

## Instructional teaching theory: Basis for effective teaching device in learning

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### Abstract

The study examines the contribution of instructional teaching theory in educational system as a basis for effective teaching devices in learning as to print materials, electronic media, technology devices, visualization and graphics, games, and interactive resources. The study employs descriptive quantitative research designs because it measures and quantifies the variables of the study on the contribution of instructional teaching theory in educational system. Likewise, convenience purposive sampling is utilized in the study. It is a non-probability sampling method in gathering the sample size of the study. The study comprised one hundred seventy five (175) respondents only. Results show to offer and plan step by step lesson, time saving, assessment materials, testing, and worksheets, to create and allow multiple friendly learning for students to listen in audiobooks, CDs, using headset to avoid disturbance from other classmates, show to help and develop deeper learning and understanding process of students, and show learning factor on the concept of instructional teaching that can turn complex things into play. Findings show that there is a significant correlation on the contribution of instructional teaching theory in educational system as a basis for effective devices in learning as observed by the respondents.

### Keywords

Effective teaching device of learning, electronic media and technology devices, instructional teaching theory, games interactive resources, visualization and graphics.

### INTRODUCTION

The issues, gaps and challenges of instructional teaching is one of the most pressing trends in teaching pedagogy that is the reason why this theory is formulated. Instructional teaching techniques and strategies are necessary for teachers to assist students to be independent in strategic learning. Instructional teaching becomes effective to accomplish the goal efficiently for the learners. It motivates and helps students to enhance learning process. It organizes and focuses attention to remember and understand the learning assessment. It is a strategy teaching process for the success and

needs of students. It provides better instructional teaching approaches learning materials which is appropriate in guided learning, modelling, and independent practice. It provides ideas and transfer skills opportunities in a meaningful connection learning. It reflects learning and assessment for students. Instructional teaching strategy must be based on the domain of learning and structure considering the academic performance of students in guiding learning achievement and learning process. It is designed for learning process in various activities to explore in-depth knowledge of students' domain



of learning. It assists teachers' styles and ways of teaching needs and process of learning. The domain of learning structure examines instructional teaching achievement and activities of the learners in terms of cognitive, affective, and psychomotor learning. It explores achievement and performance of the learners. It reveals and carries the ability of implementation and execution of the lesson to motivate learning process for effective teaching instruction [1]. Hence, instructional teaching technique and strategy leads to competency performance on the part of teachers and skills. It is to mold and to shape the trend in teaching for students. It follows the competency skills and level of teaching instructional learning to assess and deliver the framework of teaching process and performance. It adopts standard procedures in understanding the concept of challenges of learning improvement of students. It equips students to provide self-direction and information of knowledge in learning. It provides competency that contributes to interact and influence success in teaching and learning process [2].

On the other hand, the goal of instructional teaching theory is to help and describe students to develop and learn to boost the condition created for improving learning and instruction. It focuses on print materials, electronic media, technology devices, visualization, graphic, games, and interactive resources. It provides response and change for various stimuli and focus on learning approach in shaping experiences for learning. It aims to provide goals for instructional teaching as part of the theory to include the method and component criteria for students to anticipate the chance and increase learning outcome. It designated the learning of students based instructional teaching classroom experiences and practices to enhance learning. It is designed based on the domains of learning in various activities to explore knowledge of students to participate in the subject and in-depth learning process. It provides help among teachers in various ways and styles of the learners need. It provides approaches learning process and perspective knowledge and activity on the goals of instructional teaching process and theory. The success of learning is based on the goals of instructional teaching materials and learning approaches based on the domains of learning [3]. On the other hand, goals of instructional teaching must be based on the readiness of students based on needs and learning pedagogy. It employs

techniques in teaching based on instructional materials being presented in the learning process. Instructional teaching and readiness predicts performance of students' process of learning and setting [4]. It provides readiness in the learning pedagogy based instructional teaching theory through various dimension learning process and competency technical attributes. It develops and measures various instructional teaching and response learning process and transition. It supports various competencies in the goals of instructional teaching and methods [5].

Moreover, the effectiveness of instructional teaching materials utilize the tool for academic performance of the learners [6]. It provides cognizant instructional teaching materials for better learning output. It adopts utilization of instructional materials to provide modern educational function in basic instruments for teaching process and prosperity. It builds moral development in a positive interpersonal process instructional teaching materials. Effective instructional teaching materials innovate and enhance high advanced technology in teaching. It conditions and implements expected quality instructional and effective materials for teaching classroom teaching activities. The effectiveness of instructional teaching is based on integration of knowledge that influences technology in teaching which focuses on professional knowledge and belief in enhancing instructional teaching and learning. The instructional teaching identifies the impact and promotion of teachers expertise learning process based needs of students [7]. It influences values of pedagogy technology in learning for students. It provides tools in development of appropriate learning instructional teaching. It collaborates wisdom and knowledge of teaching instruction for students as a center of learning. It enhances the techniques in instructional learning approach to increase effective resources and learning teaching process. It is a systematic approach and instructional dynamic design integration of learning activities [8]. Hence, the application of instructional teaching profession and theory defines features involved process as to daily routine of teaching, novelty, and change. Effective teaching instructional design responds to adaptability of teaching. It provides an effective function instructional teaching process and techniques. It assesses various approaches to describe adaptability instructional teaching and theory implication on teachers' development

experiences and knowledge. It provides technological impact and adaptability to teaching process and change. Instructional teaching adapts attitude of teachers toward ability, skills, technology, and learning knowledge. It includes application theory and instruction adaptability to provide a broad framework process of educational setting [9].

