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# D7.2 USER RECRUITMENT PROCEDURES

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| Authors | Amalia de Götzen, Miriam Bidoglia, George Gaskell |
| Reviewers | Ivano Bison (UNITN) |

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| Abstract | This deliverable will outline the user recruitment procedure adopted in the WeNet pilots. |
| Keywords | User recruitment, participation, engagement. |

## Document Revision History

| Version | Date | Description of change | List of contributor(s) |
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# EXECUTIVE SUMMARY

In this document, the WeNet consortium provides details on the procedures and criteria used to identify and recruit research participants for key components of the project. The procedures and criteria are developed to ensure adherence to all EU, national, and institutional level rules and regulations regarding the selection and treatment of human participants in research activities and the protection of data. Specifically, the consortium adheres to the procedures outlined by the research infrastructure (WP8) that are GDPR compliant and take into consideration national specificities as well as the rules and regulations of non-European partners regarding data protection. A common funneling procedure to select the participants is outlined together with the inclusion and exclusion criteria and participant engagement strategy.

The document is divided in two main parts. The first part reports on the user recruitment strategy adopted for the two pilot studies conducted in the first three years of the study. The second part defines the recruitment strategy for the final pilot.

The document does not seek to provide details concerning informed consent procedures, justification and methods for protecting personal data and operating in non-EU countries. These details are specified mainly in the deliverables see deliverable 10.2 and deliverable 11.1, while the context for those data collection, processing and use is explained in deliverable 1.4 and deliverable 6.5.





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# TABLE OF CONTENTS





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# DEFINITIONS

**iLOG:** Is the application developed by the university of Trento to collect sensors data and behavioral data through time diaries.

**WENET CHAT APPLICATION:** Is the application that has been developed by the consortium that operates on the WeNet platform. In the first pilot study the chat application was called ASKForHelp. This was changed to *WE@university_acronym* for the second pilot study.

**DIVERSITY PILOTS:** In the WeNet context we define diversity pilots as the two pilots that have been executed in different Universities (or pilots' locations) with the aim of collecting data about the students' characteristics and behaviors through online surveys and a iLog data collection.

**APPLICATION PILOTS:** In the WeNet context we define application pilots as the three pilots iterations in M26, M35 and M46 in which the WeNet application is tested.

**USERS**: In WP7 and in the WeNet project in general we refer to the students as the users of the WeNet application and developers/innovators as users of the WeNet platform. In this specific deliverable we will outline the engagement strategies in relation to the students, who are the users of the WeNet Chat application.



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# 1 OVERALL PLAN AND STRATEGY

## 1.1 USERS IN THE WENET PROJECT

Viewed from a business perspective, the WeNet project combines a core value proposition and some complementary features [1]. The core value proposition is the WeNet platform and the WeNet chat application. The curation of the research infrastructure is one of the complementary features. As depicted in Figure 1, the different offerings target different users and communities including students, innovators and researchers. The project constructs a complex ecosystem made of different technological components (platform, Apps and the technical infrastructure) but also of different stakeholders, users and communities. The WeNet project aims at building and nurturing the different communities that will naturally develop around these offerings. In particular WP6 will lead the strengthening of the innovators' community supporting the Open Calls activities (see Deliverable 8.4), while WP8 will lead the activities addressing the community of researchers. WP7 focuses on the students as users of the WeNet application(s), as discussed in Deliverable 7.1, where the field research highlights the commitment to meeting students/users' needs and desires through the evolution of the *We@university_acronym* app. In this deliverable the user recruitment procedure will be described in respect to the students which are the main users of the WeNet application and the main participants of the pilots.

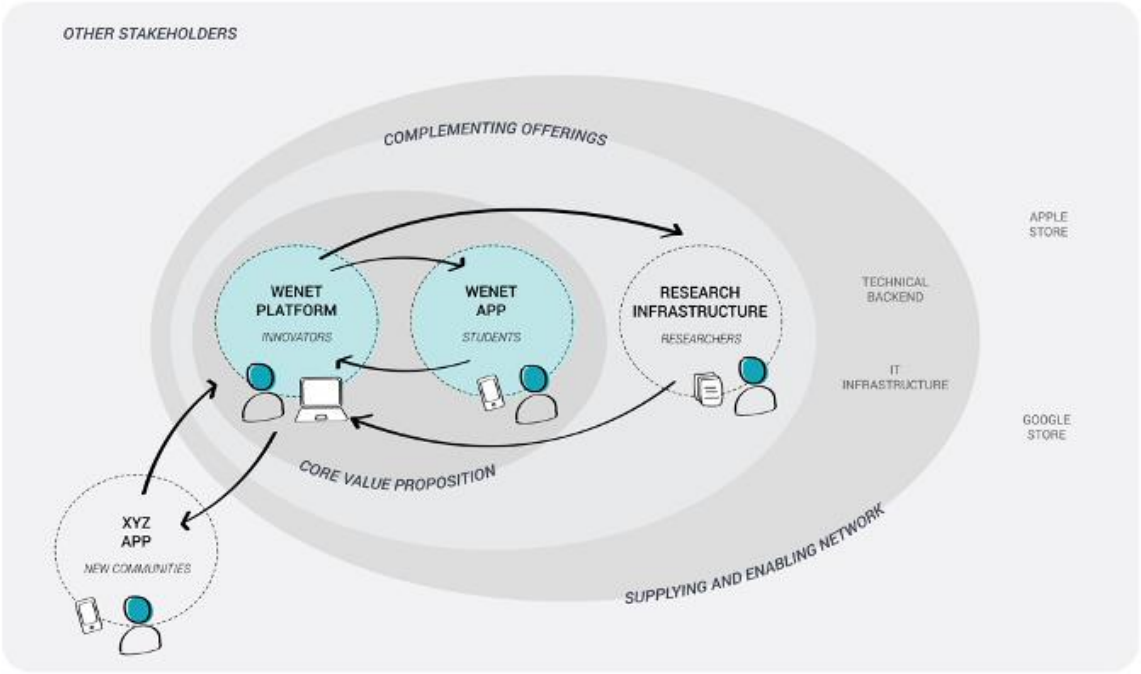


*Figure 1 Wenet Value Proposition and related Ecosystem*

## 1.2 PILOTS CONTEXT

During the first year of the project, extensive field research was conducted in the different pilot locations to better understand the students' life in the participating universities and to develop meaningful scenarios to work within the Diversity and WeNet application pilots. In this phase,


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students were interviewed and also representatives of the international office, study counsellors, academics and researchers (see D7.1 “Critical issues and scenario development”). The universities that took part in the pilots are Jilin University (China), Amrita University (India), Aalborg University (Denmark), London School of Economics (United Kingdom), University of Trento (Italy), The National University of Mongolia (Mongolia), the Universidad Católica Nuestra Senora de la Asunción (Paraguay), the Institute for Scientific and Technological Research of San Luis Potosi (Mexico). Before detailing the different pilots’ activities and the user recruitment procedures for each university, a short description of the universities is presented, to give an overview of the national and international diversity embodied in the WeNet consortium.

### 1.2.1 AMRITA

Amrita is the top ranked private University in India recognized as an Institution of Eminence by the government. Amrita has 16 schools spread across six campuses in three states of India – Kerala, Tamil Nadu and Karnataka, with the headquarters at Ettimadai, Coimbatore, Tamil Nadu. The University offers 200+ degree programs, in a variety of disciplines at the undergraduate, postgraduate, and doctoral levels. Amrita has 21,000+ students and 1800+ faculty members. The University also has a staff to student ratio of 1:10, one of the best in the country. The schools under the University offer programs in engineering, medicine, arts and sciences, business, ayurveda, biotechnology, sustainable development, social work, nursing, dentistry, pharmacy, allied health, humanities, nanosciences, mass and visual communication, physical sciences, agriculture and others. Amrita has established international collaborative initiatives with over 75 world-leading institutions in the U.S., Europe, Australia and Japan, with extensive faculty and student exchanges and cross-continental research projects.

