BEST PRACTICE REPORT

Experiential Teaching of the Skeletal System and Types of Joints

Submitted by
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TGT (Science)
PM SHRI Kendriya Vidyalaya Ranaghat

School	PM SHRI Kendriya Vidyalaya Ranaghat
Contributor	Md. Zubaer Siddiquee, TGT (Science)

1. Title of the Best Practice

Experiential and Activity-Based Learning of the Skeletal System and Types of Joints through Direct Observation, Demonstration and Collaborative Classroom Engagement

2. Kendriya Vidyalaya

Name of KV: PM SHRI Kendriya Vidyalaya Ranaghat

Region: Kolkata Region

3. Name and Designation of the Contributor(s)

Md. Zubaer Siddiquee, TGT (Science)

4. Target Group

Class(es): IX & X

Subject(s): Science / Biology

Number of students benefited: Students participating in the documented classroom/laboratory activity. The exact number is not recorded in the submitted photographs and may be entered by the contributor if required.

5. Theme/Area (as per NEP 2020)

Experiential Learning, competency-based learning, activity-based pedagogy and learning through observation and participation. The practice connects textbook concepts with direct observation of a skeletal model and collaborative student engagement.

6. Context/Need

The skeletal system and types of joints are important concepts in school science, but students can find it difficult to visualize the position, arrangement and function of bones and joints from textbook diagrams alone. The practice was designed to make the topic concrete and observable by using the school science laboratory, a skeletal model and guided teacher–student interaction. Students were encouraged to observe the model closely, identify structures and relate anatomical concepts to movement of the human body.

7. Description of the Practice

Objectives:

- To help students identify the major parts of the human skeletal system.
- To enable students to understand the location and basic function of different types of joints.
- To connect textbook diagrams with a three-dimensional physical model.
- To promote observation, questioning, participation and collaborative learning.

Implementation process (step-wise):

1. The teacher introduced/recalled the concept of the human skeletal system and its role in support, protection and movement.

2. Students were taken through a guided observation of the skeletal model available in the science laboratory.

3. The teacher pointed out relevant skeletal structures and used questioning to involve students in identifying and recalling them.

4. The concept of joints was linked with observable body movements and with the corresponding positions on the model.

5. Students gathered around the model in small groups/collectively so that they could observe the structures closely and discuss their understanding.

6. Students were given opportunities to ask questions and participate in the explanation rather than only listening to a lecture.

7. The session was consolidated through discussion and written/classroom work.

Resources/materials used:

- Human skeletal model kept in the science laboratory
- Science textbook/reference material
- Laboratory/classroom workspace
- Student notebooks and worksheets/classwork materials, as visible in the photographs

Duration/Frequency:

Implemented as a classroom/laboratory teaching practice during the teaching of the relevant Science/Biology content. Exact duration and frequency may be added by the contributor from the school record.



Photograph 1: Teacher-led demonstration of the human skeletal model with students in the science laboratory.



Photograph 2: Guided collaborative learning activity with students during the Science laboratory session.

8. Innovation

The noteworthy feature is the conversion of an abstract, diagram-heavy topic into a visually grounded and participatory learning experience. Instead of depending only on two-dimensional textbook figures, students observe a three-dimensional skeletal model while the teacher guides them through identification and explanation. The close grouping of learners around the model supports peer observation, discussion and questioning. The approach is simple, low-cost and uses resources already available in a school science laboratory, making it practical for regular classroom use.

9. Outcomes/Impact

The photographs provide qualitative evidence of active student engagement: learners are gathered around the skeletal model, observing the demonstration and interacting with the teacher. A second documented activity shows the teacher working closely with a group of students at a laboratory table, indicating collaborative and guided participation.

Expected/observable learning impact from the documented practice includes:

- Better visualisation of the human skeletal system.
- Improved ability to relate anatomical terms to actual structures.
- Greater participation during explanation and questioning.
- Increased interest through direct observation of a physical model.
- Better connection between classroom theory and practical/laboratory learning.

No numerical pre-test/post-test or assessment dataset was supplied with the photographs; therefore, no unsupported quantitative improvement is claimed in this report.

10. Scalability and Replicability

The practice can be adopted by other Kendriya Vidyalayas using a skeletal model or other suitable anatomical teaching aid. It does not require sophisticated technology and can be implemented within an existing science laboratory. The same framework can be extended to other Biology topics where physical models, charts or specimens are available. A teacher can reproduce the practice through four simple stages: introduce the concept, demonstrate with a model, involve students through guided observation and questioning, and consolidate learning through worksheet/classwork or a short assessment.

11. Supporting Documents

Photographic evidence is included in this report. The photographs document: https://drive.google.com/drive/folders/1iRlV0VjjRzrgtv8luj0f74FE6HkXj1dN?usp=drive_link

- Teacher-led demonstration using a human skeletal model.
- Students closely observing and participating in the demonstration.
- Guided collaborative work with students in the science laboratory.

Additional supporting documents such as lesson plans, worksheets, student work samples, assessment data or feedback may be attached separately if available.



Photograph 3: Students actively observing and participating in the demonstration of the skeletal system.

12. Certification

The Principal of PM SHRI Kendriya Vidyalaya Ranaghat certifies that the practice has been implemented in the school and that the information furnished is authentic.

Signature of the Principal: _____

Date: _____

School Seal: _____

— End of Report —