Journal of Positive School Psychology http://journalppw.com
2022, Vol. 6, No. 5, 5185 – 5190

The Applications Of Technologically-Assisted Tools And Technologies In Education After The Covid-19 Pandemic: A Case Study Of Regional Schools In Northern Territory, Australia

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ABSTRACT

Technologically-assisted tool is one of the popular technical topics in the fields of Information and Communication Technology (ICT), digital education, and technology. Due to the COVID-19 pandemic, many schools and school communities need to move their teaching to online classroom environments. However, many students and teachers do not understand how to manage online teaching, particularly for foreign language courses. In line with the Visual-Only Video Teaching Strategy (Dos Santos, 2019), the researcher coordinated with five secondary schools in Northern Territory, Australia, to test the outcomes and application of the digital technology tool in the regional and rural school communities. Based on the qualitative data from the teachers, three themes were categorised, including 1) Students are Motivated with the Visual Items, Videos, and Materials, 2) The Localised Environments and Images Applied into Students' Cognitive Knowledge Bases, and 3) Students can Apply the Contemporary Knowledge into the Sentences and Exercises. The outcomes of the current study significantly answered the needs and problems in Northern Territory, Australia. Although the study was taken during the COVID-19 pandemic, the results and strategies will become the future directions in the field of technology, technologically-assisted tools, and technology education in Australia and other international regions.

Keywords: digital education, digital technology, Information and Communication Technology (ICT), Northern Territory, regional schools, technology in education, Visual-Only Video Teaching Strategy

INTRODUCTION

Technologically-assisted tool (Dos Santos, 2021a; 2021c; 2021d) is one of the popular technical topics in the fields of Information and Communication Technology (ICT), digital education, and technology (Atmojo & Nugroho, 2020). Although the technologically-assisted tool was not uncommon in the field of education and teaching before the COVID-19 pandemic, many schools and universities did not employ the tools and technologies in their classroom environments before the COVID-19 pandemic, particularly the regional and rural school communities.

Many regional and rural school communities face problems about the shortages of technology and technologically-assisted teaching and learning tools due to the remote locations and limited resources (Dos Santos, 2021a; 2021c; 2021d). Unlike urban schools and school communities with the support from the government departments and local organisations, many regional and rural schools do not have enough technical supports, such as fast-speed internet access, computer per each student, technologically-assisted teaching tool, and even teachers who can use technologically-assisted teaching and learning tool in their classroom environments (Fishman, 2015).

According to a recent report from the Australian Bureau of Statistics (2019), a large number of students enrolled in regional and rural schools for their academic development. Based on the statistics, 13.3% of the students were enrolled in the very remote areas, 21.8% were enrolled in a school in the remote area, 25.8% were enrolled in the outer regional areas school, 33.4% were in the inner regional areas. It is worth noting that only 36.4% of the students studied in one of the metropolitan regions. The statistics indicated

that over 60% of the students might face technical problems in the regional and rural schools and school communities due to the lack of support from the government departments and organisations (*Australian Bureau of Statistics: School*, 2019).

According to a recent study (Dos Santos, 2021b), a large number of pre-service and in-service teachers tended to start their career developments and career pathways in the urban communities due to the potential employment, better financial sources, family opportunities, and personal reasons. Unlike the urban schools and school communities with expected student enrolment, support from the government departments, and financial sustainability from donations and annual budgets, schools in the regional and rural communities may not receive enough student enrolment and different resources due to the locations. As a result, many regional and rural schools and school communities continued to suffer from outdated technologies and technologically-assisted tools for their classroom environments (Halsey & Drummond, 2014).

BACKGROUND

The Northern Territory is one of the Australian states and territories in Australia's central and central northern regions. Although the Northern Territory is one of Australia's largest states and territories, there are only a few towns in the territory, such as Darwin, the capital city (Dos Santos, 2021a). According to the Australian Department of Home Affairs, the entire land of the Northern Territory is categorised as regional Australia, including the capital city Darwin (*Australian Government Department of Home Affairs: Designated Regional Area Postcodes*, 2019). Although students in Darwin may enjoy the developments of technology and technologically-assisted tools in their classroom environments, many students, schools, and school communities do not have enough support (i.e. resources and tools) outsides of Darwin. Due to the shortages of different software, hardware, and support, the annual growth rate in student enrolments by state and territory from 2019 to 2020 was the lowest (0.3% in Northern Territory), whilst Queensland has the highest number (2.8%).