Indeed, instructional teaching consists of methods and principles to enhance teachers' utilization in learning. It defines process of instructional teaching. It guides facilitation of activities learning process. It provides strategies and instructional teaching methods on personal interaction, behavior, and process of knowledge and information. It determines instructional teaching approach in learning achievement and goals. It also determines aspect of learning activities of students. It influences appropriate instructional method and motivates students to think critically. It is a method of instructional teaching such as digital presentation, direct teaching, video types, role-playing, brainstorming, cooperative learning, and lectures. It helps in collaboration, communication, creative thinking, and critical thinking. It focuses on thorough analysis for a better understanding process. It develops effect and principle of instruction teaching satisfaction and learning outcome. It provides conditions learning and satisfaction for instructional materials and teaching. It implements instruction teaching principle and design learning process [10]. It is the concept of educational setting that guides effective instructional teaching models. It conceptualizes understanding and evidence

scientific instructional teaching, ideas, positive effect in general achievement of learning process and principle. It underlies the principles of learning that contributes effectively to the teaching process. The concepts of instructional teaching theory are being highlighted [11].

### Cycle of instructional teaching theory

Instructional teaching theory cycle focuses on Print materials which is a teaching devices referred to printed materials, syllabus, assignment file, study guide, manual, pamphlet, handout, and textbook as resources and material for teaching process as to printed paper, Electronic media and technology devices are instructional teaching digital devices that support learners, teachers engagement, and diversity. It encourages student learning outside the classroom. It is an equipment to empower teachers to inculcate smart devices during monitoring and instruction progress of students, Visualization and Graphics which refer to capturing attention of students quickly. It processes the brain and the images seen through the eyes to catch the meaning of graphics and visualizations. It represents visual information symbols, concepts, and associates, and Games interactive resources which refer to the improvement of skills in problem solving and game-based learning to make things possible for the experiences of students instructional teaching process. It boosts and ignites imagination of students learning brainpower and interaction of teaching and resources [12]. Hence, instructional teaching theory cycle is illustrated in Figure 1.

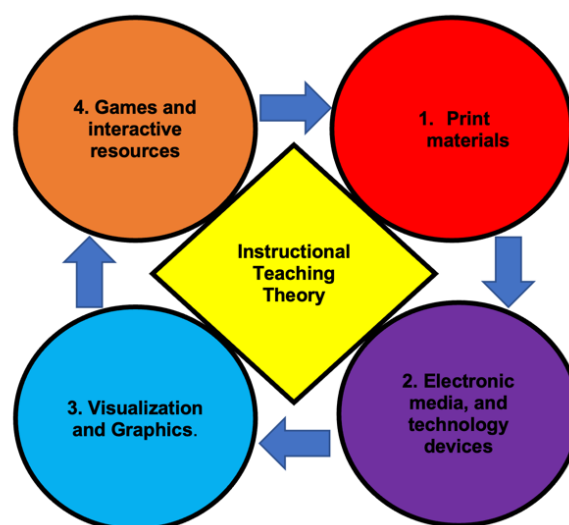


Figure 1. Instructional Teaching Theory

*Print materials*

This kind of teaching materials refers to printed materials, syllabus, assignment file, study guide, manual, pamphlet, handout, and textbook as resources and devices for teaching process as to printed paper. It is an educational text used for the backbone and foundation of instruction to supplement and steer the lesson and plans. It comprehends implication of instructional practice based needs learners [13].

Details of print materials are discussed in instructional teaching theory: (1) Print materials provide necessary significant learning and counterpart for retention and cognitive focus of teaching and learning; (2) Various textbooks print materials and supplements are focused on fundamental subjects, differentiating instruction, students activities, skills practice, and problem solving; (2) Print materials offer and plan step by step lesson, time saving, assessment materials, testing, and worksheets; (3) Reference books are updated to carry reference materials in the classroom teaching setting; (4) It provides vocabulary information, discovery, set up research, reading maps, and details of reference and interpretation; (5) It helps students to build and boost standard skills and vocabulary learning process; (6) Workbook strengthens and helps students have fun in learning; (7) It focuses on increasing activity practice and learning retention for leading mastery of the lesson; (8) It engages appropriate practice learning for easy classroom setting hands-on experiences; (9) Practice set of print materials utilizes the ideal classroom that builds students' learning process.

*Electronic media and technology devices*

This kind of instructional teaching is a digital device that supports learners and teachers engagement diversity. It encourages students to learn outside the classroom. It is a system that is linked to digital data, professional resources, system, and software as replacement for chalkboard and notebook. It is an electronic teaching tool course materials for the learners. It is an equipment to empower teachers to inculcate smart devices during monitoring and instruction progress of students. It transforms the ease in making feedback and teaching planning accessibility in connecting and immersing teaching staple of the classroom. It provides aspects of electronic media and technology

devices to explore in-depth learning in instructional teaching [14].

