

Applications of Strategies learned on the Course

Subject: Biology

Level: S4

Strategies used: 1. Small group discussion
2. Oral presentation

A role play: doctors and patients

Objectives of the activity (role play)

- To consolidate students' knowledge of the topic "nervous co-ordination".
- To check students' understanding of the topic.
- To arouse students' interest in the topic.
- To give students a chance to practise oral English.

Time required

2 periods

Introduction

After teaching the topic "nervous co-ordination", I devised the following activity to help students gain a better and deeper understanding of the topic. I have tried out the activity four times with four classes. The following is a brief description.

Procedure

1. Students are divided into groups of five.
2. Task sheet 1 is given to students (refer to appendix 1).
3. One of the group members plays the role of a patient (student A) whose nervous system is damaged during a traffic accident. The other group members (students B to E) act as doctors.
4. Student A describes his/her condition to the doctors (refer to appendix 2). He/She should rephrase and explain the symptoms in detail. However, the patient should not discuss the symptoms with the doctors.
5. Students B to E should discuss each symptom and make a diagnosis. One student should record the diagnoses on Task Sheet 3 (refer to appendix 3). Another student should report back to the class.
6. Ten marks will be given to each correct answer. An extra ten marks will be given to the group speaking only English during their discussion.
7. Prizes will be given to the winners.

Post-lesson Evaluation

Students found it interesting to pretend to be doctors. They were happy to see that their knowledge was readily applicable and that they had a chance to consolidate what they had learnt. In general, they enjoyed the activity and my objectives were met.

Apart from enjoying the activity, students behaved well too. They tried their best to speak in English, supplemented by body language. It was beyond my expectation. However, I observed that students found it difficult to communicate well because they were not familiar with the relevant vocabulary or they did not know how to conduct the dialogue. It is difficult for the student who acts as the patient. To improve the activity, I will give students a list of useful vocabulary and a sample dialogue. (See Appendix 4) The role of patient and doctors should be rotated as well. The ten symptoms should be printed on ten cue cards instead of one task sheet.

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APPENDIX 1

TASK SHEET 1 (for all students to read)

**WHICH PART(S) OF THE
NERVOUS SYSTEM IS/ARE DAMAGED?**

After a traffic accident, the driver (student A) has difficulties in coordinating his/her body. Decide which part(s) of his/her nervous system is/are damaged (Assumption: the patient does not suffer from brain damage)

Roles:

Student A (the driver, i.e. the patient): - Describe the symptoms one by one

Student B (doctor): - Discuss the symptoms, write down the answers on the answer sheet

Student C (doctor): - Discuss the symptoms, report to your classmates at the end of the discussion

Student D (doctor): - Discuss the symptoms in detail and thoroughly

Students E(doctor): -Discuss the symptoms in detail and thoroughly

(HINT: sketch the neural pathway of the action first)

(You SHOULD use English only)

TASK SHEET 2**(Only student A is allowed to read these symptoms)**

1. When my finger is pricked by a needle,
 - a. I show neither a reflex action nor a voluntary action but I have a sensation of pain. (Description given to Dr. B)

 - b. I have the withdrawal reflex but I am not aware of the pricking action. (Description given to Dr. C)

 - c. I show neither a reflex action nor a voluntary action and I do not have the sensation of pain. (Description given to Dr. D)

2. When my stretch receptor (receptor below the knee cap of the leg) is tapped,
 - a. I feel the tapping stimulus but cannot give the knee jerk response. (Description given to Dr. B)

 - b. I do not feel the tapping stimulus but can still move voluntarily. (Description given to Dr. C)

 - c. I have the knee jerk reflex action but I am not aware of it. (Description given to Dr. D)

3. The parts of my body below the abdomen have lost voluntary action and sensation but the parts of the body above my abdomen do have voluntary action and sensation.

4. I have the sensation of sight, have the ability to move the tongue, can give a knee jerk reflex but cannot move my hands and feet (limbs) at will and have no sensation of pain in my limbs.

TASK SHEET 3 (for students B, C, D and E)**Answer sheet**

- 1
 - a. _____
 - b. _____
 - c. _____
- 2
 - a. _____
 - b. _____
 - c. _____
3. _____
4. _____

Useful dialogue in consulting a doctor

Dr. Jones: Good morning. Come and sit down. What can I do for you?

Mr. Jack: Good morning. I don't feel so well. I would like something to make me better.

Dr. Jones: How do you feel?

Mr. Jack: I feel hot and tired. I don't sleep well at night. My head aches.

Dr. Jones: When did all this start?

Mr. Jack: Three days ago. I thought I had a cold but it has got worse.

Dr. Jones: Do you have backache?

Mr. Jack: No. But my eyes are sore.

Dr. Jones: Are your eyes itchy?

Mr. Jack: Yes, they itch a lot. I also have a running nose and a cough.

Dr. Jones: Oh, dear, it sounds like the flu.

Mr. Jack: Is there anything you can give me?

Dr. Jones: No, I'm afraid not. Just drink plenty of fluids. Take aspirin when needed but no more than 8 in a day. Rest as much as you can.

Mr. Jack: I'll do that. What can I do to sleep at night?

Dr. Jones: Take aspirin, your fever is high, so cool yourself with a lukewarm bath. If it doesn't get any better, come back.

Mr. Jack: Thank you, doctor.

Vocabulary and Useful phrases

- backache
- my eyes are sore
- my eyes are itchy
- lukewarm bath
- to take medication e.g. aspirin

ANSWER

1.
 - a. a cut in the motor neurone of the reflex arc
 - b. intermediate neurone to the cerebrum /spinal cord around the neck has been damaged
 - c. receptor/sensory neurone of the withdrawal reflex arc has been damaged
2.
 - a. motor neurone or the extensor muscle of the leg has been damaged
 - b. receptor/sensory neurone is damaged BUT motor neurone is not damaged
 - c. intermediate neurone to the brain is damaged/spinal cord is broken in the lumbar region
3. a section of the spinal cord in the abdomen is seriously injured
4. spinal cord below the neck has been damaged