Sisters of Code Ambassadors

September 21, 2022

Content

Sisters of Code program overview

General program results

Sisters of Code has entered into a two-year partnership with the Ministry of Posts and Telecommunications CBRD Fund, which provides new opportunities for the development of the Sisters of Code Ambassadors Program in 2022 and 2023. New student enrollment was announced on the first week of February 2022 to join the 16-week program that consists of 7 modules. In one month of open enrollment, we have received applications from 94 female students from 13 different places across Cambodia, such as Phnom Penh, Pursat, Siem Reap, Sihanouk Ville, Svay Reang, Kompong Cham, Kompong Speu, Kompong Thom, Krojes, Battambang, Banteay Meanchey, Kandal, and Kompot Provinces. We have accepted 30 students to study in two groups, both online and offline, with 15 students in each group. The study program was launched on March 3 and completed on July 31st, 2022, with 19 students graduating and 5 clubs to be launched from November 2022.

Students selection process

Application evaluation criteria included several points:

1. Profile: Cambodian female, 18+ y.o.
2. Skills: some background with IT (at least HTML, CSS level) and English skills
3. Have interest and motivation to create and run a Sisters of Code club.
4. Have their own laptop with a strong internet connection
5. Computer Skills: we did check their computer skills by using an online test and a virtual interview through Google Meet.

Program delivery

To accommodate students from Phnom Penh and other locations, we have opened two groups, both offline and online, with 15 students in each group. Online classes offer a possibility for students in the provinces who are not able to come to physical classes in Phnom Penh. And for those who live in Phnom Penh and can attend physical classes at IT Academy STEP Cambodia, we had lessons on Sundays, so it would be easier for them to combine attending the Sisters of Code Ambassadors' program and study/ work.

Sisters of Code Ambassadors curriculum consists of six sections, including the 3 main modules of the Sisters of Code computer science curriculum that were delivered over the course of 16 weeks:
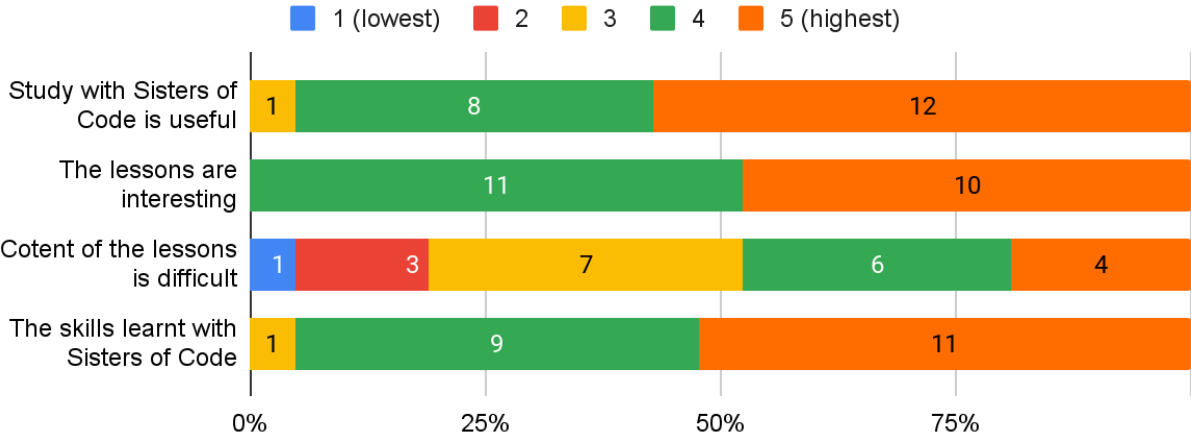1. Cybersecurity and Internet Protection
2. Leadership Skills Development
3. Presentation Skills
4. Project Planning and Project Management
5. Sisters of Code Computer Science Program
6. Work Readiness Program

The work readiness program was delivered in partnership with Deloitte Cambodia.

