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SIMULATION-BASED LEARNING IN OCCUPATIONAL THERAPY EDUCATION (SIMBA)

Report on Activity 2, Work Package 4:

Overall report best practice visits simulation-based learning

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Introduction

During the period from November 2023 to February 2024, visits to the following educational programs took place:

- FH Johanneum (Austria): nursing department
- Hanze University of Applied Sciences (the Netherlands): occupational therapy department
- Istanbul Medipol Universitesi Vafki (Turkey): nursing department
- Rotterdam University of Applied Sciences (the Netherlands): occupational therapy department
- Turku University of Applied Sciences (Finland): nursing department
- University of Applied Health Sciences (Croatia): nursing department

When visiting the various educational programs, an evaluation of simulation-based education was consistently conducted based on a SWOT analysis. The internal analysis focused on the strengths and weaknesses of simulation-based education, while the external analysis examined potential threats and opportunities regarding simulation-based education. This report consolidates all the findings gathered from the reports of the good practice visits.

The following sections present the evaluated themes in a structured manner, along with an overview of the key findings.

Evaluated themes

When conducting the SWOT analysis, the evaluation of the following themes was included:

1. Simulation-based learning (SBL) method
 - a. learning needs and objectives/goals
 - b. competencies (*i.e.*, *soft skills vs. technical skills*)
 - c. forms of simulation (*e.g.*, *case-report, simulated or standardized patient, hands on/digital, etc.*)
 - d. structure of simulation (*i.e.*, *duration, number of students, included elements e.g., briefing & debriefing, etc.*)
 - e. student involvement (*e.g. active participant, observer, etc.*)
 - f. prerequisite knowledge and skills (*including how do students gather the prerequisite knowledge and skills? e.g. digital or physical classes, self-study, etc.*)
2. Development of simulation-based learning
 - a. involved stakeholders (*e.g., experts didactics and simulation, professional experts, current students, former students, teachers, IT, etc.*)
 - b. selecting scenarios
 - c. practical considerations (*i.e., creating environment, scheduling and organization, materials*)
3. Resources
 - a. staff / personnel (*including teachers, live models, volunteers, administrative support, IT, etc.*)
 - b. infrastructure
 - c. materials
 - d. administrative and financial (*e.g., how are simulants reimbursed, how is SBL scheduled, how are simulants kept involved, etc.*)
4. Assessment
 - a. form(s) of assessment (*e.g., Observational Structured Clinical Examination (OSCE), formative, summative, etc.*)
 - b. scoring, assigning grade/point
 - c. structure and practical considerations (*i.e., duration, number of teachers, content, materials, student level (junior, intermediate, senior), scheduling, etc.*)

- d. number of assessments / items per competency
- e. development process
- f. involved stakeholders (e.g., experts didactics and simulation, professional experts, current students, former students, teachers, IT, etc.)
- g. congruence between SBL and assessment (an assessment that uses simulation used for program-based assessment or only for specific course content/competencies?)

Overview of the key findings

1. Simulation-based learning method

In which areas do the programs excel in terms of used SBL method (STRENGTHS)?

A key strength was the integration of SBL into the curriculum across all 3/4 years of undergraduate study and in a continuous or weekly basis.

In some programs, there is a strong emphasis on student self-regulated learning. The student takes on the role of director of their own learning. Within the SBL trajectory, this can involve tasks such as seeking persons to take on the role of simulated client, scheduling feedback sessions, arranging briefing sessions with selected simulated clients, etc.

The utilization of detailed simulation scenarios, accompanied by supplementary background information provided to both the simulant and the student, enhances the learning experience. These scenarios vary according to student level and depend on the structure of the curriculum.

SBL within nursing and occupational therapy education is predominantly employed for the acquisition and assessment of professional competencies in anticipation of fieldwork and practice. Enhancing communicative skills occupies a significant role.

Allowing ample time for students to thoroughly prepare for simulations (e.g., gathering necessary background information, processing data, preparing for interventions to be performed) was also identified as a key strength. Effective coordination among all involved instructors and SBL experts.

Which points require additional attention? Potential issues that may arise include (WEAKNESSES):

Within occupational therapy programs there is limited diversity in forms of SBL, the emphasis is on role play as a form of simulation, with only limited use of trained simulated clients. In nursing education, mannequins are frequently employed.

Inadequate attention to a safe learning environment in SBL, which may impede learning opportunities.

Which factors may pose a threat to the good practice of SBL? Examples of potential threats include (THREATS):

The abandonment of traditional theory classes and summative testing may pose a potential threat to the quality of the occupational therapy profession.

What opportunities for growth and improvement exist? Events that could provide opportunities include (OPPORTUNITIES):

The use of a variety of simulations (e.g., hands-on, digital, case reports, trained simulators), involvement of SBL experts, and increasing complexity throughout the progression of the program are identified as significant opportunities.

2. Development of simulation-based learning

In which areas do the programs excel in terms of development of SBL (STRENGTHS)?

The development and selection of scenarios that align with the intended learning objectives (generic or specific).

