Effects of Embedded Multimedia in Directed Reading Lessons on Student Engagement and Media Analysis

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This research examined the effects of embedded multimedia in Directed Reading Lessons (DRL) on student engagement and media analysis. The study utilized pre-post counterbalanced quasi-experimental design, which was implemented in two cycles with two Grade 6 classes as participants.

Assessments were given in three stages: (1) pre-intervention, (2) post-Cycle 1, and (3) post-Cycle 2. The major assessment instruments, namely Student Engagement Survey (SES) and Media Analysis Test (MAT), had three versions each based on the tool used by Arke and Primack (2009). The Student Engagement Observation Checklist (SEOC) filled out by the teacher-researcher together with his observation notes and the written comments of the students were also used to comprehensively examine the impact of the intervention. Data were analyzed by computing for the weighted means of each SES and SEOC item and using paired samples t-test through SPSS Statistics software.

Before and after the implementation of DRLs with and without embedded multimedia, results of the study showed that, (1) there were statistically significant differences in student engagement, (2) there were no significant differences in the media analysis skills of students, and (3) the weighted mean score of each SES and SEOC item, (4) and the patterns in the students' comments and teacher-researcher's observation notes were consistent with the findings in the SES.

Introduction

Different media platforms have dictated the kind of activities today's children engage in. From the use of the traditional forms of media such as the television and the radio to the more technologically-advanced ones like the use of cellular phones and the Internet, these various media have influenced and dominated the way the youth form their attitudes, beliefs, values, and lifestyles (Asian Institute of Journalism and Communication, 2011).

With students' extensive use of computers and mobile devices, they have become both consumers and producers of media (Khan, 2015). Moreover, with information becoming more and more instantaneous, it has become doubly challenging "to discern useful sources of information and communication vis-à-vis unreliable sources; comprehend the workings of media so as to be able to understand how they influence us; and take control of our own media and information environment instead of becoming controlled by them" (Khan, 2015, p. 1). With this in mind, there is now a need to make students media literate so that they become critical consumers and producers of media as these acts form part of the development of their values, sense of culture, and oneness as members of a larger community (Asian Institute of Journalism and Communication, 2011).

In most classrooms today, there are students who are highly eager to join in class discussions while there are reluctant ones who lack engagement and positive attitude toward doing activities, especially reading tasks. Hobbs (2001) explained that these are manifestations of how media-saturated the world now has become. It is not surprising then that the way students become interested or uninterested in doing learning activities appears to be affected by the media. Their priorities and interests seem to be anchored on what they perceive from the media, and this affects their engagement in the classrooms.

Several strategies are laid down by reading experts in order to effectively engage learners in a reading classroom. One of these strategies is the use of the Directed Reading Activity (DRA) framework pioneered by Betts in 1950. Later on, reading experts modified some of its parts and called it Directed Reading Lesson (DRL). Though sometimes criticized as being teacher-dominated, the DRA framework has been proven in several studies to be one of the most comprehensive means to foster comprehension skills and to guide and engage children inside the reading classroom (Tierney & Readence, 2005).

One of the reasons why students lose interest and eventually engagement in the reading classroom can be traced to the lack of connection between what they like and what is presented in the reading activities. Because of this, student engagement has become an area of concern in the reading classroom. There are students who have high social engagement but underperform in terms of academic and cognitive engagements (Burn & Durran, 2007). Their high social engagement is anchored on the things they are more interested in talking about such as the latest trends presented by the media. However, when they are given a reading task using a traditional text, they become unmotivated and disengaged because they are already preoccupied with other things they deem more interesting (Hobbs, 2007). This is where DRL comes in useful and effective because of its emphasis on tapping students' prior knowledge and personal experiences to spark their interest in reading. In today's reading classrooms, the media is often used as the glue to bind the students' interests and the reading activities.

Since various media forms are now often used in reading classes, it is imperative to develop not only reading skills but also media analysis as equally significant. With the media's ubiquitous quality, students frequently encounter and read media texts everywhere, every day. Thus, in order to help them critically discern these texts and avoid being unduly influenced and persuaded by them, media analysis should be developed (Khan, 2015). It is in the reading classroom where the development of students' media analysis skills can be best promoted.

