RESULTS PRESENTATION

ACCESS TO TECHNOLOGY, USES AND PERCEPTIONS OF THE STUDENTS OF THE TECHNOVATION GIRLS CHILE PROGRAM

MOTOROLA SOLUTIONS FOUNDATION

TECHNOVATION Girls Chile

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CONTENTS

This report aims to present the results obtained at the beginning and at the end of the Technovation Girls Chile program in a survey regarding access to technology, uses and perceptions, with a gender perspective, in order to explore the differences that exist in these aspects between girls and boys and if there were changes after the completion of the program.

Tecnología con Nombre de Mujer ("Foundation"), is a non profit foundation who with the sponsorship of the Motorola Solutions Foundation, implemented the program of Technovation Girls ("Program"). Present in 110 countries, the curriculum of the Program aims to educate girls in Chile ages of 10 - 17 to develop computational thinking skills, mobile application programming and entrepreneurship. The goals are for the participants to develop interpersonal skills that will allow them to become agents of change, committed to improve society with analytical thinking skills at a national or global scope. Additionally, the foundation works to reduce the gender gap in STEM areas (Basic Sciences, Technology, Engineering, Mathematics).

This study seeks to determine in an exploratory and initial way the effectiveness of the Program, when applied in an academic environment as an interpretation of the curriculum of technology.

This report will present the results obtained in two (2) instances: (i) at the beginning and (ii) at the end of the 2020 scholastic year, by means of a surveys on access to technology and uses and perceptions to 10th grade students of the following establishments: (i) Liceo Comercial Vate Vicente Huidobro ("VVH"), (ii) Instituto Superior de Comercio Francisco Araya Bennet de Valparaíso ("INSUCO") and Liceo Comercial de Desarrollo de Temuco ("LCDT"). This study focus is to observe the impact of the Program, which has a gender perspective, in order to explore the differences between female and male students' outlook towards the use of technology before and after the completion of the program.

GENDER GAPS IN STEM AREAS

"Although in Chile there are no gender differences in access to education at any level of education, gender gaps still persist in STEM areas, which are highly masculinized" (Comunidad Mujer, 2017).

This observation explains the persistence of stereotypes associated with traditional gender roles in which women continue to be associated with care and assistance tasks; the stereotypes associated with those who dedicate themselves to these disciplines (Miller, Eagly, & Linn, 2015; Bian, Leslie, & Cimpian, 2017); the perception of difficulties in developing a career in these areas (Kanji & Hupka-Brunner, 2015; Whitehead, 1994); and the androcentric construction of science, among others.

These gender stereotypes are reproduced during formative school ages, where there are important differences in the stimulation and results obtained in science and mathematics subjects by female and male students, causing the female students to feel less capable and less attracted to these disciplines when choosing a technical or professional career (Comunidad Mujer, 2017).

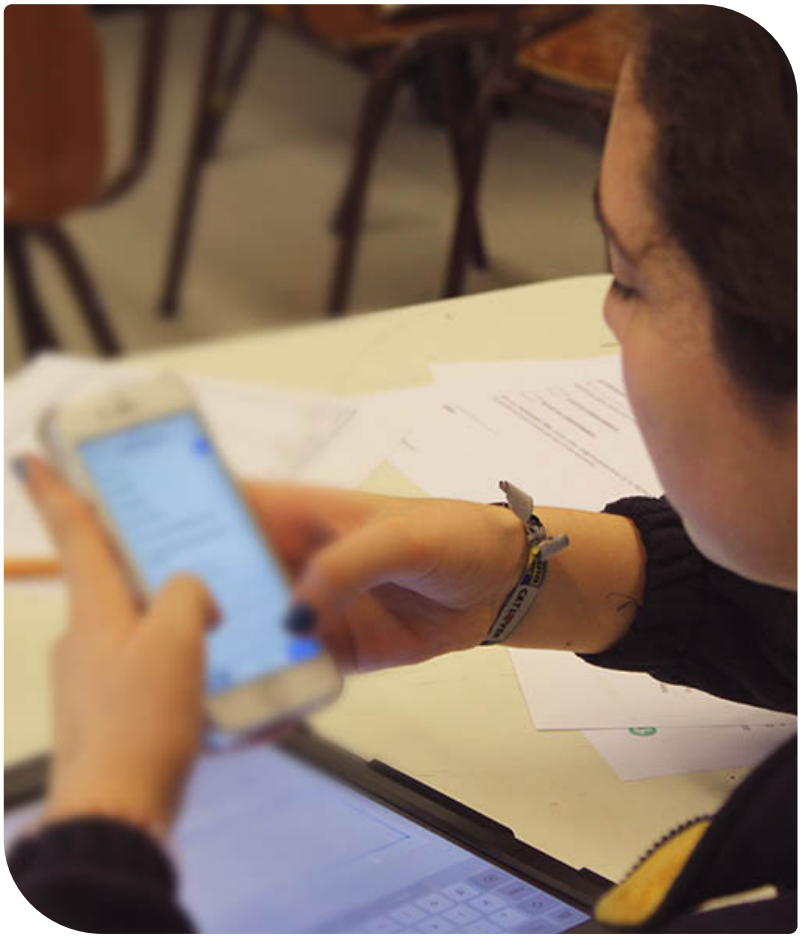
Experimental evidence shows that these stereotypes begin to be integrated in early childhood and that at 6 years of age, girls begin to evaluate their male peers as "very intelligent" in activities associated with the male stereotype (such as mathematics) more frequently than to their female counterparts. At the same age, girls stop participating in activities associated with "very intelligent" people. Studies have proved that the early incorporation of cultural ideas of intelligence and gender, as well as its immediate effect, that these stereotyped notions have on young children (Bian, Leslie, & Cimpian, 2017).

In studies carried out with university aged females students, this trend has maintained; When asking a mixed group of students to self-evaluate, the female students tended to be tougher on themselves, especially in areas dominated by men (Torres-Guijarro & Bengoechea, 2017), which can be attributed to a lower perception of self-efficacy (Bastarrica & Simmonds, 2020).

CONTEXT IN WHICH THE PROGRAM IS DEVELOPED

In 2020, the Program was carried out in an international and national context marked by COVID-19. Academic establishments across the country were closed, leading students to be confined at home. This situation forced educational institutions, families and students to adapt to new forms of viral education depending on the access of technologies that families had at home. In addition, the lack of infrastructure, spaces and work environments proved most homes were identified to not be an optimal environment for the student's learning process. Lastly, the lack of clarity from the Ministry of Education regarding methods to be taken into consideration in order to evaluate the student's learning.

Although there is no updated official data on the connectivity possibilities of students in their homes, experts agree that Chile's primary, secondary and higher educational system was not prepared to provide virtual education, both because there is no quality and stable internet connection for all the regions and for all its citizens, as well as the lack of educational competencies of teachers and students (Fajardo, 2020).



CHARACTERIZATION OF EDUCATIONAL ESTABLISHMENTS

Liceo Comercial Vate Vicente Huidobro (VVH)

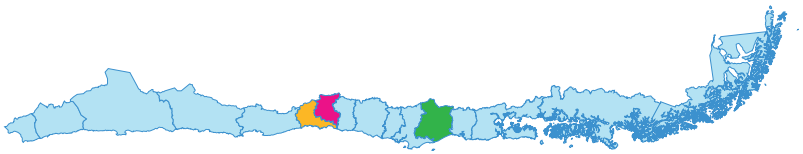
Located in San Ramón, a commune of Chile in Santiago Province Santiago, Metropolitan Region. VHS is a mixed institution that offers a vocational technical education in the technical and commercial area. Students can specialize in Accounting, Business Administration with a focus in Human Resources, Business Administration with a focus in Logistics and Computer Programming. The vulnerability index of its students is 92.16%. The Technovation Girls Chile program was implemented in the "Trained and Accompanied Modality" (T&A Modality). This means, VVH participated in a teacher training program for Technology teachers prior to the commencement of the school year and during the school year they were accompanied and supported by the Foundation's Key Account Managers during the implementation of the Program.

Instituto Superior de Comercio Francisco Araya Bennett de Valparaíso (INSUCO)

Located in the port city of Valparaíso, Chile. INSUCO is a mixed institution of vocational technical training that has the specialties of Accounting, Administration with a focus in Logistics, Administration with a focus Human Resources, Programming and Tourism. Its students have a vulnerability rate of 94%. INCUCO's program was implemented using the T&A Modality.

Liceo Comercial de Desarrollo Temuco (LCDT)

Located in the City of Temuco, of the centrally located Region of The Araucanía. It is a mixed vocational technical training institution in which its students can specialize in Accounting, Administration, Graphic Design and Programming. In addition, they have a dual specialization program in which students can complete high school and a simultaneously complete work study program. Its students have a vulnerability rate of 90%. LCDT's program was implemented using the Trained and Accompanied" modality.