Program results

The program has been very successful despite some of the challenges. There are 11 students who dropped out for personal reasons: too busy with their studies at a regular school cause the lack of motivation from their families and a poor internet connection, which made it impossible for them to catch up with the lesson and show up for the class on time. A total of 19 students completed and graduated successfully. All of the required projects assigned by their teacher have been completed by all of the graduates. The 5 Sisters of Code club will be run by the graduated Ambassadors four group will be start in November 2022 and 1 group will be start in 2023.

How would you evaluate specific aspects of the course?

Legend: 1 (lowest), 2, 3, 4, 5 (highest)

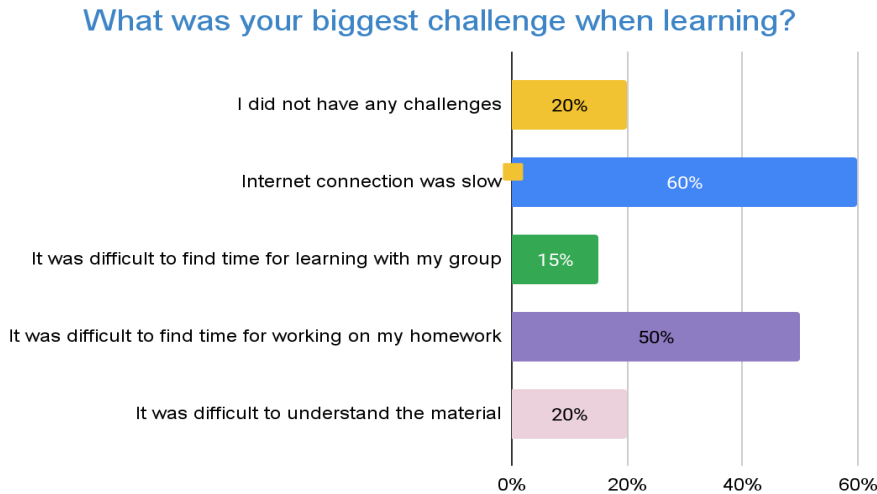| Aspect	1 (lowest)	2	3	4	5 (highest)
Study with Sisters of Code is useful			1	8	12
The lessons are interesting				11	10
Cotent of the lessons is difficult	1	3	7	6	4
The skills learnt with Sisters of Code			1	9	11

0%   25%   50%   75%

As you can see in the chart, the feedback from students is positive in all aspects. They found it very useful to study with Sisters of Code, lessons are really interesting, but some students find it difficult to understand the content of the lessons, which is related to tech subjects, since they are learning topcis that are brand-new to them and that they have never heard or learned before. However, the students admitted have a teacher support in their learning process is really helpful. The majority of students believe that the skills they gained from the program will be useful to them in the future.

We are also happy to see that all students evaluated the teachers of the course very positively, mentioning that the teachers were helpful. As the result, 100% of the students would highly recommend the Sisters of Code program to other girls.

Program key learnings

The program ran smoothly without any major stumbling blocks for the Sisters of Code team. However, there are some difficulties that students face while studying. According to the survey results, 60% of the students mentioned having slow internet, and 50% mentioned having difficulty finding time to complete assignments. Meanwhile, 15% of students had trouble finding time to learn with the group, while 20% had no problems at all. 20% of the students find it difficult to understand the content of the lessons, as it was a new subject to them.

What was your biggest challenge when learning?

| Challenge	Percentage
I did not have any challenges	20%
Internet connection was slow	60%
It was difficult to find time for learning with my group	15%
It was difficult to find time for working on my homework	50%
It was difficult to understand the material	20%

Despite these challenges, we have tried to assist students in their learning process by sharing the slide presentations and sessions recorded from the online classes with both

online and physical class students because some of them had internet connection issues and some physical class students have something urgent come up that prevented them from attending the lesson, so they can review the slide presentations and watch the video recording of the session. For those who are unable to complete the assignments due to a busy schedule of working and studying at the same time, we assist them by extending the deadline instead of submitting each assignment after class to submit all assignments before the graduation ceremony so they are not under the pressure of our program. Instead, they can join the lessons and interact with other students and the teacher each week, so they can try to squeeze their time and submit all the assignments that they missed 2 weeks before graduation, otherwise, they cannot graduate from our program. For those who have a problem finding the time to complete the group assignments, we have offered a solution to help them to manage their task effectively by assigning the task to each individual in their team to work on, so they can combine together and submit to the teacher. By doing so, they don't need to have a face-to-face meeting with each other because finding the time that suits everyone is very challenging, since they come from different places across Cambodia.