### 1.2.2 AAU

Aalborg University (AAU) is recognized as the leading engineering university in Europe, with an interdisciplinary focus and close collaboration with the public and private sectors that involves 300-400 yearly research agreements with different companies.

AAU has three campuses in Aalborg, Esbjerg and Copenhagen. The research at AAU is organized in 4 faculties: The Faculty of Social Sciences, The Faculty of Medicine, The Technical Faculty of IT and Design, and The Faculty of Engineering and Science, 17 departments including 79 research centers. The degree programs include Bachelor's programs, Master's Programs, Guest and Exchange programs, PhD. Programs, single courses, and an international master's program. In 2021 the university offered +100 different BA programs and +100 MA programs, including several Ph.D. courses.

The WeNet WP7 pilot coordinators from AAU are part of the research group: Service System Design at the Department of Architecture, design and Media Technology within the Faculty of IT and Design.

### 1.2.3 IPICYT

IPICYT is one of the 26 Public Research Centers affiliated to the Consejo Nacional de Ciencia y Tecnología (CONACYT). CONACYT is the Mexican Government agency responsible for public policies in humanities, science, technology, and innovation throughout the country. Its major goal is to strengthen Mexico’s scientific and technological independence under the principles of humanism, equity, social welfare, environmental care, and the conservation of biocultural heritage.

IPICYT supports the natural and exact sciences with highly specialized multidisciplinary academic groups. It offers master’s and doctoral graduate



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programs in Molecular Biology, Environmental Sciences, Applied Geosciences, Control and Dynamical Systems, and Advanced Materials. It also hosts three national laboratories: The National Supercomputing Center (CNS), the National Laboratory of Agricultural, Medical and Environmental Biotechnology (LANBAMA), and the National Laboratory for Research in Nanoscience and Nanotechnology (LINAN).

### 1.2.4 JILIN

Jilin University is a national key comprehensive university under the direct administration of the Ministry of Education in China. Located in Changchun, Jilin Province, the university was founded in 1946. The university offers a wide range of disciplines, within 52 colleges or schools, covering 13 academic categories, namely: philosophy, economics, law, education, literature, history, science, engineering, agriculture, medical science, management, art and interdisciplinary. Among them, archaeology, mathematics, physics, chemistry, materials science and engineering, philosophy, law, mechanical and bionic engineering, electronic science and technology, geological resources and engineering, and one health are selected as “Double First-class” constructing disciplines according to the list released by the Ministry of Education. JLU has 140 bachelor’s degree programs, 61 master’s degree programs, 48 doctoral degree programs, and 2 interdisciplinary doctoral programs. It also has 44 post-doctoral research stations.

Jilin University engages in extensive exchanges with foreign countries and in close cooperative projects with other universities. It has established cooperation and exchange relations with 302 universities, research institutions or international academic organizations in 40 countries and regions. Among these, 48 are world top 100 universities, and an additional 67 are world top 200 universities. In recent years, we have cooperated with first-class higher institutions abroad, setting up 40 joint research centers and labs with universities and scientific research institutions from 12 countries. There are 73,035 full-time students, including 8,908 doctoral and 21,283 postgraduate students, 41,531 undergraduate students, and 1,164 overseas students- and some 6.500 academic staff.

### 1.2.5 LSE

LSE is dedicated solely to the study and research of social sciences. LSE awards a range of academic degrees spanning bachelors, masters and PhDs.

The school offers over 140 MSc programs, 5 MPA programs, an LLM, 30 BSc programs, an LLB, 4 BA programs (including International History and Geography), and 35 PhD programs. Courses are split across more than thirty research centers and nineteen departments, plus a Language Centre. LSE’s academic departments are Accounting, Anthropology, Economic History, Economics, Finance, Geography and Environment, Gender Studies, Health Policy, Government, International Development, International History, International Relations, Law, Management, Mathematics, Media and Communications, Methodology, Philosophy, Logic and Scientific Method, Psychological and Behavioural Science, Social Policy, Sociology, Statistics, European Institute, International Inequalities Institute, Institute of Public Affairs, Language Centre, Marshall Institute for Philanthropy and Social Entrepreneurship and the School of Public Policy. LSE has more than 11,000 students, just under seventy percent of whom come from outside the UK.

The LSE coordinators in the WeNet study have backgrounds in social psychology, sociology and research methods.

### 1.2.6 NUM



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The National University of Mongolia (NUM) was founded in 1942, the first university in Mongolia. During its historical development, the NUM has made a significant contribution to the foundation of the higher education system in Mongolia by establishing six new universities: currently known as the Mongolian State University of Education, the Mongolian University of Life Sciences, the Mongolian National University of Medical Sciences, the Mongolian University of Science and Technology, the University of the Humanities, and the Khovd University. The NUM has 6 schools, 2 local schools, 3 national institutes, and other research centers, as well as undergraduate and graduate students, scholars and faculty staff in its campuses. Campuses have 15 buildings of 62,000 meters square and are located in Ulaanbaatar, Erdenet and Zavkhan provinces. The 21,000 students (60% are female) are enrolled in 317 programs of which 78% are bachelors, 154 Masters and 46 PhDs.

The pilot partners of the National University of Mongolia (NUM) come from the “Information and Computer Science” and “Electronics and Communication Engineering” departments.

### 1.2.7 UC

The Catholic University "Nuestra Señora de la Asunción" (UC), founded in 1960, is the second oldest in Paraguay. The 22,000 students can enroll in degree programs at six campuses and ten pedagogical units across 16 different cities, covering almost the entire national territory. The degree programs include bachelor’s programs, Graduate Diploma’s programs, Master's programs, PhD programs, and single courses.

Academic activities and research at UC are organized around different faculties: Faculty of Science and Technology; Faculty of Health Sciences; Faculty of Accounting, Administrative and Economic Sciences; Faculty of Law and Diplomatic Sciences; Faculty of Philosophy and Human Sciences; Faculty of Agricultural Sciences; Faculty of Veterinary Sciences; Faculty of Chemical Sciences; and the Ecclesiastical Faculty of Sacred Theology.

In 1987 UC became the first University in Paraguay offering an Informatics Engineering program as part of the Department of Electronics and Informatics (DEI) from the Faculty of Science and Technology, campus Asunción. The DEI-UC is the unit in charge of running the pilot in Paraguay.

DEI-UC is one of the most active departments in research, having obtained several national grants, mainly from the National Council of Science and Technology - CONACYT, and having participated in multiple international projects and initiatives, several of them financed by the European Union.

### 1.2.8 UNITN

The University of Trento, founded in 1962 as a Higher University Institute for Social Sciences, became the first Faculty of Sociology in Italy. The didactic and scientific activities are concentrated around three main "areas": the City area, with the Departments of Economics and Management, Sociology and Social research, Humanities, the Faculty of Law and the School of International Studies; the Hill area, with the Departments of Civil, Environmental and Mechanical Engineering, Information Engineering and Computer Science, Industrial Engineering, Mathematics, Physics and CIBIO - Center for Integrative Biology; the Department of Psychology and Cognitive Science and CIMeC - Center for Mind/Brain Sciences in Rovereto. With circa 16,000 students, UNITN offers degree programs for undergraduates, MSc student and PhDs. The pilot partners of the University of Trento (UNITN) come from the “Sociology and social research” and “Information engineering and computer science” departments.



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## 1.3 PILOTS ITERATIONS

Within the WeNet project there are three distinct but overlapping objectives. These are (i) the diversity pilots, (ii) the WeNet Application pilots and (iii) the Open Calls. While the first two categories of the pilots were designed and executed by the members of the consortium, the third objective concerns the external stakeholders from other universities and organizations that were successful in the Open Calls competition in late 2021.

The current deliverable focusses on the user recruitment procedures of the Diversity and WeNet Application pilots. For more details about the Open Calls, please refer to Deliverable 8.4.

