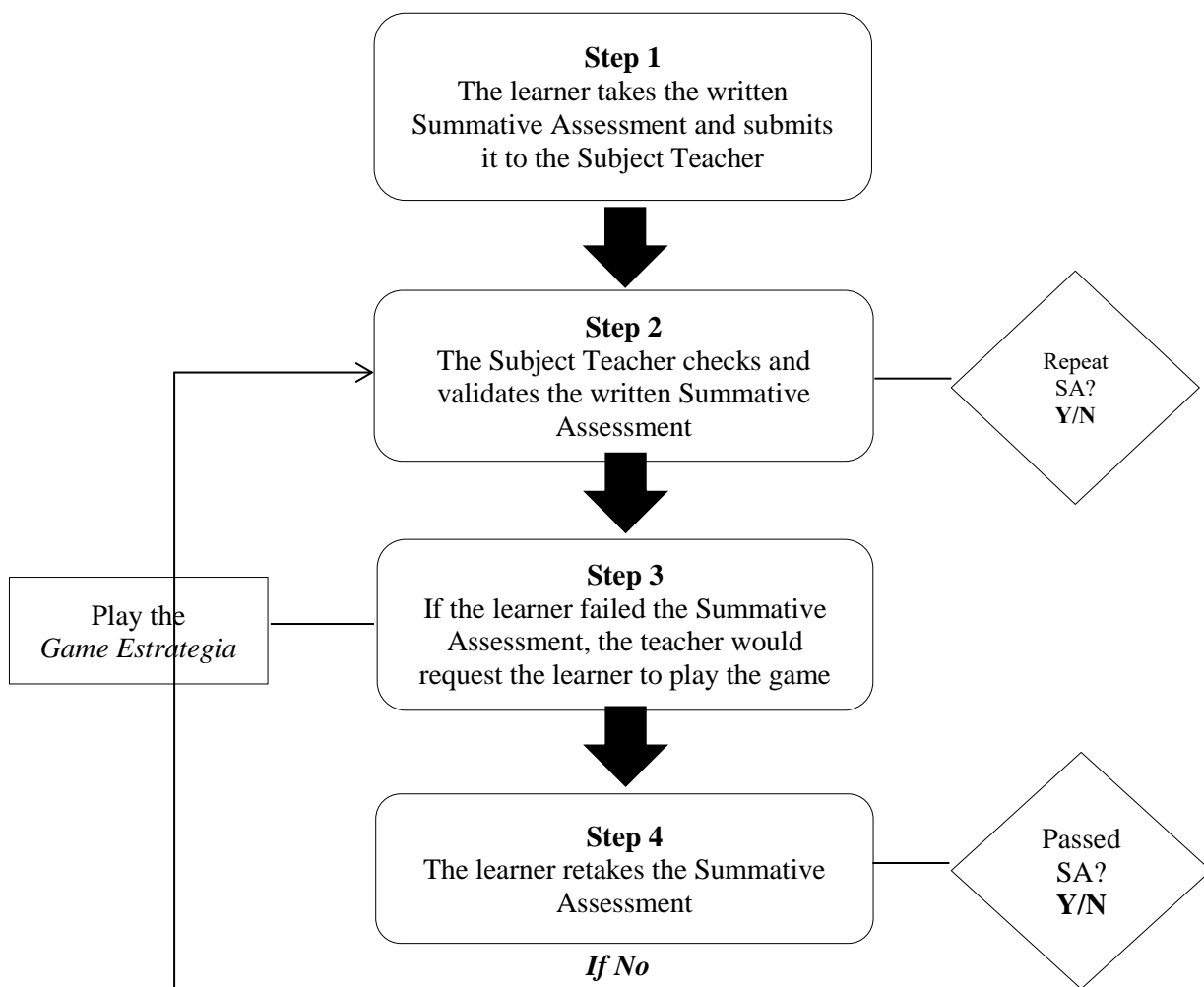
The first step was to ask the learner to answer the written Summative Assessment (pretest). Suppose the learner failed the required passing score (75) set by the Department of Education. In this case, the learner considered Game Estrategia as an "insertion" in the actual teaching-learning process.

The second step was to check and validate the teacher's Summative Assessment to determine which learning competency (LC) the learners did not achieve the required passing score.

The third step was to ask the learner to play the game app. The game app's content inspired by the learning competency (LC) to increase chances of passing.

The fourth step was to ask the learner again to retake the same Summative Assessment (posttest).

The figure showed the step by step procedures on how the "insertion" administered.



**Figure 1.** The Summative Assessment Cycle

The learning competencies (LCs) comprised the Summative Assessment arranged according to Anderson and Krathwohl [10] Education Philosophy, i.e., from Lower Order Thinking Strategies (LOTS) to Higher Order Thinking Strategies (HOTS).