Challenges: perception and support

In order to identify the barriers currently exciting in Cambodia for the female students to join digital skills training, we have asked them before and after the program: What would they consider the main challenges for girls in Cambodia to

What in your opinion are the main challenges for girls to study technology?
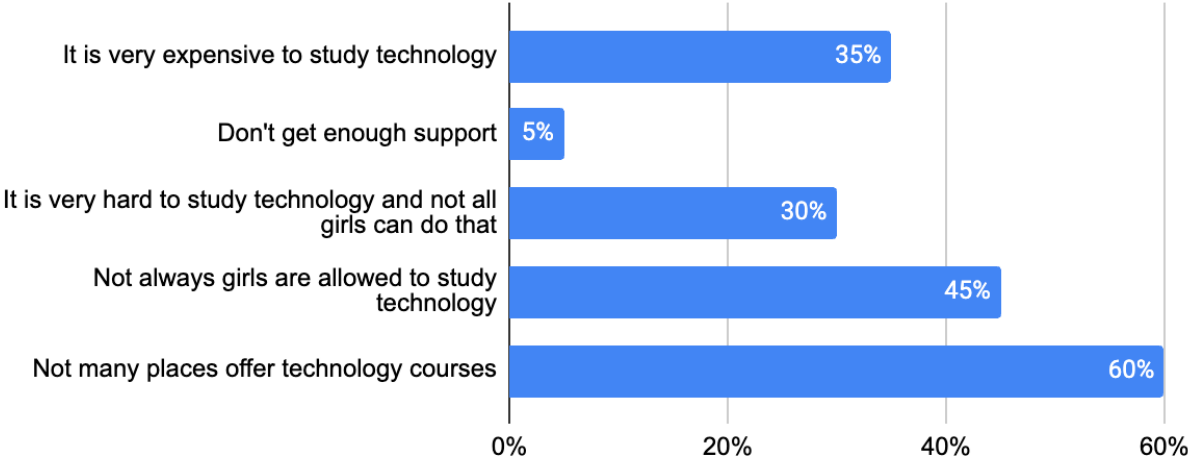
study technology?

Based on the survey, many girls in Cambodia find it difficult in finding places to learn technology, and the perception is still strong that girls are not allowed to study technology, an old pattern believing that technology is hard to study for girls, lack of learning opportunities, many courses are expensive are main barriers faced by the female students..

This survey shows that not only should an educational program with female students be conducted, but a general awareness in society about equal abilities and opportunities for girls to study technology is important. Very serious work should be done about changing the perception both among the parents to make sure they are more supportive to this choice of their daughters, as well as in society in general.

Growing confidence and awareness among the students is an important aspect too, as we can see that 30% of the respondents consider that learning technology is hard and not all girls are able to accomplish it. That is especially interesting after they have finished the course, but they still have a perception that it will be hard to study. To address this issue, the teaching approach should be focused on making students motivated, excited, and curious about the process. The best way to approach this is to ensure training is practical, project-based, and has some fun elements.

When asking about the support from their peers 90% of students get support from their friends while 10% answered that they are not sure that their friends support their decision to study coding.

Further development possibilities

Digital skills are not limited to programming and in order to resonate with the interests of the students, it would be important to review possible options for digital skills development, following the interests and preferences of the students.

Based on the survey we can see that most of the students are interested in Websites development. There is also a high interest in Graphics design such as: Photoshop, Illustrator, designing artworks, and mobile apps development. Students are curious and eager to learn new skills, therefore by diversifying the program, there is a better chance to provide relevant and engaging education that would help with the future career choice. Especially, if the aim of the informal educational program is to grow

confidence, encourage the possibility to try different skills, and remove any barrier related to low esteem.

What digital skills would you like to learn more?

