IOSR Journal of Research & Method in Education (IOSR-JRME)
e-ISSN: 2320–7388, p- ISSN: 2320-737x Volume 16, Issue 3 Ser. 4 (May. – June. 2026) 20-24
www.iosrjournals.org

Exploiting and utilizing visual imagery in teaching Geography subdiscipline for 6th-grade – Lower secondary school

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Abstract:
This paper examines the exploitation and utilization of visual imagery in teaching 6th-grade Geography subdiscipline at lower secondary schools toward student competency development. Based on a theoretical analysis of media utilization in geography instruction and an evaluation of History and Geography 6 textbook content, the study establishes foundational principles tailored to the discipline's characteristics. Consequently, the paper proposes principles and structured processes for exploiting and utilizing visual imagery in teaching 6th-grade Geography subdiscipline. The research findings contribute to proposing specific solutions to innovate teaching methods and enhance the efficacy of exploiting visual imagery, helping students study the Geography subdiscipline in an interested, active manner that connects with real life.

Keywords: *Visual imagery, 6th-grade Geography, Lower secondary school, teaching methods, teaching media.*

Date of Submission: 06-06-2026 Date of Acceptance: 17-06-2026

I. Introduction

6th-grade Geography is a subdiscipline containing highly abstract and generalized knowledge related to natural phenomena such as the shape and movement of the Earth, the internal structure of the Earth, components of the natural environment, maps, and methods for representing geographical objects. This knowledge extends beyond the direct observation capabilities of lower secondary school students, especially 6th-graders – an age group transitioning from primary to lower secondary school whose thinking is predominantly visual-figurative. Therefore, efficiently exploiting and utilizing visual media, particularly visual imagery, holds paramount importance in the instructional process of 6th-grade Geography subdiscipline.

Visual imagery in teaching Geography subdiscipline includes: maps, sketch maps, diagrams, pictures, models, digital images, videoclips... These are media that help students observe, visualize, and clearly comprehend the essence of geographical things and phenomena. A reasonable combination of the text channel and image channel not only renders the lesson content more vivid and appealing but also contributes to developing geographical thinking, capabilities for analysis, comparison, generalization, and sustainable knowledge retention. Exploiting visual imagery scientifically will create conditions for students to actively acquire knowledge and form geographical concepts naturally, thereby enhancing instructional efficacy.

However, current teaching practices of Geography subdiscipline at lower secondary schools reveal that teachers have not placed due emphasis on guiding students on how to observe, analyze, and exploit knowledge from imagery; consequently, students acquire knowledge passively, memorize mechanically, and face limitations in applying knowledge to reality. Therefore, researching methods to exploit and utilize visual imagery in teaching 6th-grade Geography subdiscipline at lower secondary schools is essential, holding both theoretical significance and practical value. On this basis, this paper focuses on proposing measures and processes for exploiting and utilizing visual imagery in teaching 6th-grade Geography subdiscipline to satisfy requirements of innovating teaching methods toward student competency development under the new general education program.

II. Research methods

The method of document analysis and synthesis was employed to systemize the theoretical and practical foundations of exploiting and utilizing visual imagery in teaching Geography subdiscipline for 6th-grade aimed at developing student qualities and competencies.

The method of content analysis of the curriculum and textbooks was used to review lessons and themes within the 6th-grade Geography subdiscipline textbook - Connecting knowledge to life, thereby identifying themes suitable for the method of exploiting and utilizing visual imagery in teaching the Geography subdiscipline.

The expert method was utilized to gather teachers' feedback regarding the suitability, feasibility, and effectiveness of the proposed pedagogical measures.

The pedagogical experimentation method was applied to initially verify the feasibility of several specific themes in 6th-grade Geography subdiscipline instruction.

III. Research results and discussion

3.1. Several concepts

3.1.1. Concept of visual media

Visual teaching media: *"are tools and media that teachers and students utilize during the instructional process to construct for students representations of things and phenomena, and to form concepts through direct perception by the learners' senses"* [4].

When referring to teaching equipment, the geographer N.N.Baransky emphasized that these are visual media, which serve as a factor heavily influencing the organization and results of geography teaching in schools. This equipment includes: textbooks maps, globes, wall pictures, charts, graphs..

3.1.2. Concept of geographical visual imagery

Geographical pictures are special materials that thoroughly replicate geographical phenomena belonging to different eras and regions on Earth. Such materials possess the capacity to partially substitute for direct observations of widely distributed geographical objects across space [4].

In teaching, geographical pictures not only maintain an illustrative role to render lectures concrete and more appealing but also serve as an important source of information for students to exploit and acquire knowledge. Through observing, analyzing, and commenting on pictures, students practice their thinking and problem-detecting abilities, thereby forming accurate, clear geographical concepts and representations while saving time.

3.1.3. Classification of visual imagery in Geography teaching

Pictures used in Geography teaching are highly diverse, including: wall Geography pictures, geography pictures in textbooks, and small-sized geography pictures cut and collected from pictorials, magazines, etc.