The integration of SBL into the curriculum throughout the entire program, featuring a gradual progression from basic to complex levels. In this manner, it ensures thorough preparation for workplace learning.

Establishing a safe learning environment for SBL, allowing students to practice without inhibition, dare to make mistakes, freely provide feedback, etc.

Which points require additional attention? Potential issues that may arise include (WEAKNESS):

The lack of uniformity in the design of written scripts (e.g. use of a template for the development).

The development of SBL requires a significant amount of time, as does the preparation of the simulation environment, the necessary materials, and the cleanup work after the simulation experiences.

Which factors may pose a threat to the good practice of SBL? Examples of potential threats include (THREATS):

One major challenge is scheduling simulation experiences within already packed program schedules, often with a large number of students.

Having a large group of teachers can make it difficult to achieve and maintain a consistent approach to planning and implementing simulation methods within one team.

What opportunities for growth and improvement exist? Events that could provide opportunities include (OPPORTUNITIES):

Developing SBL scripts and scenarios for different skill levels so that they can be used throughout the different years of the education program. The Simba Guidelines refers to this as constructive alignment and grading over time to increase complexity (dynamic, upward and spiral evolution of learning cycle).

Exploring the possibility of introducing actors as simulation models.

Integrating role-playing at the start of the programme to gradually familiarise students with simulation.

3. Resources

In which areas do the programs excel in terms of resources for SBL (STRENGTHS)?

Educators with extensive experience and expertise.

Simulation labs, fully equipped with mannequins, necessary materials, recording equipment and the ability to seal off the room from ambient noise, passing students, etc. An environment that is also very close to reality and therefore ensuring authenticity.

Ability to use enclosed practice rooms with a one-way screen and recording and sound equipment.

Incorporating adequate time for training colleagues with limited experience and ensuring consistency in student supervision during SBL.

Which points require additional attention? Potential issues that may arise include (WEAKNESS):

Using a spacious room divided by curtains to create all kinds of utility areas is not recommended. It provides too many stimuli, especially auditory ones. This raises the question of whether this environment provides enough 'safety' to allow unhindered engagement with SBL. Moreover, authenticity comes under pressure.

Which factors may pose a threat to the good practice of SBL? Examples of potential threats include (THREATS):

The availability of financial resources, e.g. for adjustments to infrastructure, purchase of supporting didactic materials (e.g. recording and sound equipment), is limited. This may hinder proper development and implementation of SBL in the curriculum.

The availability of time, as a valuable resource for planning and implementation of SBL, is often limited within educational programmes.

What opportunities for growth and improvement exist? Events that could provide opportunities include (OPPORTUNITIES):

The cooperation of administrative departments in scheduling classes in the required classrooms, scheduling simulants and teachers, gives the teachers involved more space to prepare the SBL classes.

4. Assessment

In which areas do the programs excel in terms of SBL (STRENGTHS)?

Maintaining the Constructive Alignment between the predetermined learning objectives, the learning activities, and the assessment.

A combination of well-considered formative and summative assessment moments, wherein the formative assessments are primarily oriented towards 'assessment FOR learning' (*emphasis on growth of student*). The summative assessments are utilized for both 'assessment FOR / AS learning' and 'assessment OF learning'.

As part of formative assessment: from the start of the study programme, providing extensive opportunities and avenues for learning to give and receiving feedback, wherein various forms can be viewed positively:

- 360° feedback (delivered orally or via an e-portfolio): provided by peers, facilitators, and instructors
- Feed up – feedback – feedforward (Hattie & Timperley, 2007)
- Pendleton's feedback Model: furnishing positive feedback, suggestions for growth opportunities, and a concluding summary. Participation from each stakeholder.

For summative assessment:

- Ensuring that student-level assessments adhere to (the national) proficiency standards established for occupational therapy.
- The use of standardized protocols for conducting evaluation/assessment of target competencies (e.g. OSCE).

Which points require additional attention? Potential issues that may arise include (WEAKNESS):

While placing significant emphasis on student growth is commendable, solely relying on formative assessments may pose a potential threat to the adequate acquisition and consolidation of necessary knowledge for professional practice.

Giving and receiving feedback:

- Unstructured process, e.g. absence of note-taking, lack of guidelines
- Students are still insufficiently proficient in giving and receiving feedback, leading to a sense of insecurity when they are required to evaluate each other in the full classroom setting.

Which factors may pose a threat to the good practice of SBL? Examples of potential threats include (THREATS):

When students know they are undergoing a summative assessment, it can cause them stress, anxiety and a sense of insecurity.

What opportunities for growth and improvement exist? Events that could provide opportunities include (OPPORTUNITIES):

The giving and receiving of feedback is not straightforward. Students require guidelines and sufficient time to learn and master this process step by step. It is a process that must be practiced repeatedly from the beginning of the program in a safe learning environment where making mistakes is allowed. This way, students become proficient.

By utilizing a simulation-based assessment, which can be employed for both formative and summative evaluation, students can identify areas for learning and growth as well as understand the expected level of proficiency.

When designing an assessment, it should be considered that the instrument must also be deployable for high-stakes evaluation of the students.