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Does Video Playback Speed Affect Comprehension for Students Listening to Podcasts for Novel Curriculum Delivery?

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Authors

Song, K
Chakraborty, A
Dugan, A
et al.

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A positive delta from Step 1 to Step 2 was found to be statistically significant when the value was 30 points or higher, 1.16 (1.07-1.26). Step 2 was found to be an independent predictor of passing the ABEM qualifying exam, 1.18 (1.02-1.31).

Conclusions: There was a positive trend in success rate with increasing delta. Step 2 was found to be an independent predictor of success for board passage. Our future studies will include a multi-center analysis with other emergency medicine residencies to further evaluate the significance of delta.

2 Does Video Playback Speed Affect Comprehension for Students Listening to Podcasts for Novel Curriculum Delivery?

Song K, Chakraborty A, Dugan A, Adkins B, Dawson M, Doty C /University of Kentucky College of Medicine, Lexington, KY; Stanford University Department of Radiology, Palo Alto, CA

Background: Medical education is a rapidly evolving field that has been utilizing new technology to enhance the learning of medical students. One new teaching modality is the video recorded lectures or podcasts. Recorded lectures not only allow the flexibility to pause and rewind, but also allows students to watch lectures at faster speeds. In a setting such as medical school where knowledge of minutiae and comprehension of concepts is paramount for success, the ability to watch lectures at faster speeds could be extremely beneficial. Though previous studies have shown subjective improvement in learning, no quantitative studies measuring information retention has yet been published.

Objectives: The purpose of this study is to determine if watching podcasts at 1.5x speed is more effective, equivalent to, or less effective to 1.0x speed for retention of new material by statistical comparison of the mean and median test scores.

Design: prospective, single-center, IRB approved, experimental study.

Setting: University of Kentucky College of Medicine.

54 medical students were randomized into two groups. Each group watched two separate videos at 1.5x and 1.0x speeds and took the respective assessments immediately after watching each video. The two videos shown were ultrasound artifacts and transducers. Neither topic is covered in the medical school curriculum. Group A watched artifacts video first at 1.5x speed then transducers at 1.0x speed; Group B watched transducers video first at 1.5x speed then artifacts at 1.0x speed. Mean and median test scores at different speeds were compared using the t-test.

Results: On artifacts test, there was a significant

difference ($p=0.0188$) in performance with 1.5x speed group (mean- 61.4; SD- 19.3) performing worse than the control group at 1.0x speed (mean-72.7; SD- 14.6). On transducers assessment, 1.5x speed group (mean- 66.9; SD- 17.6) again performed worse than the control group at 1.0x speed (mean- 73.8; SD-15.6), but the difference was not significant ($p=0.1365$).

Conclusions: Contrary to the previous studies showing subjective improvement in performance with sped up lectures compared to live lectures, our data shows worse test performance pertaining to new material at 1.5x speed compared to normal speed.

Table 1. Artifacts Quiz results- t-test- was used to compare the mean of 1.5x versus 1.0x speed. Group A viewed Artifacts at 1.5x speed and Group B viewed Artifacts at normal speed.

Artifacts podcast	Overall	1.0x Speed (Group B)	1.5x Speed (Group A)	P-value
No. of Participants	54	26	28	N/A
Artifacts Scores				
Mean (SD)	66.9 (18.0)	72.7 (14.6)	61.4 (19.3)	0.0188
Median (Quartiles)	65.0 (56.3, 80.0)	75.0 (65.0, 80.0)	60.0 (50.0, 75.0)	

Table 2. Transducers Quiz results- t-test- was used to compare the mean of 1.5x versus 1.0x speed. Group A viewed Transducers at normal speed and Group B viewed Transducers at 1.5x speed.

Transducers podcast	Overall	1.0x Speed (Group A)	1.5x Speed (Group B)	P-value
No. of Participants	54	28	26	N/A
Transducer Scores				
Mean (SD)	70.5 (16.8)	73.8 (15.6)	66.9 (17.6)	0.1365
Median (Quartiles)	69.6 (56.5, 87.0)	73.9 (64.1, 88.0)	69.6 (52.2, 81.5)	

3 Training Residents to C.A.R.E. Using Videotaped Unannounced Standardized Patient Encounters

Chung A, Saloum D, Retino C, Brazg J, Weiner C, Pushkar I, Drapkin J, Likourezos A, Marshall J/Mount Sinai Emergency Medicine, New York, NY; Maimonides Medical Center, Brooklyn, NY

Background: Physician empathy increases patient satisfaction, improves outcomes, and is integral to effective patient communication. We developed an innovative educational method using videotaped unannounced standardized patient (USP) encounters during real clinical shifts to train and assess our residents' empathic communication skills. In contrast to other assessment types, USP encounters do not suffer from low fidelity or the Hawthorne effect. Video provides valuable feedback on verbal and nonverbal behaviors.