The following table summarizes the different pilots' iterations that occurred until June 2022. Currently, the consortium is evaluating the data of the second iteration of both the Diversity pilot and WeNet application while preparing for the third WeNet Application pilot that will take place in the Autumn of 2022. In addition to the pilots shown in the following table, for which the user recruitment procedures will be presented, two other pilots have been organized within the project. A preparatory pilot was organized by IPICYT at M.8 in order to have a preliminary test of some of the instruments that would have been used later in the data collection (e.g., iLog and an online survey) and to start the engagement with the local community of students. Furthermore, a platform pilot was conducted at M.18 to test the platform and its functionalities with a WeNet application developed ad-hoc (no subjects were involved in this testing - see deliverable 6.2 for more details).

| | **Diversity I** | **WeNet Application I: Ask4Help** | **Diversity II** | **WeNet Application II: *We@UNI*** |
|---|---|---|---|---|
| **AMRITA** | M17-M20 | | | |
| **AAU** | M21-M24 | M27-M28 | | M35-M36 |
| **IPICYT** | M30-M32 | | | |
| **JILIN** | M30-M31 | | | |
| **LSE** | M21-M24 | M27-M28 | | M35-M36 |
| **NUM** | M21-M24 | M27-M28 | M34-M35 | M35-M36 |
| **UC** | M21-M24 | M27-M28 | M34-M35 | M35-M36 |
| **UNITN** | M21-M24 | M27-M28 | M34-M35 | M36 |

Between the different pilots' iteration, the data collected was prepared to be stored in the Research Infrastructure according to the GDPR regulation (as explained in deliverable 6.5) and then used by the consortium for research purposes (as explained in deliverables like 1.4 and 2.2). Meeting the criteria of formative evaluation each pilot iteration informed the design and implementation of the following pilot.

The formative and summative evaluations of different pilots will be found in the deliverables 7.3 and 7.4 (due at month 46 and 54), while the experimental setup of the diversity pilots and the preliminary analysis of the collected data are presented in deliverable 1.4 and 1.5.

## 1.4 WENET APPLICATION PILOTS: THE SCENARIOS



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As presented in D7.1, the consortium developed various scenarios to work within the WeNet Application pilots. It is worth mentioning that the decision about the scenario to be adopted was affected by the Covid19 pandemic and by the sudden shift in universities to online teaching. The students were isolated from their peers and any form of physical and social interaction was very limited if not forbidden (this started in M.11 for JILIN University and from M.13 for all the others). The scenario “Asking for help”, that was among the different ones presented in D7.1, appeared to be the most suitable one, allowing the students to make contact with each other without the need of a social activity or physical contact, while trying to strengthen the sense of community in such difficult and uncertain times. The Ask4Help scenario was then adopted by the 5 universities that executed the first WeNet Application pilot: this setup allowed a comparability of the results and an analysis of the represented diversity not only within the single pilot location but also across universities.

The first pilot iteration was a ’proof of concept’. It was the first experiment in which the platform was accessed through an application used by ‘real’ users, the students. Furthermore, in the first iteration a minimal set of features was available and integrated in the platform (for a complete description of the application see D7.3). For these reasons, the same scenario and application were adopted in the participating universities, with the aim of minimizing complexity in troubleshooting possible bugs and technical issues. Note also that the application, while trying to accommodate the students’ needs, was also used as a technology probe [2] for the consortium, allowing the following

- understanding the needs and desires of users in a real-world setting;
- testing the developed technology;
- Trialing technical WP concepts, for example WP4 incentives;
- inspiring users, researchers, and other stakeholders to think about new technologies and possible services/applications.

In the second iteration of the WeNet application pilots full technical integration was achieved, allowing for a complete testing of the technology and for a better user experience. To strengthen the community dimension of the application, the name of the application was changed to *we@university_acronym* along with other technical improvements. The user recruitment procedures described in the following chapter were very similar in the participating universities.



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# 2. USER RECRUITMENT PROCEDURES

Recruitment of participants in the WeNet project was an essential part of the research process, especially considering that pilots across different universities were running in parallel and with more than one iteration. A common approach to users' selection was necessary to ensure data validity and comparability.

Joseph's article "Recruitment Participants into Pilot trails: techniques for researchers with shoestring budgets" [2], was a useful starting point among numerous published articles about best practices to recruit participants into research studies [3,4,5,6,7]). Joseph mentions 5 strategies to enhance recruitment:

1. leverage on existing social networks and personal contacts,
2. identify and foster collaborations with community gatekeepers,
3. develop a comprehensive list of potential recruitment platforms and venues,
4. create recruitment materials that clearly and succinctly describe the purpose of the study,
5. build respectful and trusting relationships with potential participants.

All these 5 strategies have been relevant for the WeNet pilots, particularly considering the complexity of the experimental setup. In the first iteration the users were asked to participate in three different data collections. In the Diversity pilot, the students were asked to participate in an online survey and then to continue with the data collection through iLog (see deliverable 1.4). At the end of the iLog data collection, they were asked to participate in the WeNet Application pilot. A funneling procedure was in place, to maximize the number of students that participated in the different modes of data collection. This same principle was applied in the second round of pilots for a subset of universities (NUM, UNITN, UC), in the attempt to maximize the participation.

A technical limitation that was relevant for the parts of the pilots that used the iLog application was that the application only supported Android smartphones with an Operating System version greater than 5.0. Users that did not have devices meeting this criterion were excluded only of the phases/parts of the pilots that involved iLog but were free to participate in the others (e.g., surveys, WeNet application).

The WeNet consortium, while ensuring a common procedure for a minimum number of pilots, also allowed some deviations for those universities that were heavily affected by the Covid outbreak in fall 2020 until spring 2022. These deviations will be reported in the following paragraphs.

Before presenting the specificities in terms of diversity represented in the different Universities and adopted procedures, the following table summarizes the numbers students participating.



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| | Diversity Pilot I - Survey (+ incomplete) | Diversity pilot I - Survey (complete) | Diversity pilot I - iLog | WeNet Application I | Diversity pilot II - Survey (Participants from Diversity Pilot I) | Diversity pilot II - Survey (New Participants) | Diversity pilot II - iLog | WeNet Application II |
|---|---|---|---|---|---|---|---|---|
| **AMRITA** | 5061 | 1511 | 44 | NA | NA | NA | NA | NA |
| **AAU** | 491 | 213 | 28 | 34 | NA | NA | NA | 46 |
| **IPICYT** | NA | 40 | 38 | NA | NA | NA | NA | NA |
| **JILIN** | 1344 | 857 | 54 | NA | NA | NA | NA | NA |
| **LSE** | 2132 | 1117 | 87 | 47 | NA | NA | NA | 24 |
| **NUM** | 4683 | 1835 | 228 | 39 | 81 | 122 | 84 | 33 |
| **UC** | 1546 | 517 | 42 | 22 | 28 | 143 | 30 | 22 |
| **UNITN** | 6722 | 3854 | 263 | 53 | 132 | 80 | 134 | 33 |
| **SUBTOTAL** | 21979 | 9944 | 784 | 195 | 241 | 345 | 248 | 158 |

All students regularly enrolled at the different pilots' universities were sent an invitation to complete an online Lime Survey. To increase the response rate, three reminders were sent, one each week, inviting all students who had not already completed the survey at the time of the reminder to fill it in. At the end of the main survey, the students could express an interest in participating in the second part of the data collection, which involved filling in a questionnaire and using the iLog application for a minimum of two to a maximum of four weeks. Among all the interested students, only the ones who had an Android smartphone with an Operating System greater than 5.0 were eligible for the subsequent phases, the WeNet Application pilot (see Figure. 2 for a representation of the funneling procedure).

