# Developing Teachers´ and Nursing Students´ Competencies in Digital Nursing / SmartNu

# Sustainability Plan

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# Tabel of content

# 1   Overview of the main challenges:

- Internet connections, equipment
- Language and digital competences of teachers
- Demanding local procedures, administrations
- Workload of the teachers, project team members, changes in staff
- Lack of project work experiences
- Connections with local key stakeholders
- Needs for nurses
- Culture of quality

**How to minimize the threats**

**Sum:**

**Project consortium**
- Project communication and coordination continuation (after project?)
- Sharing (better organization) of tasks between team members
- Maintaining motivation
- future funding opportunities
- Networking

**Management of HEI**

- Internal administration
- Support to purchase, financial management
- Communication with authorities to support project work
- Protection/safety of technological equipment
- Investment in access and quality of internet connection, equipment (for students, teachers)
- Improving infrastructure of nurses
- Rooms and trainings for teachers to improve digital skills
- Better access to platforms
- Support to transfer knowledge, strategies into practice (teaching)

# 2   Overview SWOT analysis

| SUM of strengths: | SUM of opportunities: |
|---|---|
| <ul><li>Autonomy of the institution</li><li>New curricula, educational model - possibility to implement SNM (Smart Nurse Methodology)</li><li>Motivated, experienced teachers</li><li>Connections with local key stakeholders</li><li>Dissemination capabilities</li><li>Ability to follow population needs</li><li>Needs for nurses</li><li>Culture of quality</li><li>Good technological infrastructure</li></ul> | <ul><li>Lack of nurses</li><li>Digital competences of nursing students</li><li>interest of nurses and experiences of cooperation in EU projects</li><li>communication media at HEI</li><li>sharing knowledge, connections with other HEIs in country/region, opportunities to develop joint projects</li><li>good connections with local stakeholders, agreements in the public and private sectors</li></ul> |

| | |
|---|---|
| • Location and positions of HEI | • pioneers, novelty of such project in country, reference<br>• increasing number of bilingual professors, language competences<br>• adaptation of internationally best practices to curricula, international dissemination; exchanging previous successful sustainability practices |
| SUM of weaknesses:<br><br>• Lack of internet availability<br>• Low technical/technological equipment, security<br>• Lack of possibilities to train students using digital technologies<br>• (English) language competences of teachers<br>• Digital competences/literacy of teachers<br>• Lack of project support by institution<br>• Demanding local procedures, administrations<br>• Workload of the teachers, project members<br>• Lack of project work experiences | SUM of threats:<br><br>• Key: Bad financial predisposition and IT infrastructure; no financing to improve technological and other infrastructure<br>• Change of leaders in HEI, status of HEI<br>• Departures of key team members<br>• Increased workload<br>• Low motivation<br>• Inappropriate local regulations, guidelines, project work recognition<br>• Pandemic<br>• Non-acceptance by health personnel |

## 2.1 Ensuring sustainability of the project outcomes

SUM:

• Monitoring and constant curriculum up-dates
• Prolonged networking and collaboration opportunities
• Localization of the training content
• Mandatory trainings for teachers
• National workshops for healthcare personnel

# 3 Cross-cutting themes

## 3.1 Gender balance

Although historically the female gender has predominated in the nursing profession, the didactic methods and tools used in the project do not differentiate between the genders.
There are some situations where access to technology is unequal for female students, in the sense that female students have more responsibilities at home due to role assignment, courses can be organized for students in unfavorable situations.
During project activities, all identifiable opportunities to create or influence discrimination are eliminated. The methodological approach is inclusive, the term "he" or "she" is not used, but "they",

we are equal in the group, there is no such difference, nor is this differentiation promoted, with zero tolerance for discrimination. Avoid expressions that are not favorable to others, regardless of gender.

