Module 4 - TRN CULTURAL COMPETENCE, Learning Unit 4.4 The ADORE approach/model

Irena Papadopoulos, Middlesex University

THEORETICAL COMPONENT

Principles and Values

When developing models, frameworks, AI platforms, robotic devices, and systems, it is imperative that the developers adhere to values and principles underpinned by universal ethical codes and specific ethical codes referring to AI and robotics so that their developments benefit humanity and the environment. One of the key driving forces in any development is that of culture. This is most important in the field of health and caring sciences that this MOOC is based on.

The general principles and values for IENE 10 are those associated with culturally competent and compassionate care (see definition below). More specifically, the values and principles of this LU are:

- active listening
- care/caring
- communication
- compassion
- diversity
- valuing a person's cultural background/ identity
- dignity
- learning

This LU is also founded upon the values and principles of transcultural robotic nursing, which include:

- open mindedness
- genuine curiosity
- innovation
- change

Aims

- This module aims to enhance participants' knowledge about the practical skills, safety precautions, rights, and inequalities of patient/client, and the ADORE approach/model in relation to implementing SARs in health and social care settings.
- The specific aim of this LU is to understand the ADORE approach/model and its core principles.

Learning outcomes

When you have worked through this learning unit, you will:

- Have an overview and rationale behind the ADORE approach/model.
- Gain an understanding of the principles of ADORE approach/model.
- Appreciate the ADORE approach/model and its impact on transcultural robotic nursing.

Relevant definitions and terms

The **ADORE model/approach.** Developed by Professor Irena Papadopoulos during the CARESSES project (2017-2020), the ADORE acronym stands for Assess, Do, Observe, Revise and Evaluate. The ADORE

model/approach helps the robot to understand the cultural aspects and importance of the humans' actions, processes and decisions, all of which are essential to transcultural robotic nursing. The robot can use ADORE steps to make its cultural assessment (A), act on it (D), observe the results (O), if needed revise its actions (R) and then evaluate the outcome (E). (Papadopoulos et al., 2022)

Culturally competent compassion. The human quality of understanding the suffering of others and wanting to do something about it using culturally appropriate and acceptable nursing interventions. This takes into consideration both the patients' and the carers' cultural backgrounds as well as the context in which care is given (Papadopoulos, 2011)

Culturally Competent Socially Assistive Robots. This term refers to AI-based, autonomous, often humanoid, socially assistive robots that are programmed with cultural knowledge in relation to specific cultures, so to be able to interact in a culturally sensitive way with users as well as acquire increasing information about users' culture as they interact with them. Culturally competent socially assistive robots are not currently in use yet.

Cultural Robotic Knowledge. Culturally knowledgeable socially assistive robots combine concepts, principles, values, theories, practices, behaviours, and properties from a number of disciplines such as computer sciences, robotic engineering, anthropology, sociology, psychology, caring sciences, and cultural studies, to enable robots to perform task and communicate with humans in culturally appropriate ways Papadopoulos I. & Sgorbissa A., 2021).

Cultural trigger theory. This theory is closely related to the ADORE model/approach. Papadopoulos (2018) expanded the notion attributed to Hall (1976) who used the metaphor of an iceberg to explain culture. He suggested that only 5-10% of a person's culture is visible in the part of the iceberg which is above the waterline, while 90-95% remains invisible below the iceberg's waterline. Cultural values, perceptions, attitudes, etc., which are the powerful drivers of our culture, are invisible to others and ourselves as they are located under the waterline. Papadopoulos (2018) posited that the subconscious and invisible components of our culture can float to the top of the iceberg if they are triggered, and manifest themselves as cultural behaviours. Events, humans, and robots can trigger these behaviours which they can then observe and react to. In this way, a robot can use the ADORE approach to make its assessment, act on it, observe the results, if needed revise its actions, and then evaluate the outcome.

Non-verbal Communication. The complex set of ways in which we communicate in forms different from our actual language. Non-verbal communication largely consists in our body language, such as postures, facial expressions, eye gaze, gestures, proxemics, haptics, appearance. Non-verbal communication can however also include paralinguistics (i.e., vocal communication separated from actual languages, such as voice volume, pitch, intonation etc.) and symbolic communications, with objects and images.

Proxemics. The study of personal space and physical distance between individuals in social interactions and situations. In human-robot interactions, the robot proxemics behaviour refers to its capacity to follow users' socio-cultural norms in establishing appropriate physical and psychological distancing. This capacity is central for the robot to better integrate into the human physical and social environment. Proxemics is a form of non-verbal communication.