Skill	Percentage
Data Science course	5%
Games development	29%
Graphics design - like Photoshop, Illustrator, designing artworks	57%
I am not sure	5%
Mobile applications development	43%
Robotics	24%
Websites development	62%
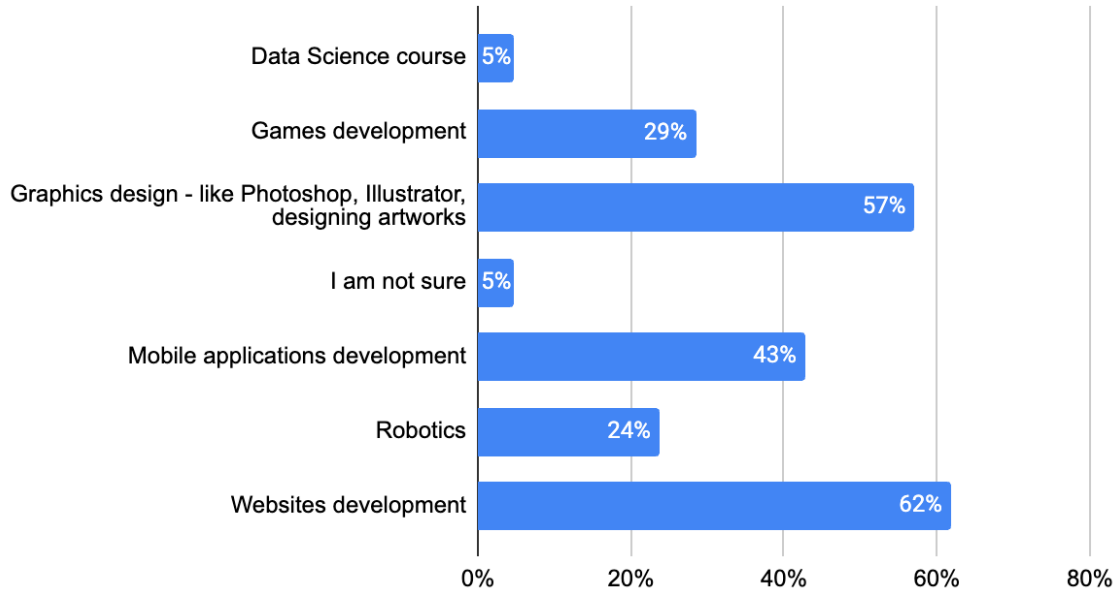
Sisters of Code Clubs

In 2022, Sisters of Code launched 5 clubs in different locations in Cambodia which are offline clubs in Battambang and Kompong Thom province as well as online clubs in Siem Reap, Preah Sihanouk, and Kandal province. The total number of students is 73. So far, students have learned how to stay safe on the internet. They also learned the basics of programming with visual coding through playing computer games, creating their own projects, and developing algorithm thinking using code.org resources. Our coding clubs are doing well despite a minor challenge that we managed to overcome.

Our ambassadors are very passionate about supporting women in tech by providing a supportive learning environment while learning coding skills, and our students show a lot of interest in learning to code. In battambang province, at first, students are shy to ask questions; but with our encouraging ambassador and learning environment, students like to ask questions for further explanation and details. Through this, they can understand the lessons and show progress in their coding skill. In Kompong Thom province, on the one hand, students are very grateful to be able to join our program because at first, they do not know much about technology because they are young and live in a rural area. Right now, they know a lot about technology and also the importance of women in tech.

For online clubs, with our interesting study materials and teaching methods, students are motivated to learn effectively like in offline classes. In Kandal province, students feel empowered and our coding club also inspires them to pursue their university major and career in tech. They also want to contribute back to our program by applying to our future ambassador program to take a part in contributing to inspiring more girls in tech. Moreover, in Preah Sihanouk province, our ambassador makes students feel welcome and students also support each other in studying and assignments. Despite the problem with their internet connection and computers, students learn to share with each other, so that they can finish homework and assignment on time. Last but not least, in Siem Reap province, students also pay attention to what our ambassador explains, like to work in a group to put what they learn into practice, and ask questions. This makes them improve their coding, digital, and leadership skills dramatically.