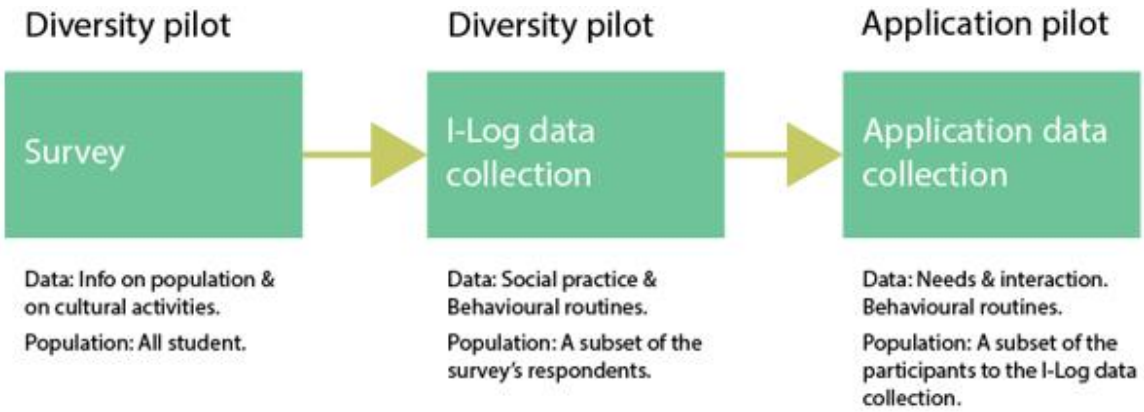


*Figure 2 User recruitment funneling process*

The relevance of the two steps of Diversity pilot is twofold: on the one hand, the data collected was used to develop and test measurement instruments on human behavior and study diversity from a sociological perspective. This data formed the basis for the development of computational models of social behavior and for the harnessing of diversity. At the same time, the collected data was used to create 'personal profiles' of the users and as a basis for developing both machine learning and interaction process algorithms. The data collected in the WeNet application pilots, and in particular their behavioral routines, provided the basis for harnessing diversity in the community.



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As mentioned, the recruitment strategy varied somewhat across countries on account of the pool of available student participants.

## 2.1 AMRITA

AMRITA, like IPICYT, could only participate in the Diversity pilot I because of the lack of resources and time. In the following table, a summary of participants' demographic data.

| | **Diversity I** | **Diversity II** | **App I** | **App II** |
|---|---|---|---|---|
| **Bachelor vs Master students** | 1805 BSc<br>898 MSc<br>2390 missing | NA | NA | NA |
| **Year of study** | - | NA | NA | NA |
| **Department** | Arts and Science, Ayurveda, Agriculture, Biotechnology, Business, Dentistry, Engineering, Medicine, Nursing, Pharmacy, Allied Health Sciences, Nanoscience | NA | NA | NA |
| **Gender** | 1435 (28%) Female<br>1282 (25%) Male<br>2376 (47%) Missing | NA | NA | NA |
| **Age/birth year (median)** | 2000 | NA | NA | NA |
| **National vs International** | 2670 Indian<br>21 International<br>2402 Missing | NA | NA | NA |

## 2.2 AAU

AAU participated in almost all the pilots carried out, with the only exception of the Diversity Pilot II. AAU and LSE adopted the same strategy of focusing on the WeNet Application to maximize the engagement of the students, having the hypothesis that the iLog data collection was overly demanding for the students and demotivated them to participate in the subsequent pilot.



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| | Diversity I | Diversity II | App I | App II |
|---|---|---|---|---|
| **Bachelor vs Master students** | 179 MSc<br>65 BSc | NA | - | 14 BSc<br>31 MSc<br>1 PhD |
| **Year of study** | 1 to 6 | NA | - | 1 to 4 |
| **Department** | Architecture, Design and Media Technology, Planning, culture and learning, Electronic systems, Sociology and social work, Political Science, Communication and Psychology, Chemistry and Bioscience, Built Environment, Mathematical Sciences, Business and Management, Materials and production | NA | - | Service system design, Innovative Communication Technologies and Entrepreneurship, Medialogy, Sustainable Design, Sustainable Biotechnology, Information Studies, Techno-Anthropology, Social Work, Global Refugee Studies, Sustainable Cities, Tourism, and Urban, Energy and Environmental Planning |
| **Gender** | 145 Female<br>99 Male | NA | 27 Female<br>18 Male | 21 Female<br>22 Male |
| **Birth year (median)** | 1994 | NA | - | 1999 |
| **National vs International** | 103 Danish<br>141 International | NA | - | - |

## 2.3 IPICYT

IPICYT participated in the pre-pilot at M.8 and in the Diversity pilot I. In the following table, the characteristics of the Diversity Pilot I participants are depicted.



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| | Diversity I | Diversity II | App I | App II |
|---|---|---|---|---|
| **Bachelor vs Master students** | 38 BSc<br>0 MSc | NA | NA | NA |
| **Year of study** | - | NA | NA | NA |
| **Department** | 2 universities: UTAN, UASLP<br>Departments: Engineering, Psychology, Public Health, Visual Arts, Medicine, Business, Law | NA | NA | NA |
| **Gender** | 13 (46%) Female<br>25 (54%) Male | NA | NA | NA |
| **Birth year (median)** | 1999 | NA | NA | NA |
| **National vs International** | 38 National (all Mexican) | NA | NA | NA |
| **Local vs Non-Local** | 30 (79%) Local<br>8 (21%) Non-Local | | | |

## 2.4 JILIN

Jilin University participated in the first Diversity Pilot. Its participation in the WeNet Application pilots was not possible because of the integration of Google services that are not allowed in China.

| | Diversity I | Diversity II | App I | App II |
|---|---|---|---|---|
| **Bachelor vs Master students** | 632 BSc<br>227 MSc | NA | NA | NA |
| **Year of study** | 1 to 4 | NA | NA | NA |
| **Department** | 32 departments represented including: College of Computer Science and Technology, School of Economics, College of Electronic Science and Engineering,<br>School of Law, Business school, College of Foreign Languages, School of Philosophy and Sociology, School of Life Sciences, School of Marxism, College of Software. | NA | NA | NA |
| **Gender** | 464 Female<br>352 Male | NA | NA | NA |
| **Age/birth year (median)** | 2001 | NA | NA | NA |
| **National vs International** | 839 (99%) Chinese | NA | NA | NA |

## 2.5 LSE

LSE, as AAU, participated in all the pilots, with the exception of the Diversity pilot II. In the Diversity pilot I and WeNet application I pilot the funneling



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procedure was followed as in the other pilots. In the second iteration the students participated only in the WeNet Application II pilot, to minimize the fatigue effect that was observed particularly in these two universities in the first pilots iteration. Note also that the majority of LSE students have Apple smart phones.

| | **Diversity I** | **Diversity II** | **App I** | **App II** |
|---|---|---|---|---|
| **Bachelor vs Master students** | 423 (38%) BSc<br>613 (55%) MSs<br>72 (7%) PhD | NA | 17 (36%) BSc<br>27 (57%) MSc<br>3 (6%) PhD | 14 (74%) MSc/MA 5 (26%) BSc/BA |
| **Year of study** | 1 to 4 | NA | 1 to 3 | 1 to 3 |
| **Department** | 25 departments represented including: Economics, Government, Management, Social Policy, Geography and Environment, Law, International Relations, Psychological and Behavioural Science, Sociology, Anthropology | NA | - | Health Policy, European Institute, Anthropology, Economics, International History, Management, Methodology, Philosophy, Logic and Scientific Method, Psychological and Behavioural Science, Public Policy, Government |
| **Gender** | 777 (70%) Female<br>322 (29%) Male | NA | 42 (89%) Female<br>5 (11%) Male | 14 (58%) Female<br>6 (25%) Male |
| **Birth year (median)** | 1998 | NA | - | 1998 |
| **National vs International** | 232 (21%) British, English or Welsh<br>872 (79%) International | NA | - | 50% missing<br>3 (25%) National<br>9 (75%) International (Chinese, Colombian, French, Indian, Polish, American) |

## 2.6 NUM

University of Mongolia participated to all the pilots' activities. Approximately 15,000 students were invited to participate in the WeNet Diversity I survey - 1st Lime Survey and iLog registered users were 224 out of 350 invited. So, the goal was to have 50 students who could participate in the WeNet Application I experiment.