Details on electronic, media, and technology devices instructional teaching theory are explained: (1) Computers, tables, and laptops are linked with students and teachers in a based massive learning through technology process of teaching; (2) Microphone is an ideal for testing students, recording lesson plans, training, high quality of additional and excellent toolkit of teachers; (3) CD players enrich learning through audio media and music players convenient to streamline computers, smartphones, and tablets; (4) It creates and allows multiple friendly learning for students to listen in audiobooks, CDs, using a headset to avoid disturbance from other classmates; (5) Audio visual media creates sensory experiences for students to engage multimedia tools in the classroom as beneficial and resources for learners; (6) It captivates learners to interact on educational features, skills and characteristics of e-technology lessons for fun; (7) It provides innovation for learners' advanced scientific model of learning crucial handheld devices and needs; (8) It encourages students to explore the world that designs and knobs technology, media, and devices of learning; (9) It brings lessons to power, life, and observation to participate in hands-on learning experiences; (10) It encourages independent thinking and improves technology devices to strengthen learning for easy and fun.

*Visualization and graphics*

It refers to capturing the attention of students quickly. It processes the brain and the images seen through the eyes that catch the meaning of the graphics and visualizations. It represents visual information symbols, concepts, and associates. It strengthens human and helps students to absorb better learning and recall new information instruction methods. It provides design and application for teaching and learning various subjects. It allows and interfaces on dynamic accuracy of visualization and graphics in instructional teaching interactively and accurately models and visuals of learning. It provides collaborative and interactive learning for both teachers and students [15].

Details of visualization and graphics instructional teaching theory are explained: (1) It grasps the pictures, concepts, and graphs to show visual aids in teaching to improve thinking and

learning; (2) It helps to develop a deeper learning and understanding process of students and processes the tools to help the power of visualization and graphics to connect the content of the lesson; (3) It provides images and infographics through a combination of words and explains information and text-based instructional teaching process; (4) It explains infographics and ideal complex into concepts of learning among teachers and students; (5) It illustrates concepts for telling the unseen process to convey dynamic way and content of infographics as part of instruction teaching process; (6) It organizes the graphic, diagram, flow charts, and tables as examples of instructional teaching process; (7) Graphic organizers explain the data of the subject to be taught for better learning where it helps students to explore critical thinking; (8) It utilizes other visuals and graphics, real objects, transparencies, illustration, photographs, and maps.

#### *Games and interactive resources*

It refers to improvement of skills in problem solving and game-based learning to make things possible for experiences of students' instructional teaching process. It boosts and ignites imagination of student learning brainpower and interaction of teaching and resources. It provides pedagogical insights pertaining to practice integration of games and interactive resources in instructional teaching and learning. It implements and indicates instructional teaching various activities in games and interactive resources. It organizes teachers to translate and ensure learning outcome and performance of students [16].

Details of games and interactive resources instructional teaching theory are explained: (1) Games remove the intimidation and learning factor on the concept of instructional learning that can turn complex things into play; (2) It counts instructional teaching to excite the pattern of the game essential improvement of skills and critical thinking of the learners; (3) Games motivate and enhance learning of students to make the process fun; (4) Role-play allows the process of students interactive resources to stimulate information in the real world of the learning process; (5) It provides students to act in the learning process and opportunities that can be portrayed through role playing as part of games and interactive teaching instruction; (6) It responds to new learning situation inside the classroom to explore

concept of learning imaginatively; (7) It provides visual aid interactive and practice for instruction teaching process among students; (8) It builds student critical thinking and creativity skills using logic challenges, puzzles, and work play games.

#### **Research questions**

This study answers the research question: (1) what is the contribution of instructional teaching theory in the educational system as a basis for effective teaching devices in learning?; (2) Is there a significant correlation on the contribution of instructional teaching theory in the educational system as a guide for effective devices in learning as observed by the respondents?

#### **Hypothesis**

There is a significant correlation on the contribution of instructional teaching theory in the educational system as a guide for effective devices in learning such as printed materials, electronic devices, media, visualization, graphic and interactive resources as observed by the respondents.

#### **RESEARCH METHOD**

The study employs descriptive quantitative research designs because it measures and quantifies the variables of the study on the contribution of instructional teaching theory in educational system as a basis for effective teaching device learning in the area of print materials, electronic media and technology devices, visualization and graphics, and games interactive resources. It challenges the approach on conventional dynamic system and complexity theory in the study to adopt and encourages pragmatic approach in transdisciplinary instructional teaching theory and nature. It provides research design in quantitative distinction designs. It provides complexity research and insights in social integrative framework and perspective objectives of research design and implication approaches and integration [17].

#### **Sampling techniques**

Convenience purposive sampling is utilized in the study. It is a non-probability sampling method in gathering the sample size of the study. It is determined on adequacy of sample size and composition in the representation of chosen

samples. It pays attention to the sampling method transparency of the population. It justifies transparency sampling size in the study. It explores the sampling method in gathering instructional teaching theory techniques. It calls for details and context samples. It assesses the sample size to uphold the sampling method validity and reliability. It indicates the convenience and purposive sampling practices in instructional teaching theory for effective teaching classroom setting and teaching device for learning [18].

### Participants of the study

The subjects of the study are the various heads, curriculum designers, teachers who have expertise in designing instructional materials for effective teaching based needs of the learners.

They come from the various institutions like: (a) 15 people from the Department of Education (DepEd), (b) 103 people from Commission of Higher Education (CHED) or Higher Education Institutions (HEIs), and (c) 57 people from Technical Education Skills and Development Authority (TESDA). The study comprised One Hundred Seventy-Five (175) respondents only using the Google Form Link.

## RESULT AND DISCUSSION

The first research question, which examines the contribution of instructional teaching theory to the educational system as a guide for effective teaching methods in learning, was addressed by analyzing the data presented in Tables 1-4.

