Culturally Relevant Supplemental e-Learning Materials in Teaching Purposive Communication

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Abstract – The incorporation of culturally relevant supplemental e-learning materials in teaching has been gaining attention in recent years. This study examined the effectiveness of such materials in a purposive communication course. A pretest-posttest experimental design was employed, with 95 students participating in the study. The pre-test scores of both groups were found satisfactory, with no significant difference between them. However, after the intervention, the experimental group achieved substantially higher posttest results than the control group. The findings suggest that the use of culturally relevant materials can enhance students' motivation and engagement in e-learning by creating connections between the content and their personal experiences.

Keywords – culture, supplemental, e-learning, teaching, purposive communication.

1. Introduction

Supplemental learning materials have become increasingly common in education as educators and parents seek to provide students with more personalized and engaging learning experiences [1]. These materials can include textbooks, workbooks, videos, software, and other digital resources [2]. Teachers, parents, and students often use them to provide additional information, practice, or enrichment opportunities [3].

Some studies have shown that supplemental learning materials can positively impact student learning outcomes, especially when these materials are well-designed and aligned with the primary instructional materials [4], [5], [6]. Others have found mixed results, highlighting the need for further research to understand better how these materials can best be used to support student learning [7]. However, they may not be inclusive or culturally relevant for students from diverse backgrounds, leading to disengagement and poor academic outcomes [8].

Culturally relevant supplemental e-learning materials have become increasingly important in today's society [9], [10]. As classrooms and online learning environments become increasingly diverse, teachers must develop digital resources catering to students' various cultural backgrounds [11]. Limited studies explain how culturally relevant teaching is implemented in the classroom. It is reported that teachers lack the skills to effectively incorporate it into their teaching [8], [12], [13], [21]. They may not have received training [14], lack of resources [10], [15], and are resistant to change [16]. Thus, they may prioritize other teaching activities over developing or using these materials [17], [18]. Hence, it is crucial for educators to acknowledge that providing students with an education that is concentrated on their culture, locality, and individual needs can benefit their academic performance and personal development [19], [20].

Studies have reported that culturally relevant supplemental e-learning materials have been proven to enhance language acquisition and learning [14]. Additionally, it can positively impact enthusiasm, confidence, and identity development of students [21].
However, there are insufficient studies on the utilization and effectiveness of these materials in teaching English classes in Philippine higher education institutions, thus this study. One of the primary reasons is the historical and cultural context in which the Philippine educational system was established [22]. The country's educational system has been heavily influenced by Western educational models, particularly those of the United States, which have been dominant since the early 20th century [23]. As a result, the curriculum and teaching materials are often heavily focused on Western literature, history, and culture, which may not be particularly relevant or relatable to Filipino students [24]. Another factor is the limited availability of resources and funding for developing culturally relevant e-learning materials [25]. Many educational institutions in the Philippines may lack the resources to develop and produce high-quality e-learning materials tailored to Filipino students' cultural and linguistic needs [26].

Additionally, there may be a lack of awareness or understanding among educators about the significance of integrating cultural relevance into the curriculum [27]. This can fail to prioritize developing and using culturally relevant e-learning materials in English subjects more reflective of Filipino culture and experiences. The study’s objective was to determine the effectiveness of culturally relevant supplemental e-learning materials in teaching purposive communication course.

2. Methodology
   - Research design
     This experimental study aimed to determine the effectiveness of culturally relevant supplemental e-learning materials in teaching purposive communication. To determine if modifications to one variable impact another, it is necessary to manipulate one variable and observe the resulting changes in the other. This method utilized controlled procedures, randomization, and variable manipulation to test hypotheses [28]. The study employed a pre-test and posttest design to collect the data before and after being exposed to a particular intervention [29]. The pre-test establishes a baseline measure of the participant's current knowledge, behavior, or attitude [30], while the posttest measures the changes due to the intervention [31].
   - Research Participants
     This study involved 95 students who were enrolled in a purposive communication course in a Philippine higher education institution. They were from one of the degree programs. Forty-eight students were designated to the control group and 47 in the experimental group.

All participants received the proper orientation on the study's processes and the potential benefits and risks of participating. Before participating, each participant provided the informed consent by signing a form indicating their complete understanding of the investigation's objectives.