Review of Related Literature

Student Engagement. Student engagement is a multifaceted concept. Researchers debate on its very definition and the aspects that it includes (Trowler, 2010). Hu and Kuh (2001) defined student

engagement as "the quality of effort students themselves devote to educationally purposeful activities that contribute to directly desired outcomes" (p.3). In addition, Trowler (2010) identified three dimensions covered by student engagement namely behavioral engagement, emotional engagement, and cognitive engagement. She noted that "students who behaviorally engage would typically comply with behavioral norms such as attendance and involvement, and would demonstrate the absence of disruptive negative behavior" (p. 5). Furthermore, emotionally engaged students are those who exhibit interest, enjoyment, or a sense of belonging, while cognitively engaged students are the ones who do not only comply with requirements but also relish learning and challenge (Trowler, 2010). Because of advancements in technology, student engagement now becomes even more complex to identify and address. Downes and Bishop (2012) noted that "middle grade students are drawn to 21st century technologies more than any other age group; 11- to 14-year-olds spend 230% more time on non-school computer use than do 8- to 10-year-olds" (p.6). Similar to middle grade students, Prensky (2001) noted that average college graduates spend 5,000 hours reading, but over 10,000 hours playing video games or using gadgets for texting, emailing, and the like. With this, it becomes challenging to engage these students because their interest is found outside the classroom. To be able to bring their interest into the classroom, "attributes of technology integration that students find most engaging must be explored" (p.6). These researchers in their study looked at the possibilities of engaging students in a student-centered and technology-rich classroom. They argued that in order to engage digital natives in the classroom, efforts must be done to link the students' in-school and out-of-school interests by integrating more technology in the classroom.

More (2015) tested in her study the Cognitive Theory of Multimedia Learning by analyzing the effects of integrating Youtube videos in hybrid and web-assisted undergraduate classes. Hybrid courses are classes "where some small portion of seat time (physical meeting time) is forfeited due to the weight of the online learning that has been incorporated into instruction" (p. 60). Web-assisted classes, he explained, on the other hand, "are traditional synchronous in-person courses where a course website has been developed, and is being used, in order to enhance instruction." Aside from lectures delivered using MS Powerpoint and MS Word, Youtube videos downloaded and created by instructors were provided to reinforce key concepts discussed in class. The Youtube videos shown to students, he added, ranged from documentary segments, relevant excerpts from television shows, scenes from mainstream movies, interviews, lectures from professors at other universities, short presentations, to thought-provoking and/or amusing videos relevant to course content.

A similar study was done by L. Godzicki, Godzicki, Krofel, and Michaels (2013), who did an action research to improve motivation and engagement in elementary and middle school students through the integration of technology. In an eleven-week intervention program, the teacher-researchers used various multimedia forms such as videos, Powerpoint presentations, blogs, and others in implementing their technology-based lesson plans and likewise, students were also given chances to use those materials in doing the activities given to them. The study surveyed both the students and their former teachers and the results of the teacher -survey showed that though teachers recognize the value of integrating technology in their classes, their school lacked the resources to acquire such materials. In the pre-intervention survey given to students, the results showed that teachers do not use as much technology as they would want them to use, which coincides with the teacher survey results. Moreover, said survey showed that in instances when teachers integrated some form of technology, their motivation and engagement did not improve. After the implementation of their intervention program, however, the researchers found out from the student survey that there was a significant increase in their motivation and engagement and that students' behavior was more animated toward learning objectives when technology was used. The researchers also explained that "since young people are becoming

increasingly dependent on technologies to communicate, gather information, and extend social experiences, it is essential that our educational system progress to meet these new demands" (p. 57).

Media Analysis. Media forms today have become so encompassing that most of them have already gained control over people (Marsh, 2005). It becomes critically important now to include media literacy skills, specifically media analysis in the classroom most especially because the kind of students we have are highly media dependent (Share, 2009). The use of various media consumes most of the students' time that it has affected the way they interact and engage in classroom activities such as reading. The increasing integration of media forms in today's classrooms calls for media literacy teaching as well.

Potter (2004) identified seven skills of media literacy and in order for media literacy to be fully realized, these skills have to be developed. The seven media literacy skills he identified are analysis, evaluation, grouping, induction, deduction, synthesis, and abstracting. However, he explained that "we rarely encounter a problem where we use one and only one skill. Most often, skills are used together in various combinations and in different orders" (p. 125). He further explained that among the seven media literacy skills, analysis is the most essential as it provides the most fundamental elements for the other six skills. In addition, media analysis development is considered as the focus in media literacy programs (Schmidt, 2013; Ashley, Lyden, & Fasbinder, 2012; and Hobbs, 2010). With the development of media analysis, the six other media literacy skills would then follow. In doing media analysis, audience members or the students themselves must break down media messages so that they can determine elements that are based on facts and elements that are purposely constructed for a particular message.

Silverblatt, Ferry, and Finan (1999) offered an approach to analyzing media content called "autobiographical analysis." The focus of this framework is the audience and their experiences as springboard for analysis. Thus, it provides ways to analyze media rather than give answers. One of the techniques they provided in doing media autobiographical analysis is the Affective Response and Personal Belief Systems Analysis that focuses on emotional responses. Since most samples of media forms in the present study came from video formats, this technique was useful in eliciting emotional responses from students, which were then used as starting points for analysis of media content.