## 3.2  Sustainable development

Quality education, the knowledge you acquire, no one can take it away from you; access to healthcare centers and clinics for every citizen, that is about to shorten the gap between these problems and the population. Incorporating digital tools into nursing means improving skills, curricula, and healthcare facilities. The links between higher education institutions and networked institutions such as national nursing authorities and hospitals (national network and ISSS) have been developed and strengthened.

This project could benefit future generations of nurses using digital tools in primary health care. In addition, these digital tools could reach the entire population.

## 3.3  Unemployment

- Digital skills can help students or nurses get a better job because these skills make them more competent and can be applied directly to patient care.
- Higher education institutions can form instructor/trainer groups for other institutions and replicate the methodology.
- The methodology can indirectly help patients if nurses have the skills and apply them in the population.
- Form support groups to train the population in health promotion through digital technology.
- Online counseling centers can be established to support health education of the population and provide a source of employment for nurses.
- In Mexico, there is currently little unemployment in nursing (although pay is low). In El Salvador, the pandemic issue has increased the demand for nurses.
- Offer continuing education and training courses for graduates and the general public.
- In the areas of chronic disease management and preventive healthcare THE PATIENTS, they would have a better chance of being treated and could improve their employment opportunities while they are sick.

## 3.4  Social cohesion

- As a team, students and society achieve social integration
- Integration of cultures, teamwork despite differences between cultures.
- Social development aimed at empowering patients and promoting self-care. It will improve the health of people.
- Pedagogical aspect: new teaching methodologies, social relations between students will be strengthened. Collaborative work, self-management.
- How students use technology to improve health conditions in their community.
- Strengthening of teaching activities.
- Dissemination, socialization with other professionals from the same country, teaching innovation.
- Innovation with students using new methods.
- Publicizing in social networks, the dissemination of the project and its results and training.
- Inclusion to the Diginurse Community, possibilites for dissemination that will be carried out.
- Scientific and professional publication of the results and progress of the project in professional and scientific journals.
- Integration with other professions to transfer knowledge regarding development of SmartNurse methodology and  dissemination.

- Linkage with national and international institutions.
- Creation of support centers in primary health care to strengthen health education in the field of health or specific to the methodology. Listen to the patient.
- Social capital is increased through dissemination and thus knowledge is shared.
- Easy access to different international tools.

## 3.5 Ethical considerations
- The method of problem-based learning must take into account patient confidentiality.
- Ethical risks with digital applications such as videos.
- The lack of informed consent when used with the patient.
- Informed consent when used with students.
- Licensing of the resources created.
- The products that remain available as part of the project or can be used at another time.

# 4 Relevance of the project relevance to national context
## 4.1 Mexico (UASLP, UAA) context
Strenghts: Authorizations from the authorities, support in the process of institutional management, work spaces, teaching staff, students and consortium with availability, work spaces for students, continuous training of teachers in digital tools, strengthening of the technological infrastructure.
Weaknesses: Knowledge of digital strategies by teachers, little updated computer equipment, saturation of activities of teachers that limits work meetings, dissemination of the project within the Faculty of Nursing. Payment of digital tools or apps.

Opportunities: Free access educational digital tools (apps) that have contributed to active learning, links with organizations such as the Mexican Federation of Faculties and Schools of Nursing (FEMAFE) for the dissemination of the activities carried out in the project, access to free magazines for publication, academic and scientific events (colloquiums, congresses and webinars) that allow the dissemination of the results of the project among academic institutions. Dissemination of the project in digital media institutions.
Threats: Planned obsolescence of computer equipment, delay in the provision of economic resources, the time allocated for class preparation, the lack of willingness of students to participate in scheduled activities, teaching strategies not appropriate to the themes of the programs of study, underutilization of purchased equipment.