- Research Instrument
  A researcher-made test was administered to determine the participants' performance before and after the intervention. It consisted of 50 multiple-choice items and was anchored on the table of specifications. It underwent content validation by faculty members teaching purposive communication course to ensure test quality. This validation process ensured that the test accurately assessed the knowledge and skills covered in the course. It was administered to 30 non-participants from a separate program to ascertain the test's reliability. The internal consistency was generated with a Cronbach's alpha result of 0.857. This indicates that the test accurately measured what it was intended to measure consistently over time.

- Materials
  The materials used to supplement the discussion were infographics, PowerPoint presentations, comics, and animated videos. It covered the topics in the purposive communication course, such as the nature of the communication, communication process, models of communication, and hindrances to communication. The materials incorporated elements of Filipino culture, such as traits, traditions, history, language, and beliefs. They were validated for their content and cultural context to ensure their quality and veracity. This validation process ensured that the materials were appropriate and accurately represented the cultural elements they were intended to convey. The materials were provided to the participants after the pre-test as an intervention. They were used to supplement the discussion in each topic and help reinforce the concepts covered in the course.

- Procedure
  Control and experimental groups took the pre-test to determine participants' performance before the intervention. The scores were assessed to confirm no statistically significant difference between groups. This ensured that their knowledge, behavior, or attitudes toward course materials were initially similar. After discussing each topic, culturally relevant supplemental e-learning materials were provided to the experimental group through Facebook Messenger. This approach allowed the participants to supplement their understanding of the course material with culturally relevant materials. After 1½ months, both groups received a posttest to measure the changes.
The results were compared to determine the effectiveness of culturally relevant supplemental e-learning materials in improving participant's performance in the course.

3. Results

- Pre-test Scores before the Intervention

Table 1 revealed the pre-test scores of the control group (M= 25.65, SD= 7.44) and the experimental group (M= 26.34, SD= 8.34) were "satisfactory." This indicates that participants had baseline knowledge or skills related to the assessed content area. This is important because it suggests that any changes in posttest scores can be accredited to the culturally relevant supplemental e-learning materials and not to pre-existing differences in the knowledge or skills of the participants.

The standard deviation suggests that both groups were somewhat spread out around the mean.

The t-test result showed no statistically significant difference was found between the control group's (M= 25.65, SD= 7.44) and the experimental group's (M= 26.34, SD= 8.34) pre-test scores having a t-value of -4.28, 93 degrees of freedom, and 0.17 p-value. The magnitude of the mean difference in the pre-test achievement of both groups (95% CI: -3.91 to 2.53) was minimal (eta-squared = 0.09). The 95% confidence interval suggests that the actual mean difference may lie within the range. The effect value of 0.09 shows that the difference in pre-test scores recorded a very small percentage of the variance. Therefore, both groups had a comparable prior understanding of the subject matter before they received the intervention, as demonstrated by the participants' comparable performance.

<table>
<thead>
<tr>
<th>Table 1. Pre-test Scores</th>
<th>95% Confidence Interval of the Difference</th>
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<tbody>
<tr>
<td></td>
<td>Mean</td>
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<tr>
<td>Control Group</td>
<td>25.65</td>
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<tr>
<td>Experimental Group</td>
<td>26.34</td>
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</tbody>
</table>

- Pretest and Posttest Scores

Table 2 revealed no statistically significant difference found in the pre-test (M= 25.65, SD= 7.44) and the posttest (M= 25.90, SD= 7.41, t (48) = -0.17, p= 0.63) scores of the control group. The magnitude of the mean difference in the pre-test and posttest was very small (eta-squared = 0.03). This suggests that the control group did not significantly improve or decline in their scores. The magnitude of the mean difference was very small, as indicated by the effect size measure of eta-squared (0.03). This implies that the changes scores of the control group were negligible or minimal and was likely due to chance or measurement error rather than a true difference in performance.

However, a statistically significant difference was found in the pre-test (M= 26.34, SD= 8.34) and the posttest (M= 40.13, SD= 4.13, t (47) = -10.15, p= 0.00) scores of the experimental group exposed to culturally relevant supplemental e-learning materials. The magnitude of the mean difference in the pre-test and posttest was relatively large (eta-squared = 2.10). This suggests that the intervention significantly impacted the experimental group's learning outcomes, and the effect size was large enough. Therefore, it can be concluded that the materials were effective intervention in improving the learning outcomes of the experimental group.

