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SPECIFIC FEATURES OF APPLYING THE MODERN 5E INSTRUCTIONAL MODEL IN TEACHING MILITARY TOPOGRAPHY TO CADETS

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Abstract
This article discusses the teaching of the subject Military Topography in higher military education through modern pedagogical approaches, the development of cadets' practical skills, and the enhancement of pedagogical proficiency. In particular, it analyzes the pedagogical potential of integrating the five stages of the 5E instructional model—Engage, Explore, Explain, Elaborate, and Evaluate—into Military Topography classes. The model aims to develop cadets' independent thinking, spatial awareness, map-based and field measurement skills, topographic and tactical orientation, and the ability to navigate by azimuth.

Keywords: Military topography, 5E model, pedagogical proficiency, interactive learning, practical skills, map, orientation, azimuth, higher military education, competence.

Introduction

Topographic training is an integral component of the combat training of military units. It provides opportunities to improve personnel's skills and proficiency in conducting combat operations.

Under modern conditions, changes in the nature of combat operations have significantly increased the requirements for the topographic training of military units. Highly mobile units and individual crews often have to move independently over distances of tens of kilometres through unfamiliar terrain, both day and night, and within very short periods. Therefore, one of the key objectives of the higher military education system is to train specialists who meet modern requirements, think independently, assess situations rapidly, and possess the practical skills necessary to

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make sound decisions. In this process, effective teaching of specialised subjects, particularly Military Topography, is of particular importance.

Military Topography develops essential competencies in cadets, including field orientation, reading topographic maps, interpreting conventional map symbols, determining distances and directions, and applying map information in practical activities.

A distinctive feature of this subject is that practical training plays an equally important role alongside theoretical knowledge. Consequently, relying exclusively on the traditional teaching format of "the instructor explains—the learner listens" does not always ensure the expected learning outcomes. It is therefore advisable to employ modern pedagogical technologies that transform cadets into active participants in the learning process.

One such approach is the 5E instructional model.

THE CONTENT AND ESSENCE OF THE 5E INSTRUCTIONAL MODEL

The 5E model involves organising the learning process around five stages:

1. **Engage** — stimulating interest and activating prior knowledge;
2. **Explore** — independent investigation and discovery;
3. **Explain** — explanation and the formation of theoretical knowledge;
4. **Elaborate** — applying and extending knowledge in new situations;
5. **Evaluate** — assessment and self-assessment.

Each of these stages requires a specific set of pedagogical skills from the instructor. Rather than merely transmitting ready-made knowledge, the instructor acts as a facilitator who organises, guides, and encourages cadets' independent learning activities.

1. Engage — Engaging Cadets in Learning

At the beginning of a lesson, the primary objective is to arouse cadets' interest in the topic and activate their existing knowledge.

When teaching Military Topography, this stage can be organised around a hypothetical scenario. For example, cadets may be tasked with identifying the most appropriate route from a designated point to another point on the terrain. Alternatively, they may be asked a problem-based question such as: "If you found yourself in

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unfamiliar terrain without a map, how would you determine your direction of movement?"

This approach encourages cadets to think actively and strengthens their intrinsic motivation to acquire new knowledge.

At this stage, the instructor's pedagogical proficiency is demonstrated through the ability to formulate appropriate questions, create problem-based situations, and engage cadets in active discussion.

2. Explore — Independent Investigation

At the second stage, cadets do not simply receive new knowledge in a ready-made form; instead, they discover it through practical activities.

For example, during exercises involving topographic maps, cadets can be divided into small groups and assigned various tasks, including:

-identifying designated objects on a map;
-interpreting conventional map symbols;
-determining the distance between two points;
-establishing a direction of movement;
-calculating magnetic azimuth;
-plotting a designated route on a map.

During this process, the instructor primarily acts as an observer and facilitator. Rather than providing ready-made answers, the instructor uses guiding questions that help cadets arrive at correct conclusions independently.

Examples of such questions include: "Why did you choose this particular direction?", "Which symbol did you use to identify this object on the map?", and "What potential errors might have occurred in your calculations?"

These questions contribute to the development of analytical and critical thinking skills.

3. Explain — Explanation

At the third stage, cadets' practical experience is connected with theoretical knowledge. The instructor systematises concepts, rules, and practical techniques.

When teaching Military Topography, visual aids can be used effectively to explain concepts such as azimuth, magnetic declination, map scale, coordinates, conventional topographic symbols, and methods of orientation.

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From the perspective of pedagogical proficiency, the instructor must present complex information clearly, accurately, and consistently. Theoretical explanations should be supported by practical examples.