### 4.1.1 Mexican national work plan
- Organize teacher training at the local level before the beginning of the semester or between semesters so that teachers who take it can schedule their digital strategies in advance.
- Organize Teacher Training at the national level with the participation of the National Institutions twice a year.
- Develop and disseminate a catalog of digital tools and strategies for free access teaching.
- Generate webinars (teachers and students) to share learning, experiences, good practices, in the use of digital strategies and tools.
- Create specific research projects and inter-institutional collaboration networks initially between UASLP and UAA on lines of knowledge generation related to health sciences and the use of digital technologies.
- Recurrently invite members of the SmartNurse consortium each time local congresses or seminars are held to disseminate the results and experiences of the project.

- Include teacher training workshops on SmartNurse in the FEMAFE national congress Annually. (Nov 2022, 2023, 2024).
  - o Flipped Classroom / AR Workshop (plikers, wordwall, kahoot, mentimeter etc.)
  - o Create SmartNurse course catalog, to share on national networks.

For plans of activities see pictures below:

## Linea de tiempo: SmartNurse / UASLP -UAA

| Dic- 2020 – jul 2021 | Sep – nov 2021 | Enero– Mayo 2022 | Junio– dic 2022 | Junio– Dic. 2022 |
|---|---|---|---|---|
| Planeación de las actividades Organización de los actores (docentes) Capacitación de los docentes Revisión de literatura | Pilotaje No.1 - Medición 1 - Implementación - Medición 2 - Análisis de datos Construcción de categorías Redacción de articulo | Capacitación 2 con equipo de cómputo Pilotaje 2 Construcción de categorías Redacción de articulo | Organizar teacher traning local aOrganizar Teacher Training a nivel nacional Participación del equipo SmartNurseen las reuniones de la FEMAFE y otros eventos científicos. | Organizar reuniones de intercambio de buenas prácticas docentes por lo menos dos veces por año Elaborar y difundir un catálogo de herramientas digitales y estrategias para la enseñanza de libre acceso |

**Gestion de recursos**
La gestión de recursos se ha realizado a través del tiempo

**Gestion de recursos**
La gestión de recursos se ha realizado a lo largo del tiempo

**Adicional a la fase 05**
Concluir el articulo
Publicar en una revista científica el articulo

| Mes | junio | | | | Julio | | | | Agosto | | | | Septiembre | | | | Octubre | | | | Noviembre | | | | Diciembre | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Semana / Actividades | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Elaborar y difundir un catálogo de herramientas digitales y estrategias de enseñanza | | | | | | Vacaciones UAA | | | | | | | | | | | | | | | | | | | | | | |
| Organizar teacher traning a nivel local intersemestral | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Organizar Teacher Training interinstitucional | | | | | | VACACIONES UAA | | Vacaciones UASLP | | | | | | | | | | | | | | | | | | | | |
| Implementación de pilotaje 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Participación del equipo SmarNurse en eventos académicos de enfermería | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Organizar reuniones de buenas prácticas docentes en enfermería | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elaborar informe de actividades realizadas | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Compartir el catálogo de herramientas con Universidades de El Salvador | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Mes | ENERO | | | | FEBRERO | | | | MARZO | | | | ABRIL | | | | MAYO | | | | JUNIO | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Semana del mes / Actividades | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Realizar reunión de inicio de año | | ■ | | | | | | | | | | | | | | | | | | | | | | |
| Actualizar el catálogo de aplicaciones para la enseñanza de enfermería | | | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | | |
| Difundir el catálogo de manera interinstitucional y con las Universidades de El Salvador | | | | | | ■ | ■ | | | | | | | | | | | | | | | | | |
| Realizar teacher training interinstitucional | | | | ■ | | | | | | | | | | | | | | | | | | | | |
| Organización de la siguiente prueba piloto | | | | | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | | | |
| Aplicación de la prueba piloto | | | | | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Elaboración de informe de actividades realizadas | | | | | | | | | | | | | | | | | | | | | | ■ | | |
| Webinar virtual compartiendo experiencia de la metodología Smart Nurse entre la UAA y la UASLP | | | | | | | | | | | | | | | | | | | | | | | | ■ |

