

# Optimizing Classroom Instruction through Online Instructional Delivery Technique

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**Abstract** This study presents the pedagogical advantages of online instructional delivery technique in optimizing classroom instruction. Using the One Group Pretest-Posttest Design of the Pre-experimental Designs to 43 senior Bachelor of Elementary Education students, the following are forwarded: the respondents were social butterflies; the respondents were generally satisfied with the integrated online learning sessions in their classroom activities; all of the respondents vouched that the embedded online learning tools in their classroom learning were very advantageous; students' successes in using online learning tools were found dependent to their indulgence and prior experiences in online learning; and much of the respondents said that they benefited from their online learning experiences.

**Keywords:** *online instructional delivery technique, educational technologies, synchronous and asynchronous e-learning modality*

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## 1. Introduction

The advent of advanced educational technologies is a vast array of digital resources and content in learning that offers the magnanimity of theories towards educational opportunities. It is the threshold that leads educationists to divert from the traditional classroom initiatives to contemporary initiatives that make the classroom learning situations more dynamic. One of these initiatives is the introduction of online instructional delivery technique (OIDT) in optimizing classroom instruction [1]. This affordance sustains a community of inquiry in a dynamic classroom that promotes continuous learning among student learners [1,2].

Oidt has been prevalent in higher education as most institutions of higher learning introduce some courses and programs using online technologies as a potent tool in their instruction [3]. This modality enhances student learning in the advancement of educational technology in higher education institutions as it further enhances students' skills in constructing a body of knowledge through computer technologies [1,3,4].

Aptly, Oidt is the introduction of online communication and multi-media tools as key modalities of instruction. This includes chat room, group discussion, online mentoring, and YouTube integration. Online instructional delivery technique creates a technology-based instruction as a way of enriching the educative processes to be more integrative through synchronous and asynchronous learning modalities. It restructures the traditional classroom routines with online learning [1,2].

Appositely, numerous researches on the introduction of online scaffolding and segments of instructional techniques were conducted and yielded positive findings: an enriching leap towards harnessing communication abilities among student-learners, open and free discussion boards through various modalities of inquiry and deconstruction process that harmonize theories of interaction and discourses in teaching-and-learning. These researches had established positive impact on the academic performance and achievement of the student learners towards better learning outcomes [2].

The crux is: advanced technologies enhance the spirit of the virtual world in any learning environment. These modalities enforce learners to improve their learning pace through independent learning and to enjoy greater academic freedom in the context of life-long learning [3,4,5,6]. Apparently, advanced technologies and communication facilities are imperative to interactive learning experiences in optimizing competencies in education at all levels. This culture is now prevalent as it is one of the thrusts of the World Declaration on Higher Education for the 21<sup>st</sup> Century [7]. Hence, the exciting challenge among educationists is to shift modalities of conventional teaching-and-learning routines to systematized online instructional delivery techniques like integrating YouTube in classroom instruction that optimizes the active-uncovering techniques of cause-effect probing skills both in theory and in practice [1].

## 2. Materials and Methods

The One Group Pretest-Posttest Design of the Pre-experimental Designs was used in this study as it intends

to collect viable data on the establishment of an online instructional delivery technique through YouTube integration in classroom instruction. This technique is believed to leverage the academic performances of students. This design involves a pretest or baseline observation which allows the investigator to determine the effects of the treatment conditions by comparing the pretest and posttest results. Aptly, pre-test results are used as covariate values in establishing the causal effects of the treatment condition.

Appositely, the Explicative-Reductive Method was employed in this study focused on the introduction of OI DT in classroom instruction. The Explicative Method was used to account the context encompassing variables and qualities attributed to the problem. This paved for the determinant of the causal effect of the program in the academic performances of the respondents. On the other hand, the Reductive Method was used to elicit potential variables of the identified context for enrichment and further analysis. This method involves a systematic investigation using pre-assessment results, formative evaluations, interview, and checklist as predominant methods of data collection. Corroboration of findings, vis-à-vis with the identified norms of the context of the study, was used to conclude on the effects of the proposed program in scaffolding learning and academic performances.

On the other hand, a questionnaire formulated by Anderson & Elloumi [6] was adopted to evaluate the learning impact of the embedded online segments and experiences through online platforms to the learning experiences of student-respondents.