GENERAL OBJECTIVE

To characterize the perceptions of 9st Year students from the aforementioned establishments are in regards to the access and use of computers and technology at the beginning of the Program compared to their perceptions at the end, especially the differences between females and male students.

Traditionally, in the Chilean educational environment there is a wide range of criteria in regards to the subject of technology, it can be focused on teaching Office Automation using programs from Microsoft Windows or teaching the principles of programming fundamentals using such material like Hour of Code. There are no "real" parameters when it comes to the teaching of technology. The purpose of this exploratory study is to delve into whether the Technovation Girls curriculum can teach about the development of tech projects and fundamentals of programming in a way that transforms both female and male student's' views on the use of technology and computers.

SPECIFIC OBJECTIVES

- Characterize access to computers, mobile phones and internet at home.
- Characterize the use of computers, mobile phones and technology, in general.
- Describe the importance of access to technology and computers by students.
- Identify the specialties of interests and provide guidance towards STEM careers.
- Identify students' preferences in classes.
- Characterize the perceptions of students' uses of technology in different areas of knowledge.
- Describe the students' post high school expectations.
- Characterize the students' perceptions and interests around technology and computers.
- Describe the students' perceptions of various dimensions of the program.

DATA COLLECTION

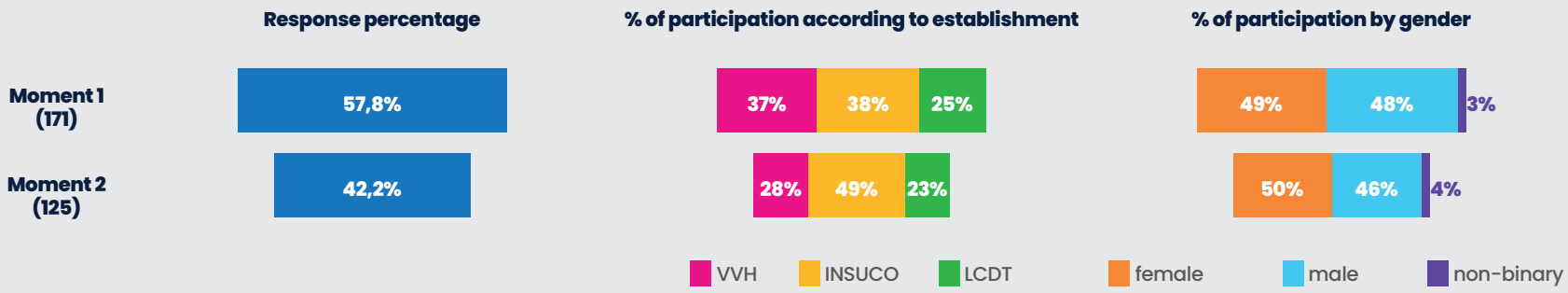
A quantitative study ("Study") was developed, through a self-applied web survey in two instances: (i) at the beginning and (ii) at the end of the Program in 2020. In this survey, questions were integrated that allowed students to address their access and perception of the use of technology and computers.

Who responded

This Study was answered by students from the participating high schools: VVH, INSUCO and LCDT. At the beginning of the program in March of 2020 (Moment 1), 171 students responded. At the end of the study in December 2020 (Moment 2), 125 responded.

Of those who responded at Momento 1: 37% were from VVH (64), 38% from INSUCO (65) and 25% from LCDT (42). In Moment 2, 28% were from VVH (35), 49% from INSUCO (61) and 23% from LCDT (29).

Regarding the gender: Moment 1: 48% were female, 49% male, and 3% identified themselves as non-binary. In Moment 2, 50% female, 46% male and 4% non-binary students responded.



ACCESS TO TECHNOLOGY

A relevant dimension of access to information and communication technologies is knowing how to use them, as well as acquiring knowledge that helps to move from the state of user to the state of creator.

The purpose of the following questions was to identify technological equipment (computers, telephones and tablets, as well as internet) access by the students with a "Yes" or "No" question and answer format.

Having said the above, it must be recognized that although the students have access to equipment: tablets, mobile phones and notebooks, if a significant number of learning activities are not carried out, in terms of learning the use of these devices, the change from user to developer will not be generated.

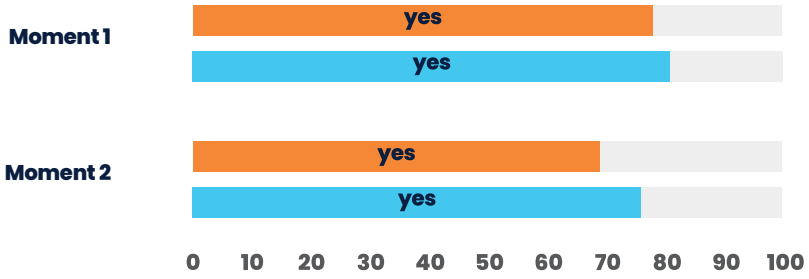
At Moment 1: 78% of the female and 81% of the male students had a computer, notebook or tablet at home. Upon Moment 2, it dropped to 69% of females and 76% of males.

Regarding mobile phones, Moment 1: 96% of the female and 98% of the male students had a device for their own use. For Moment 2, 100% of the female and 97% of the male students had a mobile phone.

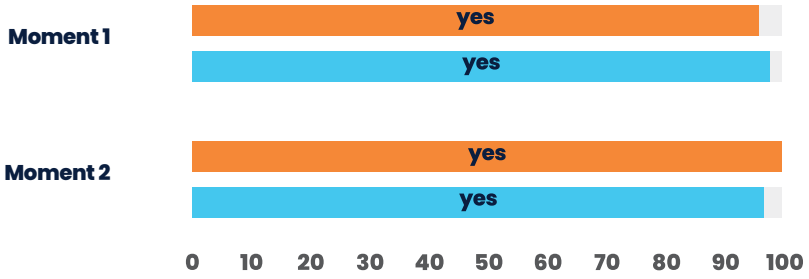
At Moment 1, 77% of female and 89% of male students had internet service at home. At Moment 2: 76% of the female and 86% of the male students had connection.

At Moment 1, 62% of the female and 70% of the male students reported having had computer classes. At Moment 2: 76% of the females and 64% of the male students reported to have had computer classes.

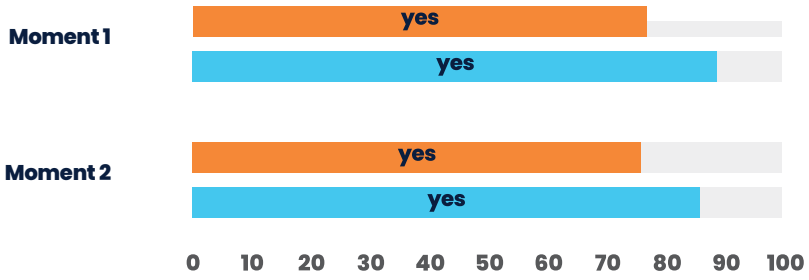
Do you have a computer, notebook or tablet at home?



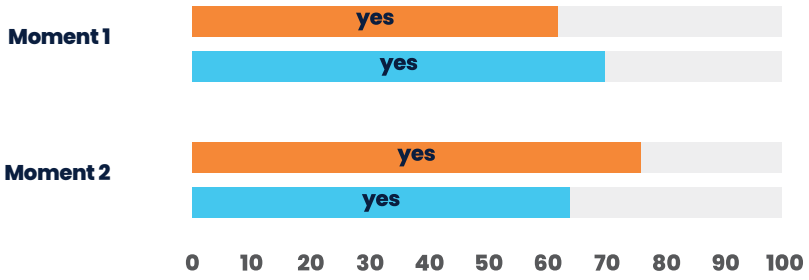
Do you have a cell phone for your own use?



In your home, do you have Internet service?



Have you had computing classes?

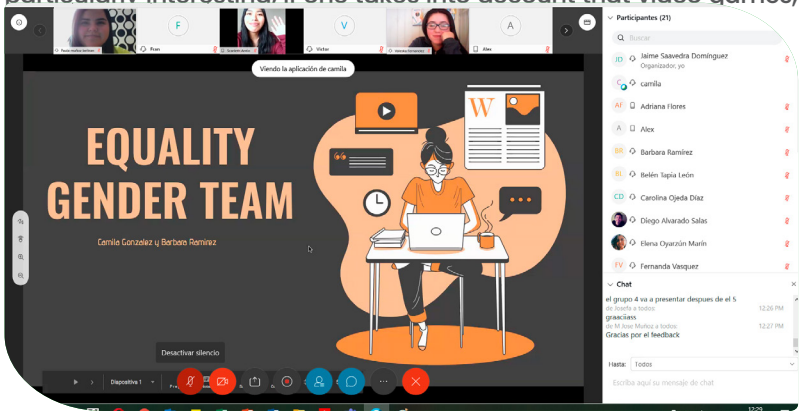


USES OF TECHNOLOGY

In the two Moments of Measurement, the main use students have for technology is to “maintain contact with my friends”.