Table 1. Contribution of Instructional Teaching Theory in the Area of Print Materials

Indicators	WM	I	R
a. Print materials provide necessary significant learning and counterpart for retention and cognitive focus of teaching and learning.	3.95	O	5
b. Various textbooks print materials and supplements are focused on fundamental subjects, differentiate instructions, student activities, skills practice, and problem solving.	3.76	O	7
c. Print materials offer and plan step by step lesson, time saving, assessment materials, testing, and worksheets.	4.29	HO	1.5
d. Reference books are updated to carry reference materials in the classroom teaching setting.	4.29	HO	1.5
e. It provides vocabulary information, discovery, set up research, reading maps, and details of reference and interpretation.	3.84	O	6
f. It helps students to build and boost standard skills and vocabulary learning process during the teaching and learning process.	4.18	O	3
g. Workbook strengthens and helps students have fun in learning.	3.36	L	9.5
h. It focuses on increasing activity practice and learning retention for leading mastery of the lesson.	4.00	O	4
i. It engages appropriate practice learning for easy classroom setting hands-on experiences.	3.36	L	9.5
j. Practice set of print materials utilizes the ideal classroom that builds students' learning process.	3.67	O	8
Average Weighted Mean (WM)	3.87	O	
Standard Deviation	0.340		

Note: I= Interpretation; R= Ranking; O= Observed; HO= Highly Observed; L= Limited.

Table 1 presents the weighted mean and the corresponding interpretation on the contribution of instructional teaching theory in the area of print materials among the respondents.

It shows that rank 1 is shared by the two indicators which are "Print materials offer and plan step by step lesson, time saving, assessment materials, testing, and worksheets", and "Reference books are updated to carry references

materials in the classroom teaching setting", with a weighted mean of 4.29 or Highly Observed. Rank 2 is "It helps students to build and boost standard skills and vocabulary learning process", with a weighted mean of 4.18 or Observed. Rank 3 is "It focuses on increasing activity practice and learning retention for leading mastery of the lesson", with a weighted mean of 4.00 or Observed. The least in rank is shared by the two

indicators which are “Workbook strengthens and helps students skills for fun in learning”, and “It engages appropriate practice learning for easy classroom setting hands-on experiences”, with a weighted mean of 3.36 or Limited. The overall average weighted mean is 3.87 (SD=0.340) or Observed on the contribution of instructional teaching theory in the area of print materials among the respondents.

Table 2 presents the weighted mean and the corresponding interpretation on the contribution of instructional teaching theory in the area of electronic media, and technology devices among the respondents.

It shows in the table that rank 1 is “It creates and allows multiple friendly learning for students to listen in audiobooks, CDs, using headset to avoid disturbance from other classmates”, with a

weighted mean of 4.25 or Highly Observed. Rank 2 is “It provides innovation for learners advanced scientific models of learning crucial handheld devices and needs”, with a weighted mean of 4.20 or Highly Observed. Rank 3 is “It brings lessons to power, life, and observation to participate in hands-on learning experiences”, with a weighted mean of 4.08 or Observed. The least in rank is “Audio visual media creates sensory experiences for students to engage multimedia tools in the classroom as beneficial and resources for learners”, with a weighted mean of 3.32 or Limited. The overall average weighted mean is 3.88 (SD=0.313) or Observed on the contribution of instructional teaching theory in the area of electronic media, and technology devices among the respondents.

Table 2. Contribution of Instructional Teaching Theory in the Area of Electronic Media and Technology Devices

Indicators	WM	I	R
a. Computers, tables, and laptops are linked with students and teacher in a based massive learning through technology process of teaching.	3.92	O	6
b. Microphone is an ideal for testing students, recording lesson plans, training, high quality of additional and excellent toolkit of teachers.	3.38	O	9
c. CD players enrich learning through audio media and music players convenient to streamline computers, smartphone, and tablets.	3.84	O	7
d. It creates and allows multiple friendly learning for students to listen in audiobooks, CDs, using a headset to avoid disturbance from other classmates.	4.25	HO	1
e. Audio visual media creates sensory experiences for students to engage multimedia tools in the classroom as beneficial and resources for learners.	3.32	L	10
f. It captivates learners to interact on educational features, skills and characteristics of e-technology lessons for fun.	3.77	O	8
g. It provides innovation for learners' advanced scientific model of learning crucial handheld devices and needs.	4.20	HO	2
h. It encourages students to explore the world that designs and knobs technology, media, and devices of learning.	4.00	O	4.5
i. It brings lessons to power, life, and observation to participate in hands-on learning experiences.	4.08	O	3
j. It encourages independent thinking and improves technology devices to strengthen learning for easy and fun.	4.00	O	4.5
Average Weighted Mean (WM)	3.88	O	
Standard Deviation	0.313		

Note: I= Interpretation; R= Ranking; O= Observed; HO= Highly Observed; L= Limited.

Table 3 presents the weighted mean and the corresponding interpretation on the contribution of instructional teaching theory in the area of visualization and graphics among the respondents.

It shows in the table that rank 1 is “It helps to develop a deeper learning and understanding process of students and processes the tools to help

the power of visualization and graphics to connect the content of the lesson”, with a weighted mean of 4.23 or Highly Observed. Rank 2 is shared by the two indicators which are “It provides images and infographics through combination of words and explain information and text-based instructional teaching process”, and “It utilizes other visuals and graphics real

objects, transparencies, illustration, photographs, and maps”, with a weighted of 4.20 or Highly Observed. Rank 3 is also shared by the two indicators which are “It explains infographics and ideal complex into concept of learning among teachers and students”, and “It organizes the graphic, diagram, flow charts, and tables as examples of instructional teaching process”, with a weighted mean of 4.12 or Observed. The least

in rank is “It illustrates concepts for telling the unseen process to convey dynamic way and content of infographic as part of instruction teaching process”, with a weighted mean of 3.39 or Limited. The overall average weighted mean is 3.98 (SD=0.300) or Observed on the contribution of instructional teaching theory in the area of visualization and graphics among the respondents.