The recruitment strategy to reach the 50 participants was to open up to students starting from those who (i) had answered 'Yes' in the M.26 chatbot experiment in the 3rd LimeSurvey and who had participated in the iLog data collection and (ii) students that did not complete the LimeSurvey and were Android users. The students that did not complete the LimeSurvey data collection, were asked to do it before participating in the pilot. The same strategy was also used for the second iteration of the Diversity pilot and WeNet application pilot. The following table summarizes the numbers and diversity of the participants.



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| | Diversity I | Diversity II | App I | App II |
|---|---|---|---|---|
| **Bachelor vs Master students** | 1761 BSc<br>67 MSc<br>6 PhD | 36 BSc | 39 BSc | 28 BSc |
| **Year of study** | 1 to 6 | 1 to 4 | 1 to 4 | 1 to 5 |
| **Department** | Business School, School of International Relations and Public Administration, School of Law, School of Engineering and Applied Sciences, School of Sciences – Division of Social Sciences, School of Sciences – Division of Natural Sciences, School of Sciences – Division of Humanities | | | |
| **Gender** | 1209 Female<br>584 Male<br>41 Not say | - | 29 Female<br>10 Male | 19 Female<br>9 Male |
| **Birth year (median)** | 2001 | 2000 | - | - |
| **National vs International** | 1822 Mongolian<br>12 International | All Mongolian | All Mongolian | All Mongolian |
| **Local vs Non-Local** | - | 9 (25%) Local<br>27 (75%) Non-Local | 16 (41%) Local<br>23 (59%) Non-Local | 11 (39%) Local<br>17 (61%) Non-Local |

## 2.7 UC

At UC, all students who had previously completed the Diversity pilot were invited to participate in the corresponding WeNet application pilot, including those that expressed interest in subsequent research phases.

| | Diversity I | Diversity II | App I | App II |
|---|---|---|---|---|
| **Bachelor vs Master students** | 752 (83%) BSc<br>40 (4%) MSc<br>113 (13%) Missing | 195 (97%) BSc<br>5 (3%) MSc | 21 (100%) BSc | 21 (91%) BSc<br>2 (9%) MSc |
| **Year of study** | 1 to 6 | 1 to 6 | 1 to 6 | 1 to 4 |
| **Department** | Accounting, Administrative and Economic Sciences, Sciences and technology, Health Sciences, Legal and Diplomatic Sciences, Philosophy and Human Sciences | | | Sciences and technology, Health Sciences |
| **Gender** | 505 (56%) Female<br>289 (32%) Male<br>111 (12%) Missing | 124 (61%) Female<br>77 (38%) Male | 11 (52%) Female<br>10 (48%) Male | 9 (39%) Female<br>12 (52%) Male |
| **Birth year (median)** | 1998 | 1998 | 1999 | 1999 |
| **National vs International** | 886 (98%) National<br>19 (2%) International | 194 (96%) National<br>6 (3%) International | 20 (95%) National | 21 (91%) National |

## 2.8 UNITN



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UNITN participated in all the pilots. At UNITN, students who had previously completed at least 75% of the diversity survey were invited to participate in the WeNet Application experiment. 7 field supervisors were involved, asking questions about the relevant survey topics (i.e., sport, cooking and shopping, university, and cultural activities). From this group, 46 joined the study (installed the chat application) and remained active until the end of the data collection.

| | **Diversity I** | **Diversity II** | **App I** | **App II** |
|---|---|---|---|---|
| **Bachelor vs Master students** | 2879 (61%) BSc<br>1118 (24%) MSc<br>706 (15%) 5 year-degree | 80 (62%) BSc<br>38 (29%) MSc<br>12 (9%) 5 year-degree | 22 (50.0%) BSc<br>17 (38.6%) MSc<br>5 (11.4%) 5 year-degree | 21 (36%) BSc<br>12 (64%) MSc |
| **Year of study** | 1 to 6 | 1 to 6 | 1 to 6 | - |
| **Department** | CIBIO; Economics and Management; Faculty of Law; Physics; Civil, Environmental and Mechanical Engineering; Information Engineering and Computer Science; Industrial Engineering; Humanities; Mathematics; Psychology and Cognitive Science; Sociology and Social Research; Center Agriculture Food Environment; CIMeC - Centre for Mind/Brain Sciences; SSI - School of International Studies; Other | | All Diversity I and II departments represented except for: Center Agriculture Food Environment; CIMeC - Centre for Mind/Brain Sciences; | CIBIO; CIMeC; Economics; Law; Industrial Engineering; Computer Science; Mathematics; Other; Physics; Sociology |
| **Gender** | 2832 (60%) Female<br>1852 (40%) Male | (59%) Female<br>53 (41%) Male<br>77 | 30 (68%) Female<br>14 (32%) Male | 7 (21%) Female<br>23 (70%) Male<br>3 (9%) Not say |
| **Birth year (median)** | 1999 | 1999 | 1998 | 1999 |
| **National vs International** | 4665 (96%) National<br>1027 (4%) International | 126 (97%) National | 43 (98%) National | 22 (67%) National<br>11 (33%) International |



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# 3. USER RECRUITMENT STRATEGY

The third iteration of the pilots will only involve the WeNet application. A new version will be released based on formative learnings from the two earlier iterations of the WeNet App with the aim of better addressing the comments and feedback from the students, solving some technical issues, and improving the overall user experience. In this last iteration, 5 Universities will participate (IPICYT, UC, NUM, AAU and LSE), each one with a slightly different scenario. In the following paragraphs all the different universities present their points of departure (in terms of the scenario) and specify the user recruitment procedure, KPIs and risk management measures.

The third iteration of the WeNet application will continue to be a technology probe that will allow the technical WPs to test their hypotheses and their components. While the new version of the WeNet Application will be used in the AAU, NUM and LSE pilots, UC and IPICYT are developing their own application on top of the WeNet platform.

## 3.1 SCENARIOS SPECIFICATIONS PER PILOT LOCATION

### 3.1.1 Aalborg University in Copenhagen (AAU)

AAU will work on a similar scenario to the one proposed in the previous WeNet Application pilots. The core idea is to leverage diversity to support the students in their everyday life, while raising their awareness of the complexity of their community and enabling them to mutually benefit from it. In this new scenario AAU will work on norms that will strengthen the pairing up of experienced students with newcomers that just started their education in the Copenhagen campus. In order to achieve this goal, the revised version of the application will allow students to follow up a given conversation and, additionally, to access all the questions and answers that have been posed by their peers via an ad-hoc channel.

The first two iterations of the WeNet application pilots will be considered for comparison and the second one in particular as the baseline for the third and final experimentation. The pilot will run for 4 weeks and will be based on the formative evaluation of App I and App II pilots. A quantitative exit survey followed by a focus group will be conducted to better understand the overall user experience of the participants.

#### Diversity requirements

AAU will not be setting pre-determined sampling quotas; given the diversity represented in the previous data collection, we expect to have again a good representation of nationalities, gender, degrees of experience of the campus and the university and year of study. The diversity of the Copenhagen campus attracts international students and the variety of educations makes it an interesting place for students from many different backgrounds.

#### Incentives

We will offer economic incentives to those students who complete the four-week pilot study. Beside the 250kr for active participation during the 4 weeks, we will also give a couple of weekly prices of 500kr during the whole duration of the pilot.

#### User recruitment procedure



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We will adopt a two-fold strategy to recruit (i) first year and one-year MSc students who will have just arrived at AAU and (ii) 2nd, 3rd year undergraduates and 2nd year master students who have been in the School for more than one year and will be familiar with the environment and surrounding areas.

