Final Project and Evaluation Report

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Glossary of Terms and Definitions

Blockchain	A blockchain is a shared ledger of transactions between parties in a network, not controlled by a single central authority.
Crypto-token	A blockchain powered token could represent an asset or some product or services, built on an existing blockchain (different from a coin). Tokens are designed to be unique, secure, instantly transferable, and digitally scarce.
Distributed Ledger Technologies (DLT)	Distributed ledgers use independent computers (referred to as nodes) to record, share and synchronize transactions in their respective electronic ledgers (instead of keeping data centralized as in a traditional ledger). Blockchain is one type of DLT.
Digital Crypto-Wallet	Used to send and receive transactions on a blockchain network. Wallet essentially has an address which is an alphanumeric character string and can also be represented as a scannable QR code. Digital wallet also provides user interface to manage these activities.
Ethereum	A public blockchain network and decentralized software platform upon which developers build and run applications.
Evokation	Final project or solution to the 'grand challenge' created by the students as the outcome of the Evoke program (see the term "Evoke").
Evoke	Evoke is an online educational experience based on the problem-based learning (PBL) methodology, which uses storytelling, game mechanics, and social networks, to prepare young people to become social innovators who create solutions that address global 'grand challenges'. The Evoke project is designed to support young people as they develop an understanding of these complex challenges, acquire 21st century skills (e.g., creativity, collaboration, critical reflection), socio-emotional skills (e.g., curiosity, empathy, generosity), and gain the confidence to experiment, collaborate, and create innovative solutions.
EVOCOIN (EVC)	The specific token created for the project (see the terms "crypto-token" and "token economy"). The redeemable reward value of the EVOCOIN token is predefined by the team. The exchange rate between Evocoins (EVC) and Colombian Pesos (COP) established for the pilot was EVC/COP=100.
Hackathon	A design sprint-like event that could have different goals. In the context of this pilot, an event in which computer programmers and others involved in software development, including graphic designers, interface designers, blockchain experts and others collaborated intensively to create a prototype. The goal of a hackathon is to create functioning software or hardware by the end of the event, and in the context of the pilot, identifying local technical expertise.
Private blockchain	Private blockchains are closed shared ledger systems with restricted access to read, write and commit to only authorized entities. Here, authorized entities are needed to run and maintain ledger node infrastructure to arrive at consensus (a common agreement of the ledger history) for the private blockchain ledger.
Private keys	A private key is an alphanumeric string of data that corresponds to a single specific wallet or "public address". Private keys can be thought of as a password that enables an individual to access their crypto wallet/account.

Public Blockchain	Public permission-less blockchains are open for anyone to read, write and commit data, ledger consensus is maintained through nodes where anyone can participate. E.g. Bitcoin, Ethereum. There are also permissioned public blockchains where write and commit of data is only for authorized participants.
Token Economy	Blockchain and smart contracts have enabled the creation of digitally scarce assets or digital tokens with a few lines of code. Token economy helps in designing systems or networks which creates new models of value generation and exchange and creates incentive models for community members of the network.

Executive Summary

In a rapidly changing and increasingly digital economy, countries confront the challenge of providing learning opportunities for youth to develop life-long learning and relevant skills to compete and thrive. Education systems increasingly aspire to engage their students in authentic real-world challenges such as renewable energy, clean water, literacy, sustainable cities, et al.

Capitalizing on this momentum, the project aims to increase the motivation of youth to learn and build relevant skills to address global 'grand challenges' (e.g., displacement, hunger, poverty, water scarcity, sustainability) through a project-based learning methodology and conditional cash transfer incentives using blockchain technology. In the early exploration phase of this project, the Global Education GP partnered with the World Bank ITS Technology & Innovation Lab to explore a new model around education service delivery using emerging technology. The use case sought to improve the process by which students are incentivized and rewarded for developing innovative solutions to local challenges through the implementation of blockchain technology and crypto-tokens as a means of value exchange between funders, students, and teachers in an education system. The project aspired to bring results-based financing directly to students and teachers in a cost-effective and transparent way. The team tested a proof of concept platform for use of the Ethereum blockchain and smart contracts (code that allows for if-then statements to program disbursements) to facilitate value exchange among the actors in the system. The use case directly focused on the critical challenges of incentivizing youth to develop relevant skills to address development challenges in their communities. The project also aims to test blockchain technology in response to prevalent challenges more broadly in World Bank projects including the transparency and trackability of funds down to the dollar with transactions recorded on the blockchain; the potential to move toward results-based financing agreements at the classroom level with outcomes and conditions for disbursement based on outcomes clearly stated in smart contracts executed on the blockchain; reducing the speed and costs of disbursement; and the potential to crowd in non-traditional development funders to maximize finance for development are all larger challenges that this use case addressed. After proving the feasibility of this concept with a prototype, the team modified the prototype and tested the viability of the proof of concept during the pilot in Colombia. This effort was **funded by the Disruptive Technology for Development (DT4D) trust fund supported by the Spanish Fund for Latin America and the Caribbean (SFLAC)**.

Some clear problems that the pilot aspired to solve include:

- Programmable money to reduce dependencies on intermediaries to disburse funds and improve efficiency.
- Traceability of funds to reduce time & efforts needed towards monitoring & evaluation of such projects and reporting success of the project to donors.
- Results-based Financing using smart contracts to reduce costs of validation and increase accountability and transparency of results.
- Improve efficiency of incentives for action through conditional cash transfer schemes (CCTs).
- Facilitate the ease of disbursement using blockchain technology and smart contracts.

- Create incentives for real-time and transparent reporting of use of funds to donors as a means to mobilize additional finance for development projects.
- Create incentives for actors in the learning process by crowding in non-traditional teachers.
- Empowering youth and teachers.

1. Project context and development objectives

1.1 Context

1. **Problems are chronic and repetitive in education projects**. Youth are unmotivated (only 46% of all young people in LAC who start higher education graduate by the time they are 25-29) and lack relevant skills (private sector demands increasingly 21st century skills such as creativity and collaboration, which are the most demanded skills in 2020[1]). In a rapidly changing and increasingly digital economy, countries confront the challenge of providing more learning opportunities for youth to develop life-long learning and relevant skills to compete and thrive. Moreover, education systems increasingly engage their students in authentic real-world challenges through project-based learning focused on global challenges such as sustainable cities. These demands have been exacerbated by the recent COVID-19 crisis.

2. Through discussions with policymakers at both the basic and higher education levels, the Colombian Ministry of Education has identified 21st **century skills, entrepreneurship, innovative content and curriculum** as key aspects of their education reform agenda.

3. In order to combat issues of retention and drop-out rates in higher education, the Agency for Social Protection (*Prosperidad Social*) in the government of Colombia has a program called Youth in Action to provide **conditional cash transfers to out of school youth in incentivize them to enroll in skill building programs, develop relevant skills and graduate from these programs** in return for cash incentives. Again, the needs for quick and transparent government assistance during COVID-19 highlighted the deficiencies with existing technologies.

4. **Results-based financing and transparency in education projects**. Studies have shown that in many countries only 13% of intended resources actually reach the school. For FY18 77% of Bank Education Projects involve Results-Based Financing (RBF) and reports[2] illustrate that in some cases for each $1 spent on service provision about $.50 is spent on verification that the results have been met.

5. **Remote Learning and Social Protection**. The COVID-19 crisis has laid bare the inequalities in digital access and learning resources as schools across the world have closed and education systems deliver education through remote learning. The crisis has also highlighted the need for a more transparent and efficient distribution of emergency cash support to those most impacted by economic crisis.

6. In this context, the **Blockchain Technology for Youth Empowerment and Value Exchange project (P171672) seeks to improve the process by which resources are transferred transparently in an education system based on results-based rules in which students are incentivized and rewarded for developing relevant skills.** The project uses blockchain technology and crypto tokens as a means of

[1] Anderson, Bruce. The Most In-Demand Hard and Soft Skills of 2020. LinkedIn (2020).
[2] Lee,Ling Jessica Diana; Medina Pedreira,Octavio.2019. Results-Based Financing in Education : Learning from What Works (English). Washington, D.C. : World Bank Group. Original quote from Paul et al (2018)

value exchange between funders, students, and teachers. The project leverages and builds upon the very successful initiative called Evoke which demonstrated positive impact on students 21st century and socio emotional skills in a pilot with Uniminuto in Soacha, Colombia[3] and also builds on a new learning module for Evoke on 'sustainable cities' developed by the innovation lab in the Colombian Ministry of ICT. Finally, the project refines and tests a proof of concept platform for use of the Ethereum blockchain and 'smart contracts' that was developed in 2018 in collaboration with an industry leader – Consensys Labs and the World Bank Group Technology & Innovation Lab. The project therefore combines engaging learning content that teaches relevant 21st century skills and provides incentives to students who successfully complete their learning with blockchain tokens that can be redeemed for value.

7. The project, while focused on the educational goal of addressing the critical challenges of incentivizing youth to develop relevant skills, has applications well beyond this use case. For instance, the transparency and trackability of funds down to the dollar with transactions recorded on the blockchain ledger; the potential to move towards results-based financing agreements with outcomes and conditions for disbursement based on outcomes clearly stated and executed leveraging smart contracts[4] and blockchain technology; reducing the speed and costs of disbursement; evaluating the changes in disbursement in real time; and the potential to crowd in non-traditional development funders to maximize finance for development are challenges relevant for any World Bank financed project.

1.2 Development objective

8. **The development objective for the Blockchain Technology for Youth Empowerment and Value Exchange project (P171672) is to pilot new disruptive blockchain technology with Colombian University partners** to evaluate the impact on the transparency and trackability of funds; student motivation and skills development; and cost savings for application to results-based financing and conditional cash transfer programs in education.

9. **The project develops an open source platform with transparent rules for disbursement of resources**. The evaluation assesses: i) the ease in which resources can be tracked; ii) the motivation and skills of the students and teachers that are developed, and iii) the cost efficiency realized through a fully automated system on the blockchain. Additional research questions regarding results-based algorithms, use of blockchain tokens, game mechanics for motivating students, and scaling the innovation through a network of partners are also explored.

[3] Freeman, Barbara; Hawkins, Robert J. 2017.

[4] A smart contract is a computer program or transmission protocol intended to digitally and automatically execute, control, document, verify, or enforce the performance of a contract or an agreement. Smart contracts allow the performance of credible transactions without third parties. They not only define the rules and penalties around an agreement in the same way that traditional contracts do, but also automatically enforce those obligations.

1.3 Activity summary

10. **The pilot implements the use of blockchain for trackability of resources, development of student motivation and skills and reduction of costs in education programs using results-based financing**. To accomplish these objectives, the pilot tests a proof of concept platform for use on the Ethereum blockchain developed in 2018 in collaboration with an industry leader – Consensys Labs and the World Bank Innovation Lab.

11. The preparation phase from August – December 2019 involved the following activities:
    a. *University engagement and identification of participants (August 2019).* While four universities in Colombia expressed initial interest, the project was implemented in one of these universities -- EAN University.
    b. *Legal Sandbox (August 2019).* The team met with the World Bank legal team to review regulatory and legal issues associated with blockchain which could not be mitigated and in some cases identified prior to implementation. The sandbox matrix provided guidance for the design of the project to address and mitigate potential risks.
    c. *Technical Design (Aug. to Dec. 2019).* The blockchain based prototype that was developed by the World Bank Group Technology & Innovation Lab and Consensys (for more details see a recording of a demo of the prototype) was merged with the broader Evoke platform developed for the pilot.
    d. *Finalization of learning content for 'sustainable cities' (September 2019).* The Colombian partners developed the creative content for 'sustainable cities'. They also developed and tested educational content and learning activities. Furthermore, the skills framework on learning activities to support the development of 21st century skills was updated and contextualized.
    e. *Technical Hackathon (September 2019)*. A hackathon was organized by local partners and universities to identify technical developers to take the technical design and develop an initial prototype.
    f. *21st Century Skills design and algorithmic rules design (Sept. to Oct. 2019).* As part of the design process, the 21st century skills of creativity, collaboration, problem-solving and empathy were defined, performance tasks to develop these skills were developed and the measures to assess these skills were created. The measures were then fed into the results-based rules on which incentives are earned and disbursed.
    g. *Vendor identification (Sept. to Oct. 2019).* A partnership with Telefonica at both the global level and in Colombia was developed and finalized. Telefonica provided data plans as the primary incentive for students to use the blockchain tokens that they earn.
    h. *Evaluation design (Nov. to Dec. 2019).* An evaluation of the pilot was designed to address the three key issues: ease and transparency of resource deployment; motivation of students and teachers including quality of student solutions to environmental challenges in their cities; and costs to verify results in a smart contract compared to traditional verifications modalities.

12. The second phase took place from January 2020 to May 2020 and involved the implementation of the pilot in EAN university, involving the following activities:
    a. Training and awareness for teachers participating in the pilot (Feb. to March 2020).

b. Pilot. 16-week grand challenge pilot implementation of the Evoke platform on theme of 'sustainable cities' (March to June 2020).

13. The third and final phase took place from May to June 2020 and involved the finalization of the evaluation, review of options for moving the pilot to scale and dissemination of findings to stakeholders (May to June 2020).

1.4 Significant changes during implementation

14. Significant changes were made to the activities designed in the original proposal, especially regarding the implementation phase (the third section of this report, Key factors that affected implementation and outcome, analyzes the factors in detail).

15. During the initial phase to identify participating universities for the pilot, the local partner (QuidLab) established initial contact and conducted multiple interviews with several interested universities in Colombia, including EAN, Uniminuto, Javeriana, Nacional and Los Andes. Due to the very tight design and implementation timeframes, the team identified that EAN university was the best prepared to be able to implement the project. In order to have the content aligned and ready for the implementation in the proposed timeline, the team decided to implement Evoke only in EAN (the flexibility of the Evoke curriculum and the openness for innovations from the professors of the "*Cultura del Emprendimiento II*" course made possible the correct integration and alignment between the subject´s syllabus and Evoke in a short period of time). The university estimated that around 200 students could enroll in the second semester. **The total number of students enrolled was 198**, in two classes (morning and night schedules).

16. Amid the preparation phase, the team also identified potential high schools to implement Evoke in parallel, in the department of Magdalena (specifically in the municipalities of Fundación and Aracataca). The local partner QuidLab organized events and workshops with local teachers to explain the program, and the team also closed an agreement with Telefónica Colombia to include incentives in the marketplace (data plans) for 200 high school students (in addition to the 200 university students from EAN). However, due to the school closures caused by the COVID-19 pandemic, the team had to cancel the implementation in the identified schools. Teachers and principals highlighted the connectivity issues that many students were facing because of the lack of connectivity at home. The team tentatively explored the possibility of implementing Evoke using a combination of channels (radio, SMS, section in the newspaper, etc.), however there wasn't time for the content adaptation.

17. The team faced technical challenges regarding the adaptation of the platform (detailed in section 3.1), and this delayed the implementation of Evoke at EAN University to the beginning of the second semester, in March).

2 Outcome

18. **The Project has been fully and successfully implemented**, with the adaptations mentioned in section 3. It should be noted that the Evoke program was fully implemented despite the environment of high uncertainty and volatility marked by the closure of schools and universities due to COVID-19 and by the quarantine order decreed in Colombia during the time of the implementation.

2.1 Completed milestones

19. **Hackathon**. The team successfully designed and organized a hackathon in Bogotá (Colombia) with the objective of identifying local Colombian technical expertise to be part of the development team. Eight technical experts were identified (2 back-end developers, 2 front-end developers, 2 UI/UX developers, 1 designer and 1 blockchain expert). All of them were part of the technical development team during the platform design and development phase of the project, and four continued during the implementation (improving the platform, adapting the usability based on feedback, adding new features and solving usability issues). See Annex III for details.

20. **Content co-creation and capacity building**. The team worked intensively with a professor in EAN University (the target university for the project) in order to align the content from the university subject ("*Cultura del Emprendimiento 2*") and the content of Evoke. The course was delivered by the professor and a number of graduate teacher assistants (who played the role of "mentors"). While the team could not train the assistant professors before implementation, the team met weekly with these assistants (or mentors) to answer their questions and to adapt the platform as necessary.

21. **Development of a functioning platform**. A functioning platform was developed for the pilot which integrated with the public Ethereum blockchain. After studying the options of different open source alternatives (from lessons learned in past iterations of Evoke and review of functional needs), the team decided to build the platform in Moodle, an opensource learning management system popular in higher education institutions. Moodle provided a large community and a number of auxiliary features that could be integrated with platform – i.e. plugins (see design in figure 1). The development team initially created a platform designed to be mobile-first, but then adapted the design to the context of the pandemic (in which EAN indicated that students would access Evoke using laptops from their homes, once the university canceled the face-to-face classes). The team conducted several user tests with students and teachers on the functionality of the platform and adapted it based on this feedback. Other features were added to the platform in order to provide students with the necessary tools to continue with the learning process and teamwork remotely: forums, virtual rooms, chats or wikis, among others. The team created a video tour (with explanations in Spanish) to some of the key features of the developed platform).

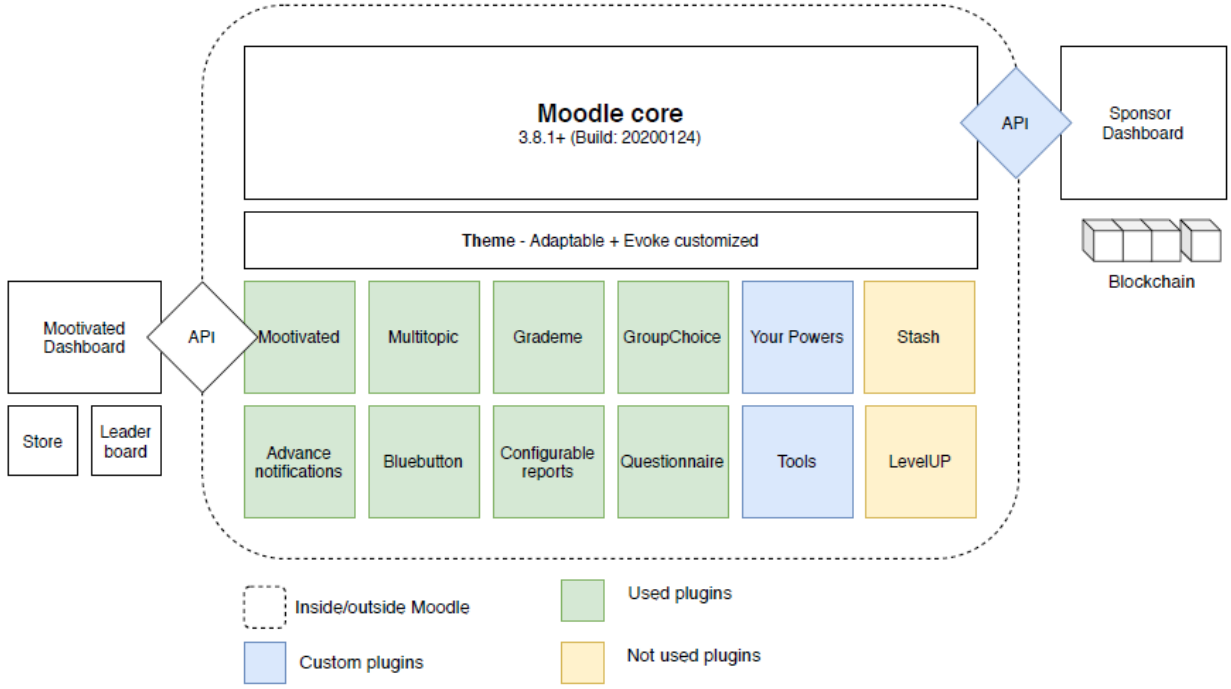


Figure 1: Evoke-Moodle´s architecture diagram. The platform supported the process to achieve Evocoins as follows: The student selects the mission to carry out and enters in the selected mission. Then, the student submits the evidence of that activity, and the corresponding EVC percentage is earned (this amount of EVC is programmed in the Mootivated plugin, associated with the mission's "assignment" Moodle activity). The transaction is recorded in the blockchain (a via the blockchain API). The mentor rates the mission submission. If the grade is> 80%, a bonus is activated in the student's panel so that they can claim the EVC linked to the quality (this rule is programmed in Moodle). The student claims the bonus and 2 things happen: The skill points linked to the mission are assigned and the % of EVC corresponding to quality is assigned (this amount is programmed in Mootivated, associated with the corresponding bonus activity). Then, the transaction is registered in the blockchain (through the blockchain API).

22. **Finalization of learning content for 'sustainable cities'**. Creative content about sustainable cities including a graphic novel was combined with new learning activities to support the development of 21st century skills. The graphic novel was particularly successful among the students (85.9% of the total number of students scored 10 points out of 10 on the questions related to the graphic novel, which suggests that the attention paid to the graphic novel was high). The team also adapted and extended the content to fit the needs of the university in the context of the pandemic. Thus, the team expanded the existing content to align it with the tools and syllabus of the EAN university and with the content provided by other partners and experts, like the city of Vitoria-Gasteiz.

23. **Blockchain token rules design**. As part of the design process, basic results-based rules -- on which incentives were earned and disbursed to the students -- were designed, tested and integrated into the platform. The rules were designed to be used with Ethereum smart contracts for execution on the Ethereum blockchain. For this iteration, the rules to earn incentives were very simple: students earned incentives by submitting activities and by doing those activities with quality ("quality" was defined with the participating university as obtaining 80 points or more out of 100). More sophisticated algorithms were originally designed including staking of tokens and token curated

registries, but the team opted for the simplest design. These other rule sets would need further testing but could be considered important global public goods that partners could use based on the types of results to be incentivized. Also, additional possibilities for including a more robust set of assessment data including peer assessment and computer-generated data is also possible and supported by Moodle as a multi-source dynamic assessment tool.

24. **Vendor identification**. For this pilot, a single vendor was identified (Telefonica). The project evaluated how students could redeem their blockchain tokens for cellphone minutes and data plans. Telefonica provided 440 1GB data plans and 220 2GB data plans. Some of the challenges included the fact that not all students had Telefonica SIM cards (the team overcame this difficulty by working with Telefonica to offer SIM cards for those students); and the difficulty of delivering those SIM cards to the students (initially, before the university closure, the team planned to deliver the SIM cards in class. After COVID-19, the cards were sent to the homes of the students).

25. **Development of the donor's dashboard**. A donor dashboard was created to provide traceability and transparency on the flow of funds from the donor account to the university account and down to individual students. The dashboard included interactions on the blockchain per the token rules which recorded the number of tokens earned for each action with a time stamp as well as when the students redeemed those tokens in the marketplace for data plans.

26. **Evaluation and implementation**. Evaluation data on engagement was collected (see Annex I). After the implementation, several students from different teams, the professor in charge of the subject and all the mentors were interviewed. In addition, the different partners who participated in the process were interviewed in order to capture their feedback on issues related to transparency and costs of the project. In addition, the Moodle platform also provided data that has been collected (most successful activities, number of Evocoin (EVC) distributed and redeemed, progression of the students and groups, etc.).

27. **Evoke as connector: creating networks.** During the implementation of the pilot, Evoke worked as a connector for innovations. After the participation of the Center for Environmental Studies of the city Vitoria-Gasteiz (in Spain) in conducting webinars for the students and mentors at EAN University around "sustainable cities' (the challenge of this iteration of Evoke), the city of Bogotá initiated a collaboration to share best experiences (initial conversations between both cities took place, and the collaboration is ongoing). In addition, after some meetings with the blockchain team of Telefónica around possibilities to incentivize participants, the city of Vitoria engaged with Telefonica to learn more about how to incentivize participation of the citizens in decisions around sustainability of the city. Another example was the collaboration with the Office of Commerce of Spain in Colombia and their participation in the selection of the best student projects. Future possibilities were discussed with the Spanish programs Impact+ and with CDTI (the Centre for the Development of Industrial Technology, a Public Business Entity, answering to the Ministry of Economy, Industry and Competitiveness of Spain) to provide follow up support to the most innovative student projects.

28. **Dissemination workshop.** Before the COVID-19 pandemic, a workshop in Colombia with the different partners that participated in the process was planned for dissemination of lessons learned. Due to the pandemic, the team decided to organize the workshop online ("Reimagining the future of education: lessons learned from Evoke", see the recording of the event -- in Spanish -- and the overview and speakers). In addition, two online sessions were conducted to identify the best youth solutions for sustainable cities (but no additional resources were distributed to execute winning ideas). See details in Annex III.

2.2 Key accomplishments

29. **The project created a platform and mechanics to assess the ease in which resources can be tracked in a transparent immutable manner**, distributing incentives based on smart contracts depending on submission of activities and quality of the submitted activities, and capturing all the transaction information on the Ethereum network and organized in a donor´s dashboard (iterated based on feedback from partners). A number of lessons learned with regard to valuing the campaign, training for mentors to validate success, frequency of posting to the blockchain, and types of incentives are shared in lessons learned and in more detail in the annexes.

30. **The project created a blockchain token to incentivize students.** A token is simply a digital representation of value on a blockchain. The project disbursed 780,311,176 tokens (Evocoins) based on the work performed by students. Evocoin was created as an ERC-20 token on the Ethereum network and designed as a stable coin – such that its value would not change. The value was derived from the total value of the data plans provided by Telefonica. Telefonica provided one 2GB data plan (20,000 COP) per student and two 1GB data plans (10,000 COP) per student. The total value per student for the campaign was therefore estimated at 40,000 COP or 11.57 USD. The total value of the campaign was established at US$2,545 or COL$8.8M. The exchange rate between Evocoins (EVC) and Colombian Pesos (COP) established for the pilot was the following: EVC/COP=100 (note that USD/COP=3,457), therefore the total number of Evocoins created was 880,000,000). Eighty-nine percent of the Evocoin created was distributed during the pilot. The final total number of students who participated was 198. The next figure presents the view from the donor's dashboard, with the final number of Evocoins distributed out of the total number that was created.