Table 3. Contribution of Instructional Teaching Theory in the Area of Visualization and Graphics

Indicators	WM	I	R
a. It grasps the pictures, concepts, and graphs to show visual aids in teaching to improve thinking and learning.	3.71	O	7
b. It helps to develop a deeper learning and understanding process of students and processes the tools to help the power of visualization and graphics to connect the content of the lesson.	4.23	HO	1
c. It provides images and infographics through a combination of words and explains the information and text-based instructional teaching process.	4.20	HO	2.5
d. It explains the infographics and ideal complex into concepts of learning among teachers and students.	4.12	O	4.5
e. It illustrates concepts for telling the unseen process to convey dynamic way and content of infographics as part of instruction teaching process.	3.39	L	8
f. It organizes the graphic, diagram, flow charts, and tables as examples of instructional teaching process.	4.12	O	4.5
g. Graphic organizers explain the data of the subject to be taught for better learning where it helps students to explore critical thinking.	3.87	O	6
h. It utilizes other visuals and graphics, real objects, transparencies, illustration, photographs, and maps.	4.20	HO	2.5
Average Weighted Mean (WM)	3.98		
Standard Deviation	0.300		

Note: I= Interpretation; R= Ranking; O= Observed; HO= Highly Observed; L= Limited.

Table 4 presents the weighted mean and the corresponding interpretation on the contribution of instructional teaching theory in the area of games and interactive resources among the respondents.

It shows that rank 1 is shared by the two indicators which are “Games remove the intimidation and learning factor on the concept of instructional learning that can turn complex things into play”, and “Games motivate and enhance students to make learning process for fun”, with a weighted mean of 4.21 or Highly Observed. Rank 2 is “It provides students to act in learning process and opportunities that can be portrayed through role playing as part of games and interactive teaching instruction”, with a weighted mean of 4.13 or Observed. Rank 3 is “It provides visual aid interactive and practice for instruction in teaching process among students”, with a weighted mean of 4.00 or Observed. The least in rank is shared by the two indicators which

are “It counts the instructional teaching to excite the pattern of the game in essential improvement of skills and critical thinking of the learners”, and “Role-play allows the process of students interactive resources to stimulate information in the real world of learning process”, with a weighted mean of 3.33 or Limited. The overall average weighted mean is 3.84 (SD=0.361) or Observed on the contribution of instructional teaching theory in the area of games and interactive resources among the respondents.

The second research question, which investigates whether there is a significant relationship between the contribution of instructional teaching theory in the educational system as a guide for effective learning devices as observed by the respondents, was addressed based on the data presented in Table 5.

Table 5 presents the test of significant correlation on the contribution of instructional teaching theory in the educational system as a



basis for effective devices in learning as observed by the respondents.

It reveals that when variables are tested the computed  $z$  value of print materials is 87.69, electronic media and technology devices is 91.70, visualization and graphics is 96.08, and games and interactive resources is 84.52 which shows that all  $z$  computed values are higher than the

critical  $r$  value of  $\pm 1.96$  which is significant and resulted to the decision of rejection, two-tailed test at 0.05 level of significant. Therefore, it is safe to say that there is a significant correlation on the contribution of instructional teaching theory in the educational system as a guide for effective devices in learning as observed by the respondents.

Table 4. Contribution of Instructional Teaching Theory in the Area of Games and Interactive Resources

Indicators	WM	I	R
a. Games remove the intimidation and learning factor on the concept of instructional learning that can turn complex things into play.	4.21	HO	1.5
b. It counts the instructional teaching to excite the pattern of the game in essential improvement of skills and critical thinking of the learners.	3.33	L	7.5
c. Games motivate and enhance students to make the learning process for fun.	4.21	HO	1.5
d. Role-play allows the process of students interactive resources to stimulate information in the real world of the learning process.	3.33	L	7.5
e. It provides students to act in the learning process and opportunities that can be portrayed through role playing as part of games and interactive teaching instruction.	4.13	O	3
f. It responds to new learning situation inside the classroom to explore the concept of learning imaginatively.	3.77	O	5.5
g. It provides visual aid interactive and practice for instruction teaching process among students.	4.00	O	4
h. It builds student critical thinking and creativity skills using logic challenges, puzzles, and work play games.	3.77	O	5.5
Average Weighted Mean (WM)	3.84		
Standard Deviation	0.361		

Note: I= Interpretation; R= Ranking; O= Observed; HO= Highly Observed; L= Limited.