For instance, rather than merely defining the concept of azimuth, the instructor can demonstrate, step by step, the procedure for determining it using a map and a compass. This approach improves the effectiveness of learning and helps cadets connect theoretical knowledge with practical application.

4. Elaborate — Extending Knowledge and Applying It in New Situations

At the fourth stage, the knowledge and skills acquired are applied in more complex and unfamiliar situations.

This stage is particularly important in Military Topography because military service requires not merely recalling information but applying knowledge appropriately in response to specific circumstances.

The instructor may create a simulated tactical scenario. For example, a cadet may be provided with a topographic map and tasked with developing a route to a designated point, selecting intermediate landmarks, and justifying the chosen direction of movement.

Working in small groups, brainstorming, case studies, practical assignments, and simulated scenarios can help develop cadets' ability to make independent decisions.

This stage clearly demonstrates the instructor's creativity and methodological proficiency. The instructor must not only possess subject-matter knowledge but also be able to adapt it to a variety of practical situations.

5. Evaluate — Assessment and Reflection

At the fifth stage, learning outcomes are assessed. Assessment should cover not only the final results but also cadets' performance and engagement throughout the learning process.

The following assessment methods can be used in Military Topography classes:

-completion of practical assignments;
-evaluation of results obtained when working with maps;
-correct selection of a direction of movement;
-accurate determination of magnetic azimuth;
-participation and engagement in group activities;

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-independent decision-making;
-self-assessment;
-peer assessment.

5E stage	Instructor's activities	Cadets' activities
Engage	Creates a problem-based scenario	Analyse the situation
Explore	Provides a map and practical assignments	Conduct independent investigations
Explain	Explains rules and procedures	Draw conclusions and ask questions
Elaborate	Assigns a more complex practical task	Apply knowledge in a more challenging situation
Evaluate	Assesses performance according to established criteria	Analyse their results and conduct self-assessment

Clearly defined assessment criteria established in advance help develop cadets' sense of responsibility and promote objectivity in evaluating their performance.
During the reflection process, instructors may use questions such as: "What have I learned today?", "Which task did I find difficult?", and "Where can I apply the knowledge I have acquired?"

DEVELOPING PEDAGOGICAL PROFICIENCY THROUGH THE 5E MODEL

The 5E model requires instructors to demonstrate several pedagogical competencies simultaneously. These include:
-Communication skills — establishing effective communication with cadets;
-Methodological proficiency — selecting teaching methods and technologies appropriate to the lesson content;
-Organisational skills — effectively organising group and individual activities;
-Creativity — developing non-standard scenarios and practical assignments;
-Reflective skills — analysing and improving one's own teaching practice;
-Assessment competence — evaluating learning outcomes objectively and accurately.
After each lesson, instructors are encouraged to analyse their performance by considering questions such as: "Which teaching method was most effective?", "At which stage did cadets encounter difficulties?", and "What should be changed in the next lesson?"

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Such reflection enables instructors to identify strengths and weaknesses in their teaching practice and continuously improve the quality of instruction.

A SAMPLE 5E MODEL FOR A PRACTICAL LESSON

For example, a lesson on Orientation Using a Topographic Map can be organised as follows:

When a lesson is organised in this way, cadets transition from passive listeners to active participants in the learning process. This, in turn, facilitates the transformation of theoretical knowledge into practical skills.

CONCLUSION

In conclusion, organising Military Topography instruction according to the 5E instructional model represents an effective pedagogical approach to improving the learning process and developing cadets' practical skills and independent thinking.

Within the 5E model, the instructor does not simply transmit ready-made knowledge but acts as a facilitator who guides cadets towards investigation, analysis, drawing conclusions, and applying knowledge in new situations.

The use of this model is particularly beneficial in subjects such as Military Topography, which require a close integration of theoretical knowledge and practical skills. Its systematic application can contribute to improving the quality of military education and preparing cadets to address practical tasks effectively.

By continuously developing pedagogical proficiency, purposefully employing modern educational technologies, increasing the use of practical and problem-based assignments, and implementing objective assessment mechanisms, instructors can make Military Topography classes more engaging, meaningful, and effective.

REFERENCES

1. Bybee, R. W. The BSCS 5E Instructional Model: Creating Teachable Moments. Colorado Springs: BSCS, 2009.
2. Bybee, R. W. The Case for STEM Education: Challenges and Opportunities. NSTA Press, 2013.
3. Teaching and methodological manuals on modern pedagogical technologies and interactive teaching methods.
4. Current textbooks and teaching manuals on Military Topography.
5. Subject curricula and methodological recommendations for military educational institutions.