The differences can be observed in the options marked by the second majorities: at Moment 1, 51% of the female students indicated that they use technology to study, which remains the second majority at Moment 2, marked by 65% of the students. In the case of the male students at Moment 1, 48% marked “play online”, at Moment 2, it remained the second majority with 57% of the male students.

The gender gap that can be observed for the “play online” option is particularly interesting, if one takes into account that video games,



which can be a first approach to the world of programming, have been developed and marketed specifically to males since the 1980’s and 1990’s, symbolically excluding the female consumer (Andrews, 2017; Lien, 2013; Mundy, 2017).

Therefore, it is of particular interest to observe the increases in female students who reported playing online at Moment 2 (from 17% to 39%), in addition to the slight increase in the percentage of girls who reported using technology to program mobile applications (from 5% to 8%).

Regarding the use given to the computer, notebook or tablet at homes by the students, the most frequent answer was: “looking for information for tasks or projects”, in both male and female students, at both Moments of Measurement.

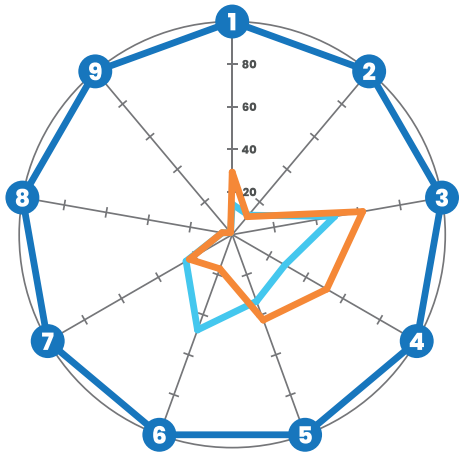
As far as the use of technology in general, the biggest difference between the female and male students is in the “play” option.

Regarding students’ mobile phone use, it can be observed that more than 50% of the female students declared to use them, except “play” in Moment 1. In Moment 2, the percentage of female students who say

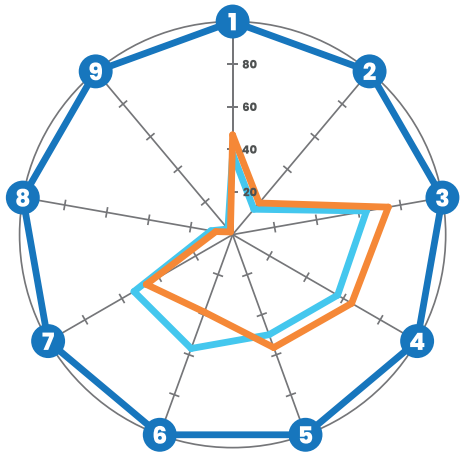
they used more specific functions is even higher, even in “play”, which goes from being selected by 49% to 55%. In the case of male students, it can also be observed that more than 50% use most of the functions indicated in Moment 1, with the exception of “search information for tasks or homework” which was marked by 46% and “take photos and make videos”, marked by 39%. In Moment 2, there is an increase in the use of all mobile phone functions, including “find information for tasks or homework” and “take photos and make videos” (which were marked by 72% and 47% , respectively).

At the same time, the differences in Moment 2 between female and male students who declare to “use social media networks” (92% of female and 79% of male students) and “take photos and make videos” (68% of male students) are striking (68% of female students and 47% of male students).

Uses of technology



Moment 1

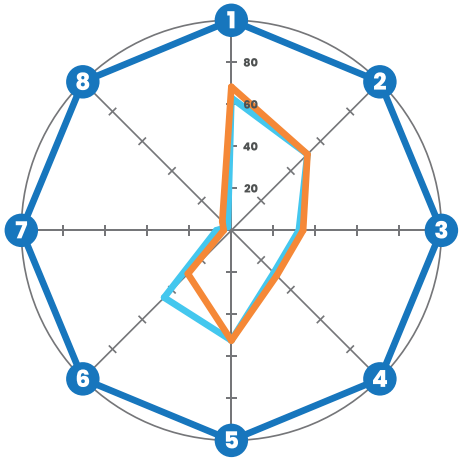


Moment 2

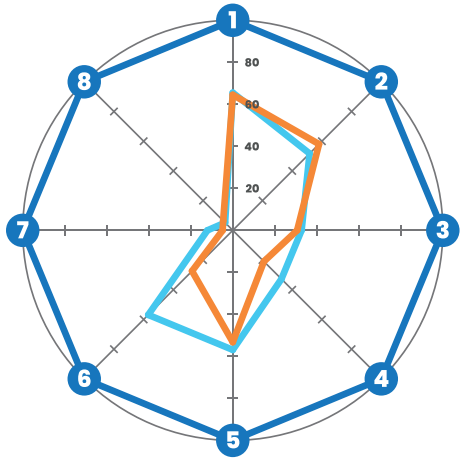
female male

1 Take photos or videos 2 Meet people 3 Keep in touch with my friends
4 To study 5 Learn about topics that motivate me 6 Play online
7 Watch videos 8 Schedule applications 9 Others

Computer use



Moment 1

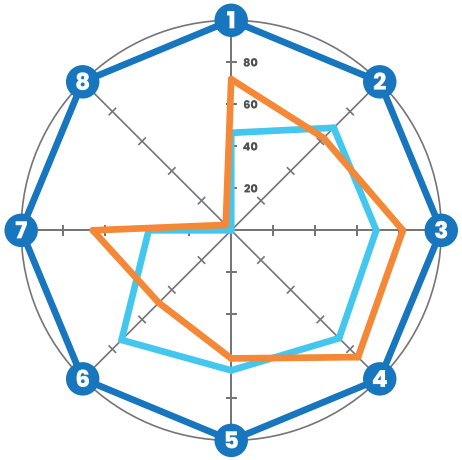


Moment 2

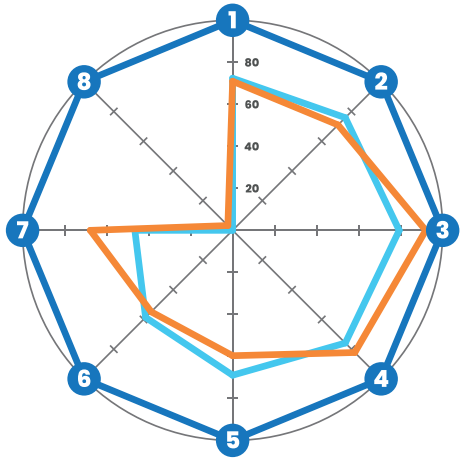
female male

1 Find information for school assignments or projects
2 Search for information of personal interest
3 Use social networks
4 To chat
5 Watch videos or movies
6 Play
7 Schedule applications
8 Others

Mobile phone use



Momento 1



Momento 2

female male

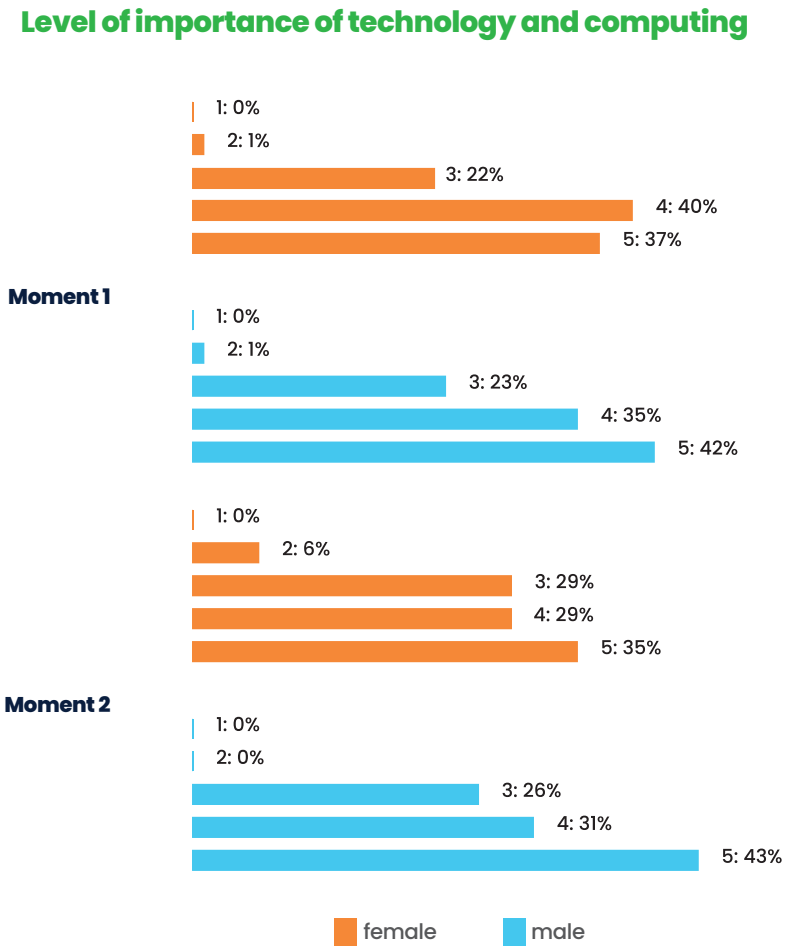
1 Find information for school assignments or projects
2 Search for information of personal interest
3 Use social networks
4 To chat
5 Watch videos or movies
6 Play
7 Schedule applications
8 Others