The researchers asked for consent and approval from the School Heads, parents or guardians, and learners before answering the Summative Assessment (pretest/posttest).

Further, the Summative Assessment validation adopted the adjectival descriptions set by the DepEd when reporting grades.

**Table 1.** Report Card

Description	Grading Scale <sup>a</sup>	Remarks
Outstanding (O)	90-100	Passed
Very Satisfactory (VS)	85-89	Passed
Satisfactory (S)	80-84	Passed
Fairly Satisfactory (FS)	75-79	Passed
<b>Did Not Meet Expectation (DNM)</b>	<b>Below 75</b>	<b>Failed</b>

<sup>a</sup>DepEd Form 138-E

## 5. Results and discussions

This part discussed the significant findings and results to answer the Statement of the Problems.

### 5.1. The cognitive process dimension

According to Anderson and Krathwohl [10], the Cognitive Process Dimension provides a scheme classifying educational goals, objectives, and standards. It defines a broad range of cognitive processes from basic to complex: Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating.

Summative Assessment is an assessment that is usually administered toward the end of a learning period to measure the extent to which the learners have mastered the essential learning competencies recorded and used to report the learner's achievement [11].

The Cognitive Process Dimension determined the objective distribution of the selected learning competencies (LCs).

Data revealed that the selected LCs identified under the Applied Subject – Introduction of the Philosophy of Human Person for the First Quarter – First Semester of 2020 – 2021, where learners obtained the most failed scores.

The twenty (20) test items comprised the Summative Assessment distributed according to the expectation of the Table of Specifications (TOS) of the Department of Education.

The percentage of distribution according to the TOS was as follows; 60% for Remembering (1-12), 10% for Understanding (13-14), 10% for Applying (15-16), 10% for Analyzing (17-18), 5% for Evaluating (19), and 5% for Creating (20).

The Summative Assessment was checked, validated, and approved by the Master Teacher, the SHS Assistant Principal, and the Secondary School Principal before giving it to the SHS learners.

### 5.2. The pretest – lc1, lc2, lc3, and lc4

Learning Competency (LC) refers to the knowledge, understanding, skills, and attitudes learners need to demonstrate in every lesson and learning activity [12].

The table below showed the pretest of Senior High School learners under the Information and Communications Technology (ICT) strand with the Applied Subject – Introduction to the Philosophy of Human Person for the First Quarter – First Semester of 2020 – 2021.

**Table 2.** The Pretest (a)

R <sup>d</sup>	TRANS <sup>e</sup>	DER <sup>a</sup>	REMARKS	
L1 <sup>c</sup>	68	DNM <sup>b</sup>	FAILED	INSERTION
L2	69	DNM	FAILED	INSERTION
L3	69	DNM	FAILED	INSERTION
L4	71	DNM	FAILED	INSERTION
L5	70	DNM	FAILED	INSERTION
L6	72	DNM	FAILED	INSERTION
L7	73	DNM	FAILED	INSERTION
L8	69	DNM	FAILED	INSERTION
L9	70	DNM	FAILED	INSERTION
L10	70	DNM	FAILED	INSERTION
L11	70	DNM	FAILED	INSERTION
L12	71	DNM	FAILED	INSERTION
L13	72	DNM	FAILED	INSERTION
L14	68	DNM	FAILED	INSERTION

**Table 2.** The Pretest (b)

<b>R</b>	<b>TRANS</b>	<b>DER</b>	<b>REMARKS</b>	
<b>L15</b>	<b>72</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L16</b>	<b>69</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L17</b>	<b>70</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L18</b>	<b>70</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L19</b>	<b>69</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L20</b>	<b>71</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L21</b>	<b>71</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L22</b>	<b>72</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L23</b>	<b>72</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L24</b>	<b>73</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L25</b>	<b>73</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L26</b>	<b>73</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L27</b>	<b>73</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L28</b>	<b>74</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L29</b>	<b>74</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L30</b>	<b>74</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L31</b>	<b>72</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L32</b>	<b>71</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L33</b>	<b>69</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L34</b>	<b>70</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L35</b>	<b>70</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L36</b>	<b>71</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L37</b>	<b>72</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L38</b>	<b>72</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L39</b>	<b>68</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>
<b>L40</b>	<b>69</b>	<b>DNM</b>	<b>FAILED</b>	<b>INSERTION</b>

## Legend

<sup>a</sup>DER = Descriptive Equivalent Rating.<sup>b</sup>DNM = Did Not Meet Expectation.<sup>c</sup>L1 – L40 = Learner No 1-40.<sup>d</sup>R = Respondent.<sup>e</sup>TRANS = Transmutation.

Based on Classroom Assessment [12], a learner must satisfy a Summative Assessment requirement by obtaining a passing score of 75.

Data revealed that the Senior High School learners could not pass the selected learning competencies (LC1, LC2, LC3, and LC4) of the identified Applied Subject with a descriptive equivalent rating of Did Not Meet Expectation (DNM).