Overall, Sisters of Code are proud to see our students enjoy learning in our clubs and change their perspective toward women in tech as well as support them in their journey to tech majors and careers. Sisters of Code aims to bring possibilities to learn digital skills to as many Cambodian female students as possible, so they feel supported and encouraged to join the field of technology. An-after school clubs led by Ambassadors, who are young female students themselves, help to build a strong and dedicated community.

Conclusion

Sisters of Code Ambassadors program has demonstrated significant success with the implementation of training of trainer with the same-gender training course by creating both a motivating and supportive environment, as well as giving an opportunity for the girls to learn the digital skills and leadership development to improve themselves. As an after-school program, Sisters of Code was giving an additional value, complimenting the general school program and helping students to get in-depth knowledge in programming.

Despite all the worries and challenges, the program was delivered efficiently and has achieved the expected results. However, in the future, we should take into consideration internet connectivity challenges and access to a personal computer for each student, especially those who study online.

Sisters of Code Ambassadors is a valuable approach and already a strong program to be supported and developed in the future, by adding additional training courses in soft skills, creating new groups, and encouraging graduated students to take an

active lead in spreading their confidence and encouragement to other female students and changing the perception in the society.

Next steps

As the main goal of the Sisters of Code Ambassadors program is to train trainers, who can become leaders in their communities and start new Sisters of Code clubs for any female student to join, our next steps are creating those clubs.

Ambassadors at the end of the program were required to submit their project proposals on creating the clubs and in total we have received 7 applications, with 5 being approved. The next steps are to formalise the process and launch the clubs with identified communities.

As some of the Ambassadors are willing to create clubs outside Phnom Penh, we are coordinating with the Ministry of Education identifying 2 public schools in Sihanouk and Battambang that have a computer lab and a strong internet connection for our Ambassadors to execute their clubs in those cities. As to other clubs, which will be run by Ambassadors online or in Phnom Penh, we will start making an announcement to accept new students' applications to join the Sisters of Code clubs that are taught by our graduated Sisters of Code Ambassadors in September.

Our main goal is to launch new clubs in different locations for female students from 10 to 17 y.o. Under leadership of the graduated Ambassadors and with the support of the Sisters of Code team.

Student Graduation Lists:

N0	Full name	Email Address	Telephone number	Come from	Work / study
1	Much Sokvicheka	muchsokvicheka@gmail.com	099233223	Phnom Penh	CADT
2	Van chorda	chordavan05@gmail.com	081715183	Phnom Penh	RUPP
3	chheung kongsotheara	sotheara8998@gmail.com	0974988624	Phnom Penh	Num
4	Leangheng Map	mab.leangheng@gmail.com	016203616	Phnom Penh	Norton
5	Heang Sreylen	heangsreylen096@gmail.com	0964736844	Phnom Penh	Rupp
6	Lim Chanvina	limchanvina@gmail.com	012433656	Phnom Penh	CADT / IFL
7	Phen Phallideth	phallidethh.phen@gmail.com	015520707	Phnom Penh	CADT
8	Maronlin ly	lymarolin@gmail.com	087315756	Banteay Meanchey	ITC
9	Chin Somavatey	chinsomavatey2@gmail.com	0967694051	Battambang	Sovannaphum
10	Seng Sopheaktra	sopheaktraseng168@gmail.com	092824728	Takmao	PUC
11	Canica Pal	canicapal1107@gmail.com	069955970	Sihanoukville	CIA First
12	Huot Chansreynich	huot.nich8888@gmail.com	0963004126	Kandal	Korea Software HRD
13	Khen Chanen	chanenkhen18@gmail.com	0889976516	Phreah Vihear	Royal University of Agriculture
14	Eng Meardey	meardeyct@gmail.com	016315091	Sihanoukville	MPTC
15	Chin Sonita	sonitachin1009@gmail.com	017406145	Battambang	TVET polytech decho Sen Battambang
16	Eng Sarunmealea	sarunmealeaeng@gmail.com	010609669	Phnom Penh	MPTC
17	Suos Rane	rane.suos@gmail.com	077699256	Kandal	IT Academy STEP Cambodia
18	Seng Sina	sengsina18@gmail.com	011509678	Koh Kong	MPTC
19	Sovanmolyka Seng	sotheary.molyka@gmail.com	012556672	Phnom Penh	NGS