IMPORTANCE OF TECHNOLOGY AND COMPUTING

Evaluating from 1 to 5, where 1 is “not important”; 2 “unimportant”; 3 “neither important nor unimportant”; 4 “important” and 5 “very important” was the level of importance of technology and computer science by the students.

At Moment 1, most of the female students rated it a 4 (40%), while most of the male students rated it a 5 (42%).

After going through the Program at Moment 2, most of the female students rated the subject at a 5: “very important.” . For male students the figures were maintained at time 1, a 5.

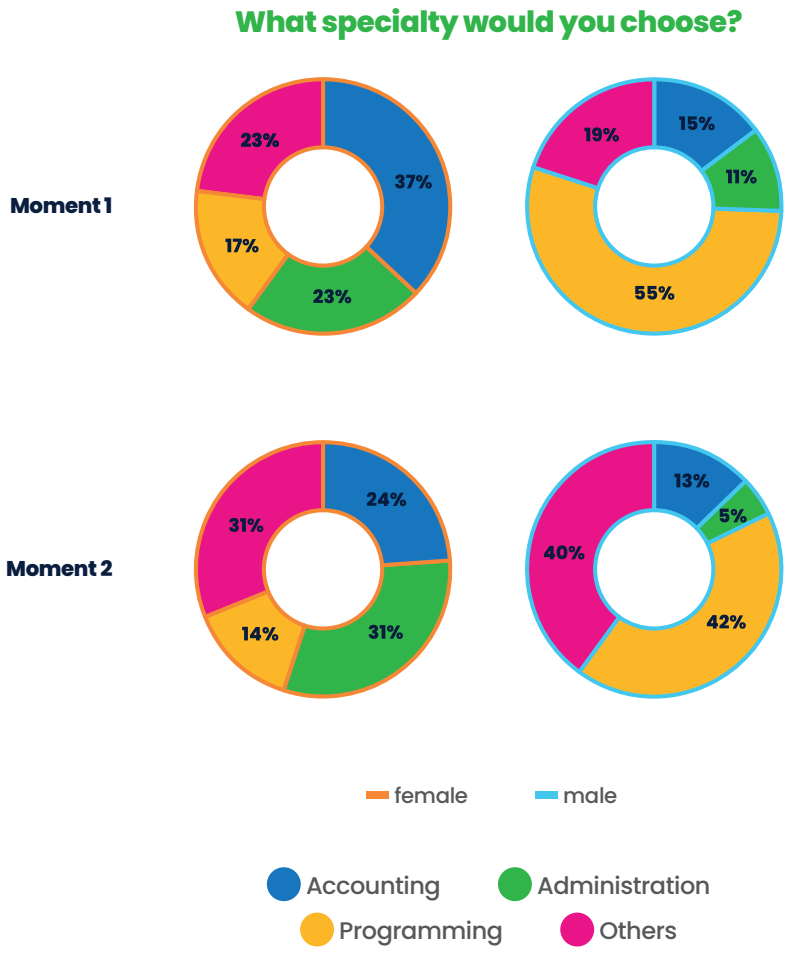


SPECIALTY

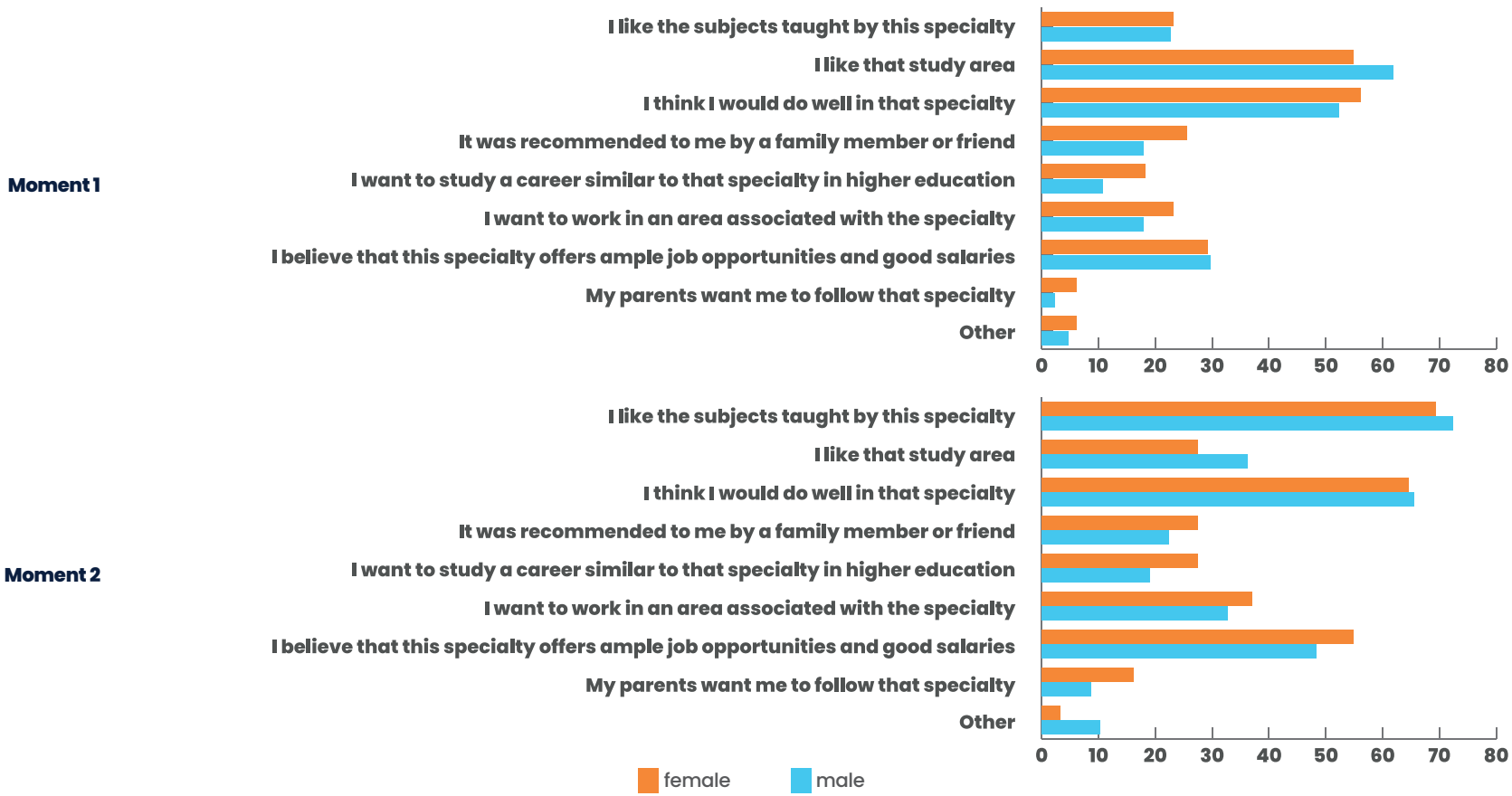
When asked "If you had to choose a specialty today, which one would you most likely choose?" At Moment 1, the highest percentage of female students marked accounting was 37% and administration was at 23%, while 55% of the male students indicated thatthey would choose computer programming. At Moment 2, a similar situation can be observed: 31% of the female students declared that they would choose administration and 24% accounting, while 42% of the men would choose computer programming.

Regarding the reasons for choosing the specialty, although in Moment 1, both female and male students responded that they preferred the area of study, 55% of the female and 62% of the male students . It was followed by: "I think I would do well in that specialty" with 52% of the female and 56% of the male students.

In Moment 2, the reason with the highest percentage of responses was: "I like the subjects taught by this specialty" with 69% from female and 72% from those of male students. In second place: "I think I would do well in that specialty" with 65% for the female students and 66% males.