Since the questions in the Affective Response Analysis framework call for highly personal and subjective responses, measuring the framework's effectiveness as form of intervention will be particularly challenging. Little empirical studies that investigated the effectiveness of media literacy programs were noted by Arke and Primack (2009) in their review of literature. Most studies focused on the qualitative aspect and because of this, they argued that assessment measures must be developed in order to accurately look into the outcomes of media literacy education, specifically its effects on the critical thinking and analysis skills of students. There were media literacy experts who conducted studies on the measure of media literacy such as Quin and McMahon (1995), Hobbs and Frost (2003), and Primack, Gold, Switzer, Hobbs, Land, and Fine (2006). One of the most comprehensive studies was done by Arke and Primack (2009).

Three different media analysis situations (print, radio, and TV) were used in Arke and Primack's test (2009). They chose these analysis situations to acknowledge Aufderheide's suggestion that media literacy should assess various abilities in a variety of forms. In order to evaluate the responses to open-ended questions, Arke and Primack (2009) used Worsnop's Assessment Scale for Responses to Media Texts (1996) that guided the conversion of said responses to numerical values. Arke and Primack (2009) first used their test among 34 college students and they found that their test had validity and reliability in measuring media literacy, which may be used "for future efforts in bringing rigor to the measurement of media literacy and the careful evaluation of media literacy programming."

Embedded Multimedia. In today's classrooms, various media forms are used to meet the demands of changing times, particularly changes in the way students learn. Integrating or embedding various

forms of multimedia is one of the means to keep up with the interests of today's learners. Embedded multimedia provides additional scaffolding for learners, especially for the struggling ones. In their study, Chambers et al. (2009) defined embedded multimedia as "brief video segments threaded throughout the teachers' lessons, which share impacts on achievement found in the studies on the use of pictures, illustrations, diagrams, and other graphic content to enhance the effects of class lessons and text" (p. 213).

Mayer (2001) discussed the potential of multimedia approaches in the classroom. He argued that in recent years, video as a multimedia format has contributed so much to education reform. He also noted how multimedia segments can be embedded throughout the teachers' lessons to enhance the effects of class lessons and texts. He argued, however, that this embedded multimedia does not intend to replace actual classroom instruction given by teachers. Rather, these segments of embedded multimedia aim to augment instructional formats by using graphic contents in the form of screen media such as videos.

By using videos, students could learn skills and content through demonstration of proficient performance such as showing children problem-solving strategies, sounding out words, thinking out loud about their creative writing, or working through a scientific investigation (Mayer, 2001). Moreover, using videos with diagrams or moving pictures that illustrate a concept teaches visual memory (Mayer & Moreno, 2003). Incorporating videos with narration or text will increase initial learning of an idea and would likely increase retention as well, as long as videos and texts to be used are closely congruent and are directed toward specific instructional objectives.

Solso (2001) discussed cognitive load as a key concept in multimedia learning. The human brain can only absorb a limited amount of information at any given time. Thus, he argued that the brain's memory systems that may be fairly independent of one another could be tapped by distributing the cognitive load through embedding video segments in the teachers' lessons. With this idea of the brain having complex memory systems, Mayer and Moreno (2003) suggested that teachers can "off-load" meaningful information from one channel to the other, by using fewer words and more pictures when verbal working memory would otherwise be overloaded. This means that the input load coming from the teachers' lessons would not solely be stored in the memory capacity for words but also in the memory capacity for pictures, thereby distributing the load.

Bus, Verhallen, and De Jong (2009) demonstrated that the use of multimedia presentations increased children's comprehension of story and vocabulary than did static presentations. These researchers based their study on Neuman's (1997) theory of synergy that puts emphasis on having connections among idea units in teachers' lessons in aid of comprehension. The use of words or printed texts and moving pictures working hand in hand has been demonstrated in a series of empirical studies, where instructional videos broken into segments were integrated in the teachers' reading lessons (Chambers, Cheung, Madden, Slavin, & Gifford, 2009). These studies yielded positive results in the use of such videos. In most cases, students learned significantly more from video-audio presentations and this shows the complementary nature that narratives and moving pictures have.

One of the first studies that were anchored on these theoretical principles was the Success for All embedded multimedia program called Reading Reels (Chambers, Cheung, Madden, Slavin, & Gifford, 2009). This study combined both verbal and visual content that aimed to improve retention and comprehension. By using "bite-sized" segments, these Reading Reels videos were embedded in the lessons of the teachers. However, these were only used to teach beginning reading such as matching letter shapes and sounds, letter combinations and the like. Though this was the case, the theory that posits the effectiveness of using multimedia forms was nonetheless exemplified. The reading program that used embedded multimedia was spearheaded by the nonprofit organization Success for All and the Johns Hopkins University. Fifty experimental-control comparisons of one or more years' duration have found, on average, positive effects of Success for

All on children's reading achievement.