Furthermore, the focused interview was employed in verifying the gathered data through the adopted questionnaire. The interview was focused on the specific issues particularly on the implementation of OI DT as well as on the respondents' insights on its pedagogical advantages. All these formed part in corroborating the results found in the study.

This study was conducted at the College of Teacher Education of Quirino State University particularly in the Research Class of senior Bachelor of Elementary

Education (BEEd) students. Respondents of this study were briefed according to the research' constructs, norms, and parameters particularly on the online segments using OI DT through YouTube integration. Online discussions were conducted in the FB's group chat designed by the proponents as the university does not have LMS. Online segments included in the study were both synchronous and asynchronous e-sessions. Both sessions required 100 % participation among the student-respondents. The respondents of this study were the 43 BEED – IV students enrolled in Thesis Writing for the first semester, SY 2015 – 2016.

On the other hand, YouTube video clips on Statistical Treatment Plan were selected under the assistance and supervision of the Research professor and Research adviser of the proponents. It included YouTube clips on the types of data, t-test, F-test, ANCOVA, and Pearson-r correlation.

The procedure employed in this study is as follows:

- Determinants of the Respondents' Online Characteristics. This procedure employed interview and questionnaire as predominant tools of data gathering.
- Selection of Video Clips. The evaluation was focused on the content, presentation, and suitability of the video clip. Evaluation was made by the proponents' thesis professor and adviser.
- Establishment of chat rules, procedures, and the required competencies to be observed in the online sessions.
- Experiencing online instructional delivery techniques. These sessions were conducted in both synchronous and asynchronous e-learning modalities.
- Determinants of the respondents' satisfaction on the implemented OI DT. It made use of a questionnaire as a tool in data gathering. Feedback was also solicited among the respondents in a focused interview.

### 3. Results and Discussion

**Table 1. A-priori e-learning Experiences of Students in using Online Learning Tools for Classroom Interventions**

|         |   | Mean | D.I. |
|---------|---|------|------|
| 1       | I am a social butterfly and use social networks (E.g. MySpace, Flickr, Facebook, among others)  | 3.28 | A    |
| 2       | I use synchronous chat tools (E.g. Instant messaging, chat rooms, IP telephony, among others)   | 3.07 | O    |
| 3       | I use messaging and discussion tools (E.g. Email, forums, phone texting like BBM, Tango)  | 3.15 | O    |
| 4       | I play online games or use virtual worlds and talk to other players (E.g. COC, World of War Craft, Battlefield 2, Sims Online, Second Life) | 2.46 | S    |
| 5       | I have an online personal space other than a social network (E.g. Web pages, blogs, triode team, among others)                              | 2.41 | S    |
| 6       | I use other social and communication tools online (E.g. Online dating, Friends Reunited, among others)                                      | 2.76 | O    |
| Average |   | 2.86 | O    |

Legend: DI – Descriptive Interpretation; A – Always; O – Often; S – Seldom.

Presented in the foregoing table are the a-priori e-learning experiences of the respondents particularly on online learning tools. It can be said that the respondents have good background and exposure to online learning tools. Their state of being social butterflies particularly in Facebook and chat rooms is a good indication of their readiness to participate in online learning. Despite these affordances of the respondents, it was noted, however, that most of the respondents do not have sophisticated mobiles.

Likewise, the respondents have poor internet connectivity especially to those who are living in the villages in the province of Quirino, Philippines.

In an interview, the respondents zeroed-in that they are just renting in the internet cafes whenever they go online. However, it was found out that some of them were maintaining a blog and familiar of using wikis. This concordance indicates further their readiness to do academic online discussions.