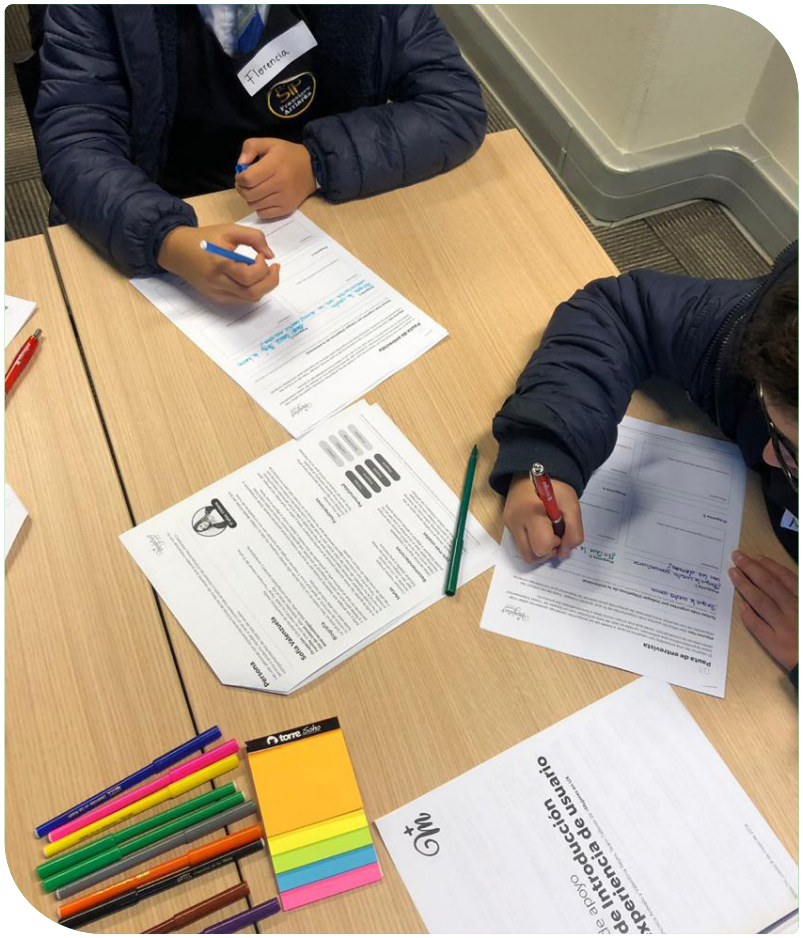
Reasons to choose specialty



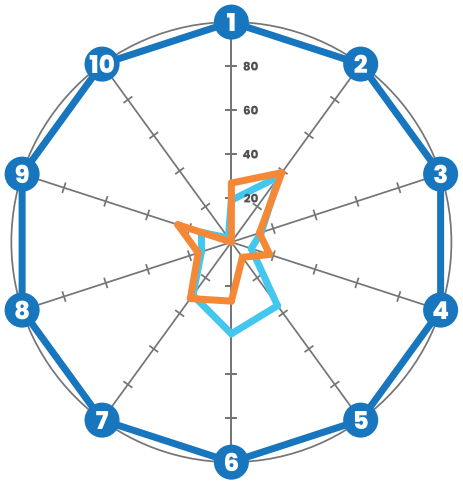
FAVORITE SUBJECT

At Moment 1, the favorite subject of most of the female students was Mathematics, which was marked by 39%. On the other hand, for the male students it was Physical education and Health, marked by 42%. It should be noted that Technology was the preferred choice of 36% of male students and only 9% of females students.

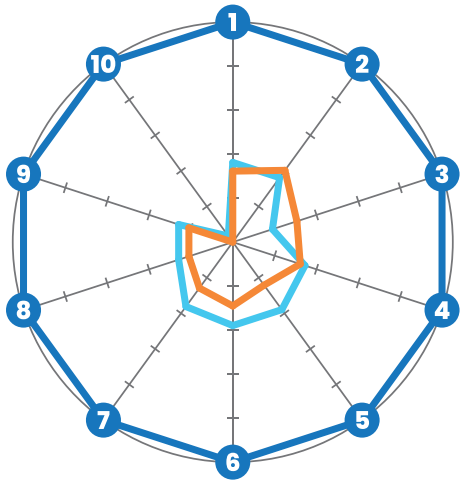
In Moment 2, the highest percentage of female students continued to rate Mathematics (40%) as their favorita and males scored Technology and Physical Education and Health (38% each) to the same extent. This highlights a great change in the ranking of Technology, since 24% of the females and 38% of the male students marked it as their favorite subject.



Favorite subject



Moment 1



Moment 2

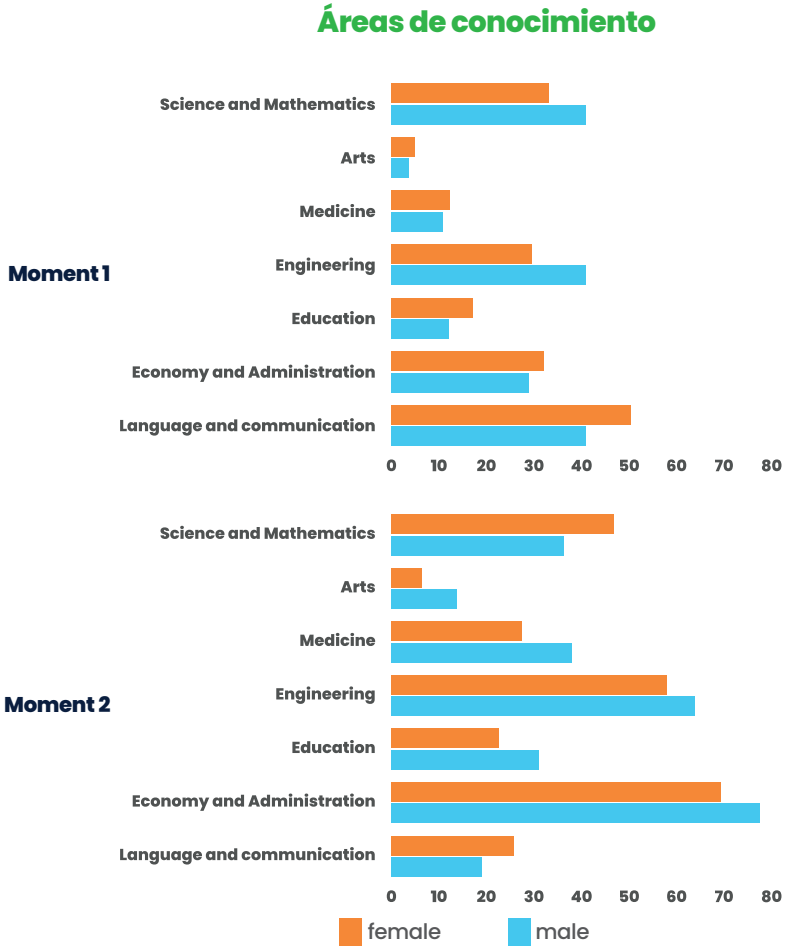
female male

1 Literature 2 Mathematics 3 Science 4 History 5 Technology
6 Physical Education and Health 7 English 8 Music
9 Visual arts 10 Religion

KNOWLEDGE AREAS THAT USE TECHNOLOGY THE MOST

Regarding the perception of students regarding their personal knowledge of what would require greater management and use of technology: Moment 1, Language and Communication marked the highest at 50% of the female students and 40% of the male students. Science and Mathematics was top rated by the male students at 40% versus 33% of the girls, and Engineering by 40% of the male students compared to 29% of the females students.

At Moment 2, the most marked options were Economics and Administration, by 78% of the male students and 69% of the female students, and Engineering by 64% of the male students and 58% of the female students.



PERCEPTIONS AND INTEREST IN COMPUTING

Evaluating from 1 to 5, where 1 is “Strongly Disagree”; 2 “Disagree”; 3 “Neither Agree nor Disagree”; 4 “Agree” and 5 “Totally Agree”, given the statement “Computers can solve problems in my daily life”, an increase can be observed in the female students who scored 4 and 5 in Moment 2, in the case of male students, it can be seen that a higher percentage of them scored 5.

At Moment 1, when faced with the statement “Knowing computers is useful for any work area in which I work”, most of the students scored a 4 (43% of the female and 40% of the male students). At the end of this, while the responses of the male studnets remain similar to those of Moment 1, those of the female students changed and it can be seen that 60% of them marked 5 “Totally Agree”.

A similar change can be seen in female students when faced with the statement: “I think it is important for me to know computers”, which at first was answered with a greater part of 4 (49%) and in the second moment of measurement 52% marked 5 “Totally agree“.