Multimedia approaches to fostering comprehension have considerable potential both with regard to comprehending specific information and with regard to developing strategies that can be applied in a range of comprehending situations (van den Broek, Kendeou, & White, 2009). However, they emphasized that "it is not the use of multimedia per se that fosters comprehension but it is the strategic use of the various media in such a way that the comprehending child engages in relevant processes in which he or she otherwise would not" (p. 69).

Research Design

This study was done in two cycles using a pre-post counterbalanced quasi-experimental design with two classes. The counterbalanced design was used to test each class for both conditions—one cycle or quarter used DRLs with embedded multimedia and the other had DRLs without embedded multimedia. The intervention was conducted within a period of 14 lessons with two sessions each (1.15 hours per session), which was approximately two quarters or fourteen weeks in the target school. Twenty-eight sessions in a fourteen-week period were allotted in the present study to mirror the intervention done by said researchers.

Sample

The participants in this study were two grade 6 English classes with 32 students each in a coeducational laboratory school that serves as the basic education unit of a state university in Quezon City. The two classes were comparable in terms of their overall grades across all subjects. Their comparability was also evident in the results of the study's pre-intervention assessment.

This study chose sixth graders as participants because this is the transition stage from grade school to high school, where more information from various sources are introduced. Oftentimes, multimedia forms are used as sources of new information given to students. Furthermore, as Flavell, Flavell, Green, and Korfmacher (1990) in the study of Sharrer (2005) explained, sixth graders are "considered old enough to have the cognitive and scholastic abilities, including listening, reading, and critical thinking, needed to follow the curriculum" (p. 332). They considered grade six students old enough to not be exceedingly frightened or disturbed by the sensitive images that were critically analyzed in the media literacy curriculum. On the other hand, they were also viewed as young enough to still be forming important impressions of media that may persist into adulthood.

Instruments

Two sets of adapted, researcher-made, expert-validated, and pilot-tested instruments with three versions each were used to collect data in three stages: pre-Intervention, post-Cycle 1, and post-Cycle 2. The two instruments were the Student Engagement Survey (SES) and the Media Analysis Test (MAT). Additional tools such as the Student Engagement Observation Checklist (SEOC) as well as the students' written comments and the teacher-researcher's observation notes were used to further examine the results of the statistical tests and to comprehensively answer the research questions.

The SES is a Likert-type and group administered survey that was adapted from the researcher-made tools used by Neo and Neo (2009) and More (2015). These tools were modified and combined to come up with two categories that aimed to measure the students' motivation and perception (Category 1), and subject domain (Category 2). SES.1, which used the word "materials" and present form of the verbs in the statements, was answered by the students prior to the intervention. This was conducted to gather baseline data. SES.2, which had the word "videos" in the statements, was conducted after the students had the intervention. SES.3, which used the word "materials" in the statements to refer to the static materials used in class, was given to them after they had DRLs without embedded multimedia. The SEOC, an instrument designed by the teacher-researcher, is an abridged version of the SES. It is a parallel survey answered by the teacher-researcher after every session during the intervention.

The MAT is an adapted tool based on the instruments used by Hobbs and Frost (2003),

Mihailidis (2008), and Arke and Primack (2009). Their tests had three types of analysis situations from print, radio, and TV. However, since videos were mostly used as embedded multimedia segments in this study, only an analysis situation in video format was given to the research participants. The Worsnop's (1996) Assessment Scale for Responses to Media Messages, the same tool used by the aforementioned researchers, was also adopted to evaluate the students' answers in this research. Analysis being the most essential media literacy skill identified by Potter (2004) was mainly covered in the test.

Data Collection

Data were collected in three stages (pre-Intervention, post-Cycle 1, and post-Cycle 2) during the prescribed intervention period, which had two cycles with 7 lessons each and 2 sessions per lesson (1.15 hours per session). Cycle 1 was held during the second quarter, wherein Class A was given DRLs with embedded multimedia, while Class B received DRLs without embedded multimedia. Cycle 2 took place during the third quarter, wherein Class A was given DRLs without embedded multimedia and simultaneously Class B received DRLs with embedded multimedia.

Both classes were given SES.1 and MAT.1 during the pre-intervention phase to gather baseline date. After the first cycle, both classes answered MAT.2. In addition, Class A was given SES.2, while Class B answered SES.3. After Cycle 2, MAT.3 was given to both classes. SES. 3 was given to Class A, while SES.2 was conducted in Class B. Two sessions in one day—the homeroom period and the English period—were allotted for the administration of the pre-Intervention, post-Cycle 1, and post-Cycle 2 assessments.

Data Analysis

The data gathered from the SESs, RCTs, and MATs were analyzed using paired-samples t-test through SPSS Statistics Software. All significance levels were set at $p<0.05$. The findings were further analyzed by examining the mean scores of each item in the SES and SEOC, and reviewing the patterns, trends, and themes in the students' and the teacher-researcher's written comments and observation notes.