### Contribution of instructional teaching theory

The contribution of instructional teaching theory in the area of print materials among the respondents shows to offer step-by-step lesson plan, time saving, assessment materials, testing, and worksheets, and books are updated to carry reference materials in the classroom teaching setting. This helps the instructional teaching process on a clear concept and distinct learning for students. It explores the changes and various aspects as to reference materials in teaching. It focuses on the learning process and opportunities for instructional pedagogy of teaching. It highlights the competency of instructional teaching and development of student practices, challenges, and pedagogical strategies. It supports innovation of instructional teaching in terms of print materials in education [19]. On the other hand, print materials in instructional teaching theory help students to build and boost standard skills and the vocabulary learning process. It builds and designs instructional teaching materials to describe instruments and

approach in the learning process. It determines precision and accuracy of instructional teaching materials ability of learning structure. It designs proper learning process of students as a center of learning based on needs. It allows characteristics and performance of teaching instruction and materials to demonstrate a learning subject. It promotes understanding and models for instructional instruments and prototypes [20]. Indeed, print materials in instructional teaching theory focus on increasing activity practice and learning retention for leading mastery of the lesson. It examines learners experiences and preferences with print materials instructional teaching process. It is the preference of students as perceived learning process because they developed critical thinking based on print materials given in instructional teaching. It helps to examine the gap as they explore print materials and preferences in the learning process [21]. Notably, print materials in instructional teaching strengthen and help students' skills for fun in learning where it engages appropriate practice

learning for easy classroom setting hands-on experiences. It provides better comprehension of student learning performance as to features and characteristics of instructional materials. It provides better focus learning process and identifies exposition and implication of teaching [13].

Furthermore, the contribution of instructional teaching theory in the area of electronic media, and technology devices among the respondents shows to create and allows multiple friendly learning for students to listen in audiobooks, CDs, using headsets to avoid disturbance from

other classmates. It creates advanced technology in teaching since students are interested in the latest trend of teaching. This can help them equip better learning through the device utilized during the teaching process. It strengthens learning process and transition to highlight literacy needs in electronic media devices for teaching. It analyzes critical perspective of teachers' instructional method. It provides better techniques and strategies for students' competency in learning. It addresses strategies and prospective demand of teaching and learning process [22].

Table 5. Test of Significant Correlation on the Contribution of Instructional Teaching

Test of Variables	Z-value	Interpretation	Critical Z-value	Decision
a. Print Materials	87.69	significant	$\pm 1.96$	rejected
b. Electronic Media and Technology Devices	91.70	significant	$\pm 1.96$	rejected
c. Visualization and Graphics	96.08	significant	$\pm 1.96$	rejected
d. Games and Interactive Resources	84.52	significant	$\pm 1.96$	rejected

Note: Decision based on the two-tailed test at 0.05 level of significance.

On the other hand, electronic media and technology devices show to provide innovation in advanced scientific models of learning crucial handheld devices and needs. This implements instructional teaching materials based needs of the learners and contribution of advanced technology as trends in teaching. This can equip students technology of teaching. It analyzes digital literacy of teachers learning process in various educational institutions. It focuses on utilization of technology devices in teaching proficiency, learning tool, digital media utilization, learning and designing media. It operates various devices and transfers of learning through audiovisuals, and other teaching platforms [23]. Subsequently, the electronic media, and technology devices bring lessons to power, life, and observation to participate in hands-on learning experiences. It provides critical thinking for learners where they enjoy participating the classroom teaching. It designs and introduces features of technology devices instructional teaching, learning and experiences among students. It promotes and explicitly designs program to reflect motivation in instructional teaching materials on advanced technology devices and electronic media to deepen collaborative appreciation in teaching and learning. It focuses on learners and personalizes teaching enhancement through technology media and devices to equip better learning [24]. Lastly, electronic media and technology devices show

that audio visual creates sensory experiences for students to engage in multimedia tools in classroom as beneficial and resources for learners. It describes interactive learning through multimedia-based practices [25].

Moreover, the contribution of instructional teaching theory in the area of visualization and graphics among the respondents shows to develop a deeper learning and understanding process of students where the tools help to empower visualization and graphics to connect the content of the lesson. It provides interaction instructional teaching through data visualization and web-based learning that is simply adopted to make the learning accessible, meaningful, and fun with the trend of technology. It provides visual tools to entice students learning process. It addresses the analysis of learning and framework in utilizing the visualization and graphics in teaching. It assesses the instructional teaching through visualization and graphics for purposes of interacting with web technology processes. It focuses on technology impact of learning, trends, and options in promoting the learning process [26]. In view hereof, the visualization and graphic instructional teaching provides images and infographics through combination of words and explain information and text-based instructional teaching process where it utilizes other visuals and graphics, real objects, transparencies, illustration, photographs, and maps. It provides effective means for infographics and concepts for

the attention needed by the learners. It explores infographics in teaching materials and instructions to explore opinion and knowledge of students. It helps to engage and determine students to identify the key concept of learning and instruction process. This can embed the infographic and content presented inside the classroom to measure retention of the learners [27]. Hence, visualization and graphics explain infographics and ideal complex into concepts of learning among teachers and students where it organizes the graphic, diagram, flow charts, and tables as examples in instructional teaching process. It establishes the process and practices of visualization and graphics in teaching and learning tools among students. It facilitates and analyzes the tool for various graphic visualization and exploration instructional teaching [28]. Lastly, visualization and graphics illustrate the concepts for telling the unseen process to convey dynamic way and content of infographics as part of instruction teaching process. It develops rapid information technology to analyze the process of teaching and learning instruction. It provides dynamic static infographics in teaching interaction and application [29].

