



## AN INSTRUCTIONAL SCENARIO (LESSON PLAN): THE IMPORTANCE OF ARTERIAL PULSE

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### **Abstract:**

This article aims to present a lesson plan entitled: "An instructional scenario: The Importance of Arterial pulse". This teaching plan lasts for one teaching hour. It was carried out with modern educational form through the Cisco WebEx Meetings platform and concerns the course Nursing Theory II for the 3<sup>rd</sup> Class of Vocational High School (EPAL), specializing in Nursing of the Health, Welfare & Wellness Sector. This lesson plan was implemented in the context of the training of B2 level ICT trainees, organized by the Institute of Educational Policy (IEP) with the co-financing support of Greece and the European Union. The article aims to present a teaching plan so that students can deepen their knowledge in the topic of Vital Signs with emphasis on the importance of arterial pulse. More specifically, students learn to define what an arterial pulse is, to list the points where the arterial pulse is taken, and to state each time the arterial pulse should be taken. The strategy on which it was based is collaborative learning. In particular, through the working groups, the participation and the interaction with the students are reinforced. Students were asked to complete interactive exercises created in the e-me content, then work on a collaborative document (google forms), and at the end of the course fill in a worksheet for feedback.

**Keywords:** arterial pulse, arteries, nurses' training lesson plans, nursing assistant

### **1. Introduction**

Both the theoretical training of the students and their practical reception and recording of all Vital Signs (temperature, respiration, arterial pulse and blood pressure) play a particularly important role (Gourgouli et al., 2013). This importance is also evident from the fact that the Vital Points occupy a central position in the Curriculum of the DG Class

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of the EPAL of the course "Nursing II", which aims at teaching theoretical and laboratory part with practical training of students.

More specifically, the recourse to the theoretical knowledge of the thematic unit of respiration precedes the laboratory course, thus, the practical exercise. This article emphasizes on the theoretical knowledge, which will benefit to the correct diagnostic prediction and assessment of the condition of a patient/individual.

In the context of all this effort, the use of ICT is laying the foundation stone, which contributes substantially, interactively, and pleasantly to the understanding and consolidation of all that is to be taught, emphasizing the group collaboration of students (Matzagouras, 2000). The playful exercises, collaborative documents, and worksheets offered by ICT help to better consolidate the material taught, and the feedback of students emphasizes the central points of the lesson taught and not the detailed or redundant information, which can exhaust or confuse students. Also, the use of ICT enhances and encourages the active participation of students with learning difficulties and helps them to consolidate the content of the lesson better, as well as organize their notes more appropriately and focus on all those important points of the lesson (Tsimpoukli, 1999). Of course, the teacher is on the side of all those students by supporting, guiding, and strengthening their effort and in case of additional help needed, the teacher provides additional/explanatory and more detailed material.

## **2. Description of Educational Scenario**

The specific educational scenario lasts for one teaching hour (45 minutes) and concerns the course Nursing Theory II for the 3rd Class of Vocational High School (EPAL) specialty Nursing Assistant of the Health, Welfare & Wellness Sector. All 14 students in the e-classroom participated through the Cisco Webex Meetings (modern education) platform created by the Ministry of Education, Research and Religions, due to the needs arisen due to Covid-19. No pre-existing knowledge is required regarding the taught topic by the students. However, a basic familiarity with the use of computers and software is required.

The learning objectives of the teaching scenario are divided into three levels. More specifically, at the cognitive level, students should learn to define arterial pulse, list the points from which the arterial pulse is taken, and state when the pulse should be taken. At the socio-emotional level, students actively participate in the activities of the lesson, discuss the results of the exercises and appreciate the value of learning one of the four Vital Signs of the human body, namely the arterial pulse. Finally, the goals regarding the use of ICT are both the Familiarity with distance education (Modern Education) and the approach of ICT as tools and sources of interactive learning.

This teaching plan emphasizes on the active participation of students and their collaborative interaction. The strategy which it was based on is collaborative learning (Koulaidis, 2007). ICT (Information and Communication Technology) and educational applications that tend to maximize the benefits of any type of course, whether it is to be implemented live in the classroom or remotely with modern or asynchronous education.

### 3. Conclusions

The assessment of the present educational lesson plan conducted by the students was positive, as both the purpose of the program and the individual teaching objectives were achieved. Through the discussion that took place at the beginning of the course (modern education-Cisco WebEx Meetings) students were allowed to exchange very interesting views and knowledge gained from personal experiences or experiences related to their close family environment. Throughout the lesson, they participated by completing playful exercises created by the teacher on the e-me platform, as they were given two collaborative documents (google form), where, in this way, interacted with each other, commenting on each other's answers to their questions posed based on all the above, which helped the students and the teacher to understand how well they had consolidated the knowledge they were taught. Shortly before the completion of the lesson, there was time to discuss questions, but also to solve them. Besides, students became familiar with ICT (Information and Communication Technology) as the course was implemented through the Cisco WebEx Meetings platform (modern education), which means that all activities required the operation of a computer or a tablet. Finally, the time of one teaching hour that was originally designed to implement the teaching plan was sufficient to its successful completion.