The male students, although they maintained similar responses at Moment 1 and Moment 2, an increase can be observed in those who marked 5 “Totally Agree”.

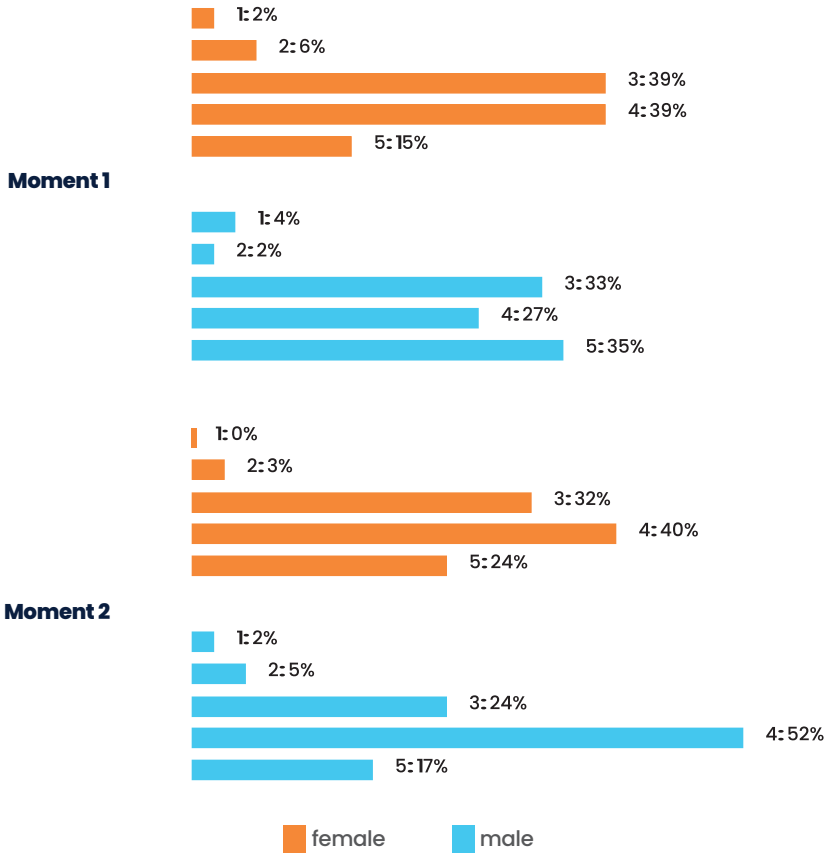
The vast majority of students “Totally Agree” that males and females can be equally good at using computers; 89% of the female students and 86% of the male students scored 5 at Moment 1; and 89% of the female and 84% male students at Moment 2. It should be noted that at both times the percentage of female students who score 5 is higher.

In relation to the self-perception of computer skills, most of the students score 4 at Moment 1, that is, they agree with the statement. However, at Moment 2, most scored 3 “Neither Agree nor Disagree” (35% female and 36% male students). This could be interpreted as a decrease in the perception of the students abilities.

On the other hand, the highest percentage of male students who scored 5 in relation to female students in both moments of measurement stands out.

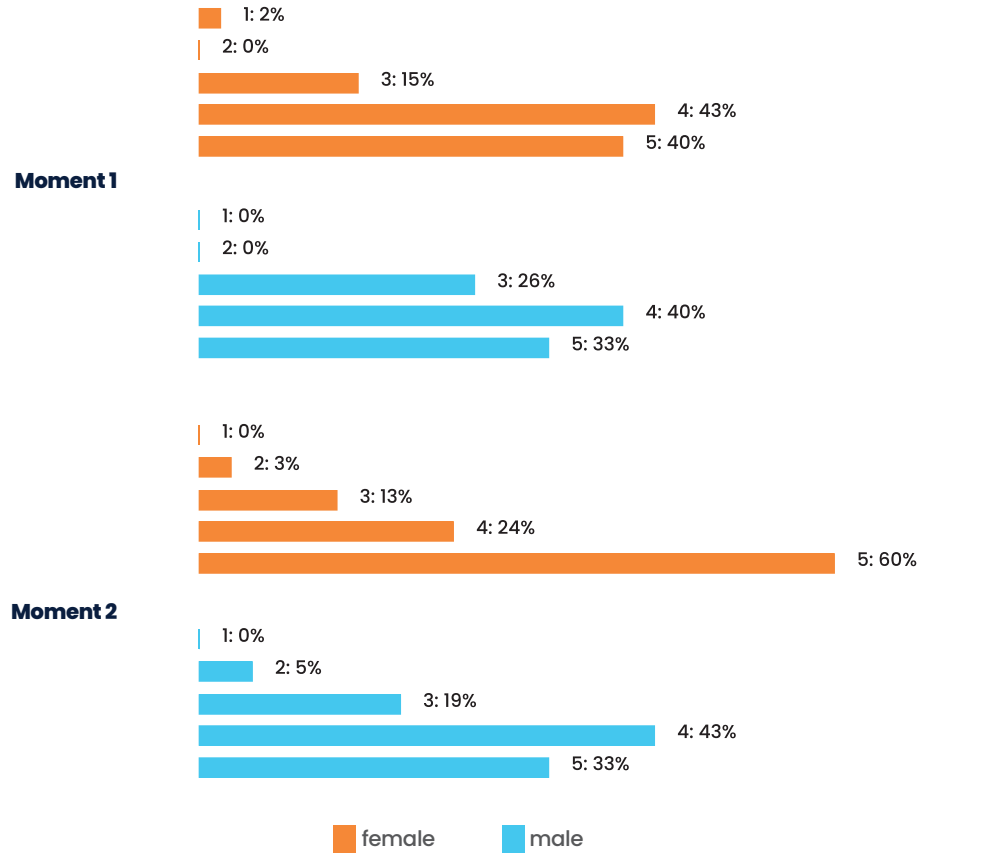
It is striking that, despite the fact that 89% of female students considered themselves just as good as their male counterpart, only 16% rate their abilities in 5 at the end of the program. Especially compared to 28% of men who evaluated their abilities in 5.

Computing can solve problems in my daily life



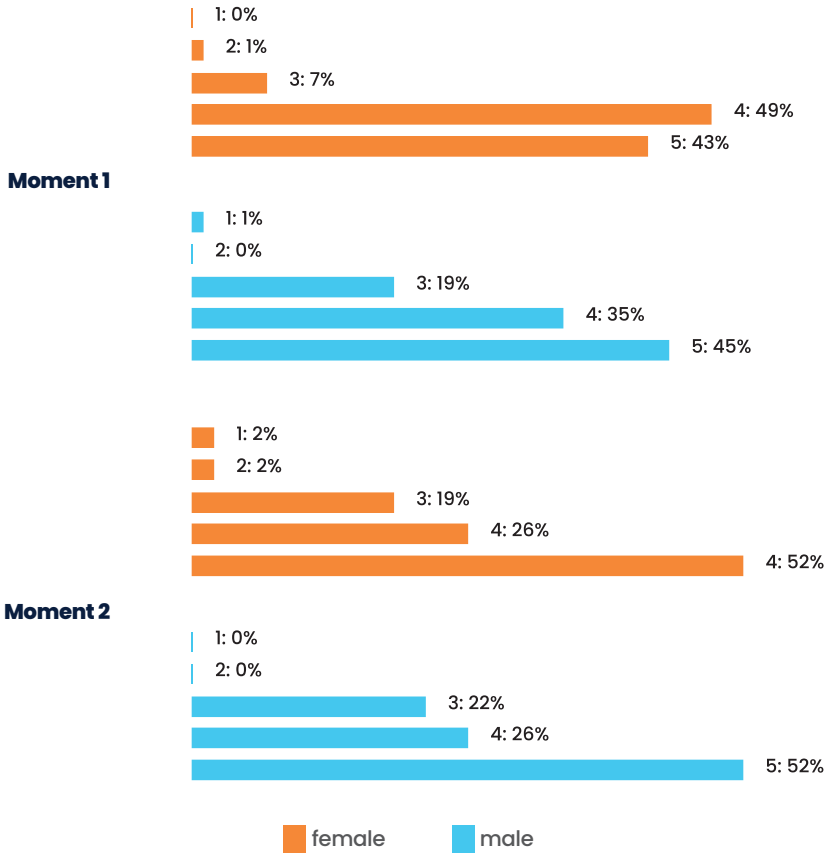
1: Strongly Disagree **2:** Disagree **3:** Neither Agree nor Disagree **4:** Agree **5:** Totally Agree