Lastly, the contribution of instructional teaching theory in the area of games and interactive resources among the respondents shows to remove and intimidate learning factors on the concept of instructional learning that can turn complex things into play, where games motivate and enhance learning of students to make the learning process fun. This can challenge and benefit the utilization of game-based learning instructional teaching and method. It perceives teachers instructional teaching through games for teachers interest and knowledge acquisition in learning memorable experiences. It motivates and inspires teachers and students engagement [30]. In addition, games interactive resources provide students to act in the learning process and opportunities that can be portrayed through role playing as part games and interactive teaching instruction. It motivates students to continue the learning and teaching process to demonstrate skills in instructional learning through games among students. It integrates instructional teaching through game-based learning strategy to demonstrate a positive learning process [31]. Hence, games and interactive resources respond to new learning situation inside the classroom to explore the concept of learning imaginatively where it builds student critical thinking and

creativity skills using logic challenges, puzzles, and work play games. It develops critical thinking of the learners and measures interactive tasks and higher order of thinking through game and interaction instructional teaching. It demonstrates interactive success of game tasks and activities toward learning competence and dynamics [32]. Also, it shows that it counts instructional teaching to excite the pattern of the game, essential improvement of skills and critical thinking of the learners where role-play allows the process of students interactive resources to stimulate information in the real world of learning process. It identifies the impact of teaching instruction through games and interactive resources among teachers. It enhances higher skills and thinking inside the classroom teaching [33].

## CONCLUSION

It shows that print materials offer step by step lesson plan, time saving, assessment materials, testing, and worksheets, and shows that reference books are updated to carry materials in the classroom teaching setting where it helps students to build and boost standard skills and vocabulary learning process.

It shows that electronic media and technology devices create and allow multiple friendly learning for students to listen in audiobooks, CDs, using headsets to avoid disturbance from other classmates where it provides innovative learners an advanced scientific model of learning crucial handheld devices and needs.

It shows that visualization and graphics help to develop a deeper learning and understanding process of students. It processes the tools to help the power of visualization and graphics to connect the content of the lesson where it provides images and infographics through combination of words and explain information and text-based instructional teaching process and utilizes other visuals and graphics in real objects, transparencies, illustration, photographs, and maps.

It shows that games and interactive resources remove intimidation and learning factor on the concept of instructional learning that can turn complex things into play, and motivates enhance learning of students to make the learning process for fun where it provides students to act in the learning process and opportunities that can be

portrayed through role playing as part of games and interactive teaching instruction.

It shows that there is a significant correlation on the contribution of instructional teaching

theory in the educational system as a guide for effective devices in learning as observed by the respondents.

## REFERENCES

- [1] L. L. D. Mallillin, J. C. Cabaluna, R. D. Laurel, P. A. C. Arroyo, T. M. Señorón Jr, and J. B. Mallillin, "Structural domain of learning and teaching strategies in the academic performance of students," *Eur. J. Educ. Stud.*, vol. 8, no. 9, pp. 187–208, Aug. 2021.
- [2] L. L. D. Mallillin and J. B. Mallillin, "Competency skills and performance level of faculties in the higher education institution (HEI)," *Eur. J. Educ. Stud.*, vol. 6, no. 9, pp. 1–18, 2019.
- [3] L. L. D. Mallillin, "Different Domains in Learning and the Academic Performance of the Students," *J. Educ. Syst.*, vol. 4, no. 1, pp. 1–11, 2020.
- [4] T. A. Glover, L. A. Reddy, and K. Crouse, "Instructional coaching actions that predict teacher classroom practices and student achievement," *J. Sch. Psychol.*, vol. 96, pp. 1–11, Feb. 2023.
- [5] L. L. D. Mallillin, L. C. Mendoza, J. B. Mallillin, R. C. Felix, and I. C. Lipayon, "Implementation and readiness of online learning pedagogy: a transition to COVID 19 pandemic," *Eur. J. Open Educ. E-learning Stud.*, vol. 5, no. 2, pp. 71–90, Sep. 2020.
- [6] L. L. D. Mallillin, "Teaching and learning intervention in the educational setting: adapting the teacher theory model," *Int. J. Educ. Innov. Res.*, vol. 1, no. 2, pp. 99–121, Jul. 2022.
- [7] S. Prediger, J. Dröse, R. Stahnke, and C. Ademmer, "Teacher expertise for fostering at-risk students' understanding of basic concepts: conceptual model and evidence for growth," *J. Math. Teach. Educ.*, vol. 26, no. 4, pp. 481–508, Aug. 2023.
- [8] L. L. D. Mallillin, E. A. Carag, J. B. Mallillin, and R. D. Laurel, "Integration of knowledge through online classes in the learning enhancement of students," *Eur. J. Open Educ. E-learning Stud.*, vol. 5, no. 1, pp. 19–33, Jun. 2020.
- [9] L. L. D. Mallillin, "Teacher theory and adaptable model: an application to teaching profession," *Eur. J. Educ. Stud.*, vol. 8, no. 12, pp. 299–311, Nov. 2021.
- [10] M. Badali, J. Hatami, M. Farrokhnia, and O. Noroozi, "The effects of using Merrill's first principles of instruction on learning and satisfaction in MOOC," *Innov. Educ. Teach. Int.*, vol. 59, no. 2, pp. 216–225, Mar. 2022.
- [11] H. Ruiz-Martín and R. W. Bybee, "The cognitive principles of learning underlying the 5E Model of Instruction," *Int. J. STEM Educ.*, vol. 9, no. 1, p. 21, Dec. 2022.
- [12] D. I. Hanauer *et al.*, "Instructional Models for Course-Based Research Experience (CRE) Teaching," *CBE—Life Sci. Educ.*, vol. 21, no. 1, p. ar8, Mar. 2022.
- [13] A. Singh and P. A. Alexander, "Audiobooks, Print, and Comprehension: What We Know and What We Need to Know," *Educ. Psychol. Rev.*, vol. 34, no. 2, pp. 677–715, Jun. 2022.
- [14] J. Q. Juan Qian, "Research on Artificial Intelligence Technology of Virtual Reality Teaching Method in Digital Media Art Creation," *網際網路技術學刊*, vol. 23, no. 1, pp. 127–134, Jan. 2022.
- [15] R. Ziatdinov and J. R. Valles, "Synthesis of Modeling, Visualization, and Programming in GeoGebra as an Effective Approach for Teaching and Learning STEM Topics," *Mathematics*, vol. 10, no. 3, p. 398, Jan. 2022.
- [16] N. Bado, "Game-based learning pedagogy: a review of the literature," *Interact. Learn. Environ.*, vol. 30, no. 5, pp. 936–948, May 2022.
- [17] P. Hiver, A. H. Al-Hoorie, and D. Larsen-Freeman, "Toward a transdisciplinary integration of research purposes and methods for complex dynamic systems theory: beyond the quantitative–qualitative divide," *Int. Rev. Appl. Linguist. Lang. Teach.*, vol. 60, no. 1, pp. 7–22, Mar. 2022.
- [18] S. E. Scholtz, "Sacrifice is a step beyond convenience: A review of convenience sampling in psychological research in Africa," *SA J. Ind. Psychol.*, vol. 47, no. 1, pp. 1–12, May 2021.
- [19] M. M. C. Shohel, S. Shams, M. Ashrafuzzaman, A. S. Alam, M. A. Al Mamun, and M. M. Kabir, "Emergency Remote Teaching and Learning," in *Handbook of research on Asian perspectives of the educational impact of COVID-19*, M. R. Islam, S. K. Behera, and L. Naibaho, Eds. IGI Global, 2022, pp. 175–200.
- [20] L. M. Díaz-Vázquez, B. M. Ortiz-Andrade, M. L. Kovarik, and M. L. Morris, "Active Learning Exercises Involving Building and Design," in *Active Learning in the Analytical Chemistry Curriculum*, ACS Publications, 2022, pp. 181–204.
- [21] E. Spica, "The Influence of Technological Savviness and Home Internet Access on Student Preferences for

