LET'S WATCH: VIDEO LESSONS ON SELECTED TOPICS IN BIOLOGY AND
ACHIEVEMENT OF GRADE 9 STUDENTS

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La Paz, Iloilo City

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts in Education

(Biological Science)

by

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APPROVAL SHEET

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Abstract

This quasi-experimental research study aimed at determining the effects of video lessons as a teaching strategy in the biology achievement of Grade 9 students. The subjects of this study were the seventy - six (76) Grade 9 students enrolled in a public junior high school during school year 2017-2018. One class of 36 students was exposed to traditional teaching, which employed pure-lecture discussion method while the other 40 students were exposed to biology instruction with the integration of video lessons. Results of the biology achievement pretest mean scores were low, signifying that the two groups were comparable at the onset of the study. The pre-test result for the group exposed to lecture discussion method had a mean of 27,139 while that off the group exposed to lessons with integration of video lessons had a mean of 29. 675. The study was conducted from June to August 2017 and used the following research instruments: (1) a validated teacher-made test to measure biology achievement; (2) lesson plans for (a) lecture – discussion group, (b) lesson plans for the group exposed to the use of videos; (3) Class Observation Form and Checklist; and (4) Interview Guide. The statistical tools utilized were means and standard deviation for descriptive statistics; and t-test for independent samples, t - test for paired samples for inferential statistics, and Pearson's r for significance of relationship which was set at 0.05 level. The posttest mean scores showed considerable increase in the mean scores in biology achievement in

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both groups. Furthermore, there was a small disparity in the posttest mean scores; however, the values of the standard deviations were relatively large, indicating a wider dispersion of the scores from the mean. There were students who increased their scores fairly well and there were also those who retained or decreased their scores. It shows that there was no significant difference in the posttest mean scores of both groups but there was a significant relationship in the use of video lessons and the science achievement of Grade 9 students. This study also revealed that both lecture-discussion method and science teaching integrating video lessons can be used to improve students' achievement in science. Further, almost all students like to use videos in learning science. The use of videos in science lessons should be tried with another set of students to further ascertain the effectiveness of the said strategy.

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- Achuonye, K. (2011). Using computer in science class: The interactive effect of gender. *Journal of African Studies and Development*, 3 (7), 131-134.
- Afolabi, A. & et al. (2016). The impact of embedded multimedia video learning of building construction practice on construction students. Retrieved from file:///C:/Users/User/Downloads/THE_IMPACT_OF_EMBEDDED_MULTIMEDIA_VI DEO_LEARNING.pdf. retrieved on May 4, 2017.
- Aina, J. & et al. (2013). Students' Proficiency in English Language Relationship with

 Academic Performance in Science and Technical Education. *American Journal of Educational Research*, 1 (9), 355-358.
- Allam, C. et.al. (2006). *Handbook on Digital Video and Audio in Education, Creating and using audio and video material for educational purposes, The Videoaktiv Project.*Retrieved from Hhttp://www.uq.edu.au/teach/video-teach-learn/pedbenefits.html retrieved on April 28, 2017.
- Ali Rezaee, A., Abdullah, H.N., Abidin, M.J.Z., & Singh, K.B. (2011).Learning styles and overall academic achievement in a specific educational system, 1 (10), 143-152.
- Aloraini, S. (2012). The impact of using multimedia on students' academic achievement in the College of Education at King Saud University. *Journal of King Saud University Languages and Translation, 24,* 75–82.

J

Iloilo City

76 **7**

- Berk, R.A.(2009). Multimedia teaching with video clips: TV, movies, Youtube, and mtvU in the college classroom. *International Journal of Technology in Teaching and Learning*, 5 (1), 1-21.
- Bravo, E. et al. (N. D.) Video as a new teaching tool to increase student motivation.

 Retrieved from https://upcommons.upc.edu/bitstream/handle/2117/12717/

 bravo amante.pdf;jsessionid=5D910DCA54797553AEBEC798FDFCFA71?

 sequence=1 Retrieved on May 4, 2017
- Brunvand, S. (2010). Best practices for producing video content for teacher education.