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### Conflict of Interest Statement

The authors have no conflicts of interest to declare. We have seen and agreed with the contents of the manuscript and there is no financial interest to report. We certify that the submission is our original work and is not under review at any other publication and we have no commercial associations (e.g., consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that might pose a conflict of interest in connection with the submitted article.

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## References

- Gourgouli E., Kissoudi A. et al. (2013). *Nursing Theory-Laboratory*. 2nd Grade <sup>1st</sup> CYCLE, Department of Health and Welfare, Athens: Diofantos publications.
- Matzagouras, H. G. (2000). Collaborative teaching and learning. Athens: Grigoris.
- Koulaidis, B. (2007). Modern Teaching Approaches for the Development of Criticism - Creative Thinking for Secondary Education. ΟΕΠΕΚ.
- Tsimpoukli, Anna (1999). The training of special groups in Educational Methods - group of trainees, Vol. D, EAP, Patras.

## Annex 1

**Lesson plan title:** An instructional scenario (lesson plan): The Importance of Arterial Pulse.

**Estimated duration of the teaching scenario:** 1 teaching hour (45') distance using modern education.

Integration of the teaching scenario in the curriculum/prerequisite knowledge Nursing Theory II 3rd Class EPAL. The nursing specialty of the Health, Welfare & Wellness Sector.

### **Prerequisite knowledge:**

- The students already have relevant knowledge of the taught thematic unit from the 2nd Grade of EPAL. They are not asked to repeat so that the teacher can assess what they remember and what they do not.
- Basic knowledge of computers and software is required.

### **Purpose and objectives of the teaching scenario:**

Get to know one of the four vital signs that are arterial pulse.

### **The learning objectives of the teaching scenario are:**

#### Cognitive

- ✓ Learn the definition of arterial pulse
- ✓ List the points from where the arterial spasm is taken
- ✓ To formulate when to take the beats

#### Socio-emotional

- ✓ Participate in the activities of the course
- ✓ Discuss the results of the exercises
- ✓ Assess the value of learning one of the four Vital Signs of the human body namely arterial pulse

#### Regarding the use of ICT

- ✓ Familiarity with distance education (Modern education)
- ✓ Approaching ICT as tools and resources for interactive learning

### **Supervisory means**

Both the teacher and the students should have either a Mobile or Tablet or laptop/desktop computer, which has speakers, a camera, and a microphone. Internet connection is required. The teacher must have installed the Cisco WebEx meetings application, have a Google account for the use of Drive, and have codes of the Pan-Hellenic School Network to be able to connect to e - me. Students should also have the Cisco WebEx Meetings application installed, as well as have codes in the Pan-Hellenic School Network to be able to connect to [e - me](#). The connection to the digital training platform can be made by

clicking [Cisco WebEx Meetings](#). Students have received the connection instructions on the e-classroom platform and a test connection has been made the day before.

### **Description**

#### **Teaching Method**

In this teaching scenario, emphasis is placed on the active participation of the students and the group interaction of the students. ICT educational applications tend to maximize the benefits of any type of lesson whether it is to be implemented in the classroom or remotely with modern or asynchronous education.

#### **Class organization**

The online class consists of 14 students. All the students of the DG Nursing department of the Health and Welfare Department participate in the implementation of the educational scenario.

Students participate at the beginning of the lesson individually by writing in the WebEx chat answers to the questions asked by the teacher. Then, they each complete the exercises created in the e - me content and finally, they work in groups on worksheet 1 and worksheet 2 (google forms).

#### **ICT added value**

The lesson plan is entirely different from the form of modern education.

As a result, by using ICT, they provide:

- ✓ Facilitate communication, sharing, and interaction between students and their teacher
- ✓ Interaction and immediate feedback from web applications
- ✓ The added value from the use of new technologies lies in the multi-sensory approach of the specific skill and the multifaceted cognitive mobilization of the students
- ✓ With the use of new technologies, both theoretical and laboratory courses, a system of practice and practical application of knowledge by students is promoted, with the systematic guidance of the teacher.

#### **Teaching Activities:**

##### **a. Cognitive/psychological preparation activities (5 minutes)**

Students with the computer or tablet open will work individually and in groups remotely. The course begins with the question "what is arterial pulse?" Students with what they already know from the 2nd grade of EPAL are invited to compose the definition that was asked. The teacher encourages the students to write on the chat of the WebEx platform words that they probably remember, to compose the definition in groups. The teacher then asks two more questions, "where is the arterial pulse taken from"

And “when should the pulse be taken? “Again, students mention what they remember on the chat of the same platform. Throughout this activity the teacher shares on WebEx a PowerPoint file he has prepared.

### b. Consolidation activities (25 minutes)

The students, using the above answers given in the WebEx chat and based on the teacher's questions, encourage the students to go to [e - me](#), platform, to do the corresponding playful activities created by the teacher through e – me content. The first interactive exercise is filled in the gaps and concerns the definition of the pulse. To complete this exercise, students must log in to the wall of the Nursing Theory II course by clicking [here](#). The teacher shares the above link with the students in the Webex chat.