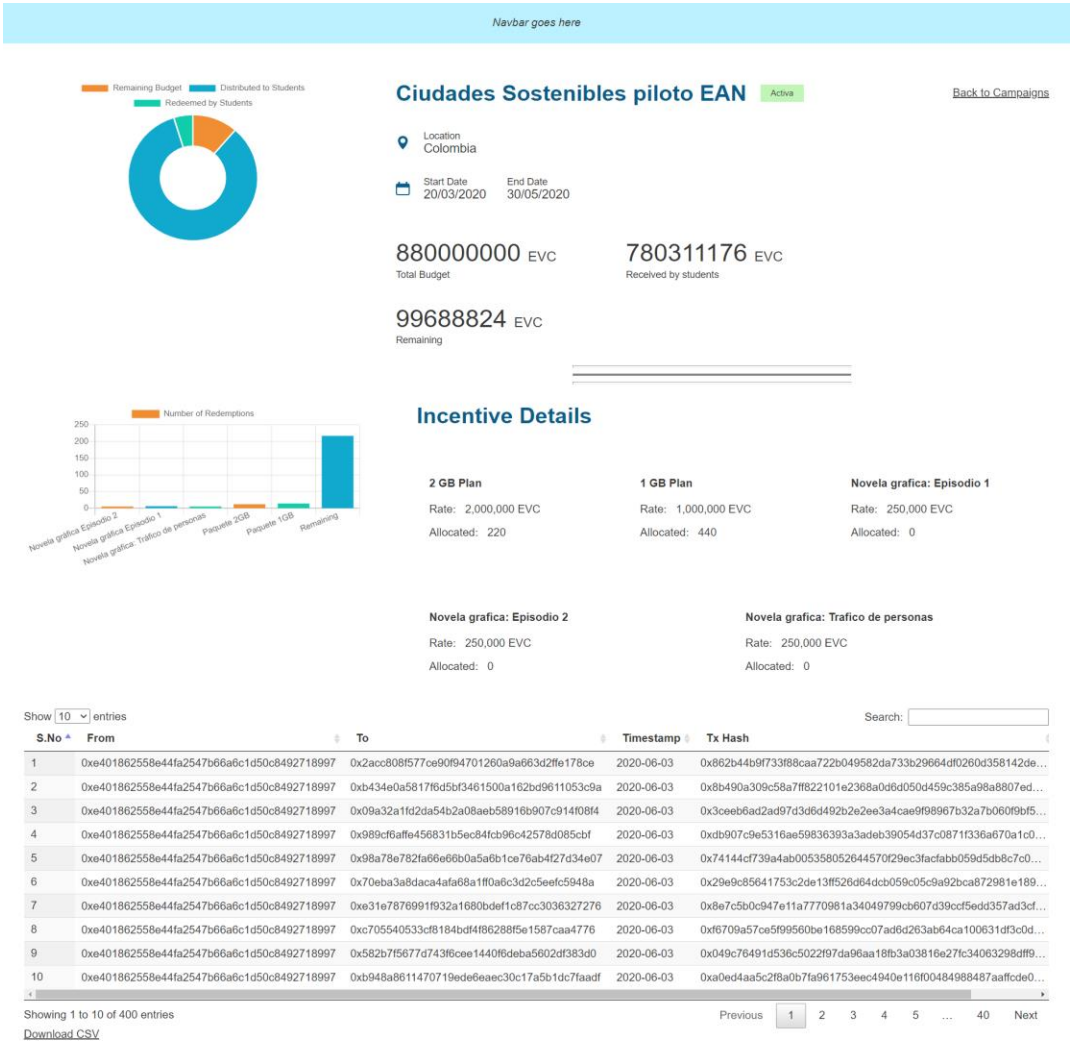


Figure 2: screenshot of the donor´s dashboard at the end of the implementation but before the redemption of student data plans. It shows the total number of Evocoins created for the campaign (the "total budget", 880,000,000 EVC), and the number distributed to the students. The remaining EVC that were not distributed (the equivalent to 997,000 COP or 260 USD) weren't allocated due to a synchronization error with the Mootivated plug in.

31. **The project recognized student skills and awarded a total number of 2,089 badges** based on quality submissions by the students, to recognize skill development for creativity, problem solving, empathy, and collaboration. Students also earned badges for completing certain milestones in the project. Every student (100%) earned at least one badge (for more information about the badges go to the specific subsection in Annex I).

32. **The project realized high levels of student engagement.** The total number of missions (the activities students were asked to complete to earn Evocoin tokens) completed by the teams was 1,326 of the 1,564 possible missions available (this represents the total number of potential missions or activities times the total number of students). We can conclude, therefore, that student **teams completed 85%**

of the total content of Evoke (see Annex I for more detailed information). This engagement and retention level are very high for an on-line learning experience.

33. **Partnership developed with Telefonica for provision of data plans in the Marketplace**. Telefónica Colombia donated 2GB and 1GB data plans for students in the marketplace. Students were able to redeem the earned Evocoins for these data plans. Based on the rates explained in the previous point, the value in EVC of the 1GB data plans were 1,000,000 EVC, and the value of the 2GB data plans was 2,000,000 EVC. A total of 42 redemptions were made.

34. **Content for 'sustainable cities' integrated with game mechanics, learning platform and blockchain functionality.** The project successfully brought together the various elements of an engaging on-line learning environment. A functioning platform on Moodle was developed, with updated game mechanics. The skill matrix was also reviewed and contextualized for the university partner (see the detail in the section Skills and Learning Objectives from Annex III) with new learning material that aligned with the university learning objectives. In addition, the smart contract integration and blockchain integration was implemented successfully to facilitate the connection between activity completion and token rewards (see more detail around the blockchain module in Annex II).

35. **The project created a network of education partners in Colombia.** During the implementation of the pilot, the Ministry of National Education (MEN) of Colombia and the Department of Social Protection (DPS) reviewed the implementation of the pilot to assess the use of Evoke in their programs. The evaluation collected feedback from these counterparts in order to improve the pilot, and the Head of Innovation of the Ministry of National Education participated in the previously mentioned dissemination event to share relevance of the pilot for remote learning in Colombia. The project team collaborated with Telefonica Colombia and Telefonica Spain (who provided the data plans for the marketplace, as well as feedback on the blockchain and the dashboard), with the Center for Environmental Studies of Vitoria-Gasteiz (who provided their technical expertise in sustainable cities and shared some resources for the students), with the EAN University (the pilot was implemented with the university replacing the course, "*Cultura del Emprendimiento 2*" with 198 students), with the Embassy of Spain in Bogota (who participated in the selection of some of the best projects) and with other local institutions who also participated on the selection of the projects (such as the Chamber of Commerce of Bogota and Innpulsa (the entrepreneurship and innovation agency of the National Government).

36. As part of the project, the team **co-organized a national dissemination workshop in Colombia.** Participants included the Ministry of Education in Colombia, the EAN University of Bogotá, the Economic and Commercial Office of Spain in Colombia, Telefónica, and the city of Vitoria-Gasteiz to review lessons learned from the project. The discussion (open to the public and broadcast in Spanish), focused in the following themes: i) The role of teachers and mentors in remote learning; ii) innovations in education: reflections on 21st century skills, teamwork and learning, gamification and project-based learning; iii) the importance of networks: opportunities and challenges of public-private collaborations in educational innovation processes; and iv) opportunities for leveraging blockchain

technology in education to support conditional cash transfer programs. For more details on the open webinar "Reimagining the future of education: lessons learned from Evoke", see Annex III.

37. **The project successfully adapted to the Covid-19 pandemic**. During the preparation phase of the project, the University EAN cancelled the face-to-face classes due to COVID-19. In addition, in March, the National Government issued Decree 457 of March 2020, by means of which instructions are given for the fulfillment of the Mandatory Preventive Isolation ("*Aislamiento Preventivo Obligatorio*") of Colombians. This had a notable impact on the original structure of the Evoke program, which includes activities to foster community engagement to develop student skills and create sustainable solutions. The team completely revised the learning activities to meet this new reality. As a result, students continued their learning in the subject using the platform and the different tools provided to facilitate the teamwork remotely (such as the virtual rooms, the forums or the webinars including the participation of external experts).

38. As a result of this successful and fast adaptation of Evoke, the **project was offered in the Education Portal of the Ministry of Education for any school to use** (for details, go to *colombiaaprende* and search for Evoke). The team also organized a webinar explaining the details of the Evoke program. However, due to limited resources, time and challenges with connectivity for many schools, the team focused only on the existing pilot at EAN university.

39. **The project supported the creation of student innovations for sustainable cities**. As a part of the Evoke program, **students presented the best team projects** (or "Evokations"), pre-evaluated by the mentors (associated professors of the "*Cultura del Emprendimiento 2*" subject of the EAN). In two events with an external jury (partners for external organizations that collaborated during the implementation and were invited to participate as jury to decide the best Evokations) these student teams presented their projects. There were two winning teams (one for each class). The winning project in the first session was a proposal to improve waste management in the city of Bogotá, focusing on the recycling process and the awareness raising. The winner of the second session focused on the problem of plastic contamination and waste, creating protective gear and a biosafety suit using the recycled plastic. For more details on the "Final Evokation Event", see Annex III).

2.3 Timeline and budget

Table 1: overview of the main components, cost and timeline for each.

Component	Cost	Timeline
PREPARATION		
Local University outreach & onboarding	$6,500.00 USD	AUG. - SEPT. 2019
Hackathon design and implementation	$15,000.00 USD	SEPT. 2019
Skills framework revision and activities	$25,000.00 USD	SEPT. – NOV. 2019
Platform development and initial tests	$90,000.00 USD	OCT. 2019 –JAN. 2020
IMPLEMENTATION and SUPPORT		
Platform adaptations and adjustments	$20,000.00 USD	FEB. – MAY 2020
Adaptation of activities and support to mentors	$3,500.00 USD	FEB. -- APR. 2020
Local coordination and support	$15,000.00 USD	FEB. – JUNE 2020
EVALUATION		
Evaluation of pilot	$5,000.00 USD	JUNE - 2020
DISSEMINATION		
Dissemination of lessons learned	-	JUNE – JULY 2020
TOTAL	**$180,000.00 USD**	

3 Key factors that affected implementation and outcome

3.1 Key factors during preparation

40. **Change in platform requirements and technical needs**. The development team decided to pivot from one open platform -- Sunbird to another -- Moodle**.** Initially, the Evoke team decided to develop the platform using the available tools in the Sunbird suite, as a practical exercise to try to mirror some of the experiences of client countries with the concept of "open digital infrastructure for education".

41. When trying to install Sunbird, the team discovered challenges with oversized requirements in terms of infrastructure, demanding up to seven servers (as Sunbird is very robustly dimensioned, probably designed for large-scale scenarios similar to those in India). Additionally, at the time, there was no "*dockerized*" Sunbird lite (low requirements) functional distribution. According to what was indicated by the EkStep team (the team behind Sunbird) it was possible to obtain it but could delay the estimated times for the creation of the platform. It was therefore not possible to experiment with the customization of Sunbird for Evoke: modifications to its frontend and APIs. This limitation created uncertainty as to whether or not it was possible to satisfy the technical and functional requirements for Evoke. Sunbird's learning curve was considered too steep by the local technical partner (also referred in the document as the development team) for the available time allotted in the project. In addition, there was no clear and well-structured documentation. Other important features that Sunbird lacked were the Spanish language support and the possibility of group configuration.

42. **The team therefore developed the platform on Moodle**, an opensource learning platform widely used at the higher education level in several countries, including Colombia. In fact, most of the interested universities were already familiar with Moodle and using it for their courses. The team quickly reviewed Moodle and its features and plugins and had some meetings with Moodle experts. This also required an investment of time that delayed some of the milestones of the development roadmap. For future implementations, an expert Moodle designer who can save the development team time in customizing the platform to reach the needs of the project is critical.

3.2 Key factors during implementation

43. **School and University closures due to COVID-19.** All face-to-face classes were interrupted due to COVID-19. The team had to adapt the content of the activities, the platform, and the support to teachers and mentors in order to ensure the continuity of the program. The pandemic impacted the content, the platform and the teacher facilitation as follows:

    - Content: Evoke's program includes activities to foster community engagement to create sustainable solutions to the grand challenge of 'sustainable cities'. Due to the pandemic, the government of Colombia issued a 'quarantine order' prohibiting citizens from leaving their houses (except for specific situations). This forced the adaptation of all activities, including those designed for face-to-face interaction. The flexibility of both Evoke and of the Moodle

platform allowed these modifications, in close coordination with the professor of the EAN university.

- Platform: The development team began the design of a mobile-first platform, with the idea of facilitating its use when students were on the street, engaged with the community. However, due to the aforementioned quarantine order and being aware that the students were going to spend most of their time at home, the team modified the initial design to create a platform to be used with desktop and laptop computers.
- Teachers and Mentors. Additional webinars and support meetings were organized to help the mentors and teachers to effectively use the platform and adapt to a style of pedagogy for which they were not prepared. Additional capacity however was required as the learning curve for mentors, was steep in adapting to a fully remote learning style.
- Dissemination workshop. Originally the team planned a workshop in Colombia with the different partners that participated in the process for dissemination of lessons learned and interaction between students and companies. Due to the COVID-19 pandemic, the team decided to organize the workshop online.

44. **Smart contracts and assessment**. The smart contract design was substantially simplified for the project. This is an area with large potential as a global public good as smart contract design can identify ways in which to incentivize honest feedback and assessment by both individual students, teachers and team members.

45. **Marketplace**. For future implementations, the marketplace should be ready at the start of the implementation. Many students were not familiar with the marketplace, and this had an impact on the number of redemptions. Furthermore, the main incentives identified for this implementation were data plans provided by Telefónica Colombia. The “shelter in place” order issued by the government forced the team to modify the distribution of the SIM cards, initially designed to be carried out in the classroom. The team had to mail the SIM cards to those students who did not have a plan with Telefónica.

46. **Internal challenges**. The project faced several internal challenges, as the team tried to explore the uses of frontier technologies not widely adopted (yet) by the World Bank (such as opensource technology or blockchain technology). This resulted in numerous meetings with the legal team and the adoption of a legal sandbox approach to design a technology approach in line with the current regulatory and legal framework and taking into consideration the legal ambiguities in the crypto space. The other major constraint was the amount of resources available for the pilot and the limited time to execute.

4. Lessons and recommendations

4.1 Preparation phase

47. **Mentor training, evaluation and incentives are critical.** More comprehensive training sessions for mentors are important as they are the key actors for determining quality and distribution of token rewards. At the beginning of the pilot an onboarding session was developed, but it wasn't a training session. During the pilot, the team observed that the usability of the platform and lack of time of the mentors generated several questions and inquires on how to evaluate the deliverables sent by the students within the platform. The project found that "less is more": the platform should avoid increasing the workload of the mentors and needs to provide effective and easy to use tools to facilitate the assessment process. In addition, during the evaluation of the implementation, the team found that an official certification from the World Bank or the Ministry of Education could be a potential incentive for mentors, rather than using Evocoins as with the students.

48. **Sandbox process was critical for mitigating legal and regulatory risks.** In collaboration with DT4D and LEGOPS, the project team took a sandbox approach to mitigate certain identified risks and conduct a pilot in Colombia (see more in Annex II). Various categories of risks for the project design were identified as part of the Sandbox considerations to identify the level of risk and determine corresponding mitigation approach. This provided an effective tool to address any potential concerns while fostering innovation and learning. The approach also provided space for implementing an innovative technology for which learning and experimentation are essential. Without this approach the project may have never been cleared for implementation.

49. **Donor identification and engagement**. Engagement with the potential donors of the campaign early in the process was essential. It is necessary to invest time in this process, first to explain the potential of the pilot to the donor and to familiarize them with the project and its possibilities and also to establish the terms of their participation. For this project, the team began conversations with Telefónica Global and Telefónica Colombia early in the process, so that at the time of implementation, the agreement to provide data plans available on the marketplace would be in place. In addition, during the design phase of the dashboard, the team had several conversations with potential donors so that the design of the donor´s dashboard was relevant to their needs.

4.2 Implementation phase

50. **Flexible Platform.** In the situation of "*virtuality*" (due to the cancellation of face-to-face classes in Colombia) the platform provided needed flexibility to offer different possibilities for communication and interaction such as forums or virtual rooms. The mentors highly valued the visualization of progress of teams and evidence per student to make decisions (for more details go to the "Tracked progress by teams" section in Annex I). This characteristic of on-line learning was a novelty that the mentors did not have in previous implementations of the subject, and it was key when understanding and redirecting the performance of several teams and students, by being able to clearly identify which teams were having difficulties in which specific activities. On previous iterations the mentors only knew that some students had not contributed to the group work at the end of the course. With the Evoke platform, they were able to identify these situations in time and make decisions based on

evidence such and have early conversations with the affected teams. On the other hand, the team identified numerous aspects to improve, such as its usability, simplicity and its interactions with other activities that happen outside the platform. The platform needs to be improved in order to facilitate the mentor´s work and participation, rather than increasing their workload. The flexibility of the platform made it possible for the activities to be easily adaptable to the context of COVID-19 and the cancellation of face-to-face classes. In close coordination with the university, some activities were readjusted, and different features were included in the Moodle platform (using existing plugins) to offer more tools and to facilitate the communication between students (e.g. a forum was included to promote participation, a chat feature was incorporated to be used between the teams or virtual rooms were added, among others).

51. **Results-based rules were simple but effective**. The rules designed to earn incentives for this iteration were very simple (as explained before, students earned incentives by submitting activities and by doing them with quality). However, with future implementations more sophisticated algorithms need to be tested, leveraging the possibilities that a platform (like Moodle) could bring for a multi-source dynamic assessment or a 360 assessment of students. As detailed in Annex II, there are multiple lessons learned regarding the use of blockchain, but the team also identified several outstanding questions for the roadmap that need to be tested in the future.

4.3 Evaluation phase

52. **Evaluation results on trackability.** The team met with different groups with different profiles that could potentially be interested in participating in Evoke as donors, such as Telefónica Colombia, Chemonics and the Colombia Department of Social Protection – Prosperidad Social, to explain the potential of using blockchain technology regarding trackability of funds, and to incorporate their priorities, needs and feedback into the design of the project. These focal groups highlighted the value of the traceability of the data, positively evaluating the dashboard presented. Telefónica stressed the importance of knowing what items are being consumed the most in the marketplace (the type of products). They also insisted on the importance of showing clearly the equivalence between the Evocoins and the local currency in the dashboard and differentiating the campaigns by the different institutions (for example having a dashboard for implementation at the university and another for schools). Telefónica Colombia also emphasized that this was the first time that they were able to track what was happening with donated products. All the partners stressed the value of better understanding blockchain technology and its application to real world challenges.

53. **Evaluation results on costs.** The team conducted several meetings with the Department of Social Protection (DPS) in order to understand how the *Jóvenes en Acción* program (JeA) works and to analyze how a validation and verification system based on blockchain technology (such as the one Evoke proposes) could generate efficiencies in its costs and processes. The JeA program has an associated cost of the 3% of the allocated budget, which translates into an expense of between US$515,000 to US$690,000 every two months. These costs include financial services, complementary activities, support to operators, among others. The JeA program has an information system called SIJA

(*Sistema de Información Jóvenes en Acción*), which has up of 24 additional validation rules. The information is validated and loaded so that the banks can deliver the resources to the students. This process must be done in an agile way because every 2 months the program starts the process again for the new delivery of resources. While the government identified the potential cost savings and efficiencies of using blockchain technology, the highlighted the risks of changing their critical systems for a new technology and would take a slow and deliberate approach to further assessing the potential.

54. **Discussions with the government indicated that there is an opportunity to optimize these processes using blockchain technology**, in aspects such as: authentication or validation of identity of students or beneficiaries; the exchange of information with banks, which could be carried out automatically on specific dates and with specific conditions or rules, optimizing elements such as checkpoints and final file generation; simplifying and streamlining the information system of the program and obtaining tracking information of the beneficiaries as well as their use of the resources by region. The partner would analyze these aspects of their system and determine which aspects would most benefit from blockchain technology taking into consideration the need to limit changes and experimentation of existing systems.

55. **Evaluation results on engagement.** The evaluation found that some elements of the experience stimulated the engagement of students more than others (see Figure 3). The students conveyed that the graphic novel story used as a common thread connected them to the learning content and skills development. For example, with the particular story-related language used in Evoke, students shared that they really felt like “agents” in the story. Most students agreed that the story, the characters and the graphic novel are elements that generated increased interest and curiosity, some even mentioned that these components lead them to be part of a "parallel reality" (It is important to note that 85.9% of all students had the highest score 10 / 10 in the activity on the graphic novel, which shows their engagement with this narrative element). A pattern found in conversations with mentors, students, and reviewing the data is that levels of satisfaction, participation, evaluation, bonuses, and other elements were higher at the beginning of EVOKE and decreased as the chapters passed. The image below shows this line and some items that have been found may help maintain high satisfaction.

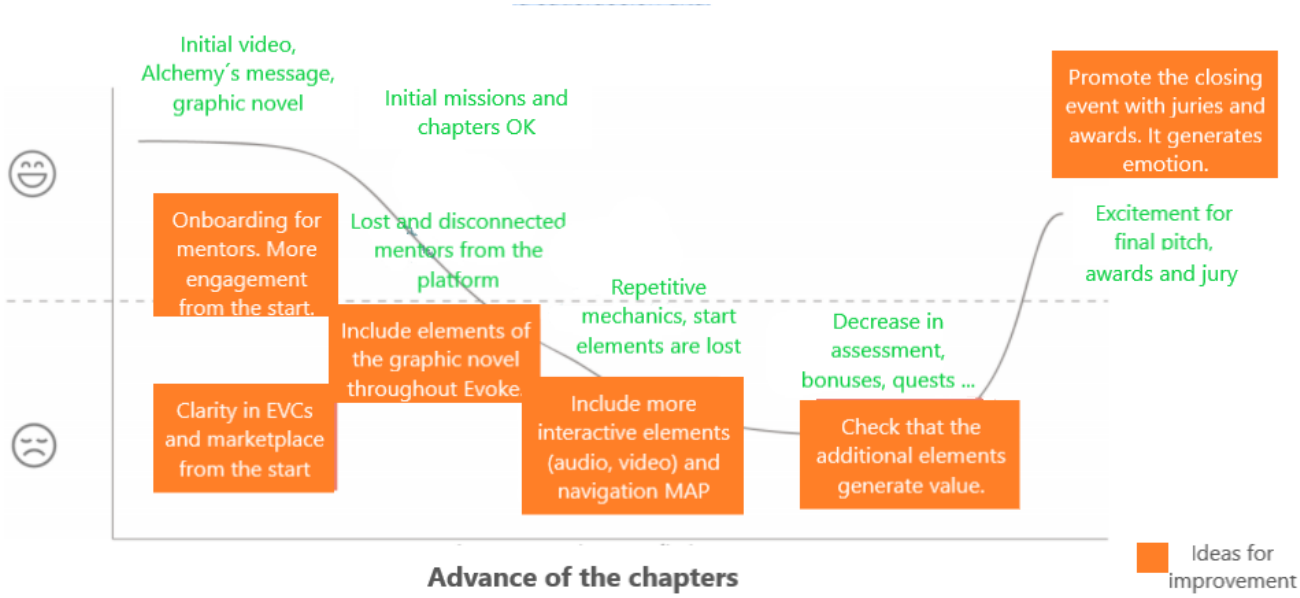


Figure 3: The figure shows the variation in the satisfaction and participation of students and mentors in relation to the progress in Evoke, and identifies the key elements that affect this evolution and the aspects that have been found can help to maintain high satisfaction levels throughout the entire program.

56. The team also identified that it is necessary to make the skills (or 'superpowers') more visible and evident for the students on the platform, making clearer their purpose and evolution. Although most students find it difficult to remember the 'superpowers' and their objective in the process, when asked about the aspects that they feel they have strengthened, they agree to mention teamwork and project planning. This element would improve the connection between the activities, the token rewards and the skills associated with completing those activities.

57. **The DT4D initiative was extremely important as a signaling mechanism in the Bank**. It is essential that Bank staff push the boundaries of new technologies and take risks. The DT4D program -with the support of the SFLAC- created institutional space for staff to engage in smaller scale projects that provide important learning for the Bank and Bank clients in development and deployment of new technologies.

58. **The pilot generated interest in continued activities in the country**. Ministry of Education is interested in the context of their remote learning strategy and development of 21st century skills. The Ministry of Social Protection is interested in the context of their Youth in Action program. The local implementing partner Quidlab have put together a budget for a next phase of Evoke in Colombia and are currently engaging potential funding partners to launch a national Evoke campaign in the coming school year.

59. **The pilot supported the Bank's dialogue at the higher education level in which innovation networks and 21st century skills are priorities.** While the Bank does not currently have a Project in social protection on conditional cash transfers, the project deepened our dialogue with the Ministry of Social Protection on this issue. The pilot addressed the issue that prior solutions to incentivize youth

engagement in learning through conditional cash transfers are not well targeted to specific actions nor well managed with regard to disbursement. The pilot demonstrated an open source platform with transparent rules for disbursement of resources using blockchain technology, and the lessons learned can potentially be used at any RBF project at the WBG. The Ministry of Higher Education is also interested in the lessons for the pilot as it prepares for a more blended learning approach using technology to deliver remote learning. The team has discussed the potential to use Evoke to prepare innovative teachers in remote teaching pedagogy as well.

