

A journey through the heart: Cardiac anatomy and physiology for vocational education students

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| Technology tools (version): | Hololens V2 |
| Requirements: What do you need? (Think hardware, skills, knowledge.) | <ul style="list-style-type: none">○ Hololens 2○ Stable Wifi connection○ Basic understanding of the structures of cardiac anatomy at a vocational level.○ A basic understanding of cardiac physiology at vocational level○ Inside heart app (Hololens app store) |
| Optional technologies: | <ul style="list-style-type: none">○ Knowledge base support by Thinglink and or LessonUp |
| Date: | 14 december 2023 |
| College: | Dulon Healthcare College, Ede, the Netherlands |
| Author: | Carl Ashman |
| Topics of the lesson(s): | Cardiac Anatomy |
| Estimated time: | 120 minutes |



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Intention: What do you wish for or hope to happen? (Intentions are often not measurable or tangible, but help you in developing the design process.)

1. The students learn that digital technology has become an integral part of both healthcare and healthcare education.
2. The students, who are largely digital natives, are exposed to lessons methods that they feel connected to as a digital generation.
3. The students are able to understand and appreciate the complexity of the cardiac anatomy and physiology.
4. They students will be exposed to medical terms in English.

Desired Outcomes: One or more measurable and tangible goals the teacher aims for with this lesson/these lessons.

1. The students are able to name a minimum of 6 vital structures of the cardiac anatomy.
2. The students are able to explain in their own words what the role is of these structures in a healthy heart. For example: they can explain the difference in both structure and function of the heart valves that connect both atria and ventricles.
3. They can name at least 4 vital structures in both English and Dutch (native language).

Agenda: HOW are you going to reach the goals? Description of the lesson plan / educational activities / working methods.

1. The student will be given an instruction how to operate the HoloLens.
2. The students start the app.
3. The student receives information about the app via the “Onboarding” button.
4. The student rotates through steps 1 to 5 in order to receive all the relevant information to achieve the learning outcomes.
5. The student logs out and hands the HoloLens to a fellow student that is waiting in line.

Roles: Who facilitates what? Who participates? What do we expect of the students?

1. The teacher or instructor is responsible for the operation of the HoloLens. He or she will ensure that the device is both in good working order and fully charged at the beginning of the lesson.
2. The students will work in groups of three. These students will rotate through the following learning stations: self study into basic cardiac anatomy, Journey through the heart (HoloLens) and quiz.
3. The teacher or instructor will give students the relevant links and sources into the subject of basic cardiac anatomy.
4. The teacher or instructor will create a quiz with at least 10 questions over the anatomy and physiology of the heart with the Inside Heart programme as source.

Rules: Rules or principles are about how you want to learn and work together.

1. The students’ prior knowledge should be activated by self study into the subject matter. If time is limited this can be in the form of a homework assignment.
2. The students will be encouraged to collaborate by sharing information in their own group.



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3. The students will be expected to show respect for the HoloLens by using it carefully.
4. The outcomes will be evaluated in the form of the quiz.

Time: Describe the time path: What time do we start / finish / break? When is the time for reflection? What happens between contact times?

1. Orientation, lesson outcomes and explanation: (10 minutes)
2. Explanation HoloLens and rules for use: (15 minutes)
3. Round 1: Self study basic cardiac anatomy (30 minutes)
4. Round 2: A journey through the heart (30 minutes)
5. Break for students, teacher or instructor prepares the quiz
6. Round 3: (all participants): quiz (30 minutes)
7. Evaluation of lesson (outcomes): (5 minutes)