(i) to recruit new students, we started a collaboration with the coordinators of the first semesters of the various Masters and Bachelors and with the Buddy network at AAU. The coordinators will support our requests for participation while the Buddy network will be able to spread the news directly to the students that they usually meet at the beginning of the semester. An invitation advert to join the *we@AAU* pilot study will be offered/marketed as an opportunity to (a) join an AAU community that serves to help each other and (b) participate in an ongoing AAU research project, funded by the European Commission with partners in Italy, Denmark, Paraguay, India, China and Mongolia, i.e., enhancing students' research experience and curriculum.

(ii) To recruit students with a year or more of experience at the School, we will approach all the Departments with a request to circulate an (e-mail) invitation to students to participate in *we@AAU*, bringing their experience of AAU, and in particular of the Copenhagen campus, to the benefit of new students, but also as an opportunity to a) tap into the many competences of other students on academic matters – choosing options, designing and writing dissertations and b) act as an 'AAU buddy'.

## KPIs

- We will make every effort to recruit a minimum of 70 students
- Given the improvements in the WeNet application design, we expect:
  - greater user satisfaction
  - higher engagement in terms of messages exchanged
  - higher engagement throughout the whole duration of the pilot, with a reduced "fading out" effect
  - more 'quality badges' that testify the quality of the interaction
- We make no prediction regarding the questions flagging up a preference for greater diversity. We hope that the new design will serve to deliver greater diversity.

## Risks

| **Risks** | Risk management |
|---|---|
| A failure to recruit sufficient participants for the pilot study | The recruitment has already started in terms of engagement with the key stakeholders that will play a crucial role in the fall to actually recruit the students. |
| A new pandemic and a return to a deserted campus | This could lead to a delay in launching the pilot study, but it could also be an opportunity to add an online social intervention of benefit to students |



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| | |
|---|---|
| While recruitment goes well, *we@AAU* is in competition with departmental supported Whatsapp groups and *we@AAU* loses appeal | Increase the incentive to 350kr |

### 3.1.2 London School of Economics (LSE)

LSE envisions a pilot scenario largely similar to that at M35 (WeNet Application pilot II) - *getting strangers to help each other* -, and therefore, similar to that adopted by AAU.

The overarching goal is to determine what contributes to a positive user experience. In the absence of a control group (see design option 3), M.26 and M.35 evaluation data will be used for an indicative comparison.

To achieve the set objective, and based on M.26 and M.35 learnings, LSE expects to offer an improved version of chatbot and, specifically, to: i) include filter options for anonymity and sensitivity, ii) adopt streamlined onboarding procedures, iii) offer the option for follow-up interactions between users, iv) implement questions expiration with an assessment of the helpfulness of the set of answers and to identify the most useful answer, v) offer the option to make questions and answers available to the wider users' community.

Three possible designs are outlined. A decision on which of the three designs will be adopted will follow consultation with partners in the technical work packages.

**Design 1: A split ballot experiment to assess quality of user experience with random allocation of responders compared to algorithmic allocation.**

| | **Weeks 1 and 2** | **UX1** | **Weeks 3 and 4** | **UX2** | **UX3** |
|---|---|---|---|---|---|
| Ballot 1 | Random allocation of responders | Quant survey | Algorithm Allocation of responders | Quant survey | Focus group |
| Ballot 2 | Algorithm allocation of responders | Quant survey | Random allocation of responders | Quant survey | Focus group |

Followed up by an analysis of the use of filters, question and answer categories and other indicators to assess interventions designed by technical WPs – for example badges and messages etc.



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**Design 2: Time-series additions of functionalities**

| **Weeks 1 and 2** | **UX1** | **Weeks 3 and 4** | **UX2** | **UX3** |
|---|---|---|---|---|
| App with limited functionality* | Quant survey | Functionality of App increased* | Quant survey | Focus groups |

*Functions in App for weeks 1&2 and 3&4 to be determined in collaboration with the technical work packages.

**Design 3:** Basic model following M.26 and M.35 designs

| **Weeks 1 to 4** | **UX1** | **UX2** |
|---|---|---|
| App full functionality based on formative evaluation of M26 and M35 pilots | Quantitative exit survey | Focus groups |

## Diversity requirements

LSE will not be setting pre-determined sampling quotas; given the diversity of the student body at LSE, we expect to have a good representation of nationalities, sex, with more or less experience of LSE and year of study.

The official LSE *Equality and Diversity* report (2018) shows that, in terms of ethnicity, 53% of the student population identifies as White, 24% as Asian, 10% other (incl. mixed), 5% as Chinese and 5% as Black. In terms of age, 36% of students are under 21, 60% are between 22 and 30 and 3% are in the 31 to 40 age group. 6% declared a disability. 55% of students identified as female and 45% as male. Over 100 nationalities are represented in the student population.

## Incentives

We propose to offer a more generous payment of £35 to those students who complete the four-week pilot study.

## User recruitment procedure

We will adopt a two-fold strategy to recruit (i) first-year and one-year MSc students who will have just arrived in London and (ii) 2nd, 3rd year undergraduates and PhD students who have been in the School for more than one year and will be familiar with the environment and surrounding areas.



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(i) to recruit new students, we will liaise with colleagues who run the LSE Student Hub. This reaches out to students with information on student support, public lectures, health services, events of relevance to students etc. Additionally, we will have a stall in Freshers' week. An invitation advert to join the *we@LSE* pilot study will be offered/marketed as an opportunity to (a) join an LSE community that serves to help each other and (b) participate in an ongoing LSE research project, funded by the European Commission with partners in Italy, Denmark, Paraguay, India, China and Mongolia, i.e., enhancing students' research experience and curriculum.

(ii) To recruit students with a year or more of experience at the School, we will approach two or three Departments with a request to circulate an (e-mail) invitation to students to participate in *we@LSE*, bringing their experience of the School and London to the benefit of new students, but also as an opportunity to a) tap into the many competences of other students on academic matters – choosing options, designing and writing dissertations and b) act as an 'LSE coach'.

### KPIs

- We will make every effort to recruit a minimum of 70 students
- On the basis of the earlier pilots, we anticipate varying levels of engagement but, with the design developments based on the pilot 1.0 & 2.0 experience, expect to double the percentage of 'highly committed' users, identified as circa 8% in the latent class analysis for M35
- Given the improvements in the chatbot design, we expect greater user satisfaction
- We make no prediction regarding the questions flagging up a preference for greater diversity. We hope that the new design will serve to deliver greater diversity.

### Risks

| **Risks** | Risk management |
|---|---|
| A failure to recruit sufficient participants for the pilot study | We have already started the recruitment process and are encouraged by the interest of key stakeholders |
| A new pandemic and a return to a deserted campus | This could lead to a delay in launching the pilot study, but it could also be an opportunity to add an online social intervention of benefit to students |
| While recruitment goes well, *we@LSE* is in competition with departmental supported Whatsapp groups and *we@LSE* loses appeal | Increase the incentive to £45 |

#### 3.1.3 National University of Mongolia (NUM)

NUM is proposing the pilot scenario where students as a learning community help each other during the degree course. The goal of the pilot is to help students to prepare for the final examination and identify diverse aspects of students with respect to their daily routines. From a research point of view, the pilot can help to identify the relationship between academic



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performance and students' daily routines. This will be investigated based on the Object-oriented programming (OOP) course schedule and its enrolled student body. OOP course is a compulsory subject and all second-year students with prerequisites in the Fundamentals of Algorithms and the Programming Language C are eligible. Mostly, these students have no experience studying the same subject together because of the flexible credit system at the NUM.

**Pilot design**

| Timeline | Date | Control group | Experimental group |
|---|---|---|---|
| Week 0 | Nov 17 - Nov 23, 2022<br>/12th week of semester/ | Orientation session<br>First questionnaire | |
| Week 1 | Nov 24 – Nov 30, 2022<br>/13th week of semester/ | None | (1) Use improved version of the chatbot<br>(2) Use iLog<br>(3) Use time diary questions every 2 hours and at the end of the day<br>(4) Exit survey |
| Week 2 | Dec 1 – Dec 7, 2022<br>/14th week of semester/ | None | |
| Week 3 | Dec 8 – Dec 14, 2022<br>/15th week of semester/ | None | |
| Week 4 | Dec 15 – Nov 21, 2022<br>/16th week of semester/ | None | |

**Diversity requirements**

Every single person in the learning community has different knowledge, perspectives, and points of view. NUM will not set any sampling criteria for the groups. The student pool will contain only Mongolian students. Since NUM enrolls students from all over Mongolian territory, diversity in the student pool is guaranteed.