ANNEX I: Data tracking and metrics

Tracked progress by teams

The following graphs show the progress of the student teams for each activity or mission:

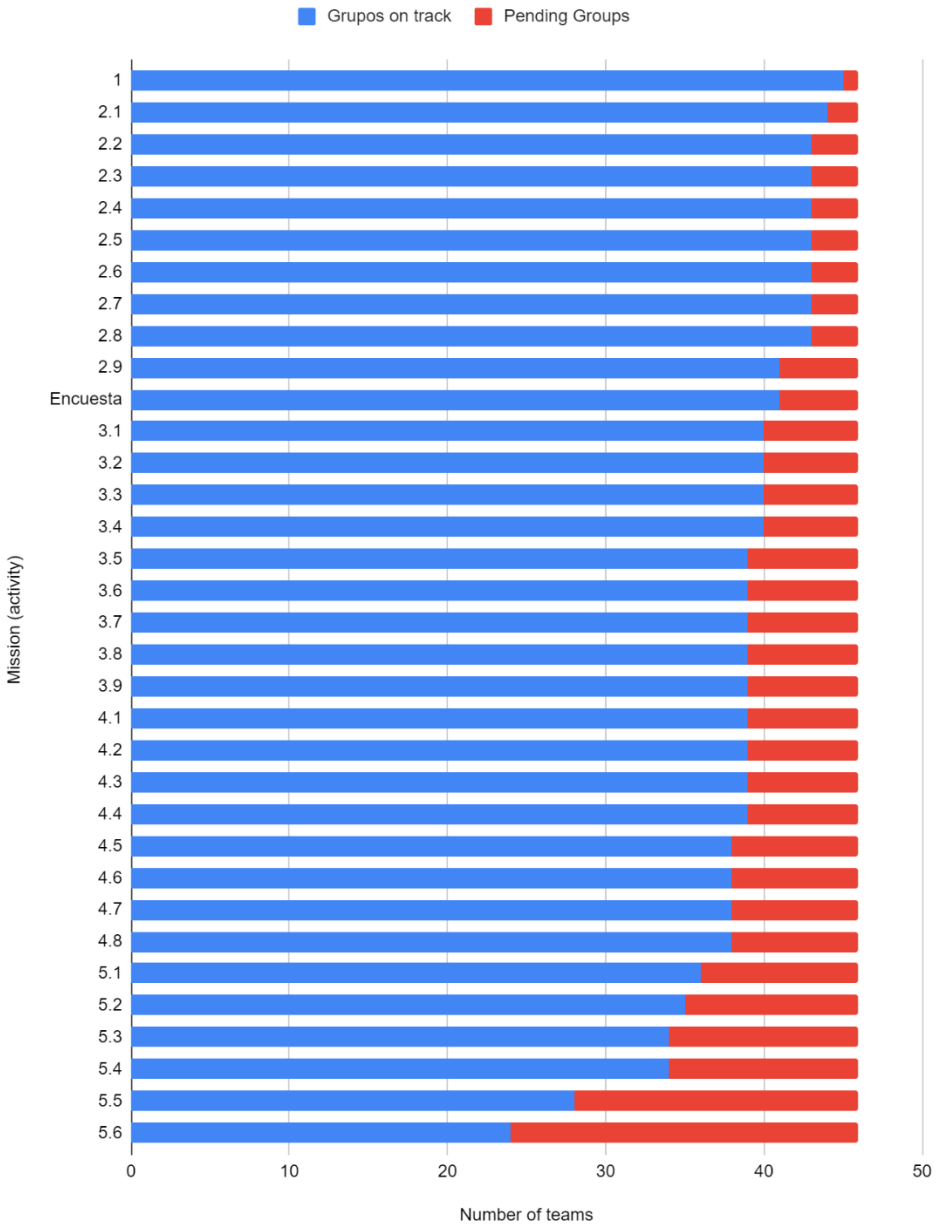
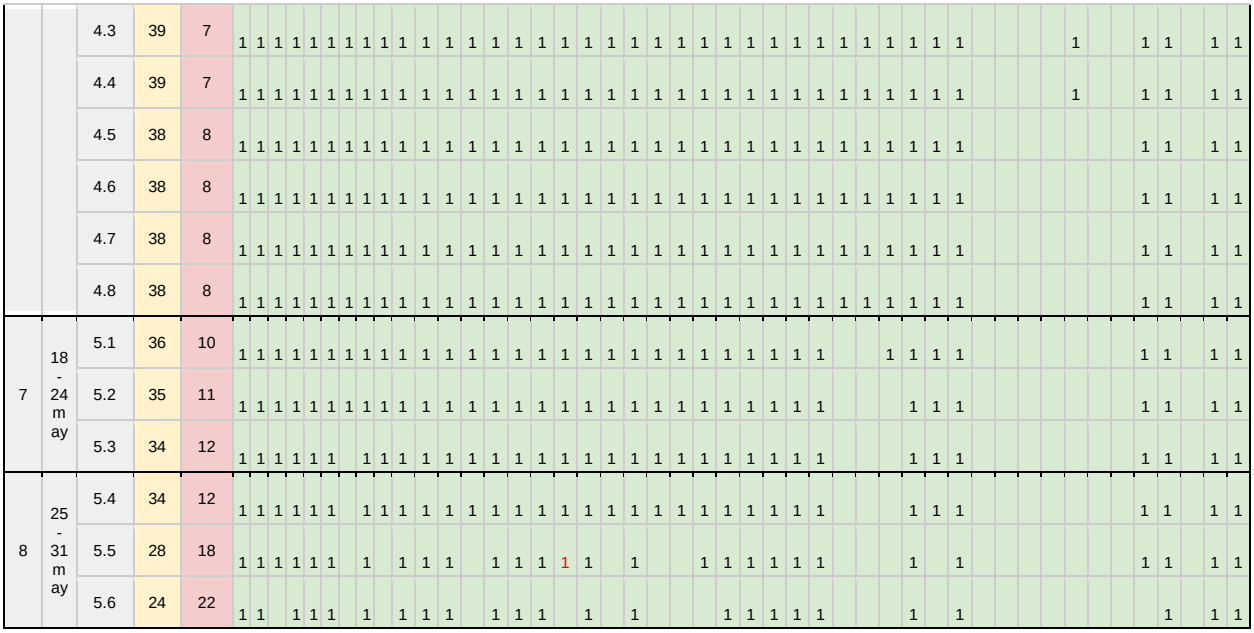


Figure 4: Progress of the teams per mission. In blue, the teams that were on track with the deliverables and in red, the pending groups

The following table shows the details of the mission completion. The total number of missions completed by the teams was 1,326. Compared with the total number of missions in the program (1,564), **we could conclude that the groups went through 85% of the total content of Evoke which is extremely high for an online course.**

Table 2: Detail of the progress of the teams by activity. Those marked with a "1" were completed.

Week	Date	Activities	Groups on track	Groups pending	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
1	30 mar - 5 abr	1	45	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2 (SS)	6 - 12 abr	2.1	44	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		2.2	43	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		2.3	43	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	13 - 19 abr	2.4	43	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		2.5	43	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		2.6	43	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		2.7	43	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	20 - 26 abr	2.8	43	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	27 abr - 3 may	2.9	41	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		Encuesta	41	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		3.1	40	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		3.2	40	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	4 - 10 may	3.3	40	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		3.4	40	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		3.5	39	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		3.6	39	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		3.7	39	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		3.8	39	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		3.9	39	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	11 - 17 may	4.1	39	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		4.2	39	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1



Student participation and engagement

The development team included in the platform different tools to encourage teamwork, participation and virtual discussion (due to the closure of the university, the entire program was carried out remotely). A significant increase can be seen in the participation of students in the forums, increasing in chapters 4 and 5 as they progressed through the course.

Table 3: Detail on the incremental participation in the forum.

	Data 1 - May 20				Data 2 2 – May 27				Data 3 – June			
	Increase in students	%	Increase in messages	%	Increase in students	%	Increase in messages	%	Increase in students	%	Increase in messages	%
Chap 3	6	**11.5%**	9	**6.7%**	10	**17.2 %**	20	**14.0%**	10	**14.7 %**	25	**15.3 %**
Chap 4	42	**420.0 %**	62	**387.5 %**	17	**32.7 %**	43	**55.1%**	18	**26.1 %**	34	**28.1 %**
Chap 5	7	**87.5%**	11	**100.0 %**	13	**86.7 %**	25	**113.6 %**	20	**71.4 %**	33	**70.2 %**
Challenge	5	**100.0 %**	5	**35.7%**	8	**80.0 %**	16	**84.2%**	9	**50.0 %**	23	**65.7 %**

One of the key aspects regarding student engagement is the graphic novel. One of the main hypotheses prior to starting the Evoke pilot with EAN University is that the graphic novel is one of the elements that generates the greatest engagement with the platform and arouses the greatest interest.

To measure the above in a quantitative way, the results of mission 1.4 were taken, which consisted of a series of questions about the graphic novel that had been previously presented to the agents. Agents get 10 points for correctly answering the question posed.

The result is that 171 agents obtained 10 points in this mission, that is, 85.9% of the total number of agents, which allows us to infer that the attention paid to the graphic novel was high.

There are other activity types that were not as successful as the previous ones, such as the “quests” (short questions that appeared randomly in the platform, not following the student´s workflow). While missions asked open ended questions of the students and constituted the most prevalent and most important activity, quests presented knowledge questions with right and wrong answers. These were the least important type of activity for the participants. The third week of the course a weekly measurement was started to find out the percentage of students who carry out the "Quests" to understand the interest that this type of activity generated among students. For this implementation, a total of 25 quests were proposed.

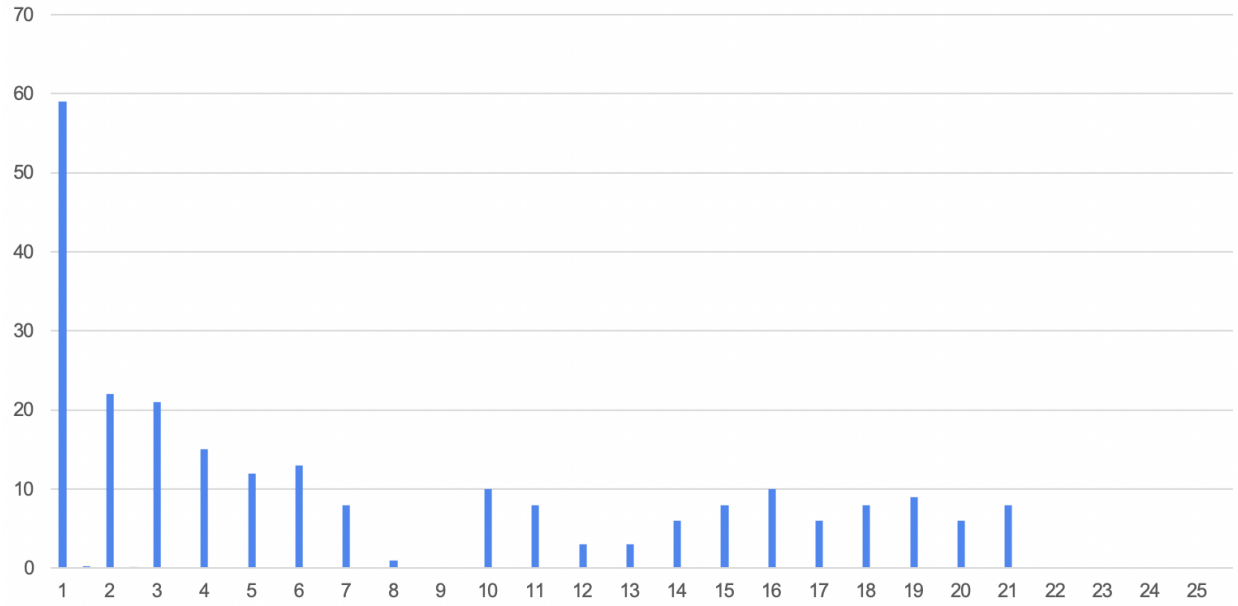


Figure 5: Number of students answering the "quest" activities.

The data shows that the most frequently answered Quest by students was the first one, completed by a total of 59 agents (29.8%), followed by the second completed by 22 agents (11%) and the third completed by 21 agents (10.6%)). From there, the quest performance continues to decrease, quests 22, 23, 24 and 25 were not answered by any agent.

The results shown may be due to the fact that the time and interest of the students at the beginning was greater, but as the course developed, they had more academic load which made it more difficult for them

to carry out these additional activities. Or that these activities were not linked to the development of their final project.

Combining the above with comments from the students recommending that the quests be "more fun" as games (most of them were quizzes), it is recommended to rethink both the number of quests and their format.

Detail of the distribution of badges

Badges were given to students based on their progress in the course and special accomplishments. They are a form of micro-accreditation within the course. There were three types of badges: incentives, powers, and superpowers. Note that while the total number of students was 198, mentors and teachers could also earn badges and there were two test teams composed of the project team to experience and evaluate the pilot along with the students.

The breakdown of these badges are as follows:

- Incentive Badges:
  - Profile completed (231): Enter the profile section and make the information changes
  - First quest carried out (68): Perform for the first time any of the 24 existing quests (the total number of students plus some additional users of the platform).
  - First Evocoins won (224): Complete the activity "Join your team"

- Power Badges. Criteria: Complete the task with high quality, obtaining a grade of > 80%. The badge related to a specific power was earned if the activity was completed with quality and that power was the main skill of the activity.

- Analysis: 126
- Experimentation: 56
- System thinking: 116
- Communication: 210
- Generosity of Spirit: 54
- Teamwork: 209
- Courage: 56
- Empathy: 108
- Leadership: 203
- Curiosity: 123
- Imagination: 51
- Vision: 53

- Superpower badges. Criterion: to earn three badges of the underlying powers.
  - Problem Solver: 53
  - Creative Visionary: 42
  - Deep Collaborator: 54
  - Empathetic activist: 52

In the figure on the right the design of some of the aforementioned badges is presented.

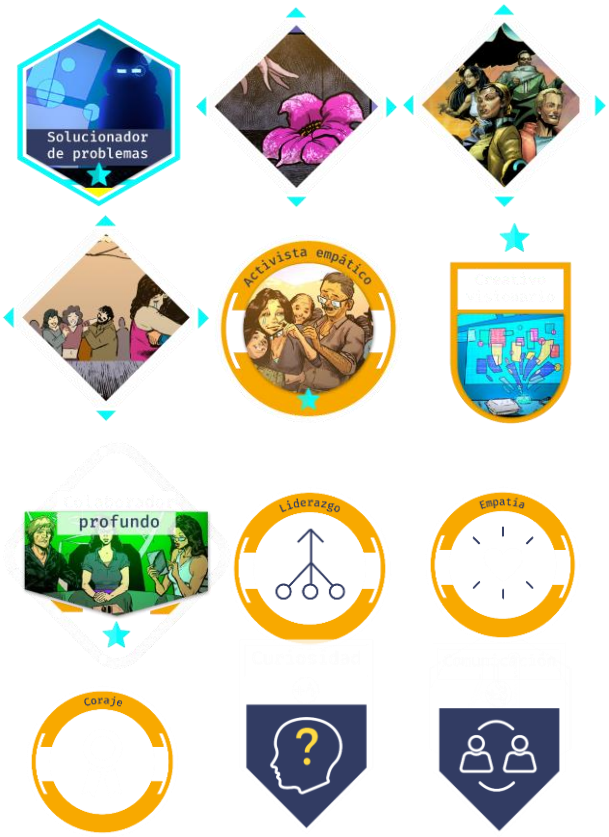


Figure 6: Design of some of the badges that the students obtained based on the criteria specified in this section.

Information on the marketplace

The marketplace provided access to the data plans as well as graphic novel content to the participants. The students could redeem the Evocoin they earned in the marketplace. In order to understand how many of the products available in the marketplace were redeemed by the students, it is necessary to first know how many students were able to acquire them. In this regard, these were the values of the available products:

Table 4: Products offered in the marketplace.

Items	Value in Evocoins
Plan 2 GB	2.000.000
Plan 1 GB	1.000.000
Graphic novels	250.000

Three measurements were made towards the end of the program using the "Leaderboard" to understand the number of agents that had the necessary number of Evocoins to be able to redeem these products:

Table 5: Detail on the number of students with the necessary amount of evocoins to redeem or "purchase" the items shown in the previous table.

	# of students with more than 2million EVC	%	# of students between 1 y 2 million EVC	%	# of students between 250 thousand and 1 million EVC	%	Total students with more than 250,000 EVC
Before June 5th	**14**	6,4%	**27**	12,3%	**141**	64,4%	182
Before June 15th	**40**	18,3%	**27**	12,3%	**117**	53,4%	184
Before June 18th	**75**	34,2%	**22**	10,0%	**87**	39,7%	184

The percentages are calculated taking into account a total of 219 profiles on the platform with Evocoins. Although the total number of students was 198, the team created 219 profiles (for testing purposes, and to have some extra profiles ready in case new students enrolled in the course).

The data shows that for the first measurement date (June 5), in which the course had already been completed (elevator pitches were carried out on June 2 and 3), most of the students had between 250

thousand and 1 million Evocoins (83%). The number of students with enough Evocoins to redeem the 2GB data plan was under 6.4%.

This number of agents rises considerably for the measurement of June 15. 40 agents could redeem the 2GB plan. This is because the agents finished uploading evidence and requesting their bonuses between June 5 and 11.

On Friday June 12, a redistribution of the campaign's remaining Evocoins took place, which can be reflected in the data from June 18: 75 students (34.2%) have enough EVCs to redeem the 2GB data plan, 22 for redeem the 1GB and 87 plan to redeem on graphic novels.

Table 6: Detail on marketplace redemptions.

	Plan 2 GB	%	Plan 1GB	%	Graphic novel displaced people	%	Graphic novel episode 1	%	Graphic novel episode 2	%	Total redemptions
June 5th	1		4		1		0		0		6
June 15th	10		9		3		5		5		32
June 18th	1		1		1		1		0		4
Total	**12**	**16%**	**14**	**64%**	**5**	**6%**	**6**	**7%**	**5**	**6%**	42

The percentages are calculated taking as a total the number of agents who could redeem that product (table above). As of June 5, there were only 6 redemptions and the percentages reflect that while many agents could have redeemed by that date, few had.

The number of redemptions increases for June 15, with 38, especially in the 2GB plans (10 more) and those of 1GB (9 more), this has to do with several factors, the first is that between June 5th and 15th, pending bonuses were delivered and the remaining EVOCOINS of the campaign were redistributed, which means that the agents had more redemption capacity (75 agents had more than 2 million EVCs).

Between June 15 and 18, a small increase in redemptions can be observed. This may be due first to the fact that the students are already on vacation and are not active on the platform. At the moment of the last measurement on June 18, the total redemptions are 42, the most redeemed product is the 1GB plan (14 redemptions), followed by the 2GB plan (12 redemptions). The graphic novels in total have 16 redemptions distributed among the 3 available options.

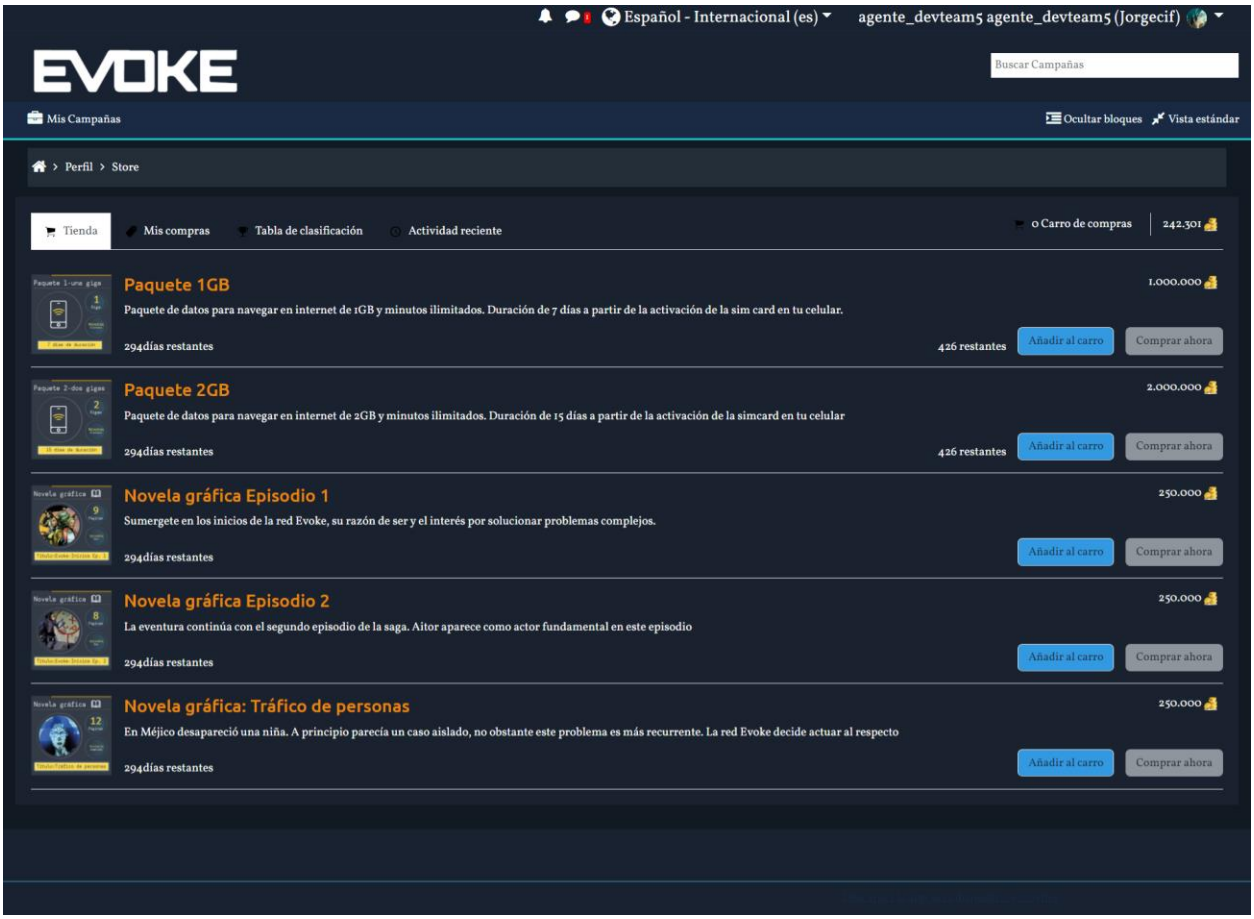


Figure 7: available products in the marketplace.

Mentor´s engagement

An important factor in the delays in disbursement of Evocoin was the inconsistency in evaluation on the part of the mentors. The lack of mentor training mentioned in section 1.4 could have had an impact on their engagement. Although the team, to solve this problem, organized weekly meetings to follow up and solve doubts, technical problems and questions about the methodology, the data shows that not all the mentors were comfortable using the platform (although the final result of the projects was very satisfactory).

As the following image shows, many mentors did not rate the activities within the platform and did so in parallel using other channels they used regularly (such as WhatsApp or email from the university).

The data shows that during chapter 2, between 26% to 40% of the missions were not graded using the platform. These percentages increase for chapter 3 (between 40% and 57%). In the final chapters (4 and 5), the percentages of non-graded activities were between 47% and 60% (half of the missions sent by the students were not graded in the platform). Again, what the mentors indicated during the end of the implementation interviews is that they used other channels that were more familiar to them (such as email). This use of offline tools also impacted the distribution of tokens as highlighted above.

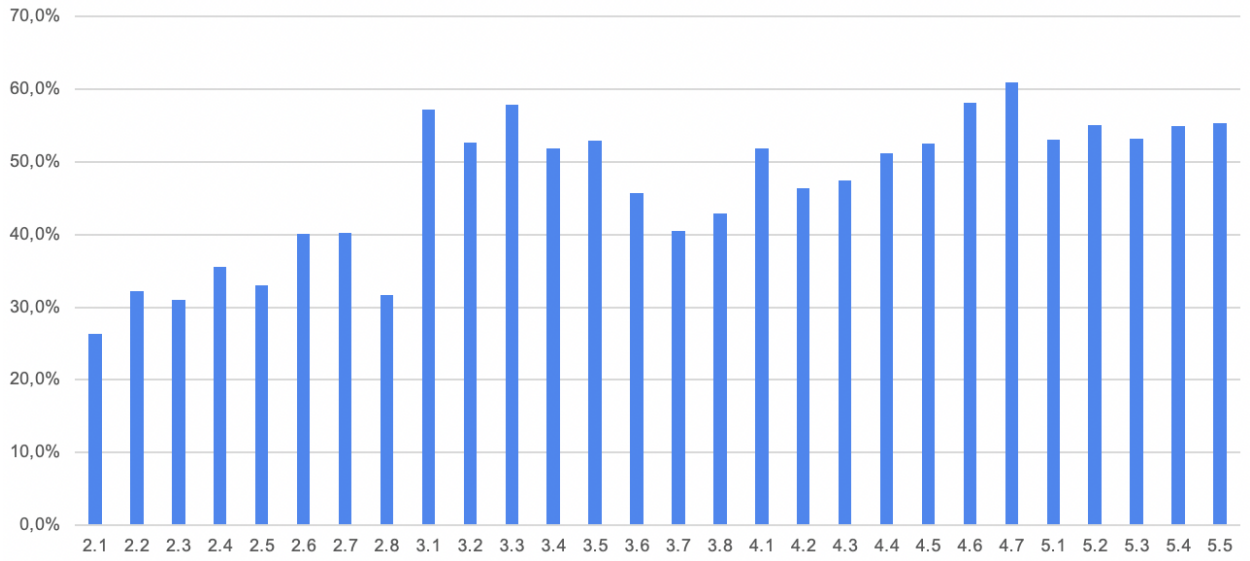


Figure 8: percentage of non-evaluated activities in the platform. These mentors used more traditional channels to evaluate the work done by the students, such as WhatsApp or the email.