The researchers concluded that respondents who could not meet the required passing score of 75 should undergo re-assessment with an “insertion” on the actual teaching-learning process.



### 5.3. The concept of insertion through game estrategia

Consistent with DepEd Order No. 8, s. 2015, teachers should ensure that learners receive remediation when their raw scores are consistently below expectation. It will prevent a learner from failing in any learning area.

In this study, “insertion” is a teacher’s intervention in the actual teaching-learning process to help learners understand the learning competencies and increase chances of passing the Summative Assessment.

In this study, Game Estrategia is a teacher’s instrument inserted in the actual learning process to provide mastery on specified learning competency. It shall refer to the actual game application given to learners who obtained failed Summative Assessment scores.

**Table 3.** The Posttest (a)

<b>R<sup>c</sup></b>	<b>W/ INS<sup>g</sup></b>	<b>TRANS<sup>e</sup></b>	<b>DER<sup>a</sup></b>	<b>REMARKS</b>	
<b>L1<sup>b</sup></b>	<b>17</b>	<b>85</b>	<b>VS<sup>f</sup></b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L2</b>	<b>15</b>	<b>82</b>	<b>S<sup>d</sup></b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L3</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L4</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L5</b>	<b>19</b>	<b>87</b>	<b>VS</b>	<b>PASSED</b>	<b>SUSTAIN</b>
<b>L6</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L7</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L8</b>	<b>18</b>	<b>86</b>	<b>VS</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L9</b>	<b>18</b>	<b>86</b>	<b>VS</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L10</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L11</b>	<b>19</b>	<b>87</b>	<b>VS</b>	<b>PASSED</b>	<b>SUSTAIN</b>
<b>L12</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L13</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L14</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L15</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L16</b>	<b>17</b>	<b>85</b>	<b>VS</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L17</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L18</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L19</b>	<b>16</b>	<b>83</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L20</b>	<b>16</b>	<b>83</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L21</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L22</b>	<b>19</b>	<b>87</b>	<b>VS</b>	<b>PASSED</b>	<b>SUSTAIN</b>
<b>L23</b>	<b>19</b>	<b>87</b>	<b>VS</b>	<b>PASSED</b>	<b>SUSTAIN</b>
<b>L24</b>	<b>19</b>	<b>87</b>	<b>VS</b>	<b>PASSED</b>	<b>SUSTAIN</b>
<b>L25</b>	<b>17</b>	<b>85</b>	<b>VS</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L26</b>	<b>17</b>	<b>85</b>	<b>VS</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L27</b>	<b>16</b>	<b>83</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L28</b>	<b>17</b>	<b>85</b>	<b>VS</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L29</b>	<b>19</b>	<b>87</b>	<b>VS</b>	<b>PASSED</b>	<b>SUSTAIN</b>
<b>L30</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>

**Table 3.** The Posttest (b)

<b>R</b>	<b>W/ INS</b>	<b>TRANS</b>	<b>DER</b>	<b>REMARKS</b>	
<b>L31</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L32</b>	<b>16</b>	<b>83</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L33</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L34</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L35</b>	<b>15</b>	<b>82</b>	<b>S</b>	<b>PASSED</b>	<b>ENHANCE</b>
<b>L36</b>	<b>19</b>	<b>87</b>	<b>VS</b>	<b>PASSED</b>	<b>SUSTAIN</b>
<b>L37</b>	<b>19</b>	<b>87</b>	<b>VS</b>	<b>PASSED</b>	<b>SUSTAIN</b>
<b>L38</b>	<b>19</b>	<b>87</b>	<b>VS</b>	<b>PASSED</b>	<b>SUSTAIN</b>
<b>L39</b>	<b>19</b>	<b>87</b>	<b>VS</b>	<b>PASSED</b>	<b>SUSTAIN</b>
<b>L40</b>	<b>19</b>	<b>87</b>	<b>VS</b>	<b>PASSED</b>	<b>SUSTAIN</b>

Legend

<sup>a</sup>DER = Descriptive Equivalent Rating.

<sup>b</sup>L1 – L40 = Learner No 1-40.

<sup>c</sup>R = Respondent.

<sup>d</sup>S = Satisfactory.

<sup>e</sup>TRANS = Transmutation.

<sup>f</sup>VS = Very Satisfactory.

<sup>g</sup>W/ INS =With Insertion.

Based on Classroom Assessment [12], a learner must satisfy a Summative Assessment requirement by obtaining a passing score of 75.

Data revealed that the Senior High School learners could pass the selected learning competencies (LC1, LC2, LC3, and LC4) of the identified Applied Subject with descriptive equivalent ratings of Satisfactory (S) and Very Satisfactory (VS), respectively. The researchers concluded that respondents could pass the learning competencies (LCs) through an "insertion" in the actual teaching incorporating the Game Estrategia. Further, the Game Estrategia can be enhanced to improve and sustain the learners' learning capacities and increase passing scores as the learner progresses.