Ορισμός αρτηριακού σφυγμού Δραστηριότητα χρηστών Επεξεργασία

Σύρετε τις λέξεις και αποθέστε τις στα κουτάκια

Αρτηριακό σφυγμός είναι το [gap] διάτασης, το οποίο μεταδίδεται στις περιφερειακές [gap], όταν το αίμα εισέρχεται στην [gap] μετά από κάθε συστολή της [gap] κοιλίας.

αορτή  
αρτηρίες  
κύμα  
αριστερή

Έλεγχος

Students, by completing the above activity, will engage in the second playful activity which is a cryptocurrency, where they will have to find the points where the arterial pulse is taken This playful activity has been posted on the lesson wall and can be found by clicking [here](#).

Σημεία που παίρνεται ο αρτηριακός σφυγμός Δραστηριότητα χρηστών Επεξεργασία

Βρες τις λέξεις του Κρυπτολέξου

Μ	Χ	Ν	Ν	Τ	Ψ	Ε	Α	Λ	Ε
Η	Σ	Ο	Ψ	Π	Η	Ω	Φ	Ρ	Κ
Η	Κ	Ι	Φ	Α	Τ	Ο	Ρ	Κ	Τ
Ι	Γ	Ν	Υ	Α	Κ	Η	Ι	Σ	Ρ
Η	Κ	Ι	Δ	Ι	Τ	Ω	Ρ	Α	Κ
Β	Σ	Β	Σ	Κ	Δ	Χ	Μ	Κ	Ρ
Α	Ι	Α	Ι	Ρ	Η	Μ	Σ	Ρ	Κ

Βρες τις λέξεις

κερκιδική κροταφική καρπιδική βραχιόνιος μηριαία ηγυακή ραχιαία

Διάρκεια 0:00 0 από 7 βρέθηκαν

Έλεγχος

Finally, students complete the third activity, which is on [worksheet 1](#) (google collaborative form), called worksheet document 1 - when to tighten (annex 2).

### c. Evaluation Activity-Formative evaluation (10 minutes)

After completing the above two playful activities and recording in the collaborative google document the students the answers about when the pulse should be taken, the teacher encourages the students by giving the link in the WebEx chat, to go to [worksheet 2](#) (annex 3). Students entering this document will have to answer the questions given in groups. As students answer these questions, the teacher checks,

encourages and supports the students throughout the completion and until the answers are completed.

This is followed by a discussion by the students themselves, with the teacher intervening where necessary, and discussing the mistakes they made, getting the feedback they need. That is, the teacher uses worksheet 2 and it completes the assessment needed.

### **Use of PC, ICT, as well as other means for the teaching scenario**

- Course wall Nursing Theory II DG Lyceum in e – me,
- Cisco WebEx Meetings Platform,
- PowerPoint presentation,
- E-me content,
- Collaborative document (google forms): worksheet 1 & worksheet 2.

### **a. Final Assessment of the course (5 minutes):**

At the end of the course, the degree of achievement of the learning objectives of teaching is evaluated through:

- The completion of worksheet 1 created by the teacher in google forms, where the teacher intends to understand what the students remember
- Worksheet 2, where it is also used as an evaluation tool
- The debate developed by students/behavior shows throughout the course and the chat of WebEx

### **c. Worksheet**

Students are given to fill two worksheets 1& 2 in groups (google forms).



## Annex 2

### Worksheet 1: when to

Course: Nursing Theory II

Class: 3rd grade of high school

Specialty: Nursing Assistant

#### Exercise 1:

According to all that we mentioned on Webex and wrote in the chat, as well as based on the Nursing book that you have obtained from the school at the beginning of the school year, going to chapter 3, subsection 9c, on page 71, record when do you think it is right to take the clamps. In the third column, you can comment on other classmates' answers.

Name	Record when arterial pulse should be taken	Comments
Konstantinos A.		
Niki A.		
Anthi A.		
Maria B.		
Popi Z.		
Eirini K.		
Valia K.		
Maria K.		
Maria P.		
Maria S.		
Emanuel T.		
Eva T.		
Zacharias F.		
Eirini Ch.		

### Annex 3

#### Worksheet 2: Course: Nursing Theory II

**Class:** 3rd grade of high school

**Specialty:** Nursing Assistant

Below are two questions, where based on what you have already done in the playful activities, I would like to work collaboratively to answer the following questions. This will help you and me to check the answers you give and comment on any of your mistakes or points that made it difficult for you. Each of you will write in the line where his name is the answer he wants to give...

Name	Record the points where the arterial pulse found in the cryptocurrency is taken	What is the difference between a man who has 60 cramps and one who has 105 when both are at rest? (crisis question)
Konstantinos A.		
Niki A.		
Anthi A.		
Maria B.		
Popi Z.		
Eirini K.		
Valia K.		
Maria K.		
Maria P.		
Maria S.		
Emanuel T.		
Eva T.		
Zacharias F.		
Eirini Ch.		

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