| Mes | Julio | | | | Agosto | | | | Septiembre | | | | Octubre | | | | Noviembre | | | | Diciembre | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Semana del mes | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| **Actividades** | | | | | | | | | | | | | | | | | | | | | | | | |
| Organización del semestre para la aplicación de la metodología Smart Nurse | | | | | ▨ | ▨ | ▨ | ▨ | | | | | | | | | | | | | | | | |
| Construcción de formatos de clase | | | | | | | ▩ | | | | | | | | | | | | | | | | | |
| Entrega de planes de clase de manera común en un Sharepoint o sitio común | | | | | | | | ▨ | | | | | | | | | | | | | | | | |
| Implementación de la metodología Smart Nurse | | | | | | | | | ▦ | ▦ | ▦ | ▦ | ▦ | ▦ | ▦ | ▦ | ▦ | ▦ | ▦ | ▦ | | | | |
| Elaboración de informe de actividades realizadas | | | | | | | | | | | | | | | | | | | | | ▨ | | | |
| Webinar: compartiendo nuevas experiencias de metodología Smart Nurse | | | | | | | | | | | | | | | | | | | | | | ▧ | | |

## 4.2  El Salvador Sustainability Action Plan  (IEPROES, UES, UGB)

### 4.2.1   UGB  context (SWOT)

| Strenghts | Weaknesses |
|---|---|
| • Teaching staff committed to the project.<br>• It has a very complete digital platform.<br>• E-learning team to provide support and assistance.<br>• Online bibliographic databases.<br>• Socio-educational model based on competences. | • Poor ability to speak and understand a<br>• second language (English) in nursing staff.<br>• Personnel assigned to the project with various assignments.<br>• Work overload on staff. |
| Opportunities | Threats |
| • Have the entire eastern region of the country to develop the project.<br>• To be pioneers in the country with an innovative project in the country.<br>• Be a reference and have a presence in the Ministry of Health.<br>• Agreements in the public and private sectors. | • Non-acceptance by health personnel in local establishments.<br>• Have the financial disposition of the institutions so that their staff can participate. |

### 4.2.2   UES context

The University of El Salvador has 12 Faculties, 9 of them are in its Central Campus "Dr. Fabio Castillo Figueroa" and three Multidisciplinary, located in the Departments of Santa Ana, San Miguel and San Vicente. UES is the only public University in El Salvador, the Faculty of Medicine have eleven degrees among them nursing degree. As UES we have signed cooperation and understanding agreements with the Ministry of Health (MINSAL), Salvadorean Institute of Social Security (ISSS), Association of nurses El Salvador (ANES), private health institutions and international university also, UES have dissemination units such as radio, TV campus, digital newspaper, social networks and so on for the dissemination and exploitation of research. The Faculty of Medicine must face some weaknesses, one of them is the digital gap. Internet access for students and teachers is around 20%, which is a very low access for the numbers of students that we have also the faculty does not have a update technological equipment for teachers and students, classes are held with outdated technological equipment. The digital gap has reached such a point that teachers do not know how to use modern technological tools, which makes it difficult to use digital pedagogical tools and computer systems. The great threat that UES and Faculty of Medicine has is the budget allocated by the State to the University. The budget of the university is too little to be able to maintain the technical laboratories of the medical school and other faculties of the university. The opportunity of Faculty of Medicine for the Nursing degree is that the SmartNurse project is being developed while the nursing study plan is being updated. Nursing major is currently updating its curricula, now per competencies (80% of progress), the project will input towards digital modernization.