Results

Student Engagement. The weighted mean of each student's survey form from each version of the SES was obtained first. Paired-samples t-test analysis was used to compare the results of SES.1 and SES.2, SES. 1 and SES.3, and, SES.2 and SES.3. Table 1 shows the descriptive statistics of the Student Engagement Surveys paired samples.

SES. 1 was given prior to the intervention in order to gather baseline data. SES.2 was answered by the participants after they had gone through lessons with embedded multimedia, while SES.3 was conducted after lessons without embedded multimedia. The mean scores in the descriptive statistics show that SES.2 and SES.3 were numerically higher than SES.1, and SES.2 was slightly higher than SES.3. The next table presents the results of the paired-samples t-test analysis of the SES. All the significance levels were set at $p<0.05$.

As presented in Table 2, statistically significant differences were found in all SES paired samples tested. This suggests that the use of embedded multimedia improved student engagement of both

Table 1

SES Paired Samples Descriptive Statistics

		N	Mean	Std. Deviation	Std. Error Mean
Pair 1	SES.1	64	3.93	.47842	.05980
	SES.2	64	4.39	.45410	.05676
Pair 2	SES.1	64	3.93	.47842	.05980
	SES.3	64	4.13	.42528	.05316
Pair 3	SES.2	64	4.39	.45410	.05676
	SES.3	64	4.13	.42528	.05316

Table 2.
SES Paired Samples t-Test Results

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				Sig. (2-tailed)
					Lower	Upper	t	df	
Pair 1	SES.1 SES.2	-.45594	.52570	.06571	-.58725	-.32462	-6.938	63	.000
Pair 2	SES.1 SES.3	-.20094	.59763	.07470	-.35022	-.05165	-2.690	63	.009
Pair 3	SES.2 SES.3	.25500	.51211	.06401	.12708	.38292	3.984	63	.000

classes before and after their exposure to it. Moreover, it could be inferred that DRLs without embedded multimedia were effective in improving student engagement as well because of the statistically significant difference established between SES.1 and SES.3—before and after exposure to DRLs without embedded multimedia. The results of the test done on Pair 3 also suggest that there was statistically significant difference between the participants' experiences in being exposed to DRLs with and without embedded multimedia. This is due to the higher mean score from SES.2 compared to the mean score obtained from SES.3. This means that student engagement manifested in both conditions, that is, in DRLs with embedded multimedia as well as in DRLs without embedded multimedia. It should be noted, however, that higher statistically significant difference was found between SES.1 and SES.2 compared to SES.1 and SES.3. This suggests that better student engagement can be achieved through exposure to DRLs with embedded multimedia compared to DRLs without embedded multimedia.

The weighted means of each item in SES.1, SES.2, and SES.3 were computed to comprehensively check how the students responded to each statement. Results show that, except in item number 10 (The videos/materials enhanced my reading skills.), all the weighted means of each item increased from SES. 1 to SES.2 and these same items decreased from SES.2 to SES.3. Though some of the increases in SES.2 were minimal, they still suggest that the use of embedded multimedia had a positive effect on the students. They seemed to find the use of videos better than most static print-based materials as manifested in the decrease in weighted means in SES.3. It should also be emphasized that among all the items in the SES, items 1, 3, and 8 had the highest weighted means of at least 4.7 in SES.2. These items were similar in terms of their emphasis on the effects of using embedded multimedia on the students' behavior and interaction with their classmates such as being motivated to listen, interested and engaged, and lively. This observation together with the general increase in the weighted means from SES.1 to SES.2, from 3.95 to 4.4, affirms the overall findings in the SES paired samples t-test analysis.

It should also be noted that the weighted means from SES.3 were higher compared to that of SES.1's. The consistency found in the weighted means from the three SESs, therefore, affirms the results of the t-test paired samples analysis. This shows the effectiveness of DRLs with embedded multimedia in improving student engagement, particularly in the motivation and perception category that covers aspects of student behavior and interaction. This is a reflection of what Berk (2009) argued that using videos is effective in creating a sense of anticipation and making students energized in preparation for class discussion. Moreover, he also explained that using such materials increases memory of content and understanding among students, which can partly explain the improvement found in the subject domain category.

The positive effects of using embedded multimedia were also evident in the additional comments provided by the students themselves. All the comments were analyzed by identifying the recurring patterns, trends, and themes such as similarities in perception toward the use or absence of embedded multimedia in the lessons. These were then grouped into two: comments given after students received DRLs with embedded multimedia (SES.2) and remarks written after they underwent DRLs without embedded multimedia (SES.3). Each of the two groups was also given three subgroups namely positive, negative, and neutral or undecided comments about the presence or absence of embedded multimedia in the reading lessons.