**Table 2. Students' Satisfaction on the Benefits of using Online Learning Tools in Classroom Learning when grouped according to Sex<sup>1</sup>**

|         |  | Male  |      | Female |      |
|---------|--|-------|------|--------|------|
|         |  | Mean  | D.I. | Mean   | D.I. |
| 1       | I am free to participate in the discussion more frequently than traditional courses.   | 3.40a | VS   | 3.39a  | VS   |
| 2       | It enables me to take more researches than the traditional classroom routine.  | 3.20a | S    | 3.20a  | S    |
| 3       | It develops my critical thinking abilities more than the traditional classroom routine.  | 3.00a | S    | 3.27a  | VS   |
| 4       | Rereading previous discussion threads enables me to review and understand topics or questions and answers that I didn't understand well. | 3.20a | S    | 3.24a  | S    |
| 5       | I am satisfied on the use of on-line instructional delivery technique.   | 3.20a | S    | 3.10a  | S    |
| Average |  | 3.20A | S    | 3.23A  | S    |

Legend: DI – Descriptive Interpretation; VS – Very Satisfied; S – Satisfied.

<sup>1</sup>means of the same letters within rows are comparable at .05 level of significance.

Presented in the foregoing table is the respondents' satisfaction on the benefits of online learning tools when grouped according to sex. It can be noted that the respondents were generally satisfied on the benefits of OI DT. However, when the foregoing results were tested for statistical significance, it was found out that the mean group responses between the two groups of respondents were comparable.

On the other hand, emphasis is given for indicator 1. It is construed that students when exposed to asynchronous sessions of OI DT are more participative and comfortable to interact in the online discussions [4,5]. This could be

attributed to the fact that they are having an informal academic discussion with their fellows which eliminate their fear and other reservations from their professor. This concordance is expected to propel their critical thinking abilities as they have all the means to verify answers to their inquiry. They are also free to ask clarifications and further discussions, as well as additional examples, whenever necessary [1,2,4,5,6].

In an interview with the respondents, they zeroed-in the advantage of free discussion especially during asynchronous sessions as this was made informal and colloquial within their own levels and limits as students.

**Table 3. Students' Satisfaction on the Benefits of using Online Learning Tools in Classroom Learning when grouped according to Learning Ability<sup>1</sup>**

|         | Statements   | High    |      | Average |      | Below Average |      |
|---------|--|---------|------|---------|------|---------------|------|
|         |  | Mean    | D.I. | Mean    | D.I. | Mean          | D.I. |
| 1       | I am free to participate in the discussion more frequently than traditional courses.   | 3.41a   | VS   | 3.31a   | VS   | 3.44a         | VS   |
| 2       | It enables me to take more researches than the traditional classroom routine.  | 3.17a   | S    | 3.15a   | S    | 3.33a         | VS   |
| 3       | It develops my critical thinking abilities more than the traditional classroom routine.  | 3.33a   | VS   | 3.15a   | S    | 3.11a         | S    |
| 4       | Rereading previous discussion threads enables me to review and understand topics or questions and answers that I didn't understand well. | 3.21abc | S    | 3.62ab* | VS   | 2.78ac*       | S    |
| 5       | I am satisfied on the use of on-line instructional delivery technique.   | 3.13a   | S    | 3.23a   | S    | 2.89a         | S    |
| Average |  | 3.25A   | VS   | 3.29A   | VS   | 3.11A         | S    |

Legend: DI – Descriptive Interpretation; VS – Very Satisfied; S – Satisfied.

<sup>1</sup>means of the same letters within rows are comparable at .05 level of significance

\*mean difference is significant at .05 level of significance (LSD test).

The respondents were generally satisfied on the benefits of OI DT when they are grouped according to learning ability. Emphasis is supplied to item 1 which states that the respondents frequently participate in the discussion as all of them had a unanimous evaluation across their learning abilities. It can be construed then that there is synergy in employing OI DT in classroom learning. This concordance is supported by Bandura in his Social Learning Theory [8]. He posited that the affordance of the respondents to interact in the online community draws interrelationship of observation and modeling of behaviors, attitudes, and emotional reactions of others in the learning process of an individual learner. This concordance leads to learning brought about by the sustained community of inquiry among student-learners [1,2].

On the other hand, the disparity between the evaluation of the average and below average groups of respondents in item 4 could be coined to the fact that learning cognition, which is based on cognitive processes, transforms the individual through imitation, modeling, and feedback which consists of environmental, individual, and other social stimulus that are believed to reshape the learning environment of the student-learner. It is claimed by various researchers that the average or the middle learners benefit the most in OI DT while the below average group will just be the observers and imitators in the learning

process. The high ability group, on the other hand, tend to be passive in the process and if not mediated would become the laissez-faire of the group [1,3,4,6].