The table below showed the overall test of significance of the Applied Subject's identified learning competencies – Introduction to the Philosophy of Human Person.

The computed t value was -16.48, which was greater than the t critical value 1.68 one-tailed and 2.02 two-tailed at 0.05 level of significance.

It means a significant difference between the scores in pretest and posttest of Grade 11 ICT-Jobs learners in their Applied Subject—Introduction to the Philosophy of Human Person.

Further, they performed very well in their posttest after giving them an “insertion.”

#### 5.4. The implication of game estrategia in basic education

The present learning set-up through the modular approach introduced by the Agency has solicited many opinions from stakeholders.

Consistent with the Agency's goal to deliver and achieve successful learning despite the possibilities of compromise education and damaged study habits amidst disruption, this becomes an appeal before the Agency starts prioritizing and developing game applications. The concept of "digitization" warrants its achievement through appropriate subjects taught in the Senior High School Department with IT experts' help and support. It will also encourage multi-grade levels to explore the

benefits of digitization in the instructions to ensure learners' attachment in studying lessons for the week.

**Table 4.** t-Test – Overall LCs  
t-Test: Paired Two Sample for Means

	Pretest	Posttest
Mean	7.35	16.60
Variance	10.900000000	2.964102564
Observations	40	40
Pearson Correlation	0.110971291	
Hypothesized Mean Difference	0	
df	39	
t Stat	-16.47943322	
P(T<=t) one-tail	1.81479E-19	
t Critical one-tail	1.684875122	
P(T<=t) two-tail	3.62958E-19	
t Critical two-tail	2.022690920	

Besides, technology warrants public health safety because it does not require face-to-face. The modular approach can sustain its learning objectives (LOs) by developing game applications inspired by learning competencies. Game Estrategia's concept will provide learning resources to help learners achieve successful learning while studying at home. The education system might be of less burden and less stressful driving during the pandemic through this initiative. The learners can enjoy and bring new excitement to the actual learning process using the game app even outside the real classroom.

## 6. Conclusions and recommendations

Based on the significant findings of this study, these were the conclusions drawn.

Game Estrategia's objectives as an "insertion" in the distance learning are doable in the Secondary Public Schools.

The development of the Game Estrategia is inspired by the selected learning competencies (LCs), which optimize learning capacity and help increase chances of passing where the Senior High School learner failed to achieve the desired results.

The game app makes learning more exciting and intense because the learners' imagination and abstraction get challenged objectively as part of their digital intelligence.

The learning competencies (LCs) can enhance through appropriate game apps to warrant learners' interest in studying lessons for the week.

The Game Estrategia can address the problems encountered in selected learning competencies (LCs) failing scores.

The developed game app can be explored and replicated with the other learning competencies (LCs) of the subjects offered in Senior High School, such as Core, Applied, and Specialized subjects through the concept of "interdisciplinarity."

In light of the provided conclusions, this study humbly recommended the following.

The "insertion" may improve the teaching-learning process more specifically during this health crisis for the identified learning competencies (LCs) in the curriculum offered by Secondary Public Schools.

Teachers and School Administrators may sustain Game Estrategia's usefulness by providing a fund to install committed and dedicated Technical Working Group (TWG) based on the identified learning competencies (LCs).

Game Estrategia envisioned a standard flagship for nationwide game application bearing the Agency's name to collate and explore digitized learning competencies. The gradual shifting of

possible teaching approaches and alternatives designed, created, and enrolled using the available technology today is an initial step towards “teachnology” beneficial to teachers and learners in Basic Education.

The SHS IT experts may lead the Department to explore and tap SHS teachers' creativity to develop game apps suited for challenged and struggling learners.

The development of the game app in Basic Education can aid the learning process because learners provide authentic assessment options and independent scoring.

This research positioned to provide "insertion" with the identified learners who failed the Summative Assessment (Phase One). The study suggests exploring the Game Estrategia to test its relatedness and sustainability with the learners' achievements (Phase Two).

The researchers suggest replicating the Game Estrategia's context towards successful learning delivery in the education sector and examine its appropriability and sustainability as an "insertion" in the teaching-learning process.

### **Ethical considerations**

This study observed the principles of autonomy. The participants will have the right to self-determination. All of the participants willingly participated in the survey without coercion. The researcher elicited their approval by accomplishing the informed consent with the Data Privacy Act (RA 10173). All the data gathered was used for academic purposes.

The researchers and the institutions declared no intention to malign or discredit any mentioned positions or Agencies concerned.

### **Declaration of conflicts of interests**

The authors declared no potential conflicts of interest concerning the research, authorship, or publication of this article.

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