### 4.2.3 IEPROES context

| Strenghts | Weaknesses |
|---|---|
| • Strategic location (3 campuses on the main cities)<br>• Professors' experience in nursing<br>• Leading nursing institution nationwide<br>• IEPROES is a primary provider of nursing professional for the Healthcare System | • Professors excessive work load, limit their participation in project<br>• Each campus has a different academic calendar, makes it difficult to coordinate activities<br>• Language barrier, only 3 professors are bilingual<br>• Administrative and other internal process have slow tendency due the lack of a specific structure to make actions more effective<br>• Professors have limited tech skills to integrate multiple digital tools in the class room<br>• El Salvador has connectivity issues, up to date LTE has a prevalence and 4G is present onlimited locations<br>• IEPROES first experience with Eramus + Projects |
| Opportunities | Threats |
| • Increase number of bilingual professor<br>• Professors with positive attitude to adopt international best practices to curricula<br>• Institution has a focus to integrate academic excellence in their curricula<br>• Develop joint project with other national and regional HEIs | • IEPROES does not hold a University category<br>• Professionals prefer an University Degree even if academic quality is inferior<br>• Other HEIs have a long standing record on Erasmus+ Projects |

## 4.3 National Action Plan

- Establish a timetable per semester to have periodic teachers' trainings (full time, part time and clinical practice) in our institution looking for updated digital tools and methodologies managing with the corresponding authorities the spaces where the teaching trainings will be developed.
- Annual meetings with other HEIs in El Salvador in order to set goals and improvement agreements for SmartNurse methodology
- Create annual goals records about the use of Smart Nurse methodology.
- Show MINSAL the obtained goals and look for their support in order to develop activities related to teaching, in place practice and research related with Smart Nurse methodology
- Negotiate an Agreement with MINEDUCYT, to develop trainings and courses related with digital tools for HE.
- To add the methodology in the development of contents related to health promotion, since it has only been visible for illness prevention.
- To show the benefits of applying the Smart Nurse methodology in the study plan of the Degree of Nursery to MINSAL and ISSS.

### 4.3.1 UES

To maintain the outputs of the project UES will does, Finance management to increase internet capacity and purchased new technological equipment; create a training plan for teachers and students to strengthen the use of computing and digital tools; add the SmartNurse methodology in the new study plan per competencies for 2024; set an agreement with the National Association of Salvadoran Nurses, for the dissemination of the SN methodology within the nursery professionals in private and public institutions and follow up the dissemination towards the development of the SN methodology through the official means of UES, at national level and social networks.

### 4.3.2 IEPROES

- Create a monitoring plan of the aplication of smartnurse methodology.
- Programming of activities in the short, medium and long term so that the teachers of IEPROES implement the methodologies of SmartNurse.
- Contingency plan so that all teachers can master the English language, in their writing, speaking, reading and listening technical vocabulary regarding nursing/ medical terms.
- Promote in teachers the research of new technological tools to be applied in the classroom. Then, give continuity to the research, knowing the experiences of students and teachers when using these tools.
- Have a budget stablized for the sustainability plan
- Provide a mandatory english program to have more bilinguial teachers.
- Continuous strenghtening of human talent and permanent use of technologies.
- Provide adecuate equipment for teachers

### 4.3.3 UGB
- Design and execute a plan for bilingual training for nursing teachers.
- Incorporate SmartNurse methodologies into continuing education for teachers.
- Promote in research teachers the design of studies for SmartNurse methodologies and virtual tools.
- Innovate and update tools, applications and digital strategies to strengthen SmartNurse methodologies.
- Design an annual budget to strengthen digital methodologies.
- Design a dissemination plan on digital methodologies.
- Train nursing professionals on digital tools for self-care.
- Design a familiarization plan of virtual tools for MINSAL and ANES.
- Manage and implement letters of cooperation between HEIs of the Project.
- Lead the program to incorporate the Smart Nurse methodology at the country level.
- Design implementation program of Smart Nurse methodologies.
- Disseminate to deans, vice-deans, directors and strategic teachers the Smart Nurse methodologies.