This highlights the importance of an initial training and early onboarding of mentors. The co-creation of both the content and the usability of the platform together not only with the professor, but with the mentors, is essential to have high levels of engagement and participation from mentors.

ANNEX II: Blockchain: questions and lessons learned

Introduction: A 'Sandbox Approach' to Disruptive Tech Operationalization

The EVOKE project team took a 'Sandbox approach' for piloting the concept of gamification and incentivized learning enabled by blockchain technology. This approach provided the necessary safety rails to further design, implement, test and learn on a concept involving disruptive technology components. In the first stage, the concept was explored and prototyped through the collaboration of ITSTI Lab and Education GP in a controlled lab hosted environment to conduct a proof of value prototype. The ITSTI Lab provided an internal safe space for exploration and experimentation.

Taking this to the next stage, the EVOKE team explored local hackathons, worked together with external consultants and local talent pool to design, implement and test the pilot. In collaboration with DT4D and LEGOPS, EVOKE team took a sandbox approach to mitigate certain identified risks and conduct a pilot in Colombia. Various categories for the EVOKE project design were identified as part of the Sandbox considerations to identify potential risks, concerns with each category and determine corresponding mitigation approach. This provided an effective tool to address any potential concerns while fostering innovation and learning.

Initial questions, implemented solutions & lessons learned

A. Blockchain for Traceability of funds disbursed - Donor Use case

1. Tokenization of funds: Blockchains and more broadly distributed ledger technologies offer a potential solution to trace fund flows and unify systems across different jurisdictions and entities, with the advantage of leveraging tamper-resistant and decentralized systems for increased auditability and resilience.

   The team explored in the pilot how blockchain powered tokens could be used to represent and 'tokenize' the flow of funds on the blockchain which provides increased visibility to donors on how the funds are being utilized and distributed in real time. Existing token standard on Ethereum Blockchain - ERC 20 - was leveraged by the team to create 'EVC - EVOCOIN' on the test network of the blockchain for the pilot.

   This was a closed loop system in the sense that the token could be transferred and used only by the pre-approved participants and users which have been onboarded as part of the EVOKE project. It had no value outside the EVOKE project and the value of the tokens were predetermined which in turn could be redeemed in a sample marketplace for 'mobile phone minutes'. A partnership with the telecom provider Telefonica was made to provide mobile minutes in exchange for EVC tokens in the marketplace.

   The rules and the logic of transfer values were simulated in Moodle while the tokens leveraged the blockchain testnet while assessing the possibility of using 'blockchain enabled smart contracts'. In the spirit of starting small with incremental learning, the team took an approach of identifying some of these complexities and keeping them to a manageable level to move forward.

2. Donor Dashboard: **A dashboard was developed with donors as the primary user base in mind**. The idea was to build an easy to navigate dashboard, with useful links and data visualization for the donors to use. The dashboard is in beta version, as the integration between the dashboard and the main EVOKE platform is yet to be realized. The interface for the blockchain component was the Mootivated Dashboard, from which the smart contract automatically took the values to make transfers. The account was managed by the Bank on behalf of Telefónica. The oversight could be done in the donor dashboard, shown previously.

   Using standard reward values according to the type of activity or mission guided the programming of the distribution rules. The rule about submitting activities with quality was programmed in Moodle as an extra activity, which could be automatized. In addition, the Evocoin distribution at the end of the campaign or at the end of each chapter could also be automated. In case of an error in amount or campaign, the private keys of the wallet will have to be used for any recalls, but the transaction will show up on the blockchain log.

   During this pilot, the donor of the products in the marketplace and the sponsor were the same (Telefónica Colombia). A visual representation of the activities and token usages were reflected through means such as charts and figures on the dashboard. Moreover, key indicators of the token transactions, pertaining to usage by the agents (students), such as total EVC distributed, redeemed and held by each of the actors in the system were also available on the dashboard. Also, the details around incentives and price equivalent of each of the incentives are also illustrated on the dashboard.

B. Public Permissionless v. Private Permissioned Blockchain

The team looked at both public permissionless and private permissioned blockchain protocols to understand a better fit for the purpose of EVOKE use case. It is important to understand that there are many technology and operational tradeoffs between these design choices. While public permission less protocols have more decentralization and resiliency, they generally pose various challenges for enterprise needs with regard to control and governance. One analogy is that permissioned chains are like intranets and permissionless chains are like the public internet.

Blockchain and DLT have two major streams of experimentation in relation to the underlying nature of protocol technology: public permissionless and permissioned protocols. Depending on the needs of enterprises and organizations and limitations of technology, for now, most of the exploration and experimentation effort is taking place on permissioned DLT systems by the enterprises and institutions which have needs such as data protection, privacy of certain logic and information, predictability of costs & security, clarity on regulations and policies, etc. However, there are rapid developments that are taking place to address some of these concerns and enable the enterprise/institutions to be more comfortable in using the public blockchain protocols.

For the purpose of this pilot, the team used the Ropsten network, which is a test network of the public permissionless Ethereum network. It is important to note that test networks are meant to provide a platform for testing purposes and have no real security & value features. It is not meant to deploy production ready systems which are deployed in the main network. However, for the purpose of testing

the concept for the pilot, the team utilized the test network which also does not require any gas fees (transaction costs) to write on the blockchain. One account and private key was created for each user on the test network, and then provided them with test 'ether' (the token used on the Ethereum blockchain) necessary to make transactions and disburse EVC for the actual redemptions.

The reasons for selecting a test network of permissionless blockchain were experimentation and learning in addition to the potential vision of the project towards building digital global public good. Since this is a test network it removed the challenges that would need to be addressed in the case of 'main network' or live Ethereum network.

C. Token Economy for Incentivized learning

Blockchain technology is demonstrating innovative means to store, manage, and transfer value between a network of participants. This distributed system does not depend on a single centralized authority, allowing for more decentralized human networks to emerge which incentivize human behaviors to achieve desired outcomes.

Tokenization or blockchain powered digital tokens are natively digital instruments which provide access to certain rights represented by the tokens, products or services. The EVOKE pilot explored the use of blockchain powered tokenization for exchange of value to the agents in lieu of predefined tasks as part of the EVOKE campaign primarily on the incentives or rewards ('micro transactions') for the tasks driven learning. It would be fair to say that this project simulated a traditional reward point-based system for actionable tasks in the gamification of learning.

There were multiple ideas and concepts which were explored during the design specification for the token economy. Team contemplated on:

- Staking as incentive: 'Skin in the game' type of incentives and disincentives for activities such as team formation, evidence assessment;
- Token Curated Registries: Could help in implementing fair ranking systems by alleviating the need of a centralized third party and leveraging the wisdom of the crowds which could be explored for project pitches by EVOKE teams at the end of EVOKE campaigns;
- Peer to Peer Reviews: Using token economy design to design for open network collaboration and addressing the corresponding challenges of "the tragedy of commons and collective contributions".

The crypto-economic incentives in blockchain based token economies, however, are challenging to design especially when it deals with human behaviors & actions which are not always fully economically rational. This is not an easy task and it takes considerable time and effort to design a robust token economy project. These design decisions also need to be well simulated to anticipate and model different scenarios based on possible actions. If designed well, the combination of concepts from behavioral economics with a technology such as blockchain and crypto-economic incentives enables: increased traceability of goods/services, faster and cheaper monitoring, improved visibility into the benefits delivered, improvement and reinforcement of behavior among actors within the value chain.

However, the team realized that these ideas involve various complicated technical and behavioral variables which would take more time and resources. It is better to start small and simple.

Wallet capabilities for 'Crypto tokens': Digital wallets are one of the important components that allows users to freely exchange, transfer and securely store value in the form of tokens such as EVOCOIN in this project. There are various methods of implementing this such as 'User controlled digital wallet', Cloud hosted digital wallet, etc. In this project the team used Azure's cloud hosted digital wallet.

Each of the users had an account within the blockchain that was associated with their user. The private key was stored in a secure environment called Key-Vault**.** However, during this implementation users could not access their private key. This prevents users from losing it. In this implementation the team didn't use wallets as students were not allowed to have direct access to the tokens (they could only access them through the Mootivated plugin). Student agents did not realize if it was blockchain or not at the back end for tokens.

Students were identified by their unique username in Moodle associated with their national ID (DNI). The Moodle identification code is not shared by Mootivated, that is why linking both databases was a big challenge.

Potential for Blockchain enabled Smart Contracts approach to Results Based Financing (RBF):

When implemented through a blockchain where tokenization is feasible, RBF and Token Economy look at the initial achievement of qualified results and reward payment (via RBF), while continued incentives are achieved via a token economy system which promotes continuous performance and the sustainability of incentivized behaviors.

The RBF, however, was centralized on Motrain to set the reward to students for certain activities inside the Moodle course. The quality was managed with approval from the mentor in Moodle. The final results of each section were read from the blockchain controller to make corresponding transactions.

D. 'Sandbox' Considerations in EVOKE Project

1. Open Source

Identified Risks/Concerns

- Bank capacity. Does the Bank have the capacity to manage an open source project?
- Bank liability. Does the Bank want to take on liability of managing an open source project?
- Bank intellectual property. What are guarantees to safeguard Bank´s IP?
- Terms and conditions of use. What are the terms and conditions for use of an open source platform or one that uses open source technologies?

Approach: To be considered in second phase. While the trust fund was Bank-executed, in practice, the project was executed by the partner in Colombia. This risk was therefore addressed in pilot through partner hosting and implementation. Bank was not involved in the hosting, data management nor licensing of the project.

2. Token Design – Stable Coin:

Identified Risks/Concerns

- Legal and regulatory issues with creation of Stable Coin. What are the reputational and reserve currency issues to be considered in creating a Stable coin?
- Legal and regulatory issues with use of existing stable coins (i.e. DAI). What are the stability and viability risks of using an existing Stable coin?

Approach: The project simulated a stable coin through linkage of the value to real world goods. We did not use any of the existing stable coins nor create a liquid stable coin of our own. The value of the coins was derived from the value of the prizes offered in the marketplace – data plans and then the token was the representation of this Colombian peso value. Moreover, the system was a closed system in the sense that the Evocoin could not be exchanged for any value outside of the system.

3. Token Design – Distribution of Tokens.

Identified Risks/Concerns:

- Virtual Asset Regulation. Crypto Token issuance may be deemed by the Financial Action Task Force as Virtual Assets Service Provider.
- Financial Asset Regulation. Crypto Token issuance may face AML/CFT and KYC obligations.
- Security Regulations. Ether may be considered a security in the future.

Approach: The tokens were created and distributed in a closed system. In other words, no tokens left the platform nor were exchanged for fiat currencies. The tokens could only be used in the marketplace for purchase of goods available in the marketplace. No ether was bought or distributed. EVC was created as an ERC-20 token. Because the pilot was implemented on the testnet no ether gas fees were used.

4. Smart Contracts.

Identified Risks/Concerns:

- Are there any limitations on use of smart contracts? What are the risks and concerns with regard to use of code in smart contracts as basis for distribution of tokens?
- Privacy. Are there privacy concerns with data shared on a public ledger?

Approach: Smart contracts for token disbursement were simulated outside of the blockchain and then written to the blockchain during the course of the pilot.

5. Limitation/Restrictions on Data Use/Reuse

Identified Risks/Concerns:

- Who owns the data?
- What user data is created?
- Where is it saved? Who has access to it?
- Who owns it?

Approach: User data was created in Moodle in line with EAN policies for creation and use of student data for on-line learning. As the project was run in practice a recipient executed, the data was managed in Colombia by local implementing partners.

6. Public Blockchain.

Identified Risks/Concerns

- Risks of use of an open permissionless blockchain like Ethereum. What are the risks of using a more open blockchain that devolves control and reversibility of execution of smart contract rules?
- Private key management. How to mitigate against loss of private keys by participating youth.

Approach: Private keys were managed through Azure vault and the data was written to the blockchain as students completed activities and as activities were evaluated by mentors.

7. Protection of Personal Data.

Identified Risks/Concerns

- Compliance with Bank privacy Policy. Is the design in Compliance with Bank privacy policies?

Approach: As project was recipient executed the data was managed by local partners.

Table 7: "Sandbox" Considerations in Bank-Executed Projects.

Category	Potential Risk, Threat, Hazard, Detriment, or Concern	Description of Impact
Open Source	Bank Capacity	Does the Bank have the capacity to manage an open source project?
	Bank Liability	What liability does the Bank take on when managing an open source project?
	Bank Intellectual Property	What are guarantees to safeguard Bank IP?
	Licensing - Terms and Conditions of use	What are the terms and conditions for use of an open source platform or one that uses open source technologies?
Token Design -- Stable Coin	Legal and regulatory issues with creation of Stable coins	What are the reputational and reserve currency issues to be considered in creating a stable coin?
	Legal and regulatory issues with use of existing stable coins -- i.e. DAI	What are the stability and viability risks of using an existing Stable coin?
Token Design -- Distribution of Tokens	Virtual Asset Regulation	Crypto Token issuance may be deemed by the Financial Action Task Force as Virtual Assets Service Provider.
	Financial Asset Regulation	Crypto Token issuance may face AML/CTF and KYC obligations

	Security Regulations	Ether may be considered a security in the future
Smart Contracts	Are there any limitations on use of smart contracts?	What are the risks and concerns with regard to use of code in smart contracts as basis for distribution of tokens?
	Privacy	Are there privacy concerns with data shared on a public ledger?
Limitations/Restrictions on Data Use/Re-use	After determining whether the data in question is personal or non-personal; what are the limitations or restrictions on use and re-use of data?	What user data is generated, where is it saved, who has access to it for processing and who controls the limitations on use?
Public Blockchain	Risks of use of an open permissionless blockchain like Ethereum.	What are the risks of using a more open blockchain that devolves control and reversibility of execution of smart contract rules?
	Private Key Management	How to mitigate against loss of private keys by participating youth
Protection of Personal Data	Compliance with Bank Personal Data Protection & Privacy Policy	Is the design in compliance with Bank Data Protection policies?

Open questions for Consideration

- Could the pilot have been done without blockchain? What was the differential contribution of blockchain vs. no blockchain in the pilot?
- How appropriate is it to continue in the test network for future implementations? Is it an option to create a private network for the token? At what point should we go to the main network? What protocols need to be put in place to ensure check and balance if we are to consider a no-blockchain version? Ethereum or Hyperledger Private Network or both?
- What would be the best way to send transactions to the blockchain to optimize performance and cost? Who would manage the wallets for the participants such as donors, student agents, etc.? What would be the role of the world bank in this?
- How can we simulate and model different scenarios for token economy design? What efforts are needed to design and implement a robust token economy?
- How does the country specific policy and regulatory frameworks impact the uptake of blockchain powered token economy in the context of scaling?
- How to better understand the challenges and benefits of incorporating complex rules and logic in the technical design of token economy? What would be the corresponding impacts on participants of the EVOKE network?
- In a large-scale project, how can we identify younger students? They normally do not have a DNI, telephone or email. What special care / restrictions should we consider when handling data on minors? (The team advises to meet the PII compliance in the implementing country).
- At what week of the campaign should we have the marketplace open? What products and how many should we place on the marketplace? How would be the process of contacting potential

vendors? Would it be interesting to open the marketplace for agents to exchange their own products?

- How do we prioritize the next set of steps to include multiple donors, and multiple countries and localization/contextualization issues (such as languages, and individual donor requirements)? What are the key considerations we will need to take in order to make the system and cases applicable for the EVOKE Honduras instance? What changes do we need to make in the dashboard thinking about global campaigns with various donors?

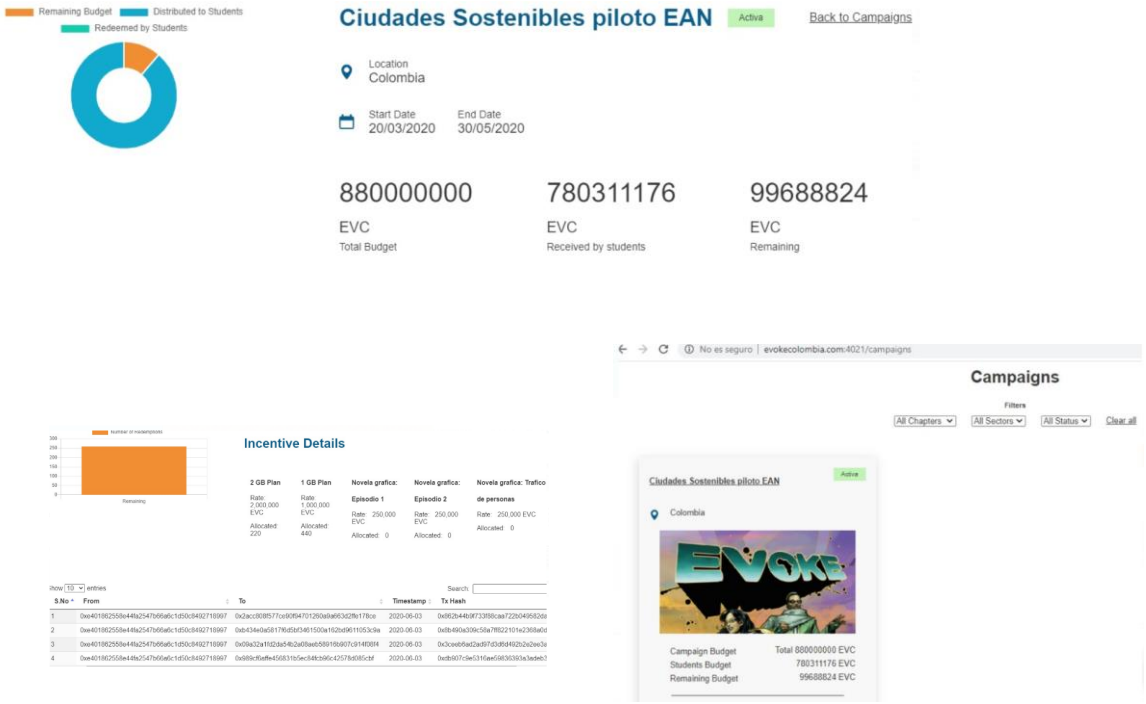


Figure 9: Screenshots of the donor´s dashboard developed for the pilot.

Forward looking opportunities going ahead

1. **Digital Verifiable Credentials for Learning and Education:** There is a growing area of effort around digital verifiable credentials enabled by distributed ledger technologies and open stand standards such as W3C working group on verifiable credentials. This could provide valuable capabilities in context of the EVOKE project which the team discussed initially but was out of scope to keep the project focused and start small. Verifiable digital credentials if issued by schools and educational institutions to the students could potentially address some of the issues around identification and user onboarding for the EVOKE project. This would need further deliberation and exploration.

2. **Open Source and Digital Public Goods:** Perhaps there are multiple considerations to take into account in regard to capacity to manage open source projects. For instance, there are important facets on consumption and distribution of open source code which would deal with issues around licensing and liability. In addition to this, capacity and strategy on creation, production and maintenance of OSS are other complex and important domains to further deliberate upon.

   Although OSS code is available in the public domain for anyone to use and share based on OSS licenses, not everyone can contribute to an existing project's code directly. This highlights the distinction to keep in mind – Public vs Participatory – just by simply being public does not ensure it is participatory. It depends on the "social and technical norms" of the OSS project in addition to other parameters such as ease of participation, reputation of the contributor, managing contributor growth etc. There are specific structures and roles in OSS projects according to which code is produced and modified. These roles are broadly identified as Creators (initiator of OSS project), Maintainers (responsible for the future of OSS project & code repository), Contributors (casual or active contributors to code who submit changes to maintainers) and Users (developers who are consuming the OSS code). For example, if WB in collaboration with other partners are the creators of the OSS project, it would then also be required to manage the sustainability of the project through maintainers, contributors and users of the project.

   There are potentially other areas to consider, one of which is the economics of the OSS projects and the role of WB in funding OSS projects and to achieve sustainability of OSS projects for building digital global public goods.

3. **Support to transition from legacy systems:** Through discussions with partners in Colombia such as Prosperidad Social, challenges were related with regard to the costs of transitioning from a legacy system for delivery of a service. Organizations are reluctant to radically change their operational modalities for a new technology. There are however potential areas of collaboration with Prosperidad Social on their Life Skill program which aligns to the World Bank work on development and measurement of 21st century skills.

Table 8: Estimated cost of the Jovenes en Accion program, from the 2017 report "Realizar el diseño y ejecución de la evaluación de impacto del programa Jóvenes en Acción". In yellow, information on the cost of one of the modules of the JeA program, called Skills for Life (Habilidades para la Vida or HpV), an opportunity for Evoke´s implementation. The Department of Social Prosperity has shown interest on implementing Evoke in this module, that is also focused on the development of 21st century skills for youth. Amounts in COP.

	POR PAGO	TOTAL JEA	POR PARTICIPANTE
Costos variables			
1. Transferencia (bi-mensual)	$400,000.00	$3,600,000.00	$3,600,000.00
2. Costo bancario (bi-mensual)	$3,540.25	$31,862.25	$31,862.25
Costos fijos			
3. Total Planta (mes)	$181,290,860	$6,526,470,960	$18,475.82
4. Total Contratistas (mes)	$56,543,742	$2,035,574,712	$5,762.52
5. HpV (2014)	$2,775,000,000	$2,775,000,000	$7,855.76
Costos del participante			
6. Transporte	$72,680.00	$1,308,240.00	$1,308,240.00
7. Implementos	$21,855.00	$393,390.00	$393,390.00
Costo del Programa por participante (1+2+3+4+5)			**$3,663,956**
Costo económico por participante (2+3+4+5+6+7)			**$1,765,586**

Initial rule set structure

Model for a 400-student class. The following are the rules developed initially for distribution of tokens to students and mentors based on their participation and quality of work. These rules were subsequently simplified for the implementation.

IMPORTANT NOTE: the amounts of USD are just indicative, and changes can be made.

a. **400 students** in 1 campaign
   i. Groups of 5 students → 80 groups
   ii. Each mentor will have NO MORE than 4 groups → **16 mentors needed** (at least)

b. **Incentives estimation** (per campaign):
   i. Mentors → 1,000,000 Colombian Pesos (aprox. 290 USD) → * 16 mentors = 16,000,000 Colombian Pesos (aprox. 4,600 USD)
   Ii. Students (example based on *Prosperidad Socia*l):
      1. For registration (*matricula*) → 100,000 CP (28USD) → *400 students = 11,200 USD → CHAPTERS 1-3
      2. For permanence (*permanencia*) → 100,000 CP (28USD) → *400 students = 11,200 USD → CHAPTERS 4-5
      3. For excellency (*excelencia*) → 50,000 CP (14USD) *100 students = 1,400 USD → Top final Evokations

c. **Distribution** of the incentives:
      1. Chapter I → 20,000 CP/Student ←→ 5,71 USD/Student
      2. Chapter II → 40,000 CP/Student ←→ 11.41 USD/Student
      3. Chapter III → 40,000 CP/student ←→ 11.41 USD/Student
      4. Chapter IV → 50,000 CP/student ←→ 14.26 USD/Student
      5. Chapter V → 50,000 CP/ student ←→ 14.26 USD/Student
      6. Top Final Evokations → 50,000 CP/student ←→ 14.26 USD/Student

Implemented rule set structure

This was the information used to create the rule set that was implemented in the pilot:

- Number of students:220 (as mentioned before, the real final number of students was 198. Some extra profiles were created in order to test the usability, but those profiles did not earn Evocoins).
- Students per Team:5.5
- Number of Teams:40
- Number of 2GB Plans:220
- Number of 1GB Plans:440
- Total Value of Campaign (COP): 8,800,000
    - This was calculated using the value of the total number of incentives posted in the marketplace. The data plans provided by Telefónica had that value (220 2GB plans, with a value per plan of 20,000 COP, and 440 1gb plans, with a value per plan of 10,000 COP. In total: 4,400,000+4,400,000=8,800,000 COP
- Total Value of Campaign (USD): 2,545.56
- Value per student (COP) 40,000.00
    - This was calculated dividing the total value of the campaign by the number of students.
- Value per Agent (USD): $11.57
- Total Amount of EVC to be created:880,000,000

These Evocoins (EVC) were allocated per chapter in the following manner: 15% Chapter I, 15% in Chapter II, 20% in Chapter III, 20% in Chapter IV, 20% in Chapter and 10% in the final Evokation (or final project).

The detail of the allocation in each chapter depended on the number of activities and the type of activities, as indicated in the next table. The Evocoins that were not distributed at the end of each chapter were distributed at the end of the implementation between the awarded projects or final Evokations (for more information on the wining Evokations, see the section of the Final Evokation Event).

Table 9: Detailed information of the Evocoin allocation per chapter and activity.