A big majority of the respondents or 69% wrote comments about their views toward the use of embedded multimedia in class. Most of the students or 87% noted that such materials had positive effects on them and on the entire class and explained that they had more fun in class when videos were used. They felt that the class was livelier and they were more encouraged to read and join in the discussion. In addition, they also mentioned that they found the videos interesting and that these helped them know more about English which also improved their understanding of real-world situations. Some of them also said that such materials like the documentaries gave them a different perspective on how and why certain social situations occur. This manifested in the way students explained their answers well during discussions, which they often backed up with instances shown in the videos they viewed. This behavior is an indicator of what Brunner and Tally (1999) observed in their study that the use of a digital medium like a video clip helped students make sound arguments in their analyses rather than simply presenting a set of assertions.

However, there was one student or 2% who said that he did not particularly like a documentary shown in the lesson. He did not give any explanation as to why he did not like it. A possible explanation for this would be because it was first time for him to be exposed to such video format in class and he might not have liked it that much because it tackled more serious topics without graphics and sounds similar to other video formats used in the intervention. Five students or 11% mentioned that they were unsure whether or not embedded multimedia materials improved their reading skills. They also said that they liked the videos but they thought that the reading materials were already interesting enough to make them engaged during class discussions.

Almost half of the participants or 48% wrote comments about the absence of embedded multimedia in the reading lessons. Two of these students or 7% said they liked the class better when there were no videos used in the lessons. They explained that the absence of videos made them concentrate better on the reading texts and that the class was less noisy. They also added that they found the pictures and the other print-based reading materials used in class more enjoyable and interesting. Nineteen students or 61% said they felt sad when videos were not used in class. Most of them mentioned that they felt the class was boring and that they felt less encouraged to participate in the discussion. They described such materials as helpful in making them imagine and relate the selections better to situations they have not yet experienced such as meeting families with different kinds of composition and dynamics. Ten students or one-third of the participants had neutral or uncertain comments about the use of embedded multimedia materials. Similar to the neutral or uncertain comments given in SES.2, these students explained that the additional reading materials such as comic strips, articles, and others. and the pictures shown in class made them devote their focus more on the lessons.

To explain the SES t-test paired samples analysis more comprehensively, the additional tool titled Student Engagement Observation Checklist (SEOC) was answered by the teacher-researcher after every intervention session. The SEOC was an abridged version of the SES. The eleven statements in the SEOC reflect the eighteen statements in the SES. The first six statements mirrored the motivation and perception category of the SES, while the last five statements covered the subject domain. The SEOC forms were grouped into two: SEOCs answered during implementation of DRLs without embedded multimedia and SEOCs

accomplished during delivery of DRLs without embedded multimedia. The responses in each survey form were tallied and the weighted means for each item, for each category, and for the overall combined categories were computed.

Results indicate that all the weighted means of the items in the SEOC accomplished after every session during the implementation of DRLs with embedded multimedia were higher compared to the means obtained from SEOC answered during delivery of DRLs without embedded multimedia. It should be noted that the weighted mean of the items that reflected the SES motivation and perception category and the weighted mean of statements that mirrored the subject domain were very close to each other. The teacher-researcher observed that the use of embedded multimedia had positive impact on the students' behavior and manner of interaction and their overall performance in the reading class.

This is further supported by the observation notes written by the teacher-researcher after every session. The notes were analyzed by identifying the recurring patterns, trends, and themes. These were divided into two groups: notes during implementation of DRLs with embedded multimedia and notes during delivery of DRLs without embedded multimedia. Similar to what was done to the students' comments, the teacher-researcher's comments were also further classified into three subgroups: positive, negative, and neutral.

Of the 28 teacher-researcher's notes written after sessions that had DRLs with embedded multimedia, 19 notes or 68% expressed positive views toward the effects of using such materials in the lessons. The teacher-observer noted that the students were more participative and enthusiastic when embedded multimedia segments were presented, which also encouraged most of them to ask more questions after viewing. This suggests that the videos might have triggered the students' interests and because of this, they became excited to know more about them. In addition, the students were able to expound on their answers well by comparing and contrasting the reading selections and the embedded multimedia materials during class discussions that often went smoothly because the students' attention was captured and sustained by the use of said materials. Their responses to the teacher-researcher's and their classmates' questions were often substantial and well-thought-out with support from the videos they viewed in class. The students were also more vocal in expressing the emotions they felt after viewing the materials.

On the other hand, one-fourth or seven notes reflected negative observations about the use of embedded multimedia materials in the reading lessons. There were some instances when students became more difficult to control because of their eagerness to react and ask questions about the embedded multimedia segments used in class. However, the comments and questions from the students were mostly about other videos elements found in the embedded multimedia segments and not necessarily about the target or focus of the lesson. Because of this, the flow of some discussions was also disrupted because the students could not control their excitement to ask questions or express opinions about the videos they watched. This led to the teacher-researcher's ability to manage the class to be challenged at times. In addition, the teacher-researcher also noted that the students sometimes lacked focus after watching the videos. They would also talk about other ideas about the videos they viewed but they were not necessarily relevant anymore to the topic of the lesson.