Knowing computers is useful for any work area in which I work

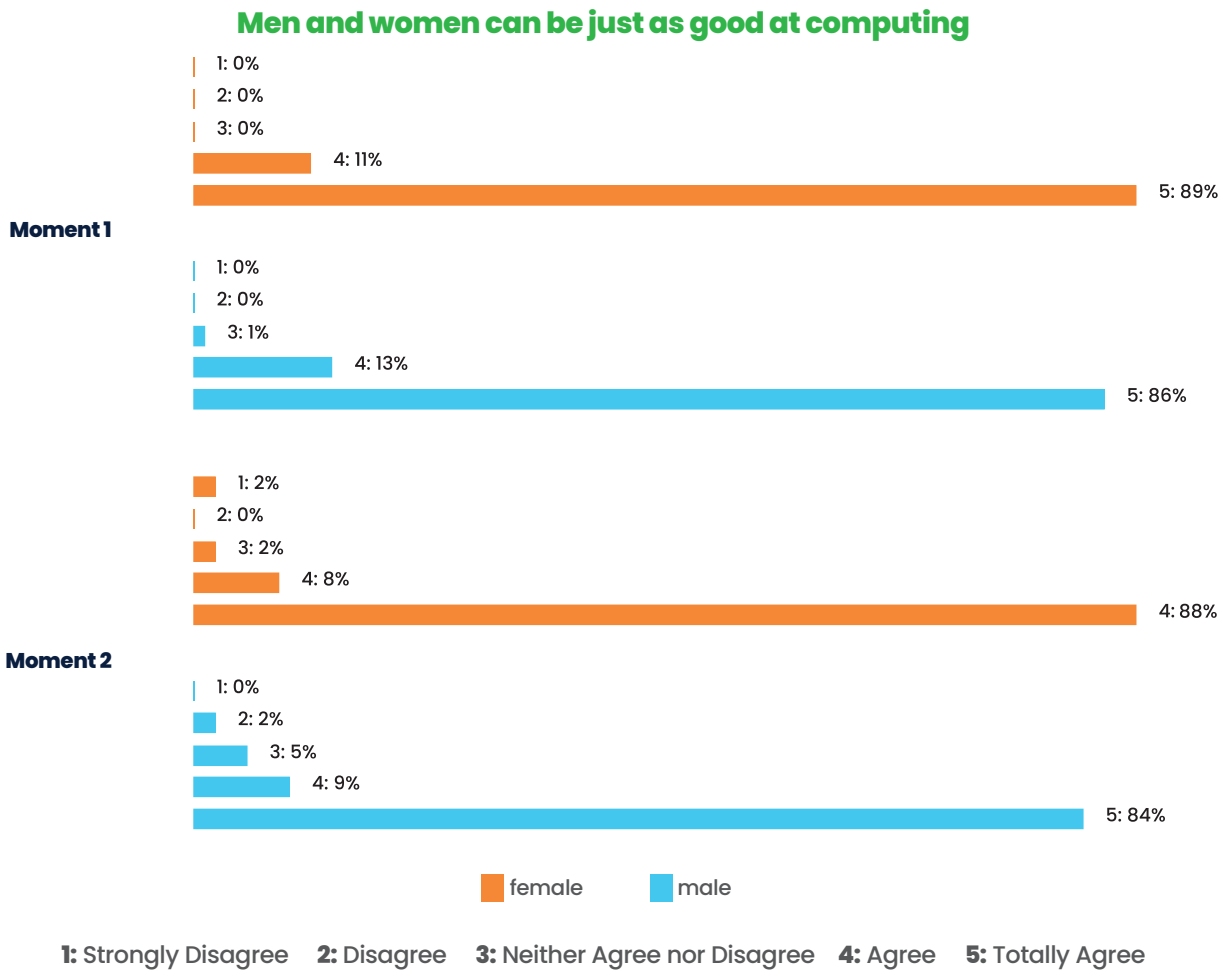


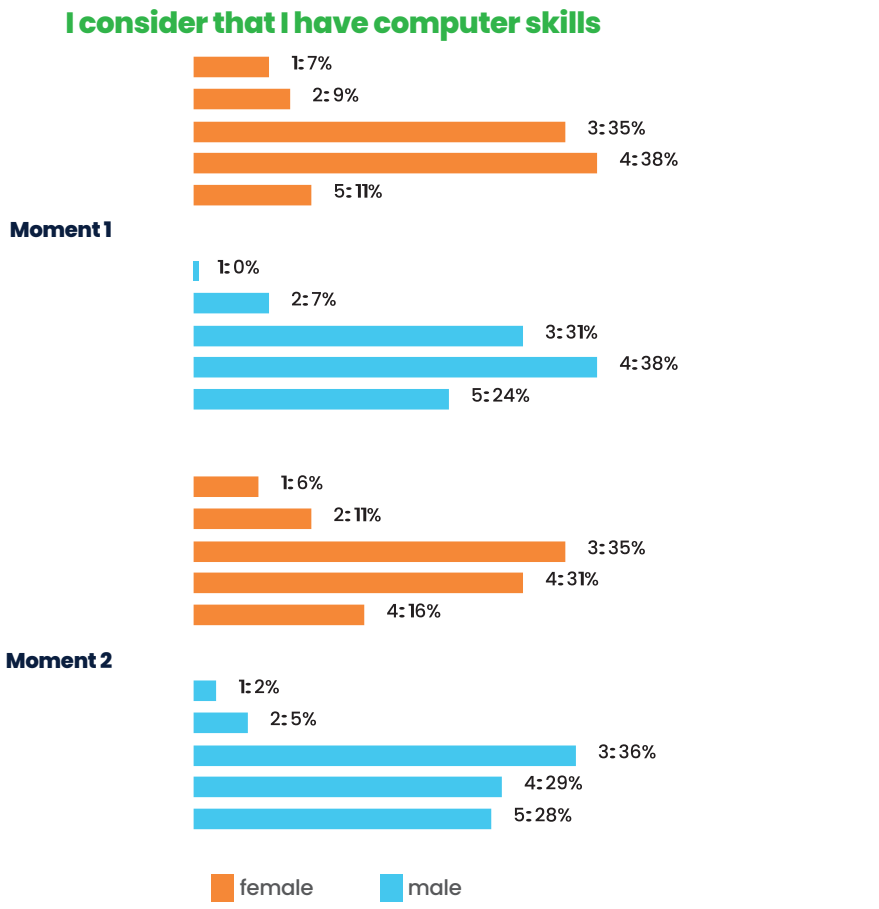
1: Strongly Disagree **2:** Disagree **3:** Neither Agree nor Disagree **4:** Agree **5:** Totally Agree

I think it is important for me to know computers



1: Strongly Disagree **2:** Disagree **3:** Neither Agree nor Disagree **4:** Agree **5:** Totally Agree


Men and women can be just as good at computing
Moment 1
1: 0%
2: 0%
3: 0%
4: 11%
5: 89%
1: 0%
2: 0%
3: 1%
4: 13%
5: 86%
Moment 2
1: 2%
2: 0%
3: 2%
4: 8%
4: 88%
1: 0%
2: 2%
3: 5%
4: 9%
5: 84%
female
male
1: Strongly Disagree
2: Disagree
3: Neither Agree nor Disagree
4: Agree
5: Totally Agree


I consider that I have computer skills
Moment 1
1: 7%
2: 9%
3: 35%
4: 38%
5: 11%
1: 0%
2: 7%
3: 31%
4: 38%
5: 24%
Moment 2
1: 6%
2: 11%
3: 35%
4: 31%
4: 16%
1: 2%
2: 5%
3: 36%
4: 29%
5: 28%
female
male
1: Strongly Disagree
2: Disagree
3: Neither Agree nor Disagree
4: Agree
5: Totally Agree

EVALUATION OF THE TECHNOVATION GIRLS CHILE PROGRAM

At the end of the program, some questions and statements were included that aimed to document the students' experience and recognize the aspects that they consider most valuable of the training process they carried out.

Regarding the opinion towards teachers managing the material they are teaching, most of the female students indicated that they were "Satisfied" with 42% scoring a 4, while most of the male students were "Very Satisfied" 36% scored 5.

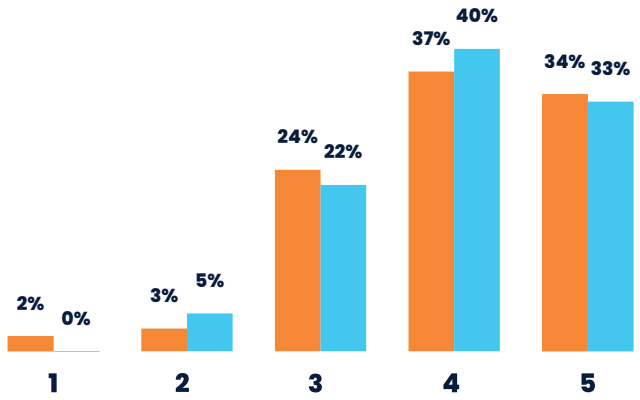
Most of the students were "Satisfied" with a score of 4, that opinion that their teachers teach in a simple way that allows them to understand easily.