	Chapter 1	**Chapter 2**	**Chapter 3**	**Chapter 4**	**Chapter 5**	Evokation
Token Distribution Rules						
EVC						
EVC Allocation %	15%	15%	20%	20%	20%	10%
EVC Allocation Total	132,000,000	132,000,000	176,000,000	176,000,000	176,000,000	88,000,000
% Allocation						
Quest %	80%	15%	15%	15%	15%	0%
Agent Mission Completion %	5%	0%	10%	10%	10%	0%
Agent Mission Quality %	0%	0%	15%	15%	15%	0%
Team Mission Completion %	5%	20%	10%	10%	10%	0%
Team Mission Quality %	5%	60%	45%	45%	45%	0%
Evokation %	5%	5%	5%	5%	5%	100%
Total %	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Quest & Missions						
Learning Objectives (LO)	3	9	8	7	5	1
Individual LO	2	0	3	1	2	0
Team LO	1	9	5	6	3	1
Quests (LO)	6	2	1	1	1	0
Missions -- Individual	2	0	3	1	2	0
Missions -- Team	1	9	5	6	5	0
Total Missions	*3*	*9*	*8*	*7*	*7*	*0*
Quests -- Random	1	5	5	5	5	0
Quests -- Total	*7*	*7*	*6*	*6*	*6*	*0*
Total Evokation Reflections	*1*	*1*	*1*	*1*	*1*	*1*
Total Engagements	***11***	***17***	***15***	***14***	***14***	***1***
Payout Total (in EVC)						
Quests	105,600,000	19,800,000	26,400,000	26,400,000	26,400,000	-
Agent Mission Completion	6,600,000	-	17,600,000	17,600,000	17,600,000	-
Agent Mission Quality	-	-	26,400,000	26,400,000	26,400,000	-
Team Mission Completion	6,600,000	26,400,000	17,600,000	17,600,000	17,600,000	-
Team Mission Quality	6,600,000	79,200,000	79,200,000	79,200,000	79,200,000	-
Evokation	6,600,000	6,600,000	8,800,000	8,800,000	8,800,000	88,000,000
TOTAL	**132,000,000**	**132,000,000**	**176,000,000**	**176,000,000**	**176,000,000**	**88,000,000**

ANNEX III: Events and webinars

Final Evokation Events

Two sessions were organized for the presentation of the best final projects or "Evokations" (see the recordings of session 1 and session 2).

The external jury who evaluated the projects was formed by different partners who participated on the pilot (Colombian institutions, the Government of Spain, the Center of Environmental Studies of the city of Vitoria-Gasteiz and Telefónica):

- Ricardo Garzón (Manager of Government and Sustainability Affairs at Telefónica Colombia).
- Marby Duarte (Leader of social responsibility at Telefónica).
- Esmeralda Velandia (Director of Innovation of the Chamber of Commerce of Bogotá).
- Aitor Albaina (CEA Senior Technician - Vitoria-Gasteiz City Council. Professor and researcher at the UPV / EHU).
- David Vela (Representative of CDTI in Colombia and represented ICEX in the evaluation).
- Luis Felipe Barrientos (Vice President of Scaling and Innovation at Innpulsa).

The awarded projects in each session and the respective topics addressed were the following:

- Winners from the session 1:
    - 1st. Group 9 ("Naturean"). Project to improve waste management in the city of Bogotá, focusing in the recycling process and the awareness raising.
    - 2nd. Group 4 ("Eco Move"). Proposal to improve public transport and reduce traffic accidents, using an app about mobility that incentives sustainable transport and awareness raising.
    - 3rd. Group 3 ("Bogo Green – Infraestructura verde"). Proposal to improve the air quality in the Barrio de los Naranjos neighborhood, designing and implementing vertical gardens in the buildings.
- Winners session 2: Final Evokations recording session 2.
    - 1st. Group 33. ("Bio-Culture"). Transforming the problem of plastic contamination and waste into a solution, creating protective gear a biosafety suit using the recycled plastic.
    - 2nd. Group 27 ("Eco-resistant"). About agriculture and capacity building and empowerment of local farmers, creating an educational network (using online, f2f and online resources) and an ecosystem of partners.
    - 3rd a. Group 29 ("Allenlebendeck"). About green urban infrastructure (creating green sustainable gardens to improve air quality and create renewable energy).
    - 3rd b. Group 34 ("Green Group"). Solution of green urban infrastructure thought the development and implementation of hydroponic cultivation and efficient home environments.

-

Figure 10: Detail with the logos of the winning teams in each session, selected by the external jury formed by partners.

Webinar: Reimagining the future of education: lessons learned from Evoke

As part of the end of the implementation of the Blockchain Technology for Youth Empowerment and Value Exchange (P171672) pilot in Colombia, **the team is co-organized an open discussion among partners** (the Ministry of Education in Colombia, the EAN University of Bogotá, the Economic and Commercial Office of Spain in Colombia, Telefónica, and the city of Vitoria-Gasteiz) to review lessons learned from the project (see the recording and the agenda for the event the24 June, Wednesday).

The discussion (open to the public and broadcasted in Spanish) focused in the following areas:

1. The role of teachers and mentors in remote learning;
2. Innovating in education: reflections on 21st century skills, teamwork and learning, gamification and project-based learning;
3. The importance of networks: opportunities and challenges of public-private collaborations in educational innovation processes;
4. Opportunities for leveraging blockchain technology in education as a form of conditional cash transfer.

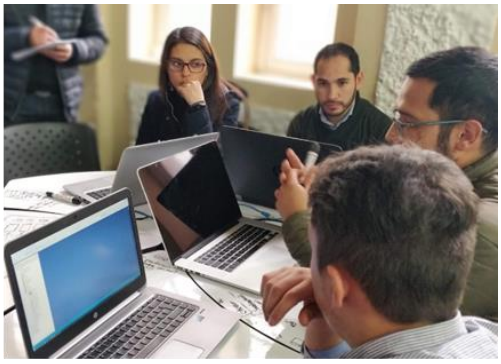
The event had the following speakers:

- Diana Silva (Head of Innovation of the MEN in Colombia)
- Robert Hawkins (Lead of Technology and Innovation in the WB and TTL of the project, here his presentation)
- Paula Echeverry (Professor of EAN University)
- Aitor Albaina (CEA Senior Technician - Vitoria-Gasteiz City Council. Professor and researcher at the UPV / EHU).
- David Vela (Representative of CDTI in Colombia).

- Ricardo Garzón (Manager of Government and Sustainability Affairs at Telefónica Colombia).
- Jorge Ordovas (Blockchain Telefónica)

Hackathon

Local Colombian technical expertise developed through hackathon organized in September 2019. The team successfully designed and organized a hackathon in Bogotá (Colombia) with the objective of identifying local Colombian technical expertise to be part of the development team. Eight technical experts were identified.



Figure

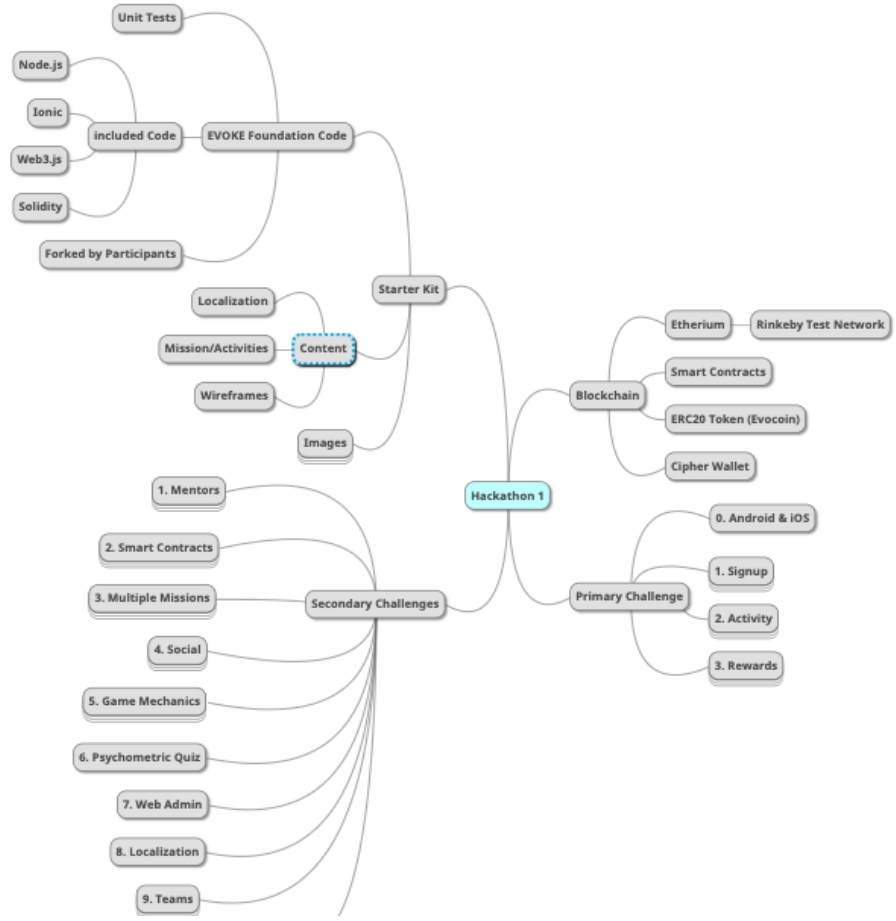


Figure 12: Basic architecture of the challenges and required use cases.

ANNEX IV: Content

Note that the program was divided into 5 chapters (engage, explore, imagine, act, communicate), and each chapter has different learning objectives. Students were given 3 choices for each LO (they had the select one mission (or activity) per learning objective). Some were individual and some team missions.

Overall structure of the program

	WEEKS								
Chapter	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Chapter 1	9								
Chapter 2		7	1	1					
Chapter 3				2	7				
Chapter 4						8			
Chapter 5							3	3	
Final Pitch									1
Total ·#missions x week	**9**	**7**	**1**	**3**	**7**	**8**	**3**	**3**	**1**

Cap 1. COMPROMÉTETE	1.0	Completa tu perfil
	1.1	Qué es EVOKE
	1.2	Tipo de agente (test psicométrico)
	1.3	Bienvenida - Test ciudades sostenibles
	1.4	Novela gráfica + test
	1.5	Conformación equipos
	1.6	Unirse a un equipo
	1.7	Comunicaciones con el equipo
	1.8	Identidad del equipo
	1.9	Cierre final - Revisitar el problema y reenviar definición
Cap 2. EXPLORA	2.1	Encontrar y definir un problema o reto de la ciudad en la que viven
	2.2	Compartir en el foro el problema a modo de reto y compartir (varias maneras)
	2.3	Fortalezas del equipo y miembros
	2.4	Investigación del usuario / context
	2.5	Preguntas/retos complejos dentro del RETO

	2.6	Practicar / comunicar preguntas
	2.7	Entrevistas / Encuesta o sondeo
	2.8	Análisis y conexión de información recolectada
	2.9	Evocación
Cap 3. IMAGINA	3.1	Benchmarking / soluciones similares
	3.2	Generación de ideas individual
	3.3	Acción de generosidad o agradecimiento
	3.4	Generación de ideas y exploración grupal
	3.5	Selección de idea y plasmarla
	3.6	Preguntas a la idea seleccionada (detallar))
	3.7	Prueba de concepto con usuarios
	3.8	Reflexión sobre retroalimentación y acciones futuras
	3.9	Evocación
Cap 4. ACTÚA	4.1	Opinión sobre un cambio importante o sobre la idea
	4.2	Definir aspectos y detalles del prototipo
	4.3	Creación del prototipo
	4.4	Preguntas de prueba para el prototipo
	4.5	Prueba del prototipo
	4.6	Iteración del prototipo (modificaciones)
	4.7	Siguientes pasos para implementación
	4.8	Evocación
Cap 5. COMUNICA	5.1	Compartir con los demás un aprendizaje, experiencia
	5.2	Métricas de éxito de implementación
	5.3	Actores clave para la sostenibilidad
	5.4	Creación del Pitch elevator
	5.5	Compartir y agradecer a alguien
	5.6	Evocación final

Detailed structure with content

Note that the column with the "% selection" indicates the percentage of students that chose that mission in each learning objective.

#LO	Content of each mission (in Spanish)	Skills	% selection	Option prior to adjustment with EAN
2.1	**Creen un video o un blog** para generar conciencia sobre las situaciones que evidencien en su investigación. Para aprender más sobre los problemas a los que su ciudad se enfrenta en lo que a ciudades sostenibles se refiere, y tener insumos para el video o el blog, construyan una "gran torta" que muestre la importancia del problema como parte de un todo, identifiquen a los actores implicados con un "mapa de actores" y establezcan la evolución del problema usando una "máquina del tiempo". Adicionalmente, analicen las tendencias relacionadas al reto. Pueden encontrar ayudas en los "archivos de investigación". Envíen, a través de la plataforma, tanto el enlace al video o al blog, como los documentos realizados ("gran torta", "mapa de actores", "máquina del tiempo" y "tendencias") a su mentor para revisión	*+4 Análisis; +3 Comunicación (Equipo)*	28.9%	Learn more about one or more problems your city faces with respect to the global grand challenge of Sustainable Cities and create a video, blogpost, etc. to raise awareness about these problems. Share with the network.
	Escriban un documento en el cual describen un problema o reto relacionado con el tema de ciudades sostenibles que crean que se ajusta bien a la realidad de su ciudad, un problema que otros, quizá, no hayan sido capaces de ver visualizar. Para aprende más sobre los problemas que a los que su ciudad se enfrenta en lo que a ciudades sostenibles se refiere, y tener insumos para el documento, construyan una "gran torta" que muestre la importancia del problema como parte de un todo, identifiquen a los actores implicados con un "mapa de actores" y establezcan la evolución del problema usando una "máquina del tiempo". Adicionalmente, analicen las tendencias relacionadas al reto. Pueden encontrar ayudas en los "archivos de investigación". Envíen, a través de la plataforma, tanto el documento construido, como los documentos realizados ("gran torta", "mapa de actores", "máquina del tiempo" y "tendencias") a su mentor para revisión.	*+4 Análisis, +2 Visión (Equipo)*	37.8%	Based on your third-party research, describe a problem or issue you think is true about your city related to the global grand challenge of Sustainable Cities, which others might not be able to see or imagine.
	Sumérjanse en la historia de otra ciudad, en su economía y su cultura, y comparen los retos que esa ciudad encara (o ha encarado en el pasado) con los retos de su propia ciudad. **Redacten la información que han encontrado, utilizando datos y documentación de su investigación.** Para aprende más sobre los problemas que a los que su ciudad (y la ciudad de referencia) se enfrenta en lo que a ciudades sostenibles se refiere, y tener insumos para el documento, construyan una "gran torta" que muestre la importancia del problema como parte de un todo, identifiquen a los actores implicados con un "mapa de actores" y establezcan la evolución del problema usando una "máquina del tiempo". Adicionalmente, analicen las tendencias relacionadas al reto. Pueden encontrar ayudas en los "archivos de investigación". Envíen, a través de la plataforma, tanto el documento de comparación, como los	*+4 Análisis, +2 Visión (Equipo)*	33.3%	Dive into another city's history, economy, culture, etc. and compare the challenges it faces (or has faced in the past) with the challenges in your own city. Post your findings using data and other evidence.

	documentos realizados (“gran torta”, “mapa de actores”, “máquina del tiempo” y “tendencias”) a su mentor para revisión.			
2.2	Compartan con el resto de la red de agentes de Evoke, a través del Foro General, cuál de los problemas sobre ciudades sostenibles es el de mayor interés para su equipo a través de generar una primera “pregunta reto”. Además, compartan con otros actores fuera de la red de EVOKE, a través de las redes sociales, una publicación con los problemas encontrados y alcen la voz para que otras personas también vean la importancia de esos problemas en su propia comunidad o ciudad. No olviden subir en la plataforma las evidencias de su publicación en las redes, así como la “pregunta reto” para compartirlas con su mentor	*+4 Curiosidad, +3 Coraje (Equipo)*	45.9%	Tell the network which of the problems of Sustainable Cities surprised and interested you the most and makes you want to speak out so other people also see the importance of the issue in your own community or city.
	Compartan con el resto de la red de agentes de Evoke, a través del Foro General, cuál de los problemas sobre ciudades sostenibles es el de mayor interés para su equipo a través de generar una primera “pregunta reto”. Además, revisen lo que otros agentes publicaron en la Primera misión (“Contextualizando el gran reto”), e indiquen en el foro cuál es el patrón o tema más interesante que han encontrado en relación a la temática de ciudades sostenibles. No olviden subir en la plataforma las evidencias de sus publicaciones, así como la “pregunta reto” para compartirlas con su mentor.	*+4 Curiosidad, +3 Análisis (Equipo)*	37.1%	Review what other agents posted for mission 2.2, what was the most interesting pattern or theme you noticed about the grand challenge of Sustainable Cities.
	Compartan con el resto de la red de agentes de Evoke, a través del Foro General, cuál de los problemas sobre ciudades sostenibles es el de mayor interés para su equipo a través de generar una primera “pregunta reto”. Además, reúnanse con otros compañeros (o con su mentor o profesor) para analizar sus pensamientos sobre los problemas de sostenibilidad que la ciudad enfrenta y escuchen sus ideas. Compartan con ellos sus intereses y su deseo para resolver este problema. Reflejen esas conversaciones (bien por escrito, en video, en audio…) y súbanlas al foro. No olviden subir en la plataforma las evidencias de sus conversaciones, así como la “pregunta reto” para compartirlas con su mentor. Si construyeron un video incluyan el enlace.	*+4 Curiosidad, +3 Comunicación (Equipo)*	17.1%	Meet with other students or your mentor/teacher to work through your thoughts on the problems facing your city and listen to their ideas. Share your own interest and desire to help solve these problems.
2.3	Creen un video, blog o dibujo que presente a cada miembro del equipo, y en que se explique qué es lo que trae a cada uno a esta red de Evoke. Describan cómo aprovechará las fortalezas y la energía de cada miembro para alcanzar su objetivo compartido (indicando el problema particular y las personas en las que se centrará el equipo). Compartan su creación, a través de la plataforma, para que pueda ser	*+7 Trabajo en equipo, +6 Liderazgo (Equipo)*	17.8%	Create a video, blogpost, or drawing that presents each team member and what they bring to the table. Describe how you will tap into each members’ strengths and energy to pursue your shared goal (stating the particular

	revisada por su mentor. Si hicieron video o blog, carguen el enlace en la plataforma.			problem and people that the team will focus on). Send to you your mentor.
	Echen un vistazo al nombre del equipo y al logo. ¿Todavía tiene sentido? Si no, cámbienlo. Luego, agreguen un lema o eslogan del equipo que refleje el problema en particular que plantean abordar (como por ejemplo "Go Green!", porque están enfocados en espacios abiertos). Publíquenlo en el foro para recibir comentarios, e inclúyanlo en la página del equipo. Compartan la evidencia de sus ajustes y publicaciones, a través de la plataforma, para que pueda ser revisada por su mentor.	*+7 Trabajo en equipo, + 5 Imaginación (Equipo)*	45.2%	Look at your team name and logo. Does it still fit? If not, update it. Then, add a team motto or slogan that reflects the particular problem you plan to address (e.g. "Go Green" because you are focused on open spaces). Post it for feedback and then include it on your team page
	Mediante palabras, imágenes, sonidos, etc., describan las fortalezas de cada miembro del equipo, y cómo planean compartir su tiempo experiencia y recursos para hacer de este objetivo común un éxito total (pueden empezar mencionando el problema particular y la gente en la que el equipo se va a enfocar). Compartan su creación, a través de la plataforma, para que pueda ser revisada por su mentor	*+7 Trabajo en equipo, +6 Generosidad (Equipo)*	37.1%	Through words, images, sound, etc., describe each team member's strengths and how they will share their time, expertise and resources to make your shared goal a great success (stating the particular problem and people that the team will focus on).
2.4	Hagan arreglos para que una persona local (de la comunidad en la que quieren enfocarse) los lleve a por un recorrido virtual por el barrio. Pídanle que les narre por teléfono o video conferencia la apariencia de los edificios, qué servicios se encuentran, cuáles son las tiendas que hay en el barrio, cuáles son las dinámicas del lugar, qué tipo de interacciones hay entre las personas, cuál es el tipo de lenguaje que se utiliza, etc. Pidan a su guía que les explique las cosas como si estuviesen caminando por el barrio. Busquen en internet videos o fotografías reales del sector o pidan a su guía que les comparta algunas que él o ella tenga. Para sistematizar la información utilicen los soportes de los "archivos de investigación" especialmente el denominado "Un día en la vida de". Allí deberán consignar cómo es un día en la vida de la comunidad que visitaron a través de la narración de su guía. Adicionalmente, busquen algún grupo en alguna red social, algún foro sobre el tema de su interés e interactúen con los integrantes para hacer una actividad de "incógnitos", para lo cual también encontrarán más soporte en los "archivos de investigación". Publiquen los resultados (los documentos de "un día en la vida de" e "incógnitos") en la plataforma para revisión del mentor, haciendo énfasis las cosas que lo sacaron de su zona de confort, así como las cosas en las que la comunidad ya está trabajando y que tienen el potencial de cambiar el statu quo	*+10 Empatía, +9 Coraje (Equipo)*	23.5%	Arrange for a local to take you on a tour of a neighborhood in your city. Note the look and feel (buildings, services, stores) and the dynamic (people interactions, artwork, etc.) Ask your guide to explain things to you along the way. Take pictures, video, do mapping and post the things that took you out of your comfort zone as well as the things that the community is already working on that hold potential to change the status quo.
	Seleccionen una persona relacionada con la prestación de algún servicio que esté vinculado con la problemática que están investigando. Busquen un servicio que esté activo en esta época y que tenca canales de atención en línea y hagan una actividad de "incógnito". Luego, busquen una persona relacionada con la problemática que están investigando y hablen con ella para que les	*+10 Empatía, +8 Curiosidad (Equipo)*	41.0%	With at least two team members (and a guide if safety is a concern or for a guided tour), sit in a café, walk into stores (or beauty salon or watch a local school sports event) and observe, listen to the chatter of

	cuente cómo es “un día en la vida de” ella (no traten de imaginar cómo es, hablen con la persona). Como resultado de esa interacción, construyan un mapa de empatía. Publiquen todas sus evidencias (los documentos de “un día en la vida de”, “incógnitos” y “mapa de empatía”) en la plataforma para revisión del mentor y destaquen los problemas y oportunidades que han sentido al realizar esta experiencia. Pueden encontrar más información para desarrollar la misión en los “archivos de investigación”.			different people and speak briefly in passing (not an organized interview). Post an empathy map, and highlight the problems and opportunities that you notice from this experience
	Encuentren miembros de la comunidad con los que conectar y organicen una reunión virtual sencilla (pueden llevar algunos consejos sobre cómo sobrellevar la temporada de emergencia). Hablen con ellos de manera relajada y casual sobre los problemas de su ciudad, y busquen reconstruir a través de los elementos de la conversación cómo es “un día en la vida de” estas personas. Luego, con base en los hallazgos, seleccionen algún grupo en alguna red social, algún foro sobre el tema de su interés e interactúen con los integrantes para y hagan una actividad de “incógnito”. Publiquen las evidencias (los documentos de “un día en la vida de” e “incógnitos”) en la plataforma para revisión del mentor, junto con un resumen de las cosas de las que han hablado, así como aquello que consideren intrigante, valioso o preocupante. Pueden encontrar más información para desarrollar la misión en los “archivos de investigación”.	*+10 Empatía, +9 Generosidad (Equipo)*	35.5%	Find members of the community to connect with and host a simple gathering (e.g., bring coffee and snacks). Talk casually with them about the problems of your city and why they matter to you and ask them for their thoughts and opinions about Sustainable Cities. Post a summary of things you talked about; things you found in common, as well as things you find intriguing, valuable or upsetting
2.5	Como equipo, hagan una lluvia de ideas (pueden encontrar más información para desarrollar la misión en los “archivos de investigación”) sobre problemas específicos dentro de su reto que creen que son insuperables: problemas difíciles, para los que (queriendo o no) elegimos pensar que no hay soluciones. Después, hagan un ejercicio de imaginación, olviden las ideas preconcebidas y piensen en el futuro. Imaginen un mañana en el que estos problemas sean solo recuerdos lejanos, y generen preguntas esenciales para tratar de entender cómo se llegó a ese nuevo punto, y para tratar de entender qué se hizo para solucionar aquellos problemas. Toda la idea de preguntas esenciales es explorar posibilidades. De todas las preguntas, descarten todas aquellas que sean cerradas (como las del tipo sí/no) o cámbienlas a preguntas abiertas. Luego, prioricen y enumeren las tres preguntas principales. Publiquen en la plataforma para revisión de su mentor todo el proceso realizado, no solamente las 3 preguntas finales.	*+7 Curiosidad, +5 Imaginación (Equipo)*	50.5%	As a team brainstorm a list of questions about the problem of Sustainable Cities that you would like to better understand. Cross-off all closed (yes/no) questions or change them to open-ended questions. Then, prioritize and list the top three questions for interview
	Vean un video explicativo sobre “Los 5 por qué” y trabajen en equipo para parar, repensar todas sus preguntas. Envíen a su mentor, a través de la plataforma, su cadena de preguntas. Pueden encontrar más información para desarrollar la misión en los “archivos de investigación”.	*+7 Curiosidad, +5 Pensamiento sistemático (Equipo)*	24.0%	Watch the ‘5 Whys Video” and work with your team to push back your questions. Show your chain of questioning.
	Como equipo, hagan una lluvia de ideas para crear una lista de preguntas entorno a dudas sobre ciudades sostenibles, preguntas que les gustaría preguntar a personas en sus ciudades que están experimentando estos problemas, y cuya experiencia puede ser distinta de la suya. Tengan en consideración los pensamientos,	*+7 Curiosidad, +6 Empatía (Equipo)*	25.5%	As a team brainstorm a list of questions about the problem of Sustainable Cities that you would like to ask of people who are living with the problem in your city and whose