Aside from the positive and negative observations, there were also two notes or 7% that expressed neutrality toward the use of embedded multimedia in the reading lessons. The teacher-researcher observed that though the classes were generally lively, there were some instances when only the active students would participate in the discussions. These same students were also the ones who would ask a lot of questions about the videos. However, there were also some instances when the less active students would be influenced by the more active ones making majority of the class join in the discussions. This was established when the more active students would help their other classmates by giving them prompts in answering the discussion questions.

On the other hand, out of the 28 notes written

after sessions that had DRLs without embedded multimedia, half reflected negative remarks toward the use of said materials in the reading lessons. It was observed that when the students were given DRLs without embedded multimedia, they were somewhat passive. They responded to the teacher-researcher's questions during discussions but they were not as enthusiastic and elaborate in their answers as when embedded multimedia segments were used in class. It was also observed that their responses during class discussions, though they were able to relate the reading selections and additional static reading materials to each other, were shorter and less substantial. It was noted that they essentially rephrased or simply repeated what they read from the text or saw from the video without necessarily providing further analysis to their answers. There were some instances wherein students simply expressed their opinions about the text or the video without establishing a clear link between their personal views and the given materials. Because of this, more prompts from the teacher-researcher were needed in order for them to expound on their responses, particularly in the media analysis aspect of the lesson. During Cycle 2 in Class A, there were some students who would frown and later on lose interest when they found out that there would be no videos to be shown to them. Class A was exposed to DRLs with embedded multimedia in Cycle 1 and they were given static print-based DRLs without embedded multimedia during Cycle 2. This could be a reason why participation in class discussions declined in Class A in the second cycle.

Ten written notes or 36% revealed positive remarks about the absence of embedded multimedia in the reading lessons. The teacher-researcher observed that students were more focused in doing the engagement activities because their attention was directed toward the reading selections. It was also observed that the static materials used such as pictures, comic strips, and others, were also somewhat effective in eliciting responses from the class. However, this was inconsistent because it only manifested if they found the materials or topics interesting. During Cycle 1 in Class B, where DRLs without embedded multimedia were utilized, it was noted that most of the students were generally participative and inquisitive even without videos. When said class had DRLs with embedded multimedia during Cycle 2, their participative and inquisitive behavior was still evident but was heightened further by the use of such materials.

Four observation notes or 14% in the set of remarks written after DRL sessions without embedded multimedia mirrored neutral views toward the absence of said materials. The teacher-researcher noticed that though the students responded well to the static materials, their participation was less enthusiastic and inconsistent compared to their reactions to embedded multimedia materials. They only expressed excitement toward printed materials when they found them really interesting.

The itemized data generated from SEOC and overall weighted means support the positive results reflected in the SES paired samples, which are affirmed further by the weighted mean of each item in the SES, the written comments of the students, and the observation notes of the teacher-researcher.

Media Analysis. For the purpose of the analysis, the data gathered from MAT.1 were labeled as MAT-BASE. The combined data from Class A's MAT.2 and Class B's MAT.3 were labeled as MAT-WEM and the pooled data from Class B's MAT.2 and Class A's MAT.3 were labeled as MAT-WOEM. The data presented in Table 3 reveal that a decline in mean scores was established in all paired samples, from MAT-BASE to MAT-WEM, then from MAT-WEM to MAT-WOEM. The biggest decrease is seen between MAT-BASE and MAT-WOEM.

Table 4 shows that there was no statistically significant difference found in any MAT paired samples tested. This suggests that both DRLs with embedded multimedia and DRLs without embedded multimedia did not improve the media analysis skills of the students. This can be partly attributed to the way the media analysis aspect was incorporated in the DRLs and the time allotted for it. Various TV shows, documentaries, movie clips and trailers, short animated films, TV commercials, advertising campaigns, music videos, social experiments, and informative videos were used as springboards for the media analysis

Table 3
MAT Paired Samples Descriptive Statistics

		N	Mean	Std. Deviation	Std. Error Mean
Pair 1	MAT-BASE	64	21.3047	6.05964	.75745
	MAT-WEM	64	20.8594	5.08302	.63538
Pair 2	MAT-BASE	64	21.3047	6.05964	.75745
	MAT-WOEM	64	19.8750	4.81894	.60237
Pair 3	MAT-WEM	64	20.8594	5.08302	.63538
	MAT-WOEM	64	19.8750	4.81894	.60237

discussion in the DRLs with embedded multimedia. On the other hand, parallel static reading materials such as comic strips, expository texts like news and feature articles were used to address the media analysis aspect in the DRLs without embedded multimedia. The Affective Response Analysis framework by Silverblatt, Ferry, and Finan (1999) was adopted as guide in doing the media analysis in DRLs with embedded multimedia, while principles of Manhit's Gradual Psychological Unfolding discussion format were espoused in the media analysis part of the DRLs without embedded multimedia.