Concomitantly, the Social Learning Theory (SLT) is also influenced by a reciprocal causation: the person, behavior, and environment are influencing each other through self-efficacy and self-regulation [8]. Learning employs self-confidence towards learning (self-efficacy) under circumstances of an individual's personal ideas on the appropriateness and inappropriateness of actions in improving his own behaviors (self-regulation). Self-regulation involves modeling (doing what others do both live model and symbolic models) and imitation (using another learner's behavior as a discriminating stimulus to both vicarious reinforcement and vicarious punishment). Therefore, SLT spans to both cognitive and behavioral frameworks by encompassing attention, memory, and motivation. Hence, the central role of social learning is on behavioral interpretation of modeling [1,2,4,5,6].

The introduced OI DT segments were found to be very advantageous in optimizing classroom learning when the respondents were grouped according to sex. Moreover, there is a comparable assessment on the perceived advantages of OI DT between male and female respondents. This implies that learning is offered equivocally to both male and female learners. Hence,

OIDD is responsive to the needs of student-learners across their inherent learning drive.

**Table 4. The Perceived Relative Magnitude of Advantages of using Online Learning Tools in Classroom Learning when grouped According to Sex<sup>1</sup>**

|         | Statements   | Male  |      | Female |      |
|---------|--|-------|------|--------|------|
|         |  | Mean  | D.I. | Mean   | D.I. |
| 1       | Online instructional delivery technique enables me to participate in the discussion more frequently than traditional courses.            | 3.80a | VA   | 3.39a  | VA   |
| 2       | Online instructional delivery technique enables me to take more researches than the traditional classroom routine.                       | 3.40a | VA   | 3.37a  | VA   |
| 3       | Online instructional delivery technique develops my critical thinking abilities more than the traditional classroom routine.             | 3.40a | VA   | 3.37a  | VA   |
| 4       | Rereading previous discussion threads enables me to review and understand topics or questions and answers that I didn't understand well. | 3.60a | VA   | 3.15b  | A    |
| 5       | I benefit in online instructional delivery technique.  | 3.00a | A    | 3.42b  | VA   |
| Average |  | 3.44a | VA   | 3.34a  | VA   |

Legend: DI – Descriptive Interpretation; VA – Very Advantageous; A - Advantageous.  
<sup>1</sup>means of the same letters within rows are comparable at .05 level of significance.

This concordance of the respondents to the realms of OIDD is stressed in the Social Development Theory of Vygotsky [9]. The theory posited that the fundamental role of social interaction in the development of cognition is its central role in the process of “making meaning”. On

the other hand, Lave posited that learning is unintentional and situated that happens in a process of “legitimate peripheral participation” [10]. Hence, it can be said that OIDD brings pedagogical advantages in meeting the needs of the technological learners of the 21<sup>st</sup> century [1,2,4,5,6].

**Table 5. The Perceived Relative Magnitude of Advantages of using Online Learning Tools in Classroom Learning when grouped according to Learning Ability<sup>1</sup>**

|         | Statements   | High  |      | Average |      | Below Average |      |
|---------|--|-------|------|---------|------|---------------|------|
|         |  | Mean  | D.I. | Mean    | D.I. | Mean          | D.I. |
| 1       | Online instructional delivery technique enables me to participate in the discussion more frequently than traditional courses.            | 3.42a | VA   | 3.54a   | VA   | 3.33a         | VA   |
| 2       | Online instructional delivery technique enables me to take more researches than the traditional classroom routine.                       | 3.36a | VA   | 3.46a   | VA   | 3.22a         | A    |
| 3       | Online instructional delivery technique develops my critical thinking abilities more than the traditional classroom routine.             | 3.33a | VA   | 3.46a   | VA   | 3.33a         | VA   |
| 4       | Rereading previous discussion threads enables me to review and understand topics or questions and answers that I didn't understand well. | 3.00a | A    | 3.54a   | VA   | 3.22a         | A    |
| 5       | I benefit in online instructional delivery technique.  | 3.29a | VA   | 3.46a   | VA   | 3.44a         | VA   |
| Average |  | 3.28A | VA   | 3.49A   | VA   | 3.31A         | VA   |

Legend: DI – Descriptive Interpretation; VA – Very Advantageous; A - Advantageous.  
<sup>1</sup>means of the same letters within rows are comparable at .05 level of significance.