Socially Assistive Humanoid Robot: Robots embodied as humans, programmed to interact with users through engaging in social interaction, with the involvement of gestures, speech, emotional expression, and other actions. Socially assistive humanoid robots are Socially Assistive Robots which in addition adopt the appearance of humans. Anthropomorphic robots and androids are robots with an enhanced, sometimes very realistic, human-likeness.

What the research says

- **Papadopoulos, I. (2018). Culturally Competent Compassion. Routledge.** A very useful and accessible book that brings together crucially important topics of cultural competence and compassion for the first time. The book defines 'culturally competent compassion' as the ability to understand the suffering of others and wanting to do something about it using culturally

appropriate and acceptable caring interventions. It also explores how to practise culturally competent compassion in healthcare settings. Available [here](#).

- **CARESSES project website, in particular the project research outputs**. Available [here](#). Below, a selection of 2 articles stemming from this project is provided.

    - **Bruno, B., Chong, N. Y., Kamide, H., Kanoria, S., J. Lee, Lim, Y., Pandey, A. K., Papadopoulos, C., Papadopoulos, I., Pecora, F., Saffiotti, A. and Sgorbissa, A. (2017) Paving the way for culturally competent robots: a position paper, RO-MAN 2017, Lisbon.** Cultural competence is a well-known requirement for effective healthcare, widely investigated in the nursing literature. This paper claims that personal assistive robots should likewise be culturally competent, aware of general cultural characteristics and the different forms they take in different individuals, and sensitive to cultural differences while perceiving, reasoning, and acting. Drawing inspiration from existing guidelines for culturally competent healthcare and the state-of-the-art in culturally competent robotics, the authors identify the key robot capabilities which enable culturally competent behaviours and discuss methodologies for their development and evaluation. Available [here](#).

    - **Bruno, B., Recchiuto, C., Papadopoulos, I., Saffiotti, A., Koulouglioti, C., Menicatti, R., F. Mastrogiovanni, F., Zaccaria, R., Sgorbissa A. (2019) Knowledge Representation for Culturally Competent Personal Robots – Requirement, design principles, implementation, and assessment,** *International Journal of Social Robotics*, **11(3), pp. 515-538.** Culture, intended as the set of beliefs, values, ideas, language, norms, and customs which compose a person's life, is an essential element to know by any robot for personal assistance. Culture, intended as that person's background, can be an invaluable source of information to drive and speed up the process of discovering and adapting to the person's habits, preferences, and needs. This article discusses the requirements posed by cultural competence on the knowledge management system of a robot. Available [here](#).

- **Hanley J. (undated) Beyond the tip of the iceberg: Five Stages toward Cultural Competence.** Understanding the cultures of those we serve requires more than words and good intentions. The journey toward cultural competence requires the willingness to learn from one's experiences and act. This article explains the cultural iceberg theory as well as the steps needed for the development of cultural competence. Available [here](#).

- **Iceberg Model of Culture by Edward T Hall (2017).** This is an informative YouTube short video (1.12 mins) clearly and concisely explaining the cultural iceberg theory. Available [here](#).

- **Papadopoulos I., and Koulouglioti C. (2022). From stories to scenarios and guidelines for the programming of culturally competent, socially assistive robots, in Transcultural Artificial Intelligence And Robotics In Health And Social Care Book authors: I. Papadopoulos, C. Koulouglioti, C. Papadopoulos, A. Sgorbissa. Publisher: Elsevier (available in 2022).** This chapter describes in detail the processes involved in the development of theories and tools which were used to collect and analyse data to help the production of and evaluation of the interim and final guidelines. The chapter introduces the ADORE model, which enables the robot to capture culture-specific information about the user, thus avoiding stereotypical culture-generic information. The Cultural Iceberg Trigger theory is also introduced and explained. This theory enables the researchers to explore and capture the enactment of behaviours that represent the human subconscious cultural values, beliefs, and perceptions. Both theories were used to develop tools for data collection and analysis of an observational study which is discussed in this chapter. Available [here](#).

What do national legislation and international/European treaties and conventions say on the topic?

As the ADORE model/approach was developed to enable the use of robots in a specific project, there are no European or international treaties and conventions written about it. Specifically, ADORE aims to enhance the quality of life for older people and help them retain as much independence as possible. However, the aim of the ADORE is compatible with many guidelines and policies the participants would have come across in the previous learning units. For example, the following principles adopted by ADORE are either explicit or implicit in them: (1) technology shall take into account cultural diversity, (2) technology shall be equally accessible to people from different cultures, (3) stereotyping shall be avoided in AII and robotic developments.