<table>
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<tr>
<th>Table 2. Pretest and Posttest Scores</th>
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<td></td>
<td>Mean</td>
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<td>Pretest of Control Group</td>
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<tr>
<td>Posttest of Control Group</td>
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<tr>
<td>Pretest of Experimental Group</td>
<td>26.34</td>
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<tr>
<td>Posttest of Experimental Group</td>
<td>40.13</td>
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</table>

p < 0.05, statistically significant at 0.05 alpha level
Posttest Scores After the Intervention

Table 3 revealed the posttest scores of the control group were "satisfactory" (M= 25.90, SD= 7.41), while the experimental group (M= 40.18, SD= 4.13) was "outstanding." This suggests that the intervention notably improved the experimental group compared to the control group. The difference in the means between the two groups is quite large, indicating a strong effect of the intervention. The experimental group's standard deviation is also low, indicating that the scores were densely concentrated around the mean, with little variation.

The t-test result revealed that a statistically significant difference was found between the control group (M= 25.90, SD= 7.41) and the experimental group (M= 40.18, SD= 4.13, t (93) = -11.53, p=0.00) posttest scores. The t-value of -11.53, 93 degrees of freedom, and 0.00 p-value implies that the difference between the means of the two groups was significant at a very high level of confidence (p<0.01). The magnitude of the mean difference (95% CI: -16.68 to -11.78) was large (eta-squared = 2.38). The 95% confidence interval shows that the true mean difference would fall within this range. The effect size of 2.38 implies that the posttest scores' difference explained a substantial amount of variance in the dependent variable.

<table>
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<th>Table 3. Posttest Scores</th>
<th>95 % Confidence Interval of the Difference</th>
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<tr>
<td></td>
<td>Mean</td>
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<tr>
<td>Control Group</td>
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<td>Group</td>
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p < 0.05, statistically significant at 0.05 alpha level

4. Discussion

The findings that culturally relevant supplemental e-learning materials positively affect the participants' posttest scores in the purposive communication course are consistent with the principles of culturally responsive teaching. It emphasizes the need to incorporate the students' cultures and experiences into the learning process to create an inclusive learning environment that recognizes and values the diversity of students' identities, experiences, and ways of knowing [32]. When students see themselves reflected in the learning materials and activities, they are more likely to engage with the content and retain the information. This is particularly important for marginalized or underrepresented backgrounds who may not see themselves reflected in traditional learning materials [33]. By incorporating culturally relevant materials and perspectives, teachers can help create relevance and relationship between the content and the students' lives, thus improving their motivation and engagement [12], [34].

In e-learning, incorporating culturally relevant materials can be especially important. Online learning environments can be isolating, and students may feel disconnected from the learning process. These resources can facilitate the development of a sense of connection and engagement in an online educational setting [35], [36]. Students from diverse backgrounds can see themselves represented in the learning materials and feel valued and included in the learning process [37].

It can also help to promote equity and inclusion in education [38], [39] and guarantee that every student has equitable access to excellent educational opportunities.

5. Conclusions

The participants demonstrated a satisfactory performance in the purposive communication course in the pre-test, both control and experimental groups. This indicates that they possessed adequate knowledge and skills related to the subject matter before receiving further instruction or intervention. It could be inferred that the students might have received quality teaching and learning opportunities or possess prior knowledge and experience related to the subject matter.

The absence of a significant difference in the control group's pre-test and posttest scores indicates no improvement in their performance over time without any intervention or treatment. Also, it indicates that the two groups had similar baseline knowledge or skills. This is critical because it permits a more valid comparison of the efficacy of the intervention between the two groups. If pre-existing differences existed between the groups, it would be more challenging to attribute any observed differences in posttest scores solely to the intervention, as other factors could also be at play. There is a possibility that some students improved, but the changes were insufficient to be considered statistically significant.
The use of culturally relevant supplemental e-learning materials significantly impacts the experimental group's performance. The results showed a large difference between pre-test and posttest scores, indicating that using these materials can significantly improve students' performance. This finding is remarkably relevant for giving instruction in English where using such materials can help students improve their language skills and achieve better academic outcomes. Educators should incorporate culturally relevant supplemental e-learning materials to enhance the language skills of their students. This can be particularly important for students who struggle with traditional teaching methods or come from diverse cultural backgrounds. By utilizing such materials, educators can better engage their students and help them achieve greater success in their language learning.

Acknowledgments

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References