In all of the lessons, the media analysis discussions were included in the synthesis part done toward the end of the lesson. The greater part of each lesson was devoted to the reading aspect i.e. pre-, during, and post-reading activities. The media analysis part was always done in the post-reading portion integrated in the synthesis. Oftentimes, the discussion of the reading selections through the engagement activities took longer time than it should, especially when the students really liked the selection or the topic. Similarly, after videos were shown to the class, processing the post-viewing questions from the students often took a longer time because most of them had queries about what they watched. Because of this, the time that should have been allotted to media analysis became even shorter, making it less comprehensive than it should have been. There were even instances when the media analysis portion had to be done hastily because of the post-lesson quiz the students had to take afterwards.

Similar to what was done in this study, Quinlisk (2012) also incorporated media analysis activities in her English class. However, her media analysis activities were not mere parts of the reading or language lesson. The media analysis activities were specifically done during sessions entirely devoted for them. The studies cited above all had positive results after their corresponding interventions because the focus in their lessons was mainly media analysis.

The absence of statistically significant difference in the current study's MAT paired samples tested could therefore be partially attributed to the media analysis aspect integrated

Table 4.
MAT Paired Samples t-Test Results

		Mean	**Std. Deviation**	**Std. Error Mean**	**95% Confidence Interval of the Difference**				**Sig. (2-tailed)**
					Lower	Upper	t	df	
Pair 1	MAT-BASE MAT-WEM	.44531	6.16256	.77032	-1.0940	1.98467	.879	63	.565
Pair 2	MAT-BASE MAT-WOEM	1.4296	6.06504	.75813	-.08531	2.94469	1.886	63	.064
Pair 3	MAT-WEM MAT-WOEM	.98438	4.84192	.60524	-.22510	2.19385	1.626	63	.109

in the DRLs. Moreover, it may also be due to the length of the intervention, which only had 28 sessions in a fourteen-week period, and the amount of time allotted in each lesson for the media analysis aspect. This suggests that the integration of media analysis in the DRLs could have led to the students' focus being split into two. This is another indicator of what van den Broek, Kendeou, and White (2009) pointed out in their study that the use of embedded multimedia in the lessons may result in the students' attentional load being compromised and divided. Instead of just devoting their attention to either the reading lesson only or the media analysis aspect only, the students were always bound to study the two during the intervention. This could be another reason why there was no significant difference found in the RCT paired samples tested.

The absence of positive effects on integrating embedded multimedia with media analysis could also be partly explained by the students' memory systems in the brain being excessively supplied with information provided by such materials that had various graphics, sounds, and other video elements. This is the opposite of what Mayer and Moreno (2003) argued in their study that information can be "off-loaded" from one brain system to the other by using videos instead of entirely static materials such as texts and pictures. However, because the students also had to focus on the reading selection and discuss it alongside the embedded multimedia and the media analysis aspect, the brain systems for words and pictures could have been overstimulated and overworked all at once causing difficulties in processing and storing information in the appropriate memory systems.

In addition, integrating media analysis in the reading lesson through the Affective Response Analysis framework (Silverblatt & Finan, 1999) was a component the students did not have in their English class during the previous grading period. Though it was observed during the intervention that the students were able to share their views and opinions well about the embedded multimedia by relating them to their personal experiences, their written explanations in the MATs were not as elaborate and substantial as they should have been. Most of them did not explain their answers well even if the instructions asked them to explain their responses thoroughly. Because of this, most of the students' scores in the MATs were low, leading to the absence of significant differences in the t-test analysis.

Conclusions and Recommendations

The findings of the study appear to show that (1) DRLs with or without embedded multimedia are effective in improving student engagement, (2) embedding multimedia only in the before reading and synthesis parts of the DRLs does not appear effective in improving the students' media analysis skills in general, and (3) teaching both reading comprehension and media analysis in DRLs can adversely affect the students' reading comprehension and media analysis skills.

With these, teachers and future researchers should adopt DRLs to promote student engagement. The development of reading comprehension and media analysis through DRLs could be fostered if there is congruence between the reading texts and embedded multimedia segments to be used and each component is given ample time allotment within the lesson. There should be specific contact time with students devoted solely for the teaching of reading comprehension or media analysis only within the lesson. That way, students will not be forced to split their focus into two and therefore, they would be able to completely devote their attention to learning either reading comprehension or media analysis. Teachers and researchers can also try integrating embedded multimedia in other parts of the DRL to maximize its full potential. Such materials can be used as good starting points in the discussion but the students' reactions and questions should be managed and addressed well so that precious time will not be wasted

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