- Wall geography pictures are large-sized images, meticulously invested in design regarding both content and presentation format. This type of picture not only ensures aesthetic value but also satisfies requirements for knowledge exploitation, effectively serving teachers' instructional activities and students' learning.

- Geography pictures in textbooks include all images integrated within the textbook content. These images are directly linked to each knowledge unit of the lesson, playing a role in supporting teachers to organize instruction and helping students acquire knowledge conveniently.

- Small-sized geography pictures cut from pictorials and magazines are image materials collected additionally by teachers from various sources. They can be utilized to illustrate, supplement, and enrich the lecture content. Notably, this type of picture exerts high effectiveness when used to provide evidence for new, updated, and topical issues [4].

3.2. Principles of exploiting and utilizing visual imagery in teaching Geography subdiscipline for 6th-grade – Lower secondary school

In Geography teaching, teaching media holds a particularly important position, which, together with other elements such as objectives, tasks, instructional content, and teacher–student activities, forms a unified whole with a dialectical relationship and mutual interaction aimed at achieving educational goals. Therefore, selecting and applying teaching methods must always be closely attached to efficiently exploiting and utilizing teaching media.

In each geography period, the system of visual imagery is always used regularly and plays an important role. They not only support teachers to organize and orient students' cognitive activities but also serve as an abundant source of knowledge, helping students form knowledge and practice skills. To ensure high efficiency in utilizing visual imagery in geography teaching, these media need to ensure the following principles [4]:

3.2.1. Pedagogical property

Pictures and videoclips used in Geography teaching must satisfy pedagogical requirements, meaning they directly serve the formation of students' knowledge and skills. Through the system of visual imagery, students can self-study, self-research, consolidate knowledge as well as practice and exercise under the organization and guidance of teachers. Simultaneously, visual imagery also serves as a tool to help teachers transmit basic contents and clarify abstract relationships, thereby developing students' logical thinking and cognitive capacities.

The diversity of visual imagery types creates favorable conditions for teachers to apply active teaching methods oriented toward promoting students' role as the subject, while fostering the application of modern teaching methods. In general, every visual image used in geography teaching must ensure educational value.

3.2.2. Visual property

Visual imagery media serving instruction need to have appropriate sizes, large enough for students at any position in the classroom, including the last rows of seats, to observe clearly. This creates conditions for students to exploit the media through various forms such as individual work, pair work, group work, or team work. Therefore, besides the requirement of being easily observed, the media also need to be compact and lightweight, convenient in moving, not occupying much space in the classroom, and suitable for characteristics of each grade level.

3.2.3. Scientific property

Visual imagery used in geography teaching must ensure accuracy and a scientific nature. Represented geographical phenomena need to correctly reflect the essence and characteristics of objective reality, avoiding distortion or inappropriate simplification.

In addition, each system of visual imagery needs to be constructed into a unified whole with close connections regarding content, layout, and presentation format. Each type of image within the system possesses its own role and position, yet must be consistent with one another to create a scientific, logical, and complete totality.

3.2.4. Aesthetic property

Visual imagery used in geography teaching needs to achieve requirements regarding aesthetics. Lines, shapes, colors, and arrangement must be harmonious and balanced, contributing to educating students' aesthetic tastes. Simultaneously, the aesthetic element also exerts positive impacts on learning psychology, helping students feel interested, enthusiastic, and actively participate in learning activities.

3.2.5. Usability property

Under conditions where the material facilities of many high schools remain limited and non-synchronized, the majority of visual media serving geography instruction are borrowed by teachers from libraries, functional rooms, or self-designed and self-made. Furthermore, teachers and students frequently have to move between classrooms according to the timetable. Therefore, visual media need to ensure usability, being easy to use, ready when needed, not too bulky, and convenient for preservation and transport.

3.3. Instructional organization process in 6th-grade Geography to exploit and utilize visual imagery

Teaching practice reveals that, during geography instruction, if pictures and illustrations are lacking, teachers will encounter numerous difficulties in helping students form geographical representations as well as memorize the content of concepts. Conversely, when appropriate pictures are utilized, the formation of representations and deepening of knowledge take place more smoothly, visually, and effectively. Therefore, pictures play a very important role in geography teaching. However, pictures themselves do not automatically generate problem-based learning situations. To efficiently exploit the value of pictures, teachers need to provide guidance, orient observation, and pose open-ended questions for students to analyze, comment, and explain, thereby drawing out necessary geographical knowledge.

Although the system of pictures in current textbooks has been supplemented more than before, to serve instructional objectives well, teachers need to actively collect more pictures from various source materials. First of all, teachers need to efficiently exploit the available source of pictures in textbooks. The process of exploiting knowledge from pictures can be conducted according to the following steps:

3.3.1. Guiding students to observe geographical pictures

Each picture is typically arranged according to three basic parts including the subject, foreground, and background. Therefore, when guiding students to observe geographical pictures, teachers need to note the following contents:

- *Subject:* is the object, human, or scenery that the picture can capture. The subject is usually located at the central position of the picture.

- *Foreground:* refers to objects located in front of the subject, closest to us, and usually located at the lower part of the picture. The foreground functions to highlight the subject.

