

MICRO-LEARNING WITH TIKTOK VS. CLASSROOM INSTRUCTION: DANCE ACQUISITION AMONG PHYSICAL EDUCATION STUDENTS

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ABSTRACT

This study explores the educational potential of TikTok as a platform for procedural motor learning. A total of 120 undergraduate physical education students were randomly assigned to one of two groups: a traditional instruction group and a TikTok-based learning group. Participants learned a short dance routine either from a teacher in a classroom setting or by watching a TikTok video. One week later, their dance was evaluated by independent experts based on five criteria: movement memory, rhythm, technique, spatial control, and overall impression. Contrary to the initial hypothesis, no statistically significant differences were found between the two groups in any of the performance measures. However, the results suggest that TikTok-based learning can achieve comparable outcomes to traditional instruction, indicating its potential as an instructional method. This study highlights TikTok's capacity to support engagement in learning, while calling for further research to determine the conditions under which such platforms can effectively substitute or complement traditional pedagogies.

KEYWORDS

Micro-Learning, Tiktok, Motor Learning, Physical Education, Digital Instruction

1. INTRODUCTION AND LITERATURE REVIEW

In the current mobile digital era, learners expect short, interactive content adapted to their characteristics and needs, such as rapid information consumption, visually rich formats, and support for multitasking (Jukes et al., 2015; Tapscott, 2009). Mobile learning environments, such as TikTok, increase immediate satisfaction, enjoyment, and motivation among learners (Deshen, 2023). These environments afford micro-learning and nano-learning, thereby responding to learners' demands for brief, visually oriented, and easily accessible learning units that fit into fragmented schedules by enabling learning in small "bites" anytime and anywhere, with each short piece of content functioning as a stand-alone learning unit (Aburizaizah & Albaiz, 2021). The content is concise but valuable, allowing repetition and long-term memory retention (Buchem & Hamelmann, 2010).

Digital and mobile learning environments have been associated with increased immediate satisfaction, enjoyment, and motivation among learners (Deshen, 2023; Escamilla-Fajardo et al., 2021; Putry & Muassomah, 2021). Deshen (2023) describes learning with TikTok as part of a broader landscape in which short, multimedia content enhances learning, by supporting learning engagement, and may even replace traditional instruction. Tik-Tok based learning contained short units which are consumed casually and "in passing", in line with the notion of learning nuggets and micro-learning as brief but instructionally meaningful chunks of content (Aburizaizah & Albaiz, 2021; Buchem & Hamelmann, 2010; Linke, 2022). As an app centered on short, personalized videos, TikTok offers users tailored clips that can serve as efficient learning tools, allowing learners to access and repeatedly review concise content anytime and anywhere with relatively low investment of time and effort (Linke, 2022). Empirical studies further indicate that when such short TikTok-based videos are integrated into learning activities, students often report higher motivation, increased enjoyment, and more active participation in specific learning tasks (Deshen, 2023; Escamilla-Fajardo et al., 2021; Putry & Muassomah, 2021).

Several studies have examined TikTok as a medium for specific learning tasks. Escamilla-Fajardo et al. (2021) and Putry & Muassomah (2021) report on the use of short TikTok videos to support language learning and student engagement. Putry and Muassomah (2021) present TikTok as a project-based medium for learning Arabic and describe its use for creating and sharing short video tasks in a formal educational setting. At the same time, the literature notes that empirical studies directly comparing learning outcomes achieved via TikTok to those achieved via traditional instruction are still scarce.

This work explores the educational potential of such platforms to convey information and deepen learning processes via short, focused visual content. The emphasis here is on procedural motor learning. Motor learning theories emphasize that acquiring complex motor skills, such as full dance routines, requires extensive practice and repeated execution of the target movement sequence (Schmidt et al., 2018). TikTok allows learners to watch, pause, and replay a complete dance video as many times as they wish, so that they can practice the routine repeatedly at their own time and pace, beyond the constraints of a scheduled, teacher-led class. At the same time, TikTok is a highly popular social network among young people, embedded in their everyday media use and designed to deliver short, personalized videos that match users' interests (Deshen, 2023; Linke, 2022). Because learners are already active on this platform and encounter content aligned with their preferences, presenting dance routines as TikTok videos can leverage existing usage patterns and is likely to increase motivation to consume and rehearse these dances, suggesting that TikTok can serve as a suitable environment for learning dance sequences in both formal and informal contexts. Specifically, within motor learning, dance is conventionally being taught in a dance hall, in a long lesson with a teacher. Nowadays a lot of users consume the dance content via tiktok and dance in non-formal situations. Is acquisition of dance via TikTok effective in terms of achievements in dance?

1.1 Rationale and Research Objective

Although TikTok's use for learning has begun to attract research attention (e.g., Escamilla et al., 2021; Putry & Muassomah, 2021), there are almost no studies comparing achievements of learners using TikTok with other studying methods. Therefore, this study's main goal is to compare the achievements of learners who studied dance (a motor skill) via two teaching methods: traditional versus micro-learning through TikTok. This approach allows a near-first examination of TikTok's value as a learning tool. Dance routines represent complex procedural motor skills that require accurate sequencing, timing, and spatial coordination, and therefore provide a suitable test case for micro-learning environments of procedural learning: Motor learning theories emphasize the importance of repeated, self-paced practice with a clear movement model when acquiring such skills (Schmidt et al., 2018).

1.2 Hypothesis

Based on motor learning theories, it was hypothesized that learners using TikTok would achieve higher or at least equal results than those taught traditionally. The TikTok video provided a complete movement model that could be repeatedly reviewed in short, concise form within an attractive digital environment preferred by many young people.

2. METHODOLOGY

2.1 Participants

121 undergraduate physical education students volunteered for the experiment. One did not complete the questionnaires properly, resulting in data analysis for 120 students.

2.2 Procedure

Participants volunteered and signed informed consent forms. They were randomly assigned to two groups: experimental (TikTok learning) and control (traditional learning). The control group learned the dance in a dance hall with a teacher for about 15 minutes. In the TikTok condition, participants received a link to a short video in which the same teacher demonstrated the full dance routine from a frontal perspective. The video could be watched and replayed on participants' personal devices throughout the week. Both groups were informed that they would be tested on the dance one week later.

After a week, participants were videotaped performing the dance once. They also completed an online questionnaire including background variables: age, gender, academic year, professional dance background, TikTok usage frequency, number of practice sessions during the week, and practice method (alone/friends/both).

The videos were rated independently by three dance experts using a rubric described below. Inter-rater reliability was high across all criteria ($ICC > .85$).

2.3 Research Instruments

A rubric with five criteria was used to assess dance performance: movement memory, rhythm, technique, spatial control, and overall impression. Each criterion was scored from 0 to 10, summed to produce a final score. The rubric was developed by the researchers in collaboration with dance experts who reviewed it.

3. RESULTS

Screening differences between the two groups revealed a few unexpected significant differences ($p < .05$): the TikTok group had more males and was on average four years older. As could be expected, TikTok participants mostly practiced alone ($p < .001$), and traditional learners rarely practiced between lesson and test ($p < .001$).

Contrary to the hypothesis, achievement was not statistically significantly differed between TikTok and traditional groups on any criterion ($p > .05$). Table 1 shows the means and standard deviations per criterion for both groups.

Table 1. Mean scores of participants across evaluation criteria

Criterion	Traditional Learning Mean (SD)	TikTok Learning Mean (SD)
Movement Memory	4.41 (2.70)	3.99 (2.88)
Rhythm	6.37 (2.54)	6.09 (2.45)
Technique	5.38 (2.42)	5.03 (2.36)
Spatial Control	6.19 (2.38)	5.99 (2.15)
Overall Impression	5.22 (2.57)	4.93 (2.50)
Average Total Score	55.14 (24.11)	52.06 (23.56)

As seen, the two groups' averages were similar, showing no significant method effect. Significant differences were found between criteria ($p < .001$) but these differences were not moderated by learning method ($p = .957$). Unexpectedly, females outperformed males significantly ($p < .05$). Across all expert-rated criteria, effect sizes were consistently small (Cohen's d values around 0.10–0.15 and partial eta squared $\approx .005$), indicating that any performance differences between TikTok-based and traditional instruction were negligible in practical terms. In other words, TikTok-based micro-learning produced dance performance levels that were practically comparable to those achieved through traditional classroom instruction on all evaluated criteria.

4. DISCUSSION

The study did not find achievement differences between learners using TikTok and those using traditional instruction. This may be due to several factors. First, the sample of the TikTok group was small (only 44 participants) and despite our randomization attempt, the traditional group was predominantly female, who scored higher regardless of method. This may have masked any TikTok advantage. Second, most participants possibly lacked high motivation for dance learning. While traditional learners rehearsed under teacher guidance during the lesson, TikTok learners had to motivate themselves for independent practice over the week. Although TikTok learners reportedly practiced more than traditional learners, the amount might still be less than typical TikTok users practicing dances frequency. The lack of difference may thus reflect similar overall practice volume: traditional group practiced few times during the lesson only, TikTok group practiced a few times across the week.

The lack of difference also legitimates TikTok as a learning method yielding results comparable to traditional learning. The equivalence suggests that learning using social media can be as effective as classroom instruction.

The study is limited by unequal age and gender distributions between groups, a relatively small TikTok subgroup, focus on a single dance routine among physical education undergraduates, and reliance on self-reported practice, so future research should examine TikTok-based micro-learning with larger and more balanced samples, diverse skills and populations, and fine-grained measures of engagement and usage behavior.

5. CONCLUSION

This study highlights TikTok's potential as a tool for enhancing engagement in learning, but also emphasizes the need for further research on its effectiveness in acquiring complex skills and as an instructional tool compared to traditional methods. Identifying conditions where TikTok can successfully substitute traditional teaching remains a priority.

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