THE PURPOSE OF THE STUDY

Based on the abovementioned statistics and reports, the current study aims to apply the Visual-Only Video Teaching Strategy (Dos Santos, 2019) and investigate the Visual-Only Video Teaching Strategy at five secondary schools in the Northern Territory during the COVID-19 pandemic. Before the COVID-19 pandemic, many schools in the Northern Territory employed the traditional teaching and learning approaches, such as textbook-oriented strategy, for their teaching. However, due to the lockdown and the social distancing recommendation, many schools continued the teaching services via social media and online platforms (Dos Santos, 2021a; 2021c; 2021d). As a result, with the coordination of five secondary schools in the Northern Territory, the researcher shared the Visual-Only Video Teaching Strategy with their foreign language teachers. The participated teachers employed the Visual-Only Video Teaching Strategy as the main tool in one academic term. After that academic term, the researcher captured the feedback and comments from the foreign language teachers. Two research questions guided this study,

1) How could the Visual-Only Video Teaching Strategy enhance the students' motivation, learning experiences, and achievement, particularly in the online-based foreign language classroom environment during the COVID-19 pandemic?

2) Would you employ the Visual-Only Video Teaching Strategy after the COVID-19 pandemic? Why or why not?

THE VISUAL-ONLY VIDEO TEACHING STRATEGY

The Visual-Only Video Teaching Strategy is originally developed by the researcher (Dos Santos, 2019). It is a technologically-assisted teaching and learning approach. In other words, students need to have the internet and computer accesses to enjoy the lessons' materials. In this case, the foreign language courses were tested.

Traditionally, teachers asked students to read the textbook materials, complete the paper-based worksheets, listen to the audio tracks, watch the textbooks' videos, and speak the language with their peers in the classroom environment. However, based on the Visual-Only Video Teaching Strategy, the teachers need to design their own teaching and learning materials with the localised elements (in the videos) to increase the students' motivations and learning experiences. Four steps were categorised,

1) Based on the chapters and units from the foreign language textbook, the teachers should capture the appropriate pictures and videos from the social environments, labs, field works, and natural backgrounds from the students' local communities.

2) After the teachers captured the pictures and videos, the teachers should merge the pictures and create taught videos (i.e. up to four minutes) based on the vocabulary lists and grammatical structures from the textbook materials. Only one vocabulary or knowledge should be taught for each video. As this strategy focuses on the visual learning format, only visual images should be yielded in the video. In other words, no audio tracks and voices should be added to the video. For example, school bus: teachers should take a set of pictures and videos of the school bus and create the taught videos with pictures of the school bus in the students' local community.

3) As for the videos, the teachers should outline the vocabulary within the first 10 seconds of the video(s) with some eye-catching pictures. The videos should have the same word size, font and style throughout the series, within the course duration, unless some important messages were listed.

4) The teachers should upload the videos to either social media platform (e.g. Facebook private study group) or the online education platform from the school before the chapter starts.

After the students watch and comment on the videos on the social media platform or education platform, students may learn the vocabulary and grammatical knowledge before the lessons. The students are encouraged to make feedback and comment on the videos. Furthermore, students may answer and respond to the comments from their classmates. During the lessons, teachers may ask the comments and feedback for their vocabulary and grammatical knowledge from the videos based on the lesson plan. With the coordination of the lesson plans, teachers may continue to discuss the videos with the textbook materials, paper-based worksheets, and peer-to-peer exercises.

METHODOLOGY

The researcher introduced the Visual-Only Video Teaching Strategy to the foreign language teachers at least six weeks before the academic term to allow the teachers to create the videos. During the conference, the school leaders and foreign language teachers agreed with the applications and procedures of the Visual-Only Video Teaching Strategy.

A total 16 participants joined the study. Three data collection tools were employed: semi-structured interview sessions (Seidman, 2013), focus group activities (Morgan, 1998) and member checking interview sessions (Merriam, 2009). After the academic term (i.e. completing the foreign language course), the researcher invited the participants to join the semi-structured interview session. Each interview session lasted from 67 to 88 minutes. After completing the interview sessions, two focus group activities were hosted (i.e. eight participants per group). The focus group activities lasted from 123 to 131 minutes. Once the interview sessions and focus group activities were completed, the researcher categorised the information based on each participant. The researcher sent the information to each participant for the member checking interview sessions. The participants confirmed their related parts and agreed with their data. Please note due to the COVID-19 pandemic, the data collection procedures were conducted online.

The grounded theory approach (Strauss & Corbin, 1990) was employed to categorise the qualitative data into meaningful themes and subthemes. First, the researcher employed the open-coding technique to narrow the massive information into the first-level themes and

subthemes. Second, based on the first-level themes and subthemes, the researcher categorised the information into the second-level themes and subthemes. As a result, three themes were grouped.

RESULTS AND DISCUSSIONS

Based on the qualitative sharing from 16 participants who had employed the Visual-Only Video Teaching Strategy into their online-based foreign language classroom environment during the COVID-19 pandemic, the researcher captured positive feedback and comments from the foreign language teachers who are teaching at one of the secondary schools in the Northern Territory, Australia. Table 1 outlines the themes of this study.