- Disseminate to CEFRES and strategic teachers the Smart Nurse methodologies.
- Disseminate to cooperators from Latin America and the Caribbean the Smart Nurse methodologies.
- Meetings of teaching, student and nursing professional to share experiences of the implementation of Smart Nurse methodologies.
- Incorporate topics related to the Smart Nurse methodology into the research agenda of each HEI.
- Develop a diagnosis on the use of technological resources and tools of the participating institutions.

## 4.4 Continuation of teacher capacity building

### 4.4.1 Nacional:

- Annual meetings with other HEIs in El Salvador in order to set goals and improvement agreements for SmartNurse methodology
- Create annual goals records about the use of Smart Nurse methodology.
- Show MINSAL the obtained goals and look for their support in order to develop activities related to teaching, in place practice and research related to the Smart Nurse methodology
- Negotiate an Agreement with MINEDUCYT, to develop trainings and courses related with digital tools for HE.

### 4.4.2 UES

- Diagnosis of needs on digital methodology and digital platforms training
- Teacher's monthly and annual training plan.
- Internal pilot tests every semester.
- Evaluation of teacher's developed activities
- Training plan of new resources for the use of Smart Nurse methodology
- Evaluate the study plan in order to check that courses include Smart Nurse methodology. This evaluation should be performed every five years, according to MINEDUCYT.

### 4.4.3 IEPROES

- Establish a timetable per semester to have periodic teachers' trainings (full time, part time and clinical practice) in our institution looking for updated digital tools and methodologies managing with the corresponding authorities the spaces where the teaching trainings will be developed.
- Create a program for teaching English as a second language.

### 4.4.4 UGB

- Train strategic teachers from each HEI on Smart Nurse methodologies.
- Train Teachers on virtual platforms
- Train teachers from the 11 HEIs in El Salvador on virtual tools.
- Train teachers on the implementation of the Smart Nurse methodology.

## 4.5 Plans how further development activities.

### 4.5.1 UES

- To add the methodology in the development of contents related to health promotion, since it has only been visible for illness prevention.
- To show the benefits of applying the Smart Nurse methodology in the study plan of the Degree of Nursery to MINSAL and ISSS.
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### 4.5.2 IEPROES

- Make a timetable to monitor the application of SmartNurse methodologies and tools.
- Present to the authorities of our institution our sustainability plan to have their support in the implementation.
- Effective communication between HEI's authorities and the National Health System authorities to integrate teachers and assistants.

### 4.5.3 UGB

- Manage letters of cooperation with HEIs and other Institutions that are linked to the training of nursing resources to train in SmartNurse methodologies.
- Look for opportunities to disseminate the Project.
- Familiarize with the authorities of the MINSAL, INS, ANES about the Smart Nurse methodologies.
- Have an annual budget for the implementation of the Smart Nurse methodology.
- Have an annual institutional plan for the maintenance of resources.
- Manage external funds to expand technological resources.
- Manage external funds to implement workshops, training, courses, diplomas of the SmartNurse methodology.
- Manage external funds to train human talent.
- Develop research in conjunction with the HEIs participating in the Project.
- Evaluate the introduction of Smart Nurse methodologies in reviews of the nursing careers curriculum.
- Implement Smart Nurse methodology in the study plan of nursing careers within the four nursing areas (direct care, teaching, research, administration).
- Network with nursing staff from the public and private health sectors to implement Smart Nurse methodologies.

- Maintain the training of teachers, students, and nursing professionals in Smart Nurse methodologies in health establishments where students carry out their clinical practice.
- Motivate researchers to carry out an impact assessment of Smart Nurse methodologies.
- Design a quality committee for the monitoring and follow-up of the activities of the Smart Nurse methodology.
- Prepare a strategic plan for the planning, organization, execution, and evaluation of the processes of the implementation of the Smart Nurse methodology.
- Design a teacher evaluation instrument on the use of Smart Nurse methodologies aimed at students periodically.
- Promote the development of academic research, degree work on the Smart Nurse methodology.
- That the student implements the Smart Nurse methodologies through health education with the user who cares at the different levels of care, during their health-disease process.