- *Background:* refers to objects or decorative scenery located furthest from us and usually located above the picture. The background serves as a foundation and supplements meaning to the subject.

Thus, teachers need to firmly grasp layout characteristics of pictures to guide students to recognize each part within the picture. Through this, students will identify the central content of the picture. This is an important foundation to continue reading and analyzing geographical pictures.

3.3.2. Guiding students to read and analyze geographical pictures

To help students read and analyze geographical pictures effectively, teachers can organize according to a sequence of 4 steps:

- *Step 1*: Identifying the subject (what does the picture capture?).

A geographical picture can be captured at many different distances or angles. Therefore, for the same thing or phenomenon, the represented image can vary, or even easily cause confusion, particularly with pictures captured from above. Consequently, identifying the correct subject of the picture is the first and highly necessary requirement.

- *Step 2*: Identifying the location where the picture was captured.

Students need to identify where the picture was captured on Earth, in which direction (East, West, South, North), at what time of the day (morning, noon, afternoon, or evening), and belonging to which stage in the development process of the geographical thing or phenomenon.

- *Step 3*: Describing the picture.

Students need to present the main contents represented in the picture accurately and in sequence. The description should be conducted according to the layout of the picture, meaning sequentially from the foreground to the subject and then to the background. In each part, prominent, important elements should be stated first; less important elements are presented later. Simultaneously, learned geographical terms should be used for expression.

- *Step 4*: Finding ways to explain the content or message of the picture.

This is the most important step; however, not every geographical picture is easily explained immediately upon observation. In this step, students need to explain 2 issues: *Why is the position of the geographical thing or phenomenon located there and not elsewhere? What are the problems that the geographical thing and phenomenon have posed to humans?*

For pictures with complex contents, teachers should guide students to formulate hypotheses, then apply learned knowledge combined with maps, charts, or other geographical materials to eliminate inappropriate hypotheses and select the correct explanation. Finally, teachers lead students to deduce the main content or message that the picture wishes to convey.

Example: Guiding students to exploit the following picture with the objective of investigating one of the manifestations of global climate change.

Figure 2.3. Melting ice in the Arctic region

- *Step 1:* The teacher poses the question: *"Identify what the picture captures?"*
- *Step 2:* The teacher poses the question: *"Where was the picture captured?"*. The teacher suggests students observe the caption below the picture. Students quickly recognize that this is a picture capturing the phenomenon of melting ice in the Arctic region.
- *Step 3:* The teacher requests students to describe what is observed in the picture. Students can state: many large and small icebergs are broken and floating on the sea surface; the ice-covered area is narrowing; seawater is exposed more; the scenery is freezing but demonstrates that ice is melting visibly.
- *Step 4:* The teacher poses an open-ended question: *"What does the picture make you think about?"*. With this question, students need to think to find out the core issue. Through observation, students will see that this is a clear manifestation of global climate change and the phenomenon of Earth warming. The increase in average temperature causes ice at the two poles to melt faster, particularly in the Arctic – a region warming at a speed higher than the global average. The phenomenon of melting ice causes many severe consequences such as: rising sea level, threatening coastal areas and low-lying islands; losing the habitat of many animals like polar

bears, seals; disrupting ecosystem balance; simultaneously affecting climate worldwide. The teacher can supplement more evidence: according to data from the National Snow and Ice Data Center (NSIDC) of America, in July, the average temperature in the Arctic was up to 3 degrees Celsius higher than normal. The World Meteorological Organization (WMO) warns: the Arctic is warming twice as fast as the global average. This warming not only changes regional climate, but also affects sea surface temperatures, particularly in the North Atlantic. From there, students generalize into a concise message: *"Melting ice in the Arctic region is a severe warning about global climate change."*

During the process of organizing for students to exploit knowledge from pictures and drawings with geographical contents, teachers need to apply flexibly and appropriately to each instructional situation. In the first few approaches to this type of media, teachers should guide students specifically and in detail so that they step by step form observation, commenting, and working-with-pictures skills. At later stages, based on lesson objectives, students' cognitive proficiency, and each specific case, teachers can select different levels of support, then the exploitation process also varies accordingly.

IV. Conclusion

The method of exploiting and utilizing visual imagery in teaching Geography subdiscipline for 6th-grade plays a particularly important role in the process of forming knowledge and developing skills for students. Based on clarifying concepts, foundations for defining content, principles, and requirements for exploiting and utilizing visual imagery in Geography instruction, while proposing measures for exploiting and utilizing visual imagery in teaching Geography subdiscipline for 6th-grade – Lower secondary school, the paper demonstrates that the 6th-grade Geography subdiscipline possesses numerous favorable conditions to apply the method of exploiting and utilizing visual imagery toward student quality and competency development. Through visual media such as pictures and videoclips, students not only acquire knowledge vividly and comprehensively but are also trained in many necessary learning skills. Utilizing visual imagery contributes to creating learning interest, promoting the activeness, autonomy, and capability for self-investigation and knowledge discovery of students. Simultaneously, this is also a favorable condition for teachers to apply modern teaching methods, innovating forms of instructional organization toward promoting learner competency, thereby enhancing the efficacy of Geography periods.

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