	emociones y circunstancias de las personas a las que mas adelante entrevistarán, y reformulen sus tres preguntas principales teniendo esto en cuenta. Publiquen en la plataforma para revisión de su mentor todo el proceso realizado, no solamente las 3 preguntas finales. Pueden encontrar más información para desarrollar la misión en los "archivos de investigación".			experience may be different than your own. Consider the thoughts, emotions, and circumstances of the people you will be interviewing and reword your top three questions to take this into account.
2.6	Identifiquen las personas que les gustaría que respondieran a las preguntas que escribieron en la misión anterior (un líder de la comunidad, alguna persona o algún familiar que esté experimentando el problema, alguna persona experta en la materia…). Después, realicen una entrevista "de broma", en la que cada miembro del equipo actúe en alguno de los roles (entrevistador, entrevistado, quien toma notas, observadores…). Cambien los roles. Graben sus entrevistas en video, y compartan el enlace con el mentor, a través de la plataforma, para que les de su realimentación.	*+7 Comunicación, +6 Trabajo en equipo (Equipo)*	7.1%	Identify the people you would like to interview to answer the questions you wrote in the previous mission (community leader, individual or family experiencing the problem, subject matter expert, etc.). Then, conduct a mock interview, with each team member playing a different role (interviewer, interviewee, note taker, and observers). Switch roles. Video your mock interview and share with your mentor for feedback.
	Empleando las preguntas que escribieron en la anterior misión, grábense un video haciéndoles las preguntas a un amigo, un familiar u otro miembro del equipo. Vean el video, discutan sobre lo que funciona y lo que podrían mejorar. Después vuélvanlo a intentar. Repitan este ejercicio hasta que se sientan preparados. Suban el enlace del video y compártanlo a través de la plataforma para revisión de su mentor y mencionen a quien les gustaría entrevistar en su comunidad o ciudad.	*+7 Comunicación, +5 Experimentación (Equipo)*	36.5%	Using the questions that you wrote in the previous mission, video yourself asking questions to a teammate, friend or family member. Watch the video, discuss what works and what you can improve. Then try again. Repeat until you feel prepared. Upload the video and describe who you would like to interview in the community or city
	Usando las preguntas que escribieron en la misión anterior, creen una breve encuesta o sondeo. Después, elijan algún rol (entrevistador, peatón cualquiera en una calle), y practiquen entre ustedes realizar esas preguntas. Asegúrense de que todos los miembros del equipo tengan la oportunidad de realizar ambos roles. Modifiquen su encuesta o sondeo basándose en lo que ha funcionado y lo que no, y envíen todo esto a su mentor para su realimentación a través de la plataforma.	*+7 Comunicación, +6 Experimentación (Equipo)*	56.3%	Using the questions that you wrote in the previous mission, create a short poll or short survey. Then choose roles (interviewers, passers-by on a street corner) and practice asking these questions. Make sure everyone has a chance to play both roles. Modify your poll or survey and send to your mentor for feedback.
2.7	Entrevisten por teléfono o en video llamada a los líderes de la comunidad que identificaron en la misión anterior. Con su permiso, compartan el video o la transcripción de la entrevista con la red Evoke a través del Foro General, y expliquen qué reto relacionado con Evoke Cities consideran los entrevistados son mas urgentes, y lo que creen que se ha ideo haciendo hasta ahora. Compartan con su mentor las evidencias de su publicación en la red Evoke a través de la plataforma	*+10 Empatía, +9 Liderazgo (Equipo)*	22.8%	Interview the community/city leaders you identified in the previous mission. With permission share a video or transcript of the interview to the network and explain the Sustainable City issue that local leaders believe to be the most urgent to solve and what they have prioritized for action or have been doing about it thus far.
	Entrevisten por teléfono o en video llamada a las personas o familiares que identificaron en la misión anterior, y que están sufriendo alguno de los problemas en su comunidad. Aprendan sobre los retos a los que se enfrentan, sus esperanzas, sus anhelos…	*+10 Empatía, +9 Comunicac*	20.4%	Interview the person or family you identified in the previous mission who is suffering from the problems in your community. Learn about their

	Escuchen con atención y describan cómo el problema les afecta en su día a día. Además, compartan una cosa que tengan en común con esta(s) persona(s), que han entrevistado, y algo que admiren de ellos. Con su permiso, comparta el enlace del video (o la transcripción) en la red de Evoke en el Foro General. Compartan con su mentor las evidencias de su publicación en la red Evoke a través de la plataforma, así como las cosas en común con los entrevistados.	*ión (Equipo)*		challenges, hopes, and dreams. Listen closely and describe how the problem affects their daily life plus share one thing you have in common with the person you interviewed and one thing you admire about them. With permission, share the video with the network.
	Usen la encuesta o sondeo que realizaron en la misión anterior (si eligieron esa misión) y llévenla a un ambiente virtual (una encuesta en una red social o en algún grupo de Whatsapp). Creen un video, blog o dibujo (u otro medio de expresión) que muestre sus hallazgos. Determinen cómo van a compartirían dichos hallazgos en su comunidad (como por ejemplo en un blog, una historia en Instagram, un video en Facebook, etc.). Compartan con su mentor, a través de la plataforma, las evidencias de su publicación así como los hallazgos de la implementación de la encuesta. Si hicieron un video o blog, compartan el enlace.	*+10 Empatía, +9 Curiosidad (Equipo)*	56.8%	Find a busy street corner and poll passers-by (seek permission as necessary), using the short poll or survey you wrote in the previous mission. Create a video, blogpost, drawing, etc. that presents your findings. Determine how you will share with the community (e.g. arrange a community meeting, post in a community forum, exhibit in a public space).
2.8	Realicen un mapa o un diagrama en el que identifiquen enlaces entre la información que han recolectado (desde el principio de las misiones). Para realizar este mapa o diagrama realicen previamente las siguientes actividades, que les permitirán condensar la información en diferentes esquemas (encuentran insumos para cada actividad en los “archivos de investigación”): • Análisis PESTEL • Búsqueda de patrones. • Narrativa de la experiencia. • Pirámide de necesidades. (opcional) • Canvas de la propuesta de valor – lado derecho. Con base en el mapa o diagrama la idea es poder tener un entendimiento claro de los insights (revelaciones) encontrados y contar con la definición del punto de vista. Para esto, deberán sintetizar en una frase la persona, necesidad y el insight para postular el “punto de vista”. Pueden encontrar más información para desarrollar la misión en los “archivos de investigación”.	*+7 Pensamiento Sistemático, +6 Análisis (Equipo)*	29.1%	Create a map or diagram that links the key issues and interactions you have discovered in the previous missions in order to develop a clearer understanding of the issues that underlie the problem you are addressing. The diagram should have arrows and loops that show how one element influences another.

	Realicen un “árbol de problemas” que evidencia las causas y los efectos relacionados con el problema en el que se han enfocado utilizando la información que han recolectado (desde el principio de las misiones). Para realizar este “árbol de problemas” realicen previamente las siguientes actividades, que les permitirán condensar la información en diferentes esquemas (encuentran insumos para cada actividad en los “archivos de investigación”): • Análisis PESTEL • Búsqueda de patrones. • Narrativa de la experiencia. • Pirámide de necesidades. • Trabajos, dolores y ganancias. Con base en el “árbol de problemas” la idea es poder tener un entendimiento claro de los insights (revelaciones) encontrados y contar con la definición del punto de vista. Para esto, deberán sintetizar en una frase la persona, necesidad y el insight para postular el “punto de vista”. Pueden encontrar más información para desarrollar la misión en los “archivos de investigación”.	*+7 Pensamiento sistemático, +5 Análisis (Equipo)*	56.1%	Investigate cause and effect relationships as a team by drawing a problem tree. The trunk is the problem, the roots the causes, and the effects are the branches.
	Realicen un video, un blog, un dibujo u otra forma de expresión los aprendizajes que han tenido sobre el problema en el que se han enfocado. Para realizar esta pieza (video, blog, dibujo, etc.) realicen previamente las siguientes actividades, que les permitirán condensar la información en diferentes esquemas (encuentran insumos para cada actividad en los “archivos de investigación”): • Análisis PESTEL • Búsqueda de patrones. • Narrativa de la experiencia. • Pirámide de necesidades. • Trabajos, dolores y ganancias. Como conclusión del video, blog, dibujo, etc. deberán sintetizar en una frase la persona, necesidad y el insight para postular el “punto de vista”. Pueden encontrar más información para desarrollar la misión en los “archivos de investigación”. Compartan con su mentor, a través de la plataforma, todos los documentos construidos (“PESTEL”, “patrones”, “narrativa”, “pirámide”, “Canvas”, “insights” y “punto de vista”) así como el enlace al video, blog o dibujo para su revisión.	*+7 Pensamiento sistematico, +5 Imaginacion (Equipo)*	14.8%	In a video, blogpost, drawing, etc., tell a story or describe how the day-to-day experiences of people in your community connect to the broader issues of sustainable cities you identified in the first mission.

#LO	Content of each mission (in Spanish)	Skills	% selection	**Option prior to adjustment with EAN**
3.1	Investiga soluciones que hayan sido probadas en otros lugares que pudieran ser aplicadas a tu ciudad o tu pueblo. Categoriza dichas soluciones dependiendo del tipo: soluciones enfocadas a la comunidad, al gobierno, al sector privado, ONGs, etc. Comparte con el mentor, a través de la plataforma, esos grupos que has identificado (via foto, dibujo, texto…). En los archivos de investigación podrás encontrar algunos ejemplos de éxito de otros lugares.	*+4 Análisis, +2 Pensamiento sistemático (Individual)*	26.0%	Research solutions that have been tried in other places that could be applied to your city. Categorize the solutions by type: community solution, government, private sector companies, NGOs, etc. Take a photo of your groupings and send to your mentor.

	Analiza cómo algunas ciudades innovadoras están haciendo frente a los mismos problemas a los que tu ciudad o tu pueblo se están enfrentando (en los archivos de investigación podrás encontrar algunos ejemplos de éxito de otros lugares.), estudia los pros y contras de esas distintas soluciones. Basándote en ese análisis, reflexiona sobre cuáles de estas soluciones, de manera hipotética, podrían funcionar mejor en tu entorno. Comparte tus hallazgos con tu mentor, a través de la plataforma, en el formato que desees.	*+4 Análisis, +3 Pensamiento sistemático (Individual)*	24.0%	Analyze how some innovative cities are tackling the challenges your own city faces. Look at the pros and cons of different solutions. Based on this analysis, hypothesize which of these solutions would potentially work best in your own city. Share your findings in a video, blogpost, drawing, etc.
	Investiga sobre nuevas tecnologías que pueden ayudar a resolver alguno de los retos de los que hemos hablado en tu pueblo o ciudad. Ilustra como funcionarían en tu entorno, centrándote especialmente en las áreas que más te interesen. Comparte tu análisis con el mentor a través de la plataforma	*+4 Análisis, +3 Visión (Individual)*	50.0%	Do some research about new technologies (links provided) that might help solve a challenge in your city. Illustrate how they might work in your city, focusing on the ones that interest you the most.
3.2	Haz una lluvia de ideas (contigo mismo). Ponte un tiempo limite de unos 10 minutos, y escribe tantas ideas como puedas sobre posibles soluciones al problema identificado, cosas sobre las que hayas soñado o sobre las que te hayas preguntado. Por ahora, cuanto más locas, mejor. No hace falta que seas realista en este momento, déjate llevar por las ideas más extrañas que se te puedan ocurrir. Puedes hacer una lista o usar notas adhesivas. Has una foto y compártela con tu mentor a través de la plataforma.	*+4 Imaginación, +3 Curiosidad (Individual) (opción 1)*	69.5%	Brainstorm by yourself. Set a time limit of 10 minutes and write down as many ideas as you have about possible solutions to the problem. Things you've wondered or dreamt about. The crazier, the better for now. You don't need to be practical. You can make a list or use Post It notes. Take a picture of your work and post.
	Genera tantas ideas como puedas utilizando la técnica de asociación libre. Elije un elemento cualquiera (realmente cualquiera): una imagen de un animal, un lugar divertido, un objeto dentro del cuarto en donde te encuentras. Analiza qué características tiene el objeto, animal o lugar que has elegido: ¿es veloz?, ¿es reciclable?, ¿es débil?, ¿de qué color es?, etc. Utiliza cada característica como inspiración para crear una o varias ideas. No te detengas a pensar si estas ideas son factibles o no, ¡diviértete! (Encuentra más información en los archivos de investigación). Comparte el ejercicio realizado con tu mentor a través de la plataforma.	*+4 Imaginación, +3 Curiosidad (Individual) (opción 2)*	12.6%	Describe a positive alternative reality for your city which improves the well-being of the people you've spoken with. Consider their needs, concerns, hopes and aspirations. Based on this description and assuming no barriers to making your ideas happen, list some solutions to the challenges your city faces.
	Describe una posible realidad alternativa para tu pueblo o ciudad que mejoraría el bienestar de la gente, con la que has hablado hasta ahora, en torno al problema que has identificado. Ten en consideración sus necesidades, preocupaciones, aspiraciones, esperanzas… Basándote en esta descripción y asumiendo que no hay barreras para que tus ideas se convirtieran en realidad, elabora una lista de algunas posibles soluciones a los problemas que tu ciudad o pueblo encara. Comparte el ejercicio realizado con tu mentor a través de la plataforma.	*+4 Imaginación, +2 Empatía (Individual)*	17.9%	Choose an object, person, or place in your city and imagine you are tasked with transforming it in a way that improves the city. Challenge conventional assumptions about how the thing that you are viewing is supposed to be or work and view it in a different light; break it apart, combine it or connect it with something else and generate many different ideas. Don't stop to think whether these ideas are feasible, just have fun.
3.3	Escribe una nota a tus compañeros en la red de Evoke y ofrécete voluntario para apoyar a alguien que pueda necesitar algo de ayuda con alguna de las misiones anteriores de Evoke. Envía al mentor, a través de la plataforma, tu nota y si colaboraste con algún otro agente, pero no menciones su(s) nombre(s).	*+4 Generosidad, +3 Imaginación (Individual)*	13.2%	Post a note to your peers in the Evoke network and volunteer to work with anyone who may need a little help with the previous Evoke missions. Post the note and whether anybody took you up on the offer, but do not mention the name(s) of the person or people you worked with.
	Envía una nota de agradecimiento a las personas que entrevistaste en el capitulo anterior. Puedes enviar al mentor una foto de la nota, pero no muestres los nombres de las personas a las que se lo envías. Envía al mentor, a través de la plataforma, tu nota de agradecimiento y a quién se la enviaste.	*+4 Generosidad, +2 Comunicación (Individual)*	52.6%	Send a thank you note to the person or people you interviewed in Chapter 1. Post a photo of the card or note, but not the name(s) of the person you sent it to.

	Contacta con una persona de la red de Evoke (otro agente, un mentor, un profesor, una persona de tu pueblo, ciudad o comunidad) y hazle saber por qué lo respetas y valoras. Sé específico sobre sus talentos, su disposición a ayudar, o alguna otra de sus características que estén marcando la diferencia para ti durante esta experiencia de Evoke. Comparte una foto de la nota de respeto y valoración con tu mentor, a través de la plataforma, pero no el nombre de las personas a las que se lo envías.	*+4 Generosidad, +3 Coraje (Individual)*	34.2%	Contact a person in the Evoke network (a peer, a mentor, a professor, a person from the city or community) and let them know why you respect and value them. Be specific about how their talents, their willingness to help, or something else is making a difference to your Evoke experience. Post the photo of the message, but not the name of the person you sent it to.
3.4	Organicen un debate entre los miembros del equipo, donde cada persona presente y defienda una potencial solución, generada con la dinámica en clase de asociación forzada de ideas, mientras los demás la critican (de manera constructiva). Capturen esta experiencia en un video, blog, dibujo, etc., y describan las nuevas ideas que emergen de este proceso. Compartan el resultado con el mentor, a través de la plataforma. Si crearon un video o un blog, compartan el enlace.	*+7 Imaginación, +6 Comunicación (Equipo)*	20.4%	Organize a debate with your teammates where each person presents and defends a potential solution while the others critique it. Capture the experience in a video, blogpost, drawing, etc. and describe the new ideas that emerge.
	Organicen una sesión de lluvia de ideas colaborativa con los miembros del equipo, generada con la dinámica en clase de asociación forzada de ideas, que sirva para proponer posibles soluciones al problema detectado en capítulos anteriores. Creen un "mapa mental" con las ideas generadas (puedes encontrar un ejemplo en los "archivos de investigación"): empiecen por escribir el tema principal en el centro, y usen "ramificaciones" para conectar los temas asociados. Luego, construyan un storyboard (ejemplo en los "archivos de investigación") que demuestre lo innovador que es su potencial solución. Compartan tanto el mapa mental como el storyboard con el mentor a través de la plataforma.	*+7 Imaginación, +6 Pensamiento sistemático (Equipo)*	47.6%	Organize a collaborative brainstorming session with your team to come up with potential solutions to the problem you identified in Chapter 1. Create a mind map; begin by writing the central topic in the middle and using branches to connect associated topics. Then, construct a storyboard that demonstrates the innovativeness of your potential solution. Share your mind map and storyboard with the network.
	Realicen en equipo una investigación sobre el ODS numero 11 (ciudades y comunidades sostenibles), y relacionen este ODS con las soluciones a las que han llegado a través de la dinámica en clase de asociación forzada de ideas. Demuestren hasta qué punto las soluciones a las que llegaron se alinean con dicho ODS, y busquen la manera de fortalecerlas. Comparte el resultado con el mentor a través de la plataforma.	*+7 Imaginación, +5 Análisis (Equipo)*	31.9%	Research SDG 11 (sustainable cities and communities) and relate your understanding of this principle to the solutions you have individually come up with in mission 3.3. Demonstrate the extent to which these solutions align with this principle, looking for opportunities to strengthen them along the way.
3.5	Como equipo, seleccionen una idea creativa para resolver el reto particular en el que su equipo está enfocado en su ciudad o pueblo. Formulen una historia convincente (usando texto, imágenes, videos…) que cuente cómo será esta ciudad o pueblo sostenible, y la vida de sus gentes, una vez su solución sea implementada. Compartan el resultado con el mentor a través de la plataforma. Si utilizaron video, compartan el enlace.	*+7 Visión, +6 Liderazgo (Equipo)*	31.4%	As a team, select one creative idea for solving the particular challenge in your city that your team is focusing on. Formulate a compelling story through text, images or video of what this sustainable city, and people's lives, will be like if this solution is implemented.
	Imaginen que ustedes están ayudando a diseñar una nueva ciudad o pueblo desde el principio. Basándose en su conocimiento sobre el reto particular que su equipo ha decidido encarar, y en las soluciones individuales que en su momento pensaron, seleccionen una idea y diseñen una imagen impactante que muestre cómo sería su nueva ciudad o pueblo sostenible. Háganlo de una manera que sea atractiva para poder atraer a otros diseñadores (pueden utilizar dibujos, un collage u otros métodos). Compartan el resultado con el mentor a través de la plataforma.	*+7 Visión, +6 Imaginación (Equipo)*	53.0%	Imagine you are helping to design a new city from scratch. Based on your knowledge of the particular challenge in your city that your team has decided to solve and your individual ideas about possible solutions, select one idea and design a powerful image of what your new sustainable city will be like in order to interest the designers in your team's innovative idea. You can use drawings, collage, etc.

	Desarrollen un conjunto de criterios que les ayude a juzgar los méritos de cada una de las soluciones que están considerando. Después, usen esos criterios para evaluar cada solución, e identifiquen la más prometedora y en la que su equipo se centrará. Pueden usar un diagrama de radar para valorar cada criterio. Compartan el resultado con el mentor a través de la plataforma.	*+7 Visión, +6 Análisis (Equipo)*	15.7%	Develop criteria to help you judge the merits of each solution you are considering. Then, use these criteria to evaluate the solutions and identify the most promising solution that your team will focus on.
3.6	Desarrollen un plan básico para poder recoger realimentación que reciban de la comunidad sobre su solución inicial, e identifiquen con quién les gustaría hablar y compartir dicha solución. Investiguen los distintos pasos para una prueba iterativa y busquen casos de éxito de planes similares en el pasado. Compartan este plan con su mentor a través de la plataforma.	*+7 Experimentación, +5 Análisis (Equipo)*	14.1%	Develop a basic plan for getting feedback on your proposed initial solution from the community and identify who you would like to speak with. Research the different steps of iterative testing and look at successful examples of plans from the past.
	Pónganse en la piel del “abogado del diablo”. Como equipo, túrnense para criticar la solución que van a presentar a los líderes de su ciudad, pueblo o comunidad, argumentando por qué no sería una buena solución. Después, desarrollen una respuesta para cada uno de los puntos mencionados y modifiquen (si fuera necesario) su propuesta de solución inicial. Compartan este ejercicio con su mentor a través de la plataforma.	*+7 Experimentación, +6 Coraje (Equipo)*	7.1%	Put on the hat of "Devil's Advocate." As a team, take turns critiquing the solution you will present to city or community leaders, arguing why it would not be a good fit. Then, develop a response to each of the points you made and/or modify your proposed initial solution.
	Como equipo, hagan una lluvia de ideas para crear una lista de preguntas sobre su propuesta de solución que les gustaría preguntar a la gente que está experimentando el problema que ustedes desean resolver. Tengan en consideración cómo pueden parecerle las preguntas a las personas a las que van a pedirles realimentación. Reformulen sus preguntas si es necesario, y piensen así mismo cómo podrían incluirlas en su Evocación más adelante. Compartan este ejercicio con su mentor a través de la plataforma.	*+7 Experimentación, +5 Empatía (Equipo)*	78.8%	As a team brainstorm a list of questions about your proposed solution that you would like to ask of people who are living with the problem in your city and whose experience may be different than your own. Consider how your questions may sound to the people you are asking for feedback. Reword your questions as needed and also think about how you can include them in your Evoke work going forward
3.7	Identifiquen cómo presentar su solución inicial a diferentes personas de su comunidad por medios virtuales (una publicación en una red social, una video llamada a familiares, etc.), y pregúntenles cómo se verían afectadas sus vidas debido a dicha propuesta. A través del medio que prefieran, creen y cuenten una narración que teja los distintos impactos que su solución podría tener. Compartan los resultados de las pruebas con su mentor a través de la plataforma. Si crearon un video o un blog, compartan el enlace.	*+10 Empatía, +9 Empatía (Equipo)*	41.6%	Present your initial solution to different people in the community and ask how their lives would be affected. Through words, images, sound, etc., create a narrative that weaves together the different impacts your solution could potentially have.
	Cada miembro del equipo debe compartir la idea inicial de su equipo con su comunidad, usando las redes sociales. Luego, en trabajo en equipo categoricen y capturen los diferentes tipos de realimentación que reciban. Compartan los resultados del ejercicio con su mentor a través de la plataforma.	*+10 Empatía, +9 Trabajo en equipo (Equipo)*	29.2%	Share your team’s initial solution with the community in-person and/or via social media and categorize the different types of feedback you receive.
	Vuelvan a hablar con algunas de las personas que entrevistaron anteriormente sobre su posible solución inicial. Además, piensen en una parte de su pueblo o ciudad que no hayan tenido en cuenta inicialmente (una que no visiten habitualmente, que no conozcan tan a fondo), y comparen el efecto y el impacto que su solución pudiera tener en esa parte del pueblo o de la ciudad con la que no están tan familiarizados. Compartan los resultados del ejercicio con su mentor a través de la plataforma.	*+10 Empatía, +8 Curiosidad (Equipo)*	29.2%	Speak with the people you interviewed in Chapter 1 about your potential solution. Also, visit a part of the city you have never been to and compare the way your solution could potentially impact that part of the city with the way it may impact the areas you are more familiar with.

3.8	Como equipo, discutan sobre cómo la realimentación que han recibido en la pasada misión ha influido en su solución inicial. Tras esto, utilicen la guía presente en los "archivos de investigación" para redactar su "declaración de visión en dos líneas". Documenten el proceso completo en video, por escrito, o por el método que prefieran. Compartan con su mentor tanto la declaración de visión como el proceso documentado a través de la plataforma. Si crearon un video o un blog, compartan el enlace.	*+7 Visión, +6 Comunicación (Equipo)*	16.3%	As a team, discuss the feedback you received in the previous mission and how it has changed your solution. Then, use this guide (attach) to write your two-line vision statement. Video the whole process or document the process in your written work.
	Usando un gráfico, expliquen cómo están unidos como equipo entorno a una meta y visión comunes, y cómo van a emplear sus habilidades y van a comprometer su tiempo para que su solución innovadora se haga realidad. Asegúrense de que tienen en cuenta los riesgos y expliquen cómo les harán frente de manera proactiva. Compartan con su mentor tanto el gráfico como el análisis de riesgos a través de la plataforma.	*+7 Visión, +5 Liderazgo (Equipo)*	35.9%	Using a graphic, explain how as a team you are united around a shared goal and vision and how you will mobilize your skills and commit your time to bring your innovative solution to life. Make sure you think about the risks and what you will do to proactively overcome them.
	Contacten con las personas y las organizaciones que les dieron realimentación en su propuesta inicial de solución en la misión anterior. Denles las gracias y explíquenles cómo van a mejorar su propuesta de solución basándose en su realimentación. Compartan con su mentor, a través de la plataforma, las evidencias de la conversación con quienes los han apoyado.	*+7 Visión, +6 Generosidad (Equipo)*	47.8%	Contact the people and organizations who gave you feedback on your proposed solution in the previous mission. Thank them and explain how you will improve your solution based on their feedback.