German Ethics Council (2020). Robotics for Good Care: Opinion. Berlin. A recent publication from the German Ethics Council also refers to these and other principles, and it is worth reading by participants who have the time and wish to expand their knowledge. Available here.

PRACTICAL COMPONENT

Learning Activities

Activity 1: Mrs Khan's headache

- Please, read the following dialogue between a robot and Mrs Khan, an older woman who lives alone. She has one son and a daughter who are married but live in another town. Then answer the questions which are after the dialogue.

  ROBOT: Mrs Khan, you are very quiet today, can I play some cheerful Pakistani songs for you?
  MRS KHAN: No thank you, I am quiet because I have a bad headache.
  ROBOT: You have a headache. I will bring you some water so you can take a headache tablet.
  MRS KHAN: Thank you. You are very helpful.
  ROBOT: I will ask you if your headache is better in half an hour.
  MRS KHAN: I hope you are right. I will let you know.

- Questions:
  o What was the robot trying to do in the above dialogue?
  o What stages of the ADORE model did the robot use during the dialogue?

- Resource needed. Word or similar writing software, or paper and pencil.
- Duration of activity: 10 minutes.

Activity 2: The importance of accurate assessment of a person's culture

- Based on the learning you have acquired during this course, prepare a reflective account of 500 words about the importance for the robot to make an accurate cultural assessment for the person it has been assigned to.
- Post your reflective account on the discussion board of the social platform for collaborative learning for others to read and discuss/comment.
- Read someone else's reflective account for this activity and offer constructive comments and suggestions.
- Resource needed: Word or similar writing software, or paper and pencil; social platform for collaborative learning.
- Duration of activity: 15 minutes.

ASSESSMENT COMPONENT

Assessment Activities

Activity 1. Mrs Khan's has a headache again.

- Answer the following questions based on the dialogue 'Mrs Khan's headache'.
    - What ADORE steps has the robot adopted?
    - How did the robot demonstrate culturally appropriate actions?
    - Suggest a sentence or a question the robot could use to show more awareness of Mrs Khan's culture.
    - What principles and values associated with this learning unit has the robot used during its encounter with Mrs Khan?
- Resources needed: Word or similar writing software, or paper and pencil.
- Duration of activity: 5 minutes.

Activity 2: Crossword

- Complete the crossword puzzle about the ADORE model (available here).
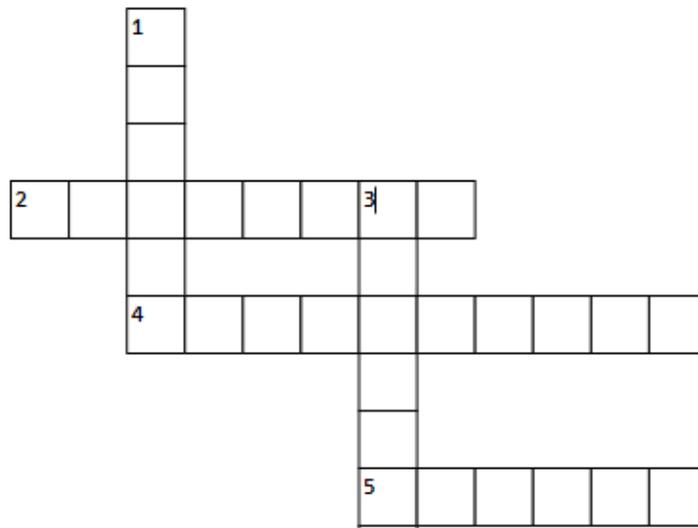
Across

2. The ADORE model helps us collect culture-generic and culture ---------- data

4. What does the ADORE model help us NOT to do?

5. What is the 4th step in the ADORE model?

Down

1. Which is the first step in the ADORE model?

3. Which metaphor has culture been likened to?

- Resource needed: CrosswordLabs, a tool for online crossword puzzles.
- Duration of activity: 5 minutes.

EVALUATION COMPONENT

Participants to evaluation

The online evaluation questionnaire of each Learning unit is completed by the MOOC participants (students and student/facilitators) on Survey Monkey

What to evaluate

The Learning Unit's evaluation criteria are: coverage of the identified learning needs, innovation, quality of the content and training materials, intuitive and friendly presentation, relevance of learning activities, and efficiency for achieving established learning outputs.

Please, complete this online evaluation of the learning unit by clicking on this link:

https://www.surveymonkey.com/r/LMD5MW3