Diversity attributes in the pilot student pool will include:

- Ethnicity (various ethnic groups)
- Aimags (21 major administrative provinces)
- Educational facilitation (urban and rural, living condition…)
- Language skills
- Economic and family background

**User recruitment procedure**

NUM will recruit from the OOP course student pool. Therefore, mostly second-year, third-year students and some portion of fourth-year students will be recruited for the pilot.



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(1) First, discussing with the course lecturers, we will organize orientation session and introduce the *we@NUM* pilot to students.

We will promote the pilot as follows:

- by using the WeNet app, students can help each other with learning activities, subject-related questions and answers; even anonymously
- not only subject-related questions, they can also share learning experiences and social academic topics
- they can build an active learning community

(2) Pseudo-random group splitting will be applied for the students who agreed to be part of the *we@NUM* pilot.

**Key Performance indicators**

| **KPIs** | **Indicator** | **Target value** |
|---|---|---|
| Recruitment | Number of students for experimental group | Min. of 50 |
| Number of active users | Percentage of active users who ask two questions per week at least | At least 30%<br>(it was 23% in M35 pilot) |

**Risk management**

| **Risk** | **Management** |
|---|---|
| Unable to recruit target number of students | Before the pilot starts, we will have Week-0 for student recruitment. The orientation session needs to be prepared thoroughly to ensure better understanding of the pilot and its benefits.<br>We will involve the course lecturers in promotion process. |
| Few highly committed users | Custom nudging questions for chatbot<br>Data monitoring on iLog<br>Custom TUD time interval setting and schedule<br>Course point incentive for students |

### 3.1.4 Universidad Católica “Nuestra Señora de la Asunción” (UC)

The research group of UC set out to make an application tailored to the specific needs of its students, and thus the first version of "SOS TUTORÍA UC" emerged, an application developed following the same model of a chatbot. It allows students to request and/or offer help/tutoring in subjects or topics of interest using technology as a means to facilitate the identification of tutoring pairs typically students of initial courses) and tutors (typically students of advanced



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courses) that can help each other, being from different careers, locations or campuses.

A new version of "SOS TUTORIA UC" is intended to be used for the next WeNet pilot, which will be carried out with students from different UC careers and campuses, belonging to one of the following faculties: Accounting, Administrative and Economic Sciences, Sciences and Technology, Health Sciences, Legal and Diplomatic Sciences, Philosophy and Human Sciences, Chemical Sciences, and the Admission Course. Participants may be of different nationalities, although a predominance of Paraguayans is expected, who mainly use the Spanish language in the academic context. Participants may register either as a tutor or as a tutee, depending on the subject/topic, being able to help in one case and ask for help in the other. To become a tutor you must complete, as part of your profile, a self-declaration of courses that have been approved and that demonstrate your knowledge of the topics in which you would be offering help. After registration, potential tutors will go through a verification and approval process before being enabled to use the platform.

**Pilot Design**

| **Timeline** | **Activity** | **Description and Target Groups** |
|---|---|---|
| Pre-pilot | Pilot Preparation and Incentives | Contact with Directors of Departments from different faculties and campuses in order to agree on academic incentives |
| Week 0 - Week 1 | Recruitment campaign | Emails to students, visit to courses and presentations to admission students, dissemination on social network and students groups |
| Week 2 - Week 3 | Orientation session<br>First questionnaire | (1) Presentations to potential participants<br>(2) Send instructions for questionnaire<br>(3) Send instructions for the app<br>(4) Monitor of registration of participants |
| Week 4 - Week 8 | Pilot Monitoring | (1) Monitoring activities and promotion of the app<br>(2) Support in the use of “SOS TUTORÍA UC” |
| Week 8 | Mid-Pilot Evaluation | (1) Follow up of the experience and pilot execution in order to assess the need of possible interventions<br>(2) Support in the use of “SOS TUTORÍA UC” |
| Week 9 - Week 15 | Pilot Monitoring | (1) Monitor the participant activities in the pilot<br>(2) Support in the use of “SOS TUTORÍA UC” |



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| | | |
|---|---|---|
| Week 16 | Exit Survey<br>Discussion Group | (1) Send evaluation questionnaire to participants<br>(2) Organize discussion group with subset of participants |

**Diversity requirements**

Every member of the student community has different knowledge, skills, perspectives, personality traits, and points of view. UC will not set any sampling criteria for the groups, although it is not expected much diversity in terms of nationality in the composition of our student body. The language used in the pilot will be Spanish and the student pool will contain UC students from different degree courses and campuses, belonging to the faculties of Accounting, Administrative and Economic Sciences, Sciences and Technology, Health Sciences, Legal and Diplomatic Sciences, Philosophy and Human Sciences, Chemical Sciences, and the Admission Course.

Diversity attributes in the pilot student pool will, among others, include:

- Gender
- Location (UC have campuses in different cities)
- Department (Technology and Science, Humanities, Management)
- Personality traits
- Skills/Competences

**Incentives**

Participants can in principle have both roles (tutor and tutee), however, it is expected that the incentives that lead them to participate in the pilot will have a marked difference for each role.

In the case of the tutee, the opportunity to increase their knowledge for free, under the guidance of someone who is more knowledgeable about a topic of interest, represents a significant incentive. In this sense, it is important to note that, when students have difficulties in any subject, it is common practice to hire paid external private tutors to reinforce in a particular way the knowledge in that subject.

On the other hand, for tutors, the possibility of providing academic incentives is raised. In this regard, it is important to note that in several departments there are so-called "extracurricular credits", which students need in order to graduate. These credits are typically obtained through the completion of extracurricular activities, although the specific rules for obtaining them vary by department. The idea would be that tutors would have the possibility of requesting credits, according to the rules of their department and according to their level of participation in the tutoring role. This requires agreement by each department, which is a potentially significant challenge. To this purpose, the UC WeNet project team will provide certification of the tutor's participation in the experiment. Additionally, recognition will be given to all tutors who have adequately completed their task and awards will be given to the top three tutors according to certain criteria for participation.

**User Recruitment**

The invitation to participate in the pilot will include the promotion of the application through social networks, student groups, messages posted in virtual classrooms, as well as some printed posters located in public spaces on campus. Students of the Catholic University "Nuestra Señora de la Asunción" will receive, by email or other means, an invitation to participate in the pilot, with a form to register for it. In addition, some groups of students may be invited by means of visits during classes.



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The communication will include information about the possible benefits for tutors in terms of academic credits and possible prizes for the 3 best tutors. Recruitment of tutor participants will require prior qualification. All participants will also be required to complete an informed consent form.

### Key Performance indicators

The success of the pilot mainly lies in the diversity and number of users in terms of skills, gender, location, personality traits, department (Technology and Science, Humanities, Management) and diversity indicators according to the definition adopted by the WeNet project.

We will also measure the number of users enrolled as tutors and as tutees, the quality of the matching, as well as the level of satisfaction of both tutors and tutees with the whole experience.

| KPIs | Indicator | Target Value |
|---|---|---|
| Recruitment | Number of students for each role | Min 50 participants (at least 20% tutors) |
| Number of active users | Percentage of active users | Min 30% |
| Number of Departments | Number of departments represented | At least participants from 2 out of the 3 areas of *Technology and Science*, *Humanities*, and *Management* |

### Risks

One risk to consider would be the low participation of tutors (in quantity and quality), which could considerably reduce the number of participants as tutees and the quality of interaction between both.