#LO	Content of each mission (in Spanish)	Skills	% selection	**Option prior to adjustment with EAN**
4.1	Crea una petición en apoyo de tu solución al problema en tu ciudad, pueblo o comunidad. En dicha petición, propón un cambio en alguna práctica, proceso, regulación, etc. que consideras que es dañina para la sostenibilidad. Compártelo por redes sociales y luego comparte con tu mentor la evidencia de tu trabajo.	*+4 Coraje, +3 Comunicación (Individual)*	20.8%	Create a petition in support of your solution to the problems in your city, in which you propose a change in practices, processes, regulations, etc. that you consider harmful to the sustainability of your city. Post to the network.
	Postea una opinión en la red de Evoke, a través del Foro General, que comience con las palabras "Yo creo en…". Esta opinión debe argumentar por qué crees importante hacer frente al problema de sostenibilidad de la forma en la que tú estás pensando en hacerlo. Comparte con tu mentor la evidencia a través de la plataforma.	*+4 Coraje, +3 Visión (Individual)*	39.3%	Post an opinion piece to the Evoke network that begins with the words, "This I believe," which argues why it is right to tackle the sustainable cities problem in the way you propose.
	Crea un afiche o una serie de fotografías en las que muestres cómo la solución de ciudades sostenibles de tu equipo puede brindar una vida mejor para la gente en tu comunidad. Comparte con tu mentor la evidencia a través de la plataforma.	*+4 Coraje, +3 Coraje (Individual)*	39.9%	Create a poster or series of photographs in which you show how your team's sustainable cities solution takes on entrenched interests and provides a better life for the people in your city or community.
4.2	Como equipo, empiecen a reunir los recursos que necesitarán para construir su prototipo, aprovechando materiales del día a día de bajo costo, materiales encontrados en la casa, mercados… Asegúrense de tener en cuenta otro tipo de recursos que puedan necesitar, como permisos o espacios. Una vez hayan logrado todo, hagan una lista de cada recurso y describan su rol especifico en la	*+7 Generosidad, +6 Visión (Equipo)*	26.8%	As a team, gather the resources you will need for your prototype, taking advantage of everyday low-cost materials, materials found around the home, and makerspaces. Be sure to address other resources you may need, such as permits or location

	creación del prototipo. Compartan el listado con las descripciones con su mentor a través de la plataforma.			space. Once you have gathered everything, list each resource and describe its role in creating your prototype.
	Con su equipo, expliquen con más detalle cómo será su prototipo cuando esté en acción, qué aspecto tendrá, incluyendo quién estará relacionado con el mismo o qué recursos serán necesarios para que se lleve a cabo. Asegúrense de describir las responsabilidades de cada miembro del equipo y los recursos que pueden necesitar. Compartan la descripción detallada de su prototipo con su mentor a través de la plataforma. Pueden usar un video, un dibujo, un texto o un diagrama. Lo importante es que se entienda cómo va a funcionar.	*+7 Generosidad, +5 Liderazgo (Equipo)*	56.1%	With your team, explain in more detail what your prototype will look like in action, including who will be involved, when it will take place, and what resources you will need to make it happen. Be sure to describe the responsibilities of each team member and what resources you might need.
	"Los equipos tienen más éxito creando soluciones a problemas complejos cuando son transparentes e incluyen otros puntos de vista. La generosidad es clave para tener éxito en el diseño del prototipo, así como en la creación de soluciones o productos". Defiendan esta declaración, y expliquen cómo su equipo incorporará la generosidad en el diseño y testeo de su prototipo (puede ser en términos de inclusión, de tiempo, de experiencia, de recursos, etc.). Compartan la defensa de la declaración con su mentor a través de la plataforma. Pueden usar un video, un texto o un diagrama. Lo importante es que defiendan esa postura desde uno o varios de los puntos de vista mencionados..	*+7 Generosidad, +6 Trabajo en equipo (Equipo)*	17.1%	Teams are more successful in creating solutions to complex problems when they are transparent and include others. Generosity is key to successful prototype design and product/solution creation. Defend this statement and explain how your team will incorporate generosity (in terms of inclusivity, time, expertise, resources, etc.) in your prototype design and testing.
4.3	Creen un prototipo de su idea. Este puede incluir dibujos, diseños, gráficos, maquetas, o cualquier otro recurso para plasmar lo que imaginan. Para la estructuración del prototipo consulten los archivos de investigación en búsqueda de la herramienta para sofisticación de prototipos y validación con usuarios. Documenten sus productos de forma digital y creen un solo archivo con el prototipo y su descripción. Compartan las evidencias con su mentor a través de la plataforma.	*+7 Experimentacion, +6 Imaginacion (Equipo)*		Create a prototype of your idea -- this could include a drawing of your idea, a mock up, a graphic, or a picture of what you have imagined
4.4	Hagan una lluvia de ideas con preguntas sobre la facilidad de uso y/o la deseabilidad de su oferta. Por ejemplo: ¿entiende la gente cómo funciona? ¿Cómo lo usaría la gente? ¿Ayudará resolver el reto que tratan de enfrentar de ciudades sostenibles?, etc. Después de proponer muchas preguntas, descarten todas aquellas preguntas cerradas (de "sí o no") y las que estén duplicadas. Asegúrense de reflejar y tener en cuenta posibles diferencias culturales. Finalmente, organicen sus preguntas para poder ponerlas a prueba mas adelante. Compartan todo el procesos con sus mentores a través de la plataforma.	*+7 Curiosidad, +6 Visión (Equipo)*	75.6%	Brainstorm questions about desirability and/or usability of your offering. For example: Do people understand how it works? How will people use it? Will it help address the problem you are addressing regarding sustainable cities? Etc. Cross-off all closed (yes/no) questions and duplicates. Make sure your questions show cultural awareness. Then, organize your questions for testing.

	Escriban algunas preguntas que se responderían con estructuras como “Me gusta…”, “Me gustaría…”, “Qué pasaría si…” y otras similares, para poder recoger información sobre lo que la gente cambiaría, lo que les gusta, lo que les gustaría de su prototipo. Hagan esas preguntas a familiares y amigos, y practiquen para mantener una conversación fluida para poder aprender lo que el usuario necesita, lo que piensan del diseño, en vez de interrumpirles con sus propios pensamientos sobre lo que querrían que la otra persona dijera. Después, preparen un guion similar para poder probar su prototipo más adelante. Compartan todo el procesos con sus mentores a través de la plataforma.	*+7 Curiosidad, +6 Experimentación (Equipo)*	7.3%	Write a few question stems such as, “I Like..., I Wish..., What If...” to gather information on what people like, would change, and would want. Ask these questions to friends or family and practice keeping the discussion flowing so that you can learn what users’ need, what users think of the design, rather than interjecting your own thoughts of what you would like the person to say or think. Then, prepare a simple script to structure your prototype testing.
	Lo primero que deben decidir a la hora de probar un prototipo es qué quieren aprender sobre las personas que van a probar su propuesta para cambiar el mundo. Como equipo, conversen sobre su objetivo principal. Después, escriban 4 o 5 preguntas que estén alineadas con ese objetivo, y unas pocas tareas (cosas que un usuario haría, miraría, cosas con las que interactuaría, etc.) mientras el equipo le hace las preguntas. Compartan todo el procesos con sus mentores a través de la plataforma.	*+7 Curiosidad, +6 Análisis (Equipo)*	17.1%	The first thing you need to decide when testing a prototype is what you want to learn more about from the people who will be testing your world changing idea in the community. As a team, discuss your key objective. Then, write 4-5 questions that align to this objective and a few tasks—things that the user will do, look at, interact with—while you your team asks questions.
4.5	¡Prueben su prototipo! ¡Compártanlo de forma virtual con la comunidad para recibir su realimentación! ¿La gente entiende cómo funciona? ¿Cómo lo está usando la gente? En un gráfico, traten de capturar aquello que le gusta a la gente, qué cosas quizá necesiten cambiar, y anoten también preguntas y nuevas ideas que pueden surgir de durante estas pruebas. Cuando las pruebas hayan finalizado, analicen la realimentación que recibieron, y luego redacten recomendaciones para mejorar el prototipo basándose en esos hallazgos. Compartan todo esto con su mentor a través de la plataforma.	*+10 Experimentación, +8 Pensamiento sistemático (Equipo)*	57.5%	Test your prototype! Share it with the community for feedback. Do people understand how it works? How are people using it? In a chart, record what people like, what may need to change, and questions and new ideas that emerge during testing. When the testing is complete, analyze the feedback you have received, then recommend changes to your prototype based on the feedback. Share these recommendations with your mentor.
	Prueben, de forma virtual, su prototipo con distintas personas de su comunidad pregúntenles cómo se verían afectadas sus vidas con la solución que proponen. Empleen las preguntas desarrolladas en la misión anterior. Revisen sus anotaciones o videos y utilicen un mapa de empatía (pueden encontrar más información en los “archivos de investigación”) para categorizar y sintetizar el resultado de las pruebas (lo que la gente dijo, lo que piensa, lo que sienten). Compartan todo esto con su mentor a través de la plataforma.	*+10 Experimentación, +9 Empatía (Equipo)*	30.0%	Test your prototype with different people in the community and ask how their lives would be affected. You can use question stems, such as, “I Like..., I Wish..., What If...” to gather information on what people like, would change, and would want. Review your notes or video and use an empathy map (attach) to categorize and synthesize what the testers say, do think, and feel.

	Prueben su prototipo con una amplia variedad de usuarios. Empleen las preguntas desarrolladas en la misión anterior. Encuéntrense con las personas con las que se reunieron en misiones anteriores, pero esta vez incluyan también gente que no estén familiarizados con Evoke y con lo que han estado haciendo. Escuchen con atención, para comprobar si sus respuestas y reacciones son similares a las de aquellos que están familiarizados o no, y determinen, basándose en esto, si su público objetivo se ha expandido, ha cambiado o si tienen que realizar modificaciones a su prototipo para satisfacer las necesidades de ese público. Compartan, a través de la plataforma, sus preguntas y los hallazgos consolidados con su mentor.	*+10 Experimentación, +8 Comunicación (Equipo)*	12.5%	Test your prototype with a wide variety of users. Make a short list of questions about desirability and/or usability of your offering. Meet with the same people you worked with in the previous chapters as well as with people who are not familiar with Evoke and what you are doing; perhaps from a different geography or culture. Listen closely to whether the answers are similar or different between the groups of potential users and determine whether the target audience for your offering has expanded or changed and what changes need to be made to the prototype to meet their needs. Share your questions and your consolidated findings with your mentor.
4.6	Iteren su prototipo: realicen las modificaciones necesarias basándose en la realimentación y las opiniones recibidas anteriormente. Mantengan a la gente a su alrededor motivadas con su prototipo. Contacten con gente que ya les dio su opinión para recabar información adicional o posibles aclaraciones que puedan necesitar en relación a los cambios a efectuar en su prototipo. Recuerden que normalmente se necesitan varios intentos solucionar o arreglar algo, y que sus primeros cambios pueden no funcionar. Detallen los cambios que están efectuando a su prototipo, y documenten este proceso (via video, documentos, otros). Adicionalmente, consoliden los aprendizajes sobres las pruebas de sus prototipos en el Canvas de la propuesta de valor (lado izquierdo). Información adicional en los archivos de investigación). Compartan todo esto con su mentor a través de la plataforma.	*+7 Liderazgo, +6 Experimentación (Equipo)*	30.2%	Iterate on your prototype: make modifications based on the feedback you received. Keep the team and other people engaged with your innovation: contact people who have already provided feedback for clarification or additional feedback on modifications to the prototype. Remember that it often takes many tries to fix something and your first change may not work. Detail the changes you are making to your prototype. Video or document the process and share with your mentor.
	Iteren su prototipo: realicen modificaciones basándose en las opiniones que recibieron. Tengan en cuenta las limitaciones en los recursos que pueden encarar cuando estén implementando su solución, y asegúrense de que el prototipo modificado continúa reflejando el propósito compartido de su equipo, sus valores fundamentales y las necesidades de su comunidad. Justifiquen los cambios que están realizando (o aquellos que no van a realizar) en su prototipo, incluyendo por qué esos cambios harán que su solución/oferta la harán mejor que la versión anterior. Adicionalmente, consoliden los aprendizajes sobres las pruebas de sus prototipos en el Canvas de la propuesta de valor (lado izquierdo). Información adicional en los archivos	*+7 Liderazgo, +6 Coraje (Equipo)*	32.6%	Iterate on your prototype: make modifications based on the feedback you received. Keep in mind the limitations in resources you may face when implementing your solution, and make sure the modified prototype continues to reflect your team's shared purpose and core values and the needs of your community. Justify the changes you are making (or choose not to make) to your prototype, including why these changes will make the

	de investigación. Compartan todo esto con su mentor a través de la plataforma.			solution/offering even better than before.
	Iteren su prototipo: realicen modificaciones basándose en las opiniones que recibieron. Piensen tanto en las opiniones que recibieron, como en el proceso completo de construir, testear y modificar un prototipo, e identifiquen las 3 lecciones más importantes que han aprendido, y cómo su equipo esta unido en dar respuesta a esas lecciones aprendidas. Adicionalmente, consoliden los aprendizajes sobres las pruebas de sus prototipos en el Canvas de la propuesta de valor (lado izquierdo). Información adicional en los archivos de investigación. Compartan todo esto con su mentor a través de la plataforma.	*+7 Liderazgo, +5 Trabajo en equipo (Equipo)*	37.2%	Iterate on your prototype: make modifications based on the feedback you received. Think about both the specific feedback and the entire process of constructing, testing and modifying a concrete prototype and identify the top three most important lessons you have learned and how your team is united in addressing them.
4.7	Describan los siguientes pasos que tomarán para hacer realidad su solución. Tengan en cuenta que un objetivo importante es fomentar el compromiso para implementar este proyecto durante los próximos meses. Describan el “top 5” de los recursos más importantes que su equipo necesitará para ejecutar su Evocación durante los próximos meses, y elaboren un presupuesto básico (pueden ver un ejemplo, como siempre, en los archivos de investigación). Compartan todo esto con su mentor a través de la plataforma.	*+7 Liderazgo, +5 Liderazgo (Equipo)*	70.7%	Outline the next steps you will take to make your solution a reality. Describe the top five most important resources your team will need to execute six months of your Evokation and come up with a basic budget (attached).
	Usen su imaginación para ilustrar cómo su equipo se encuentra en mejor posición para implementar su Evocación, comparado con cuando comenzaron en los capítulos anteriores. Usando texto, dibujos, fotografías, u otros, elaboren un plan que ilustre los siguientes 5 pasos que van a seguir para hacer su solución realidad y creen un presupuesto básico (pueden ver un ejemplo, como siempre, en los archivos de investigación) que esté alineado con su plan. Compartan todo esto con su mentor a través de la plataforma.	*+7 Liderazgo, +5 Imaginación (Equipo)*	13.5%	Use your imagination to illustrate how your team is in a better position to implement your Evokation than when you began in Chapter 2. Using text, drawings, photos, etc., make a plan that illustrates the next five steps you will take to make your solution a reality and create a basic budget (attached) that matches your plan.
	Usando palabras, imágenes, sonidos, etc., diseñen una guía de para otros estudiantes sobre cómo embarcarse en su propia Evocación. Incluyan consejos, lecciones aprendidas, apoyos, etc., basados en su propia experiencia. Asegúrense de que de que incluyen una descripción de los recursos mas importantes para implementar su Evocación durante los próximos meses, además de un presupuesto básico (pueden ver un ejemplo, como siempre, en los archivos de investigación) que esté alineado con su plan. Compartan todo esto con su mentor a través de la plataforma.	*+7 Liderazgo, +6 Generosidad (Equipo)*	15.8%	Using words, images, sound, etc., design a "How-to" guide for students about to embark on their own Evokation, with tips, advice, and encouragement based on your own experience. Make sure to include a description of the top resources you will need to implement your Evokation over six months and a basic budget (see attached).

#LO	Content of each mission (in Spanish)	Skills	% selection	**Option prior to adjustment with EAN**
5.1	Describe una situación durante la experiencia Evoke en la que defendiste algo que creías que era importante y correcto, algo que te ayudara a ponerte en la piel de otra persona. Comparte la reflexión con tu mentor, a través de la plataforma.	*+4 Coraje, +2 Empatía (Individual)*	23.7%	Describe one time during the Evoke experience that you stood up for something you believed to be important and right because you were better able to understand what it was like to walk in another person's shoes.
	Describe algo que, durante este viaje a lo largo de Evoke, despertó tu curiosidad por las ciudades sostenibles, e hizo que te comprometieras con nuevas ideas y experiencias (pueden ser, personas, situaciones, conocimientos); algo que te sacó de tu zona de confort. Comparte la reflexión con tu mentor, a través de la plataforma.	*+4 Coraje, +3 Curiosidad (Individual)*	54.8%	Describe one thing that sparked your curiosity about sustainable cities and caused you to engage with novel ideas and experiences (e.g., people, situations, knowledge), which took you out of your comfort zone.
	Explica a través de fotos, imágenes, un video, u otras formas de expresión, cómo el hecho de trabajar con tus compañeros de equipo te ha ayudado a hacer algo valioso que hubiese sido complicado hacerlo por tu cuenta. Comparte la reflexión con tu mentor, a través de la plataforma.	*+4 Coraje, +2 Trabajo en equipo (Individual)*	21.5%	Explain through words, pictures, video, how acting together with your teammates has helped you do something valuable that would have been difficult or distressing to do on your own.
5.2	Imaginen a su equipo en el futuro. ¡Su Evocación fue un éxito! Escriban el titular de un periódico que capture ese éxito (puede ser a diferentes niveles: individualmente, en su ciudad o pueblo, en el mundo). Agreguen un lema que contenga una métrica clave que represente su éxito. Para completar esta visión, y alejarse mas de su zona de confort, utilicen la herramienta RADAR para realizar un mapa de soluciones alternativas, y construyan el documento de razones y posición respecto a éstas (pueden ver ejemplos en los archivos de investigación). Compartan los resultados con su mentor, a través de la plataforma.	*+7 Visión, +6 Trabajo en equipo (Equipo)*	81.8%	Picture your team in the future. Your Evokation was a great success! Write a newspaper headline that captures that success at one or more levels (e.g., individuals, your city, the world). Add a tagline that contains a key metric that represents your success.
	Usen la plantilla SMART (disponible en los archivos de investigación) para identificar algunas métricas clave que su equipo usará con la intención de mostrar que está en camino adecuado de alcanzar sus objetivos. Piensen en lo que aprendieron haciendo el trabajo en la comunidad, saliendo a las calles, y los pequeños pasos que pueden seguir para avanzar hacia la meta de su equipo. Finalmente, para completar esta visión, y alejarse mas de su zona de confort, utilicen la herramienta RADAR para realizar un mapa de soluciones alternativas, y construyan el documento de razones y posición respecto a éstas (pueden ver ejemplos en los archivos de investigación). Compartan los resultados con su mentor, a través de la plataforma.	*+7 Visión, +6 Experimentación (Equipo)*	13.6%	Use this SMART template (attach) to identify a few key metrics that your team will use to show it is on the path to achieving its goals. Think about what you learned in the field and the small steps you can take to move toward your team's goal.

	Completen un diagrama básico de teoría del cambio (encontrarán un ejemplo en los archivos de investigación) para conectar la visión de su equipo con sus metas. Para completar esta visión, y alejarse mas de su zona de confort, utilicen la herramienta RADAR para realizar un mapa de soluciones alternativas, y construyan el documento de razones y posición respecto a éstas (pueden ver ejemplos en los archivos de investigación). Compartan los resultados con su mentor, a través de la plataforma.	*+7 Visión, +6 Pensamiento sistemático (Equipo)*	4.5%	Complete a basic Theory of Change diagram (attach) to connect your team's vision with its goals.
5.3	Piensen en los actores clave relacionados con la sostenibilidad de su ciudad o pueblo. Dibujen un esquema o diagrama de los socios clave (y mentores) que les pueden ayudar a implementar el plan que previamente han diseñado, mostrando las interrelaciones entre los diferentes socios o actores. Para complementar el análisis hagan el mapa de sistema de su solución (para más información ir a los archivos de investigación). Compartan los resultados con su mentor, a través de la plataforma.	*+7 Pensamiento sistemático, +5 Análisis (Equipo)*	27.8%	Think about the key players in the sustainability cities ecosystem. Draw a diagram or picture of the key partners and mentors who can help you implement the plan you created in the previous mission, showing the inter-relationship of the different partners.
	Reflexionen sobre cómo encaja su evocación en la estructura más amplia que incluye a personas y grupos con diversos intereses creados. Piensen en los distintos socios y mentores clave cuya ayuda pueden necesitar para mantenerse cerca de la comunidad, y para ayudarlos a navegar y sobreponerse de distintas barreras que puedan encontrar. Pongan en una lista estos socios y mentores, y mencionen cómo les pueden ayudar. Para complementar el análisis hagan el mapa de sistema de su solución (para más información ir a los archivos de investigación). Compartan los resultados con su mentor, a través de la plataforma.	*+7 Pensamiento sistemático, +5 Empatía (Equipo)*	63.3%	Think back to Chapter 2, your Evokation fits into a larger structure that includes people and groups with vested interests. Think about the key partners and mentors you will need to help you stay close to the community as well help you navigate and overcome these and other barriers. List these partners and mentors and how each of them can help.
	Den un paso atrás y vean su Evocación de manera integral. Consideren cómo su solución encaja en un conjunto más amplio de iniciativas que abordan desafíos de ciudades sostenibles similares o superpuestos a los que tratan de resolver. Luego, mapeen los actores clave (algunos de los cuales pueden ser socios) y resalte los socios y mentores que pueden ayudarles a transformar su idea en una realidad tangible. Para complementar el análisis hagan el mapa de sistema de su solución (para más información ir a los archivos de investigación). Compartan los resultados con su mentor, a través de la plataforma.	*+7 Pensamiento sistemático, +6 Visión (Equipo)*	6.7%	Step back and view your Evokation holistically. Consider how your solution fits into a broader set of initiatives that address similar or overlapping sustainable cities challenges. Then, map the key players (some of whom may be partners) and highlight the partners and mentors who can help you transform your idea into a tangible reality.
5.4	Mantengan una mente abierta mientras realizan una lluvia de ideas (ver archivos de investigación) sobre la mejor manera de afrontar el discurso del elevador, para lo cual utilicen las recomendaciones para elaborarlo que se encuentran en los archivos de investigación y alístenlo para que no dure más de 3 minutos. Compartan imágenes y documentos, y el proceso con su mentor. Practiquen su discurso (en la misión 5.06 tendrán que compartir un	*+7 Comunicación, +6 Curiosidad (Equipo)*	64.8%	Keep an open mind as you brainstorm ideas about how best to approach your Elevator Pitch and share pictures of the documents and process with your mentor.

	ensayo antes de presentarlo en público). Para construir un mejor discurso, estructuren la ficha o avatar de la solución (ver más información en los archivos de investigación). Compartan los resultados con su mentor, a través de la plataforma.			
	Creen un documento que muestre su plan para crear el discurso del elevador, incluyendo las responsabilidades de cada miembro del equipo (pueden encontrar más información en los archivos de investigación). Tengan en cuenta que el discurso del elevador no puede durar más de tres minutos. Practiquen su discurso (en la misión 5.06 tendrán que compartir un ensayo antes de presentarlo en público). Para construir un mejor discurso, estructuren la ficha o avatar de la solución (ver más información en los archivos de investigación). Compartan los resultados con su mentor, a través de la plataforma.	*+7 Comunicación, +5 Trabajo en equipo (Equipo)*	32.7%	Create a document that shows the plan to create the Elevator Pitch, including each team member's responsibilities and the timeline. Share with your mentor.
	Escriban un storyboard para su discurso del elevador (utilicen las guías de ambos en los archivos de investigación) usando notas de adhesivas o dibujos, algo que de una imagen clara de su Evocación y su idea para cambiar el mundo. Háganle una foto y compártanlo con su mentor. Tengan en cuenta que el discurso del elevador no puede durar más de tres minutos. Practiquen su discurso (en la misión 5.06 tendrán que compartir un ensayo antes de presentarlo en público). Para construir un mejor discurso, estructuren la ficha o avatar de la solución (ver más información en los archivos de investigación). Compartan los resultados con su mentor, a través de la plataforma.	*+7 Comunicación, +5 Visión (Equipo)*	25.0%	Write a storyboard for your Elevator Pitch using Post It notes or a drawing, which paints a clear picture of your Evokation and world changing idea. Take a photo and send to your mentor.
5.5	Prepara algo que haga sonreír a los miembros de tu equipo y compártelo en una de sus sesiones de trabajo para mostrar aprecio a tus compañeros de equipo. Graba la reacción de ellos. Comparte los resultados con tu mentor, a través de la plataforma.	*+4 Generosidad, +2 Empatía (Individual)*	11.3%	Bring food to one of your working meetings to show appreciation for your teammates. Take a picture.
	Envía una nota de agradecimiento a alguien especial de la red de Evoke, alguien que te haya ayudado a lo largo de este camino (alguien de la comunidad, un mentor, un profesor, etc.). Pon la foto del mensaje (sin incluir en nombre de la persona a la que se lo envías). Comparte los resultados con tu mentor, a través de la plataforma.	*+4 Generosidad, +2 Comunicación (Individual)*	78.0%	Send a thank you to someone special in the Evoke network who helped you along the way (community, team, mentor, professor). Post the photo of the note or message, but not the name of the person you sent it to.
	Agradece públicamente a alguien de la red de Evoke (alguien de la comunidad, un mentor, un profesor, etc.) que haya tenido un impacto profundo en tu manera de entender la sostenibilidad, o en algún otro reto de tu comunidad. Comparte una foto del mensaje, pero no de la persona a la que se lo mandas. Comparte los resultados con tu mentor, a través de la plataforma.	*+4 Generosidad, +3 Coraje (Individual)*	10.6%	Contact a person in the Evoke network (community, team, mentor, professor), who had a profound impact on the way you view sustainability or other issues in your city or community. Thank this person for this gift. Post the photo of the message, but not the name of the person you sent it to.