Table 1. Themes

Themes
Students are Motivated with the Visual Items, Videos, and Materials
The Localised Environments and Images Applied into Students' Cognitive Knowledge Bases
Students can Apply the Contemporary Knowledge into the Sentences and Exercises

Students are Motivated with the Visual Items, Videos, and Materials

According to a previous study (Ronchetti, 2010), students' motivations and achievements may be influenced by different types of teaching and learning strategies, in this case, the Visual-Only Video Teaching Strategy. The participants indicated that their students enjoyed the visual images and videos on-top-on the materials from their textbooks. One said,

…students enjoyed the videos on the online platform…they could watch and comment on the platform and complete the exercises with the video…the vocabulary developments are excellent…the achievements are obvious…(Participant #2)

Besides enjoying the video exercises based on the Visual-Only Video Teaching Strategy, many participants indicated that students tended to learn the vocabulary with videos and visual images. One story was captured,

…many students are visual learners…the vocabulary…over the textbook…are very boring…vocabulary, definition, and sample sentences…the traditional lists look like a dictionary…as a teacher, I don't want to read it too…but if we can have a picture and video…it is much easier…to absorb…(Participant #13)

In short, a previous study argued (Moravec et al., 2010) learning before the lessons may increase the learning achievements and outcomes during the lessons. In this case, with the application of the Visual-Only Video Teaching Strategy (Dos Santos, 2019), with the technologically-assisted videos and social media platform, many students achieved the expectation of the foreign language courses.

The Localised Environments and Images Applied into Students' Cognitive Knowledge Bases

One of the features of the Visual-Only Video Teaching Strategy (Dos Santos, 2019) is the localisation and images captured from the local communities. Previous studies (Dos Santos, 2020; Hussin et al., 2016) indicated that the examples and case studies from the textbook did not match the needs of the students. Therefore, students do not have the sociocultural background for their cognitive knowledge bases. In this case, the participants indicated that the localised pictures and videos significantly increased the motivations and achievements of students' cognitive knowledge bases; as said,

…I can show the local hospitals, restaurants, and stores as our vocabulary…and the images from the videos…the videos from the textbook always show the images in the United States and the United Kingdom…it doesn't match the image in Australia…this Visual-Only Video Teaching Strategy greatly helped…(Participant #5)

In short, based on the Visual-Only Video Teaching Strategy (Dos Santos, 2019), the localised videos and images significantly increased the cognitive knowledge bases and the learning achievements of foreign language learners. Particularly with the local images and

videos, students can apply the examples in their local communities.

Students can Apply the Contemporary Knowledge into the Sentences and Exercises

The goals and outcomes for foreign language learning allow students to apply the language to daily uses and applications. However, based on some studies, many students complained that their courses could not help them to upgrade their knowledge and applications (Gureshidze, 2017). However, the Visual-Only Video Teaching Strategy (Dos Santos, 2019) overcame the restrictions due to the visual videos and localised images from students' local communities and applications. As one said,

…after the mid-term exam…many of our students can describe their local communities with my visual-only videos based on my teaching…in many of my previous classrooms…students could not even describe a word…but they memorised the vocabulary with the local environments…(Participant #10)

In short, with the application of the Visual-Only Video Teaching Strategy (Dos Santos, 2019), students could apply foreign languages, vocabulary, and examples to their local communities. Although foreign languages are not common in many towns and parts of the Northern Territory, the students could learn and apply it to their cognitive learning practices.

CONTRIBUTIONS TO THE PRACTICE AND CONCLUSION

Three contributions to the practice have been categorised. First, many schools and school communities suffered from social distancing and lockdown due to the COVID-19 pandemic. Therefore, many schools and classroom environments need to move to the online platform in order to continue the teaching services. However, many students and teachers do not understand how to increase the motivations, learning achievements, and applications for their subject matters. Based on the Visual-Only Video Teaching Strategy (Dos Santos, 2019), the researcher created effective technologically-assisted tools for teachers to continue their teaching without borders and restrictions. Teachers, school leaders, department leaders, and researchers may take this study as the blueprint to upgrade their teaching and learning strategies.

Second, the entire Northern Territory is considered as the regional area. Students who are studying in remote regions and areas may suffer from shortages of resources, such as outdated textbooks. Therefore, the localised knowledge from their local and the Australian communities may meet the needs of these groups of students who do not have international understanding and backgrounds.

Third, the outcomes of the current study significantly answered the needs and problems in Northern Territory. Although the study was taken during the COVID-19 pandemic, the results and strategies of this study will become the future directions in the field of technology, technologically-assisted tools, and technology education in Australia and other international regions. Other regional and rural cities and towns may use this study as the blueprint to upgrade their teaching and learning approaches and technologies in order to increase students' learning experiences and achievements of their studies.

FUNDING

This study was supported by Woosong University Academic Research Funding 2021.

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