- Print or Digital Course Materials.,” *Int. J. Teach. Learn. High. Educ.*, vol. 34, no. 1, pp. 81–96, 2022.
- [22] J.-C. Mateus, P. Andrada, C. González-Cabrera, C. Ugalde, and S. Novomisky, “Teachers’ perspectives for a critical agenda in media education post COVID-19. A comparative study in Latin America,” *Comunicar*, vol. 30, no. 70, pp. 9–19, Jan. 2022.
- [23] E. Sulasmi, “Primary School Teachers’ Digital Literacy: An Analysis On Teachers’ Skills In Using Technological Devices,” *J. Innov. Educ. Cult. Res.*, vol. 3, no. 2, pp. 140–145, Feb. 2022.
- [24] R. Hobbs and J. Coiro, “Design Features of a Professional Development Program in Digital Literacy,” *J. Adolesc. Adult Lit.*, vol. 62, no. 4, pp. 401–409, Jan. 2019.
- [25] V. N. I. Sari and S. Suwandi, “Multimedia-Based Interactive Learning Media In The Text Material Of The Observation Report,” in *International Conference of Humanities and Social Science (ICHSS)*, 2021, pp. 224–230.
- [26] S. Lumley, R. Sieber, and R. Roth, “A framework and comparative analysis of web-based climate change visualization tools,” *Comput. Graph.*, vol. 103, pp. 19–30, Apr. 2022.
- [27] J. M. Abbazio and Z. S. Yang, “Are Infographics Worth It?: An Assessment of Information Retention in Relation to Information Embedded in Infographics,” *Music Ref. Serv. Q.*, vol. 25, no. 4, pp. 99–130, Oct. 2022.
- [28] D. Park, M. Suhail, M. Zheng, C. Dunne, E. Ragan, and N. Elmqvist, “StoryFacets: A design study on storytelling with visualizations for collaborative data analysis,” *Inf. Vis.*, vol. 21, no. 1, pp. 3–16, Aug. 2021.
- [29] M. He and Y. Li, “Application of Big Data Technology in News Media Scene Visualization Based on Internet of Things (IoTs),” *Math. Probl. Eng.*, vol. 2022, pp. 1–10, Jun. 2022.
- [30] E. Jääskä and K. Aaltonen, “Teachers’ experiences of using game-based learning methods in project management higher education,” *Proj. Leadersh. Soc.*, vol. 3, p. 100041, Dec. 2022.
- [31] C.-Y. Chang, M.-H. Chung, and J. C. Yang, “Facilitating nursing students’ skill training in distance education via online game-based learning with the watch-summarize-question approach during the COVID-19 pandemic: A quasi-experimental study,” *Nurse Educ. Today*, vol. 109, p. 105256, Feb. 2022.
- [32] D. Wang, H. Liu, and K.-T. Hau, “Automated and interactive game-based assessment of critical thinking,” *Educ. Inf. Technol.*, vol. 27, no. 4, pp. 4553–4575, May 2022.
- [33] F. M. Zain, S. N. Sailin, and N. A. Mahmor, “Promoting Higher Order Thinking Skills among Pre-Service Teachers through Group-Based Flipped Learning,” *Int. J. Instr.*, vol. 15, no. 3, pp. 519–542, Jul. 2022.