There was a higher percentage of male students who stated that they were "Very Satisfied" with the fact that the classroom environment made them feel comfortable (38%) while female students came second (34%). The highest ranking for the female students was with a 4, "Satisfied".

Although 32% of the female students and 34% of the male students indicated that they were "Very Satisfied" (Score of 5) that 'Evaluations included feedback that allows them to deepen their knowledge", the difference can be observed between the percentage of female and male students who scored a 4, "Satisfied" in this statement: 40% of the female students marked this option, only 22% of the male students did.

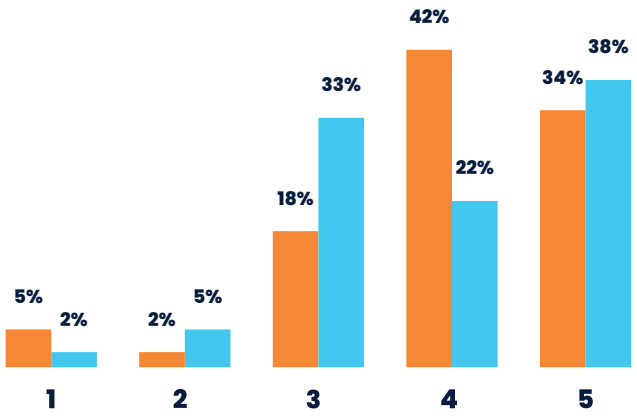
Regarding the statement: "Classes encourage debate and reflection", the highest percentage of female students indicated that they were "Satisfied" (45% marked a 4), while the highest percentage of boys indicated that they "Agree" (38% marked a 3).

The teachers teach in a simple way which allows me to understand the class easily



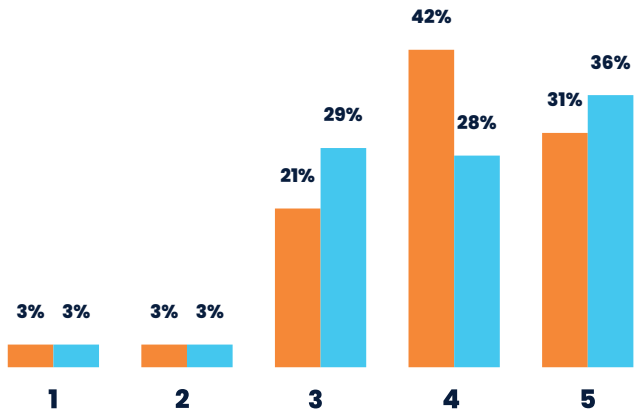
1: Very Dissatisfied **2:** Dissatisfied **3:** Agree **4:** Satisfied **5:** Very Satisfied

The class environment makes me feel comfortable



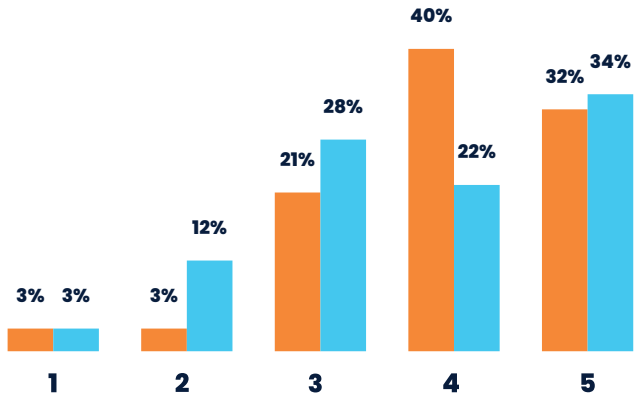
1: Very Dissatisfied **2:** Dissatisfied **3:** Agree **4:** Satisfied **5:** Very Satisfied

Teachers know what they are talking about



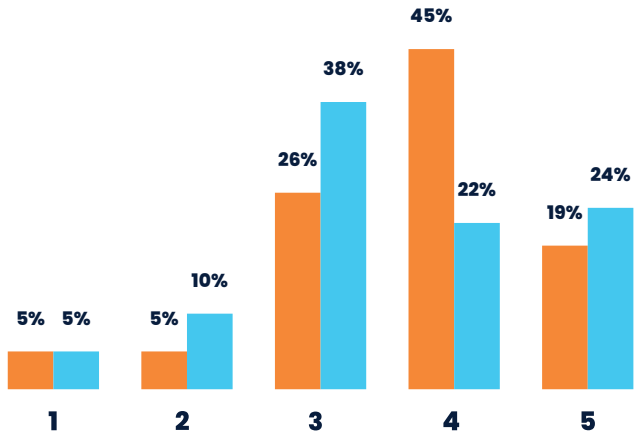
1: Very Dissatisfied **2:** Dissatisfied **3:** Agree **4:** Satisfied **5:** Very Satisfied

The evaluations include feedback that allows me to deepen my knowledge



1: Very Dissatisfied **2:** Dissatisfied **3:** Agree **4:** Satisfied **5:** Very Satisfied

Classes encourage me to debate and reflect



1: Very Dissatisfied **2:** Dissatisfied **3:** Agree **4:** Satisfied **5:** Very Satisfied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FINAL COMMENTS

Access to various technological tools and also learning about their uses were some of the key aspects to considered when bringing female students closer to computer science, especially in the context in which it was carried out during the year of 2020. A year in which most of the students had to use their own resources available in order to access the classes taught by their educational institutions.

Considering the adverse situation in which the academic year commenced and its consequent closure, it should be noted that all three (3) schools expressed desire to continue with the Program during the next school year of 2021, in their respective technology classes both in 9th and 10th year students. In addition to the above, the schools expressed interest in also incorporating the participation of their English programs, in order to strengthen the process.

In terms of access, we can see that students have greater access to computers, notebooks and/or tablets and have access to the internet at home. On the other hand, mobile phone access is quite generalized and we even see that 100% of the female students surveyed and 97% of the male students surveyed had one of these devices by the end of the Program. This aspect can be particularly relevant when educating in an inclusive way the context of virtual education.

The uses that students give to technology coincide with the information gathered from other research: female students use it more socially and in relation to relationships, while male students use it more related to playing online games, which is consistent with traditional gender roles and stereotypes. This is particularly interesting when attempting to encourage female students to develop STEM skills, given the low importance female students give to technology and computers: whereas there is a tendency for male students to give technology more importance

This trend is consistent with the study carried out in 2015 by Young People from the Autonomous Community of La Rioja (Sabater Fernández & Fernández Alcalde, 2015), which concludes that young females use technology in a more expressive-communal way, mainly to share their daily lives, sending and receiving messages through photographs and videos, while young males develop an instrumental approach, related to activities in video games and applications, a more leisurely use that has to do with entertainment. (Use of RRSS and cell phone)

The chosen career training majors also reflect stereotypical interests of both the students at the Moment 1. While female students were inclined towards management and accounting, male students chose computer programming. It is interesting to observe that female students modified their interest and increased their desire to choose a STEM focused specialty in Moment 2. Another piece of information that helps us to conclude that the Program impacts the interest of female students is by the increase of choosing technology as their favorite subject in Moment 2. This change could be attributed to the fact of having passed through the Program.

Another finding of this study is that when the students are asked about what area of knowledge requires greater management and use of technology. At Moment 1 they answered that to be used in grammar and communications; On the other hand, by Moment 2, the students responded categorically that it was the field of Engineering. It could be inferred that the students, after going through the Program, have a greater understanding of which areas of studies technology is most used in its real dimensions.

Regarding perceptions and interest in computer science, at the end of the program, the female students recognized that computer science can solve problems in their daily life, showing an increase of 9% between Moment 1 and Moment 2. On the other hand, the increase is more significant when asking if computer knowledge is useful for any work environment, increasing from 40% at Moment 1 to 60% at Moment 2.

It is noteworthy that almost 90% of students agree that both female and male students can be just as good at computer science, both at Moment 1 and at Moment 2. This shows us that when speaking in terms of capacity equality, the students have internalized that these are present in both genders, in equal proportion.

Regarding the statement: “I consider that I have computer skills” in which students evaluated their computer skills from 1 to 5, where 1 is “Totally Disagree”; 2 “Disagree”; 3 “Neither Agree nor Disagree”; 4 “Agree” and 5 “Totally Agree”, we can see that there is an increase of 5% among female students who consider that they “Totally Agree”. However, there is a decrease of 8% among the female students who “Agree”. Due to this reason, a focus group was developed