 Contemporary Issues in Technology and Teacher Education, 10 (2), 247-256.
- Cakir, I. (2006). The use of video as an audio-visual material in foreign language teaching classroom. *The Turkish Online Journal of Educational Technology*, 5 (4), 67-72.
- Cimer, A. (2004). *A study of Turkish biology teachers' and students views' of effective teaching in schools and teacher education*. Unpublished doctoral thesis.

 University of Nottingham, Nottingham, U.K.
- Cruse, E. (N.D.). Using Educational Video in the Classroom: Theory, Research, and
 Practice. (Master's thesis). Retrieved from

 http://www.safarimontage.com/pdfs/training/usingeducationalvideointheclassroo
 m.pdf. retrieved on May 4, 2017.

Iloilo City

77

- Derry, S. et al. (2010). Conducting video research in the learning sciences: Guidance on selection, analysis, technology, and ethics. *Journal of the Learning Sciences*, 19:3-53.
- El-Sayed, R.et al. (2013). Video-based lectures: An emerging paradigm for teaching human anatomy and physiology to student nurses, *Alexandria Journal of Medicine*. Vol. 49, pp. 215–222.
- Gambari, A. et al. (2014). Improving secondary school students' achievement and retention in biology through video-based multimedia instruction. *InSight: A Journal of Scholarly Teaching*, Vol. 9, pp. 78-91.
- Harwood, W. & McMahon, M. (1997). Effects of integrated video media on student achievement and attitudes in high school chemistry. *Journal of Research in Science Teaching*, 34 (6), 617-631.
- House, D. (2002). The motivational effects of the specific teaching activities and computer use for science learning: Findings from the Third International Mathematics and Science Study (TIMSS). *International Journal of Instructional Media*, 29 (4), 423.
- Huitt, W. (2003). The information processing approach to cognition. *Educational Psychology Interactive*. Retrieved December 11, 2016

 http://www.edpsycinteractive.org/topics/cognition/infoproc.html

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GRADUATE SCHOOL

Iloilo City

Г

- Hundley, S. (2007). A comparative study of traditional lecture methods and interactive lecture methods in introductory geology courses for non- science majors at the college level. A Dissertation. Ohio State University. 110-111.
- Kaliyadan, F.etal. (2013). English language proficiency and academic performance:

 A study of a medical preparatory year program in Saudi Arabia. Retrieved on:

 January 26, 2017. Retrieved from:

 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4637953/
- Kara, I. (2008). The effect on retention of computer assisted instruction in science education. *Journal of Instructional Psychology*. 35 (4), 1-14.
- Kaur, D., Yong, E., Mohd Zin, N., & DeWitt, D.(N.D.). The use of video as a cognitive stimulator and instructional tool in tertiary ESL classroom. *The Malaysian Online Journal for Educational Technology*, 2 (3), 32-41.
- Lee, O. (2005). Science education with English language learners: Synthesis and research agenda. *Review of Educational Research*. 75 (4). 491-530.
- Ontoy, I. (2011). Academic achievement in science of grade V pupils with integration of video clips. (Master's thesis). Retrieved from file:///C:/Users/User/Downloads/ThesisPublishableformatMyThesis.pdf
- Perry, MJM. (2013). Effects of visual media on achievement and attitude in a secondary biology classroom (Master's thesis). Retrieved from https://www.ohio.edu/education/academic-programs

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GRADUATE SCHOOL

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79

Sadeghi, B.et al.(2013). English Language Proficiency as a Predictor of Academic

Achievement among Medical Students in Iran . *Theory and Practice in Language*Studies, 3,(12), 2315-2321.

Г

- Shah, I. & Khan, M. (2015). Impact of Multimedia-aided Teaching on Students'

 Academic Achievement and Attitude at Elementary Level. *US-China Education Review*, 5 (5), 349-360.
- Suduc, A. et al., (2012). Digital images, video, and web conferences in education: A case study. *Procedia Social and Behavioral Sciences*, 46 (2012) 4102 4106.
- Tyndall, V. (2014). Comparison study: Virtual and traditional classrooms on high school students Mathematics and English academic achievement.
- Vural, O. (2012). The impact of a question- embedded video-based learning tool on E-learning. *Educational Sciences: Theory & Practice*, 13 (2), 1315-1323.
- Woottipong, K. (2014). Effect of using video materials in the teaching of listening skills for university students. *International Journal of Linguistics*, 6 (4), 200-212.

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