The introduced OIDD among the respondents were generally found to be very advantageous among the three learning groups in the study. Purportedly, the average group had the best evaluation when compared to their counterparts followed by the below average and the high ability group. On the other hand, there is a comparable mean between and among the responses of the respondents.

This implies that the respondents’ prior experiences are a potent leap in their successes in online learning [1,2,4,5,6].

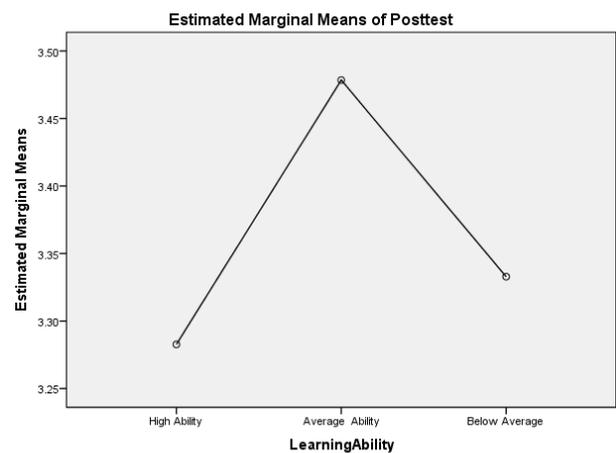
**Table 6. Relationship of the Students’ A-priori Online Learning Experiences and their Perceived Magnitude of Advantages of Using Online Learning Tools**

|  | Pearson-r Correlation |
|--|-----------------------|
| A-priori Online Learning Experiences and Advantages of Online Learning Tools | .596*                 |

\*significant at .05 level of significance.

The characteristics and experiences of online learners predict their successes in any online segments of OIDD. It can be construed then that their knowledge and exposure to online discussion, where they can freely communicate without the inhibition of coercion when their answer or comprehension is wrong, is cogently related to their success in OIDD. Hence, they find each online segment advantageous.

It was observed that students who are exposed to online discussion, like blogs, facebook, chatrooms, among others, are more receptive and participative to OIDD sessions.



Covariates appearing in the model are evaluated at the following values: Pretest = 3.017

**Figure 1. Interaction of the Online Learning Tools on the Learning Ability of the Respondents**

(Covariates appearing in the model are evaluated at the following values: Pre-test=3.017; Corrected model is insignificant at .05 level; R-squared = .066 (Adjusted R Squared = .001))

Figure 1 presents the relationship of the estimated marginal means of the pretest and post-test results, and the learning abilities of the respondents, categorized as below average, average, and high. The results of the post-test

mean score were evaluated with the pre-test covariate value of 3.017. It presents that that students who are averagely able in Research Writing benefited the most in the program followed by the below averagely able students. Surprisingly, there is no significant pattern to be discriminated on the scores of the highly able students in Research.

It could also construed then that there are other important variables or factors such as other student ability, other classroom techniques, among other variables, which may explain better the difference on the attitudes of the respondents in online delivery techniques.

In an interview with respondents, they zeroed-in the following problems: (1) the pacing of the presenter in the videos viewed was too fast, and (2) the diction, as well as his accent, was found unclear because they are not accustomed to listening and using the American accent.

#### 4. Implications to Theory and Practice

- Since most of the respondents are social butterflies (although they do not have sophisticated mobiles or laptops) with a considerable rich a-priori e-learning experiences, it is strongly recommended that an online infrastructure like Learning Management System (LMS) be adopted and implemented;
  - Since the respondents found difficulty in processing and understanding the diction and accent of the presenter in the videos used, it is recommended that a localized or personalized videos be used instead. This is to cater the needs and readiness of the respondents as most of them are not familiar with the American accent;
  - The affordance of American accent in the English curriculum may be adopted for greater cognition and exposure of the students.
- A parallel study on this line of interest be conducted in a more defined parameters, e.g. longer exposure to OI DT, personalized video and presenter.

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