Another risk related to the previous point would be the participation of students from a single course or department, which could even be all part of a single academic year or course. In both scenarios, the sample may not be representative of the UC population hindering the possibility to leverage the different aspects of diversity.

| Risk | Management |
|---|---|
| Low participation of students with the role of Tutors | We are preparing the pre-pilot activities that will include communications with authorities of different departments and lecturers to explain the pilot and agree on strategies to provide academic incentives to participants. We will also run on Weeks 0 and 1, a recruitment campaign that includes visiting different courses to invite students. Then we will dedicate Weeks 2 and 3 to orientation sessions and monitoring the registration of participants. |



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| | |
|---|---|
| Polarization of participants from one department/area, or academic year | All activities planned for the pre-pilot in Weeks 0 to 3, will be repeated for the different departments.<br>We will also include the different student groups in the promotion process.<br>As for the students with the role of tutees, the recruitment activities will also include students from the admission courses where students from different departments of the same Faculty could share some classes. |

### 3.1.5 IPICYT

The research team at IPICYT is developing a diversity-aware application to inform and prevent obesity and overweight in Mexican youth using reinforcement learning tools.

#### Local context

Obesity and overweight affect more and more Mexicans. 38.5% in the 12-19 age group have some degree of overweight or obesity. This figure almost doubles for adults: 75.5% of Mexicans who are 20 years old or older suffer from this condition, according to figures from the National Survey of Health and Nutrition 2018 carried out by the National Institute of Statistics and Geography (INEGI), the Ministry of Health and the National Institute of Public Health (INSP). According to OECD, Mexico has the second highest rate of obesity in the world, "the trend begins at an early age, and Mexican children are the most likely to develop it, over those average infants who live in the group of member countries of that body." For this reason, obesity and overweight epidemics are among the leading health problems on a national scale.

IPICYT's pilot seeks to deploy a diversity-aware approach to informing Mexican youth about obesity and overweight health risks and means of prevention. By incorporating AI tools (reinforcement learning algorithms in particular), the pilot aims to foster awareness and improve the odds of engraining habitual patterns leading to healthier lifestyles.

#### Pilot Design

The project considers a pilot study that develops in two main steps. In the first step, 50 college students will participate as volunteers in a 40-day experiment. Participants will complete an individual survey daily through a mobile app that records sensor data from the phone (GPS, velocity, step count).

The survey addresses factors leading to obesity and overweight: prenatal and postnatal influences, unhealthy diets, too much television, too little activity, too little sleep, toxic environment-food, and physical activity.

The answers to each survey, sensor data, and prior knowledge of the participant profile (supplied by the WeNet platform) are combined to produce an index evaluating positive factors associated with the participant's behavior, such as daily physical activity and a healthy diet.

A machine learning engine uses a reinforcement learning algorithm to process the above-mentioned daily index (which is computed for each participant in the app) and provide feedback. Participants receive feedback through mobile phone notifications and social media tools (Facebook and Telegram). Feedback consists of targeted messages, activity



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suggestions, and community interactions. The feedback aims to elicit a response from each participant to maximize their individual index on a finite horizon.

The second step consists of sharing the experiment results with the participants to increase awareness and propose specific solutions to the problems detected by participants concerning obesity and overweight. The sharing process includes semi-structured interviews, focus groups, and codesigned workshops.

### Diversity requirements

Diversity attributes in the pilot student pool will, among others, include:

- Gender
- Location
- University
- Skills/Competences
- Medical history and comorbidities
- Lifestyle
- Sleep habits
- Eating habits

### Incentives

The main incentive to (i) participate as a volunteer in the pilot is to better understand the causes and risks of obesity and overweight as a means of prevention and (ii) participate in community-based activities to propose specific solutions that are meaningful in the local context and compatible with the specific diversity features.

### User Recruitment

Social networks, student groups, and messages posted in virtual classrooms will enable a communication campaign to participate in the pilot in two San Luis Potosí universities (UASLP and UTAN). The communication will include the importance of addressing the obesity and overweight epidemics affecting Mexican youth.

**KPIs** - How to measure the success of the pilot?

| KPIs | Indicator | Target Value |
|---|---|---|
| Recruitment | Number of students for each role | Min 50 participants |
| Number of active users | Percentage of active users | Min 70% |

**Risks**

One risk to consider would be the low participation in completing the daily survey, which is used to compute the daily index feeding the reinforcement learning engine. In this scenario, sampling may not be sufficient to improve the population's knowledge about obesity and overweight and to make an impact on fostering a healthier lifestyle.

## 3.2 USER ENGAGEMENT STRATEGIES

Beside each local user engagement strategy outlined in the previous paragraph, an overall across-pilots user engagement strategy has been enforced and supported by the pilots'



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coordination in the different iterations. The first step for developing a successful recruitment strategy is to offer information on the WeNet project to the target users. The recruitment strategy also aimed to generate an impact on the student population beyond the number of users that were and will be involved, ensuring further participation in the iterations of the pilots. For these reasons, the official channels of the local universities have been used to inform about the running experimentation and its outcomes at the end of each iteration. Specific activities, summarized in table 2, have been carried out to maintain the community of students engaged.

| No | Procedure | Description |
|---|---|---|
| **1** | Getting notification and approvals | All the pre-pilots and pilots' experimentations have been approved by the local ethical committee and a local data protection officer (DPO) viewed the survey and was asked to approve data processing. |
| **2** | WeNet experiment campaign | All the local universities will start a campaign to let the students know about the running experimentation. The local universities will use their usual communication channels to convey the needed information. Engaging materials will be prepared and shared for this purpose. |
| **3** | Participants onboarding and consent form | The participants that will take part in all data collection will be informed about the experimentation and about the aim of the data collection through a consent form. |
| **4** | Regular reminders via email and other channels | The local university will send around reminders to ensure participation. Emails as well as social media will be used. |
| **5** | Open channel for feedback and support | An open communication channel with the students will be ensured in each pilot to solve technical issues and provide the needed continuous support. |
| **6** | Focus groups | At the end of each pilot iteration specific participatory activities have been carried out in every pilot. We engaged with the pilots' participants through focus groups to get the participants' perspective on the collected data, the way it has been used and the interactions it has allowed. |



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# 4. CONCLUSIONS

This deliverable provided details on the procedures and criteria that have been used to identify/recruit the participants to the Diversity Pilots I and II and to the corresponding WeNet Application pilots I and II. Furthermore, the user recruitment procedures for the next and final pilot iteration have been presented together with KPIs and risk management measures. The participants will be paid, but nevertheless a series of engagement strategies have been presented in order to ensure participation and a clear understanding of the experimental settings.

As explained in deliverable 9.2 in part 3.2, the WeNet consortium will apply the principles of privacy by design and by default which has also become an important part of the EU's regulatory framework. In fact, in the new General Data Protection Regulation (GDPR), privacy by design has become one of the core values that developers of technology, businesses and organizations must adhere to and implement.

Furthermore, all pilots' trials (data collection in specific universities in Europe, Latin America, and Asia) have been approved by local ethics committees. This means that a local ethics committee have been asked to approve the experiment protocols (see D10.2 and D11.1 – for all the procedures for managing data and the approvals). Furthermore, a local data protection officer (DPO) reviewed the surveys and has been asked to approve data processing. If there is no designated DPO in a local university site (outside of Europe), another qualified person designated by the local institution has been asked to check data processing.

For the final pilot iteration there will be extensive user experience studies including focus groups and online surveys. Detailed topic guides and a common core of questions for an online survey will be prepared to provide indicative time series comparative data from the M.26 and M.35 pilots. In combination with the results of tests/experiments/analyses conducted by the technical work packages, both summative and formative evaluations will be completed.

Note that this deliverable does not provide details regarding informed consent procedures, justification and methods for protecting personal data, and operations in non-EU Countries. These ethical and data management procedures are explained in WP9, WP10 and WP11.

To conclude, this deliverable complements Deliverables 7.3 and 7.4 with the detailed evaluation of the different pilots and a thorough presentation also of the experimental settings and of the design decisions that affected the overall user experience.



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