Skills and Learning Objectives

Creative Visionary (Ideas)

Skills Learning Objective

Agents feel they are able to practice and apply the key elements of curiosity, imagination, and vision to creatively solve complex problems because they are equipped with a set of techniques and strategies that enable them to think creatively. These are detailed in the table below.

Motivation Learning Objective

Agents feel motivated to practice curiosity, imagination, and vision to creatively solve complex problems because they understand the value of ideas and the importance of being a creative visionary.

Curiosity	
Definition of Skill	***Curiosity*** is the desire to learn and understand more. Curiosity invites exploration. People who are curious engage with novel, complex, and ambiguous ideas and experiences (includes situations, people, knowledge). They make sense of these experiences by keeping an open mind and questioning. They focus on things they find interesting and following questions where they lead. This includes questioning conventional certainties and ways of thinking.
Purpose of Skill (Why it matters)	***Curiosity*** is a critical component of being a Creative Visionary because it is difficult to create something innovative unless you are willing to let go of convictions about how the world appears to work (how things are currently). Engaging with novelty enriches the knowledge and experience from which people can draw upon when coming up with new ideas and creating innovative solutions to complex problems. When people are curious, they are willing to explore and immerse themselves in their interest. The intensity of a novel experience helps people better remember what they learn, especially when they document and reflect on the experience and explore it more deeply with others. This in turn can help them in whatever endeavor or career they undertake.
Learning Objectives (LO) for Skill	LO 1: Agents feel confident that they are able to engage with novel experiences and ideas because they are equipped with a set of techniques and strategies that enable them to think creatively. LO 2: Agents feel confident that they are able to keep an open mind and keep questioning (including questioning conventional certainties) because they are equipped with a set of techniques and strategies that enable them to think creatively.
Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1 (engage with novel experiences / ideas):*** • See curiosity modelled, particularly showing that it is normal to feel anxious or fearful of the new

	• Practice having novel experiences (exercise, real world) with a supportive structure that scaffolds the experience
	  ○ Find areas of interest
	  ○ Be aware how these experience make them feel, in terms of excitement and interest and discomfort and disorientation
	  ○ Identify what is valuable about the novel experience. What makes it special or unique? What is familiar? What makes it universally applicable?
	Experiences to achieve LO 2 (open mind & question certainties):
	• Practice asking good questions
	• Practice ways of observing and seeing beneath the surface
	• Practice interviewing people more formally
	• Practice active listening

Techniques and Strategies to Practice the Skill	***Techniques and Strategies:*** • Strategies to build connections between new experience and interests and/or background knowledge • Strategies to model skill in practice • Questioning techniques (e.g., Questions Formulation Technique) • Dialogue Techniques to see multiple perspectives (e.g., exercises that show a scenario or dilemma from multiple perspectives, role play) • Observation techniques • Interviewing techniques (e.g., Ask why, what if, how) • Listening techniques (e.g., Active listening)

Imagination	
Definition of the Skill	***Imagination*** is the ability to generate original ideas and to visualize and formulate a mental image of a concept* that doesn't currently exist. People who are imaginative challenge mainstream thinking by cognitively and flexibly playing with ideas – breaking them apart, combining, connecting, reproducing, and synthesizing. * Concepts can be conceptual, aesthetic, tangible, scientific, technological, literary, legislative, process-oriented, etc.
Purpose of the Skill (Why it matters)	***Imagination*** is a critical component of being a Creative Visionary because it is necessary to spark ideas and visualize them (have a mental image of what it is) before it is possible to design, invent, create or achieve them. Creative Visionaries are forward looking and don't get mired in the belief that the world must remain as is currently exists. Imagination thus provides hope and the opportunity to change the world for the better.

	Our imagination also helps shape our own personal future realities. A key step in living the life one desires is to be able to imagine a better future. Einstein best captures the purpose of imagination for all aspects of life, "Imagination is everything. It is the preview for life's coming attractions."
Learning Objectives of Skill	LO 1: Agents feel confident that they are able to generate original ideas because they are equipped with a set of techniques and strategies that enable them to creatively solve complex problems. LO 2: Agents feel confident that they are able to visualize a forward-looking mental image of a concept that doesn't currently exist because they are equipped with a set of techniques and strategies that enable them to think creatively.
Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1 (generate original ideas):*** • Experience something in a different light ('what if exercises' with no limits or no constraints, association / disassociation techniques, etc.) • Experience challenging assumptions (games without rules, identity charts, etc.) • Practice brainstorming - learn to defer judgment and other 'rules' of idea generation (e.g., focus, quantity, etc.) ***Experiences to achieve LO 2 (visualize a mental image):*** • Learn that there are different ways to group and organize information (graphic organizers, outlines, charts, etc.) to show the relationships between ideas and concepts • Practice visualization techniques
Techniques and Strategies to Practice the Skill	• Game play – 'what if' • Brainstorming techniques (individual freewriting, cubing, mind mapping, collaborative brainstorming) • Visualization techniques (graphic organizers, concept mapping, affinity chats)

Vision	
Definition of the Skill	***Vision*** is the ability to bring ideas to life and transform them into a tangible reality. People with vision see possibilities where others see obstacles or see nothing at all. They are able to paint a compelling picture—a clear vision statement—of what is achievable while also providing sufficient detail to make it vivid for others.
Purpose of the Skill (Why it matters)	***Vision*** is a critical component of being a Creative Visionary because it is the activity that translates a conceptual idea into a concrete reality, infusing it with purpose and direction.

	In everyday life, vision can lead to the achievement of goals. Having vision helps create purpose and focus and enables people to overcome the inevitable difficulties that will be experienced along the way.
Learning Objectives for Skill	LO 1: Agents feel confident that they are able to formulate a vision statement that captures the idea because they are equipped with a set of techniques and strategies that enable them to think creatively. LO 2: Agents feel confident that they are able to paint a compelling picture of an idea that is achievable that can orient others to act because they are equipped with a set of techniques and strategies that enable them to think creatively.
Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1 (vision statement):*** • Practice writing a vision for something simple (e.g., planning a group vacation) • View different types of vision statements • Practice writing a vision statement ***Experiences to achieve LO 2 (painting a compelling picture):*** • Practice storytelling techniques • Practice elaboration techniques
Techniques and Strategies to Develop the Skill	• Visioning exercises • Vision statement writing strategies • Storytelling techniques • Elaboration techniques

Deep Collaborator (relationships)

Skills Learning Objective

Agents feel they are able to practice and apply the key elements of teamwork, communication, and generosity to collaboratively solve complex problems because they are equipped with a set of techniques and strategies that enable them to work collaboratively to solve complex problems. These are detailed in the table below.

Motivation Learning Objective

Agents feel motivated to practice teamwork, communication, and generosity to collaboratively solve complex problems because they understand the value of relationships of being a deep collaborator.

Teamwork	
Definition of Skill	***Teamwork*** is the ability of a group of people to act together in order to accomplish a shared goal. People who are good at teamwork make a commitment toward directing their individual activities toward a common objective because they recognize that they can create something of even greater value when working collectively. They respect both their own abilities and the diverse abilities of their team members and build trust in one another.
Purpose of Skill (Why it matters)	***Teamwork*** is a critical component of being a Deep Collaborator because complex problems, particularly those that lead to sustainable positive change, cannot be solved alone. Innovation (of any sort) is a process and its success is dependent on teamwork. Therefore to be part of a truly innovative endeavor it is essential to be able to collaborate with other people. Individuals who work on effective teams also broaden their own abilities and improve their own quality and performance. As working life becomes more complex and the rate of change accelerates, people are often required to work in teams. Not only are teams themselves cross-functional and diverse, but also teams are not permanent. Often people will need to work on different teams for different projects (both professionally and personally). Naturally, team work is essential for sports and other activities (theater, clubs, etc.). In addition to helping the team reach its goal, it also reinforces bonds and makes for lasting friendships and sense of belonging to a community.
Learning Objectives (LO) for Skill	LO 1: Agents feel confident that they are able make a commitment to the team toward achieving a shared goal because they are equipped with a set of techniques and strategies that enable them to work collaboratively to solve complex problems. LO 2: Agents feel confident that they are able recognize their own abilities and strengths and the diverse abilities and strengths of team members because they are equipped with a set of techniques and strategies that enable them to work collaboratively to solve complex problems.

Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1 (build trust in the team):*** • Team building exercises • Create a safe zone where collaboration can take place without judgement • Manage expectations, establish ground rules for responsibility, conversation and interaction • Show respect for all team members strengths (involvement) • Practice self-mastery (respect for oneself) ***Experiences to achieve LO 2 (sustained commitment to the team):*** • Practice team alignment techniques (e.g., acknowledge and include all members, help others learn, etc.) • Practice dialogue and conversational techniques • Practice feedback techniques
Techniques and Strategies to Practice the Skill	• Strategies for self-mastery • Team alignment techniques • Dialogue and conversational techniques • Feedback techniques

Communication	
Definition of the Skill	***Communication*** is the act of exchanging and sharing information*, thoughts, and values; information which conveys meaning. Communication is <u>not</u> one directional. People who are good communicators listen actively and respectfully with the intention of understanding. They also present their ideas with clarity in a thoughtful, comprehensible, and compelling way. Networking is a strong form of communication. It is a conduit for developing relationships with people who have shared interests to exchange ideas, access resources, develop business prospects, or extend reach. People who are good networkers build productive relationships with a diverse range of people and groups, in which they both seek and share information and resources. * Information can take a variety of forms sharing facts, knowledge, ideas, expertise, opinions, values, feelings, etc.
Purpose of the Skill	***Communication*** is a critical component of being a Deep Collaborator because the foundation of all progress and innovation is the exchange of information and ideas. Deep collaboration with friends, colleagues, and partners is not possible unless people listen for understanding and speak to be understood. This is especially true as we increasingly work across boundaries in cross-functional teams and with people with skills and diverse backgrounds and access to different resources.

	People who operate in diverse networks have a greater likelihood of coming up with good ideas or of making ideas operational because they are exposed to more ways of doing things in different contexts (sometimes with globally cross-fertilized perspectives), which could potentially be transferred to their own context. Building relationships and communicating clearly with different people is vital in working life but it is also important for personal development and personal success. It can offer access to new opportunities, save time when searching for new resources and can be a good source of help for career direction and support.
Learning Objectives of Skill	LO 1: Agents feel confident that they are able to listen actively for understanding and accept feedback because they are equipped with a set of techniques and strategies that enable them to work collaboratively to solve complex problems. LO 2: Agents feel confident that they are able to present their ideas in a compelling and comprehensible way because they are equipped with a set of techniques and strategies that enable them to work collaboratively to solve complex problems. LO 3: Agents feel confident that they are able to connect, seek feedback and share ideas and resources with a network because they are equipped with a set of techniques and strategies that enable them to work collaboratively to solve complex problems.
Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1 (active listening):*** • Practice listening techniques • Practice paying attention • Practice talking with people from diverse backgrounds • Practice receiving feedback from people with diverse backgrounds and people within the Evoke network ***Experiences to achieve LO 2 (present ideas):*** • Practice storyboarding • Practice creating visual presentations • Practice presenting to people (improvisation techniques) ***Experiences to achieve LO 3:*** • Practice communicating with people you don't know • Practice asking for something from someone in your team, your mentor, in the Evoke network • Practice receiving feedback from people in the Evoke network • Practice feedback techniques

Techniques and Strategies to Practice the Skill	• Listening techniques (e.g., Active listening, BF document) • Communication techniques • Feedback techniques

Generosity	
Definition of the Skill	***Generosity*** is the ability to give the best of who you are and what you have for the benefit of others. People who are generous actively share their time, attention, expertise, and resources with others without expecting anything in return. They act with kindness and a sense that sharing is multiplicative and inclusive (not scarce and reductive).
Purpose of the Skill	***Generosity*** is a critical component of being a Deep Collaborator because it is inclusive and expansive. People who are generous make reliable friends, colleagues, leaders, collaborators, mentors, and partners because they engender trust, de-escalate conflict, show respect for others, and make other people feel valued and important. Generosity could almost be thought of as self-serving because those who are generous frequently inspire reciprocal generosity.
Learning Objectives for Skill	LO 1: Agents feel confident that they are able to share their time, attention, expertise, and resources with others because they are equipped with a set of techniques and strategies that enable them to work collaboratively to solve complex problems.
Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1: (share time, etc.)*** • Practice being fully present and paying attention • Practice working with someone who needs your time, your guidance to learn something new • Practice showing joy in the achievement or the good of other people • Practice giving and accepting compliments or resources (e.g., making something for the prototype)
Techniques and Strategies to Develop the Skill	• Strategies to practice sharing and giving • Strategies to practice being fully present

Empathetic Changemaker (action with purpose)

Skills Learning Objective

Agents feel they are able to practice and apply the key elements of empathy, leadership, and courage to solve complex problems, which bring about positive change, because are equipped with a set of techniques and strategies that enable them to work to solve complex problems. These are detailed in the table below.

Motivation Learning Objective

Agents feel motivated to practice empathy, leadership, and courage to empathetically solve complex problems because they understand the value of purposeful action and the importance of being an empathetic changemaker.

Empathy	
Definition of Skill	***Empathy*** is the ability to be aware of another person's emotions, thoughts, or circumstances. People who are empathetic are able to consider the needs, concerns, aspirations, hopes and personal meanings that structure another person's perspective and behavior. Empathetic people suspend judgement and do not offer premature advice based on their own interpretation, but rather try to "walk in other people's shoes" in order that they can connect and act in meaningful ways.
Purpose of Skill (Why it matters)	***Empathy*** is a critical component of being an Empathetic Changemaker and is necessary at every stage of the change process because it enables a profound understanding of other people and their circumstances. Facing up to the complexity of emotions and ideas opens the way to genuine engagement with others on reciprocal terms. Understanding how we impact others with our words and actions, develops a stronger sense of awareness and responsibility. Empathy is also humanizing. Fear, prejudice and racism are driven out when one accepts that another person's viewpoints are valid. It also increases the likeliness of people working together to enact change – be it social, professional, or democratic to build a more just world.
Learning Objectives (LO) for Skill	LO 1: Agents feel confident that they are able to consider the emotions, concerns, aspirations and perspectives of other people because they are equipped with a set of techniques and strategies that enable them to work to solve complex problems which bring about positive change. LO 2: Agents feel confident that they are able to suspend judgement based on their own interpretation because they are equipped with a set of techniques and strategies that enable them to work to solve complex problems which bring about positive change.

Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1: (consider emotions, etc. of others)*** • Observing without interpretations • Practice being self-empathetic • Practice attentive listening, including learning to recognize body language and expressions • Conversations with people from different backgrounds • Information acquired from different sources that challenge preconceived ideas ***Experiences to achieve LO 2: (suspend judgement)*** • Look for commonalities and shared bonds • Practicing unconditional positive regard – accepting people for who they are • Conversations with people from different backgrounds • Information acquired from different sources that challenge preconceived ideas
Techniques and Strategies to Practice the Skill	• Observation techniques • Listening techniques • Strategies for self-mastery • Dialogue and conversational techniques • Strategies for information gathering

Leadership	
Definition of the Skill	***Leadership*** is the ability to mobilize the collective capacity of people to act and dedicate their ideas and energies towards pursuing valued goals, making things better, and tackling difficult challenges that do not have easy solutions. People who exercise leadership are able to build a shared vision and motivate people to care about what they are doing because their work is infused with meaning and purpose. Moreover, they are able to foster commitment and engagement over a sustained period of time by inspiring innovation, developing meaningful relationships, activating a cooperative work culture, encouraging continual learning, and cultivating leadership in all people across the organization or initiative.
Purpose of the Skill	***Leadership*** is a critical component of being an Empathetic Changemaker because, at its core, it is about uniting and mobilizing people to take action toward making a difference, changing things for the better. Strong leadership helps people reach higher standards of performance and achieve things that they could not do on their own. Leadership is as important to everyday life as it is to organizational capacity and sustainability. All people can practice leadership. People will play different roles

	at different times and situations in their lives. They may lead in one activity but not in another. In life, like in organizations, it is not possible to stop change or avoid problems. It is possible, however, to be intentional and to actively lead the life one has reason to value. At its core, leadership is about leading rather than being led by events or rapid change. It is about proactive action not passive inertia. It is about facing challenges rather than ignoring them. It is about unity not isolation and understanding not fear.
Learning Objectives of Skill	LO 1: Agents feel confident that they are able to mobilize people to act and commit their energies around shared purpose and vision because they are equipped with a set of techniques and strategies that enable them to work to solve complex problems which bring about positive change. LO 2: Agents feel confident that they are able to foster engagement over a sustained period of time by inspiring innovation because they are equipped with a set of techniques and strategies that enable them to work to solve complex problems which bring about positive change.
Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1: (mobilize to action)*** • Practice building a shared vision • Clearly defining roles and responsibilities • Communicating clearly • Using mental models • Field of influence practice ***Experiences to achieve LO 2: (foster sustained engagement)*** • Clearly articulating the shared vision and mission • Creating metrics that show success • Creating realistic plans that line up with vision
Techniques and Strategies to Practice the Skill	• Strategies for building a shared vision • Strategies for team learning • Dialogue and conversational techniques • Iterative learning techniques • Strategies to create plans that align to vision • Strategies to create metrics • Strategies to create budgets

Courage	
Definition of Skill	***Courage*** is the ability to take action in a way that is consistent with one's values and conscience, despite fear and in the face of uncertain outcomes. People with intellectual courage move beyond their comfort zone—neither recklessly nor with bravado—but subscribe to the imperative that they are obliged to speak up for and do what they believe is right. They set good examples and use

	their voices and agency to challenge accepted boundaries and norms even if it causes discomfort or distress in themselves or in others.
Purpose of Skill (Why it matters)	***Courage*** is a critical component of being an Empathetic Changemaker because it gets people to take action on things that are worthwhile. Although much attention is given to extraordinary acts of courage, courage is also evident (practiced) where people speak up to those who act in a harmful way, speak up for those who lack voice, or when they engage in activities (in a risk-appropriate way) to make the world a better place. It is these daily acts of courage that over time allow larger positive change to emerge (accumulate to effect larger change). Courage is a vital skill in life because it is the antidote to fear (failure, embarrassment, victimization, rejection, etc.). Fear can impede happiness. To live the kind of life in which you are true to yourself takes courage. It takes courage to start something new and courage to persist with it when things get hard as they inevitably do.
Learning Objectives (LO) for Skill	LO 1: Agents feel confident that they are able to challenge status quo thinking by questioning assumptions and reflecting on biases because they are equipped with a set of techniques and strategies that enable them to work to solve complex problems, which brings about positive change. LO 2: Agents feel confident that they are able to speak up for what is right even it moves them beyond their comfort zone because they are equipped with a set of techniques and strategies that enable them to work to solve complex problems, which brings about positive change.
Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1: (challenge the status quo)*** • Modelling of the skill of intellectual courage • Questioning techniques • 'What If' strategies and game play ***Experiences to achieve LO 2:*** • Strategies for self-mastery
Techniques and Strategies to Practice the Skill	• Questioning techniques • Strategies for self-mastery

Problem Solver (understanding)

Skills Learning Objective

Agents feel they are able to practice and apply the key elements of analysis, systems thinking, and experimentation to solve complex problems because they are equipped with a set of techniques and strategies that enable them to work to solve complex problems. These are detailed in the table below.

Motivation Learning Objective

Agents feel motivated to practice analysis, systems thinking, and experimentation to solve complex problems because they appreciate the value of deep understanding and the importance of being a problem solver.

Analysis	
Definition of Skill	***Analysis*** is the ability to examine and evaluate an issue in a structured way in order to gain a better understanding of it. Good analysis begins with gathering information from multiple sources and ensuring the relevance and reliability of those sources. People who are good at analysis are able to make sense of information by finding patterns and common themes and extracting what is essential from the noise.
Purpose of Skill (Why it matters)	***Analysis*** is a critical component of being a Problem Solver because before a person can create a world-changing idea or take action, it is necessary that they understand the problem. Analysis can help throughout the social innovation process: identifying an opportunity, developing the idea, testing the idea, planning for implementation, acquiring resources, etc. Analysis helps us make decisions in our everyday lives, from making a purchasing decision through to setting life goals. Analysis helps people break down difficult problems into smaller manageable parts and also to compare, weight, prioritize and sequence steps to make and/or act on the information.
Learning Objectives (LO) for Skill	LO 1: Agents feel confident that they are able to gather reliable and relevant information from multiple sources because they are equipped with a set of techniques and strategies that enable them to work to solve complex problems. LO 2: Agents feel confident that they are able to identify what is essential in the information by finding patterns and common themes in the information because they are equipped with a set of techniques and strategies that enable them to work to solve complex problems.
Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1: (gather reliable information)*** • Where to look, how to access, how to decide what is relevant • Ensure reliability in information • Guidelines on plagiarism, references, etc. *Experiences to achieve LO 2:* ***(identify patterns and common themes)***

	• Strategies for analysis: breakdown problems small parts • Strategies for analysis: compare, weight, prioritize, sequence steps • Strategies for synthesizing information
Techniques and Strategies to Practice the Skill	• Strategies for gathering reliable information • Guidelines on plagiarism, references, etc. • Strategies for analysis • Strategies for synthesis

Systems Thinking	
Definition of the Skill	***Systems Thinking*** is the ability to understand problems holistically, not as isolated events or elements, but in the context of the larger structure and culture of the system. People who are systems thinkers are able to make connections between the causes and effects of a problem and represent these relationships visually. They seek to identify feedback loops and processes. Systems thinkers understand that their actions and the actions of others are interrelated and contribute to the functioning of the ecosystem as a whole. They are therefore aware of the implications on the larger system when they change one of the parts or, conversely, fail to consider one of the other parts.
Purpose of the Skill	***Systems Thinking*** is a critical component of being a Problem Solver because it helps people understand the root causes of an issue and the importance and interrelatedness of each part of the system (social systems are comprised of people). This deep awareness of connectedness enables systems thinkers to understand how to approach change in a fair, ecological, and sustainable way. Deep understanding derived from systematic thinking is fundamental in everyday life – how you treat your body, your family and friends, and your colleagues. Systems thinking enables people to think about how their actions affects not only themselves but also the well-being of others. For example, eating healthy and exercising affects how you feel and your general health. Likewise, how you speak and interact with your family members, friends, and co-workers impacts the well-being of each of these social units and the overall health of the family, organization or endeavor in which you work.
Learning Objectives of Skill	LO 1: Agents feel confident that they are able to identify feedback loops and make connections between cause and effect because they are equipped with a set of techniques and strategies that enable them to work to solve complex problems. LO 1: Agents feel confident that they are able to represent inter-relationships between elements in a system visually because they are equipped with a set of techniques and strategies that enable them to work to solve complex problems.
Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1: (feedback loops and connections)*** • Creating diagrams - causal loop, interrelationships and feedback loops • Mental models

	• Using archetypes • Five Ways to gain perspective • Storyboarding ***Experiences to achieve LO 2: (visualization)*** • Creating diagrams - causal loop, interrelationships and feedback loops
Tools and Strategies to Practice the Skill	• Visualization techniques • Storyboarding techniques

Experimentation	
Definition of Skill	***Experimentation*** is the ability to test an idea or method and understand it in a real-world setting, observe it in action, learn from the experience, iterate on the idea, and repeat the process. People who practice experimentation are able to create a prototype of their idea—something concrete—so that the people for whom the solution is intended can try it and provide feedback to the desirability, functionality, and/or feasibility of the idea. People who practice experimentation are able to keep trying when things do not turn out as originally planned because they use their experiences to learn what works and modify their idea based on their findings. Experimentation is essentially a means of discovery and iterative learning.
Purpose of Skill (Why it matters)	***Experimentation*** is a critical component of being a Problem Solver because it grounds knowledge and makes it applicable in the real-world. Social innovators use experimentation to test their ideas and to understand whether their idea has value and whether it is worth pursuing. Experimentation enables people to manage the uncertainty of how their innovation will be accepted because they can test their ideas with minimal resources and improve on it in small steps. Importantly, people who practice experimentation learn to separate setbacks or failure of the experiment from the belief that they themselves failed. This understanding is perhaps even more important in our daily lives than it is in social innovation. The practice of experimentation breeds understanding that most things don't come together magically the first time.
Learning Objectives (LO) for Skill	LO 1: Agents feel confident that they are able to create a prototype of their idea because they are equipped with a set of tools and strategies that enable them to work to solve complex problems, which bring about positive change. LO 2: Agents feel confident that they are able to test an idea in the real world, accept feedback, and keep trying (iterate) when things do not turn out as originally planned because they are equipped with a set of tools and strategies that enable them to work to solve complex problems.

Experiences that can help Agents Develop the Skill	***Experiences to achieve LO 1: (develop a prototype)*** • How to build a prototype: a model, a wireframe, use a maker space, etc.) ***Experiences to achieve LO 2: (test and iterate)*** • How to ask the right questions and receive feedback that can help you improve
Tools and Strategies to Practice the Skill	• Dialogue and conversational techniques • Questioning techniques • Interviewing techniques • Listening techniques • Feedback techniques • Iterative learning techniques