International Journal of Education, Business and Economics Research (IJEBER)

ISSN: 2583-3006

Vol. 6, Issue 2, March-April 2026, pp 157-164

To cite this article: Tran Thi Tu and Nguyen Manh Hung (2026). Application of Ubersense software in teaching Hurdling technique to students of the Faculty of Physical Education and Sports, Thai Nguyen University of Education. International Journal of Education, Business and Economics Research (IJEBER) 6 (2): 157-164

APPLICATION OF UBERSENSE SOFTWARE IN TEACHING HURDLING TECHNIQUE TO STUDENTS OF THE FACULTY OF PHYSICAL EDUCATION AND SPORTS, THAI NGUYEN UNIVERSITY OF EDUCATION

Tran Thi Tu[1] and Nguyen Manh Hung[2]

[12]Faculty of Physical Education and Sports,
Thai Nguyen University of Education

https://doi.org/10.59822/IJEBER.2026.6211

ABSTRACT

The application of science and technology in teaching at universities is a breakthrough work that brings high teaching and learning efficiency. Exploring and applying the slow-motion video analysis software Ubersense (integrated in modern smartphones) during class has yielded high effectiveness in teaching hurdling technique to students of the Faculty of Physical Education and Sports, Thai Nguyen University of Education.

KEYWORDS: Athletics, hurdling, Ubersense software, technique, Faculty of Physical Education and Sports, Thai Nguyen University of Education.

1.0 INTRODUCTION

The application of advanced scientific technologies in university teaching is rapidly developing, making teaching content more vivid and concrete, helping learners to be more motivated and acquire deeper knowledge. It also serves as an effective tool supporting teachers, resulting in higher teaching outcomes. Based on analyzing the significance and importance of the research topic, contributing to improving athletics learning effectiveness for students of the Faculty of Physical Education and Sports, Thai Nguyen University of Education, we selected the subject: "Application of Ubersense software in teaching hurdling technique to students of the Faculty of Physical Education and Sports, Thai Nguyen University of Education." [1], [2], [3].

Based on theoretical and practical research on the current status of hurdling technique learning of students majoring in Athletics at the Faculty of Physical Education and Sports, Thai Nguyen

University of Education, we evaluated and studied the application of Ubersense software (Hudl Technique: slow-motion video analysis software) as a supplementary tool to improve the effectiveness of training and technique teaching for the researched subjects. We primarily employed research methods such as interviews and pedagogical observation [4],[5], [6].

2.0 RESEARCH RESULTS AND DISCUSSION

2.1 Evaluation of the current status of methods and tools supporting hurdling technique teaching and learning for students at the Faculty of Physical Education and Sports, Thai Nguyen University of Education

Through the study of the current status of teaching methods and learning tools for students majoring in Athletics, it was found that the methods and tools applied for teaching and learning hurdling techniques are still very limited. They fail to generate enthusiasm, vividness, clarity, and ease of understanding for students. As a result, the technical execution is not yet perfect, with many mistakes remaining, leading to unsatisfactory learning outcomes.

Interviews revealed that although students had access to many videos demonstrating basic athletics techniques, the practice guidance was similar and often less clear and specific compared to direct classroom teaching. It is essential to apply advanced scientific and technological methods (through videos) that provide more detailed and vivid images, helping students deeply understand technical principles.

Application and Evaluation of Ubersense Software in Teaching Hurdling Technique: Ubersense software, now upgraded as Hudl Technique, is used by athletes and coaches across more than 50 sports to improve technical efficiency through slow-motion video analysis. It supports both IOS and Android operating systems, making it accessible on prevalent devices such as smartphones (iPhone, Galaxy, Oppo, etc.), tablets, and media players equipped with video and photo capability (iPod Touch, iPad, Galaxy Tab, etc.).

Users can record and manage HD training videos, import videos from camera rolls, email, Google Drive, Dropbox, etc. Features include slow-motion replay at variable speeds frame-by-frame, zooming for detailed observation using simple gestures (swiping and drawing), drawing tools for measurement and highlighting, comparison of two videos side-by-side or overlaying, synchronized video comparison for effective evaluation, progress tracking over time, team creation and management, importing contacts, and organizing video evaluations with feedback from athletes [7], [8], [9], [10].

2.2 Application and evaluation of the effectiveness of Ubeersense software in teaching hurdling techniques to students of the faculty of physical education and sports, Thai Nguyen university of education

2.2.1 Exploring the features and usage of Ubeersense video analysis software in sports teaching and training.

Hudl Technique software (formerly known as Ubersense before its recent upgrade) is used by athletes and coaches across more than 50 different sports to improve technical performance in training and competition through slow-motion video analysis.

This software is compatible with the two most advanced operating systems: iOS and Android.

Users of modern and widely available mobile devices such as smartphones (iPhone, Galaxy, Oppo, etc.), tablets, media players with video recording and photography capabilities (iPod Touch), or tablets (iPad, Galaxy Tab, etc.) can capture moments of specific movements or technical activities and then analyze those techniques using the Ubersense software, which provides immediate feedback in real-time.

Key features include:

- ✓ Easy to download and use directly on mobile devices during training sessions.
- ✓ The software is free to download and conveniently available on the two most commonly used operating systems today, iOS and Android.
- ✓ Recording and Management: Record your training sessions in HD.
- ✓ Import videos from your camera roll, email, or apps like Google Drive and Dropbox.

Analysis:

- ✓ Playback in slow motion at various speeds, frame by frame.
- ✓ Zoom in and out of images to closely examine details (using simple finger gestures like "swipe" and "draw").
- ✓ Use drawing tools to measure or highlight features.
- ✓ Compare two videos by overlaying or side-by-side display.
- ✓ Synchronize comparison videos for more effective evaluation.
- ✓ Track and compare an athlete's progress over time.

Team:

- ✓ Create and manage your client groups and accounts.
- ✓ Import contacts from your phone and Facebook.
- ✓ Organize video evaluations when sharing and receiving feedback from athletes.

2.2.2 Application of Ubersense software in teaching hurdling techniques to students of the faculty of Physical education and Sports, Thai Nguyen university of education

The Ubersense software is developed for the two common operating systems used in smartphones and tablets, making it very convenient and easy to use.

During the application process, we used an iPhone 6 directly in the teaching sessions. Additionally, to help students observe more easily and to introduce the usage method clearly to visitors attending the class, we prepared a cable to connect the phone to a projector (or a large TV screen).

The hurdling technique class proceeded as usual like other lessons. However, we flexibly recorded the technical execution of some students who made common mistakes.

While correcting students' techniques, we played back slow-motion video clips to analyze errors and simultaneously compared them side by side with standard technique clips (as regulated by the

World Athletics Federation). This allowed students to immediately see the incorrect and correct techniques, helping them quickly make adjustments.

Performing basic techniques and coordinating them into skills is very important. Through practice, students can visualize the application process in actual competitions.

With 18 teaching periods (equivalent to 9 lesson plans) in one semester involving a challenging technique, students are required to practice diligently on their own.

Furthermore, following the advanced university learning approach, instructors assign research and self-study tasks to students, and during class sessions, teachers analyze and correct techniques. This method encourages learners to actively maximize their abilities. Combined with the use of software and contributions from the online community, including experts, coaches, and experienced practitioners, this creates an effective "channel" for comparison that brings success to learners.

2.2.3 Evaluation of the Effectiveness of Applying Ubersense Software in Teaching Hurdling Techniques to Students of the Faculty of Physical Education and Sports, Thai Nguyen University of Education

The application process of the Ubersense slow-motion video analysis software was directly conducted during hurdling technique classes for students of the 56th, 57th, and 58th cohorts at the Faculty of Physical Education and Sports, Thai Nguyen University of Education. Classroom observations were made. After the teaching sessions, we distributed questionnaires to gather feedback from all experts, lecturers, coaches, athletes, and students majoring in Athletics regarding the use of Ubersense software. The results are presented in Table 1.

The results from Table 1 indicate that:

- The application of Ubersense slow-motion video analysis software has ensured quality and content alignment with the curriculum of the Faculty of Physical Education and Sports, Thai Nguyen University of Education, based on feedback from experts, teachers, lecturers, coaches, athletes, and directly from the students. The software's outstanding features and its applicability in lessons were rated almost unanimously, with over 85% of respondents expressing agreement.
- Installing the software on smartphones or tablets was rated as simple and user-friendly.
- The application serves as a tool that enables instructors to highlight their theoretical and professional expertise during real-time slow-motion video analysis, effectively bridging the gap between theory and practice for learners.

Table 1. Interview results on the effectiveness of applying ubersense software in teaching hurdling techniques to students of the Faculty of Physical education and Sports, Thai Nguyen university of education (n=40)

No.	Interview Content	Yes		No	
		mi	%	mi	%
1	Do you have a smartphone (a phone with video recording and photo-taking functions)?	34	85	6	15
2	Do you have a tablet (iPad, Galaxy Tab, etc.)?	14	35	26	65
3	Do you often record videos or take photos of your sports training sessions?	37	92,5	3	7,5
4	Is it necessary to review the technique execution process to identify mistakes and find ways to correct them?	39	97,5	1	2,5
5	Is it necessary to review immediately after practicing during training sessions?	40	100	0	0
6	Are you familiar with the slow-motion video analysis software Ubersense?	36	90	4	10
7	Have you installed the Ubersense software?	35	87,5	5	12,5
8	Is the installation and usage of the software easy?	40	100	0	0
9	Are the language and instructions in the software easy to understand?	38	95	2	5
10	Is using a smartphone or tablet convenient?	39	97,5	1	2,5
11	Is using the Ubersense software convenient?	40	100	0	0
12	Does using the Ubersense software take a lot of time?	40	100	0	0
13	Is the audio quality of the video through Ubersense clear?	38	95	2	5
14	Is the video image quality through Ubersense good?	40	100	0	0
15	Are the operations when using Ubersense easy?	36	90	4	10
16	Is the slow-motion playback speed of videos through Ubersense good?	39	97,5	1	2,5
17	Is it easy to use the marking and analysis tools?	39	97,5	1	2,5
18	Are the marking tools effective?	38	95	2	5
19	Is the zooming in and out feature for videos and images necessary?	39	97,5	1	2,5
20	Does comparing two videos simultaneously provide clear, intuitive results?	39	97,5	1	2,5
21	Does overlaying two videos make it easy to identify errors and correct movements?	37	92,5	3	7,5
22	Is saving the analysis and edited footage necessary?	39	97,5	1	2,5
23	Is it easy to export and save the analyzed videos?	37	92,5	3	7,5
24	Is it easy to send the edited videos to coaches and athletes?	40	100	0	0
25	Should the edited videos be shared with the training community?	34	85	6	15
26	Is it easy to upload the edited videos to social networks or share them with the community?	39	97,5	1	2,5

27	Are feedback and comments from experts necessary and effective?	39	97,5	1	2,5
28	Is the application of Ubersense software in training and teaching necessary?	34	85	6	15
29	Does using Ubersense software bring benefits to you?	40	100	0	0
30	Do you like using this software?	39	97,5	1	2,5
31	Do you share and recommend this software to others	39	97,5	1	2,5

2.3 Evaluation of the effectiveness of applying ubersense software in teaching hurdling techniques to students of the Faculty of Physical education and Sports, Thai Nguyen University of Education

We conducted an evaluation of the effectiveness of applying Ubersense software in teaching hurdling techniques to students of the Faculty of Physical Education, Thai Nguyen University of Education. The study involved selecting hurdle running tests for specialized students from the Faculty of Physical Education, Thai Nguyen University of Education through the following steps:

- ✓ Selection based on literature review and pedagogical observation
- ✓ Selection through direct interviews with experts, teachers, and coaches
- ✓ Selection through wide-scale surveys using questionnaires
- ✓ Determination of the validity of the tests
- ✓ Determination of the reliability of the tests.

As a result, two groups of evaluation tests were selected, including:

- ✓ General physical fitness tests: Standing long jump (meters), 100m run (seconds).
- ✓ Technical proficiency tests for hurdling: 30m hurdle run (score), 60m hurdle run (seconds), 100m hurdle run (seconds).

Before the experiment, we used the two selected tests mentioned above to examine and compare the physical fitness levels of the experimental and control groups. Results shown in Table 2 indicate that before the experiment, there was no statistically significant difference in physical fitness levels between the experimental and control groups (calculated t < table t, at a significance level of P > 0.05). In other words, prior to the experiment, the physical fitness levels of the experimental and control groups were equivalent, indicating that the grouping was entirely objective.

After 10 weeks of experimentation, we continued to use the two selected tests to assess the physical fitness and technique levels of the experimental and control groups and to compare the differences in test results. The results in Table 3 show that after 8 experimental training programs, there was a significant difference between the experimental and control groups, indicated by calculated t > table t at a significance level of P < 0.05. This demonstrates that the application of Ubersense software in teaching hurdling techniques to students of the Faculty of Physical Education, Thai Nguyen University of Education, initially has a positive effect on developing both physical fitness and technical skills for the students.

Table 2. Comparison of general physical fitness levels before experimentation between experimental and control groups of students

No.	Results Indicator	Gender	Experimental Groups	Control Groups	t	P
			x□□	x□□		
1	Standing Long Jump (cm)	Female	209.7±5.34	215.3±5.64	0.81	>0.05
		Male	249.1±8.44	250.6±7.68	1.12	>0.05
2	100m Run (seconds)	Female	15.30±0.87	15.25±0.81	0.75	>0.05
		Male	12.96±0.48	12.84±0.39	0.69	>0.05

Table 3. Comparison of general physical fitness and technical proficiency after experimentation between experimental and control groups of students

No.	Results Indicator	Gender	Experimental Groups	Control Groups	t	P
			$x\pm\delta$	$x\pm\delta$		
I.	**General Physical Fitness Test**					
1	Standing Long Jump (cm)	Female	245.6±6.48	229.6±5.36	2.19	<0.05
		Male	271.2±7.12	261.8±5.52	2.87	<0.05
2	100m Run (seconds)	Female	14.68±0.54	14.88±0.45	2.91	<0.05
		Male	12.52±0.47	12.74±0.31	3.42	<0.05
II.	**Evaluation of Hurdling Technique Proficiency**					
3	30m Hurdle Run (score)	Female	9.5±0.51	8.5±0.5	2.45	<0.05
		Male	9.8±0.47	8.9±0.4	2.67	<0.05
4	60m Hurdle Run (seconds)	Female	13.2±0.29	15.8±0.54	3.10	<0.05
		Male	12.7±0.23	13.9±0.56	2.76	<0.05
5	100m Hurdle Run (seconds)	Female	17.75±0.45	18.85±0.38	2.84	<0.05
		Male	15.85±0.38	16.95±0.36	2.46	<0.05

3.0 CONCLUSIONS

The current methods and tools applied in teaching and learning hurdling techniques for students of the Faculty of Physical Education at Thai Nguyen University of Education are still very limited, and the demand among students for visual support tools is very high.

We have researched and become proficient in using the slow-motion video analysis software Ubersense.

We have applied the software in teaching specialized courses for cohorts 56, 57, and 58. According to interviews and evaluations, the effectiveness and applicability of the Ubersense slow-motion video analysis software in classes received over 85% approval. Using the software in teaching hurdling techniques has generated enthusiasm and improved effectiveness during lessons and the learning process for students.

REFERENCES

1. Duong Nghiep Chi – Vo Duc Phung – Pham Van Thu, 1975, *Athletics Book for Students of the University of Physical Education and Sports*, Sports Publishing House, Hanoi.
2. Nguyen Dai Duong and colleagues (2006), "Athletics Book," Hanoi Sports Publishing House.
3. Nguyen Van Quang, 1995, *Athletics Curriculum*, Sports Publishing House, Hanoi.
4. Duong Nghiep Chi – Nguyen Kim Minh – Pham Khac Hoc, 1996, *Athletics Book for Students of the University of Physical Education and Sports*, Sports Publishing House, Hanoi.
5. Sports Committee, 2003, *Athletics Rules*, Sports Publishing House, Hanoi.
6. Athletics Department, 2004, *General Athletics Teaching Textbook*, University of Sports and Physical Education, Ho Chi Minh City.
7. www.hudl.com (formerly www.ubersense.com)
8. www.facebook.com.vn
9. www.google.com.vn
10. www.youtube.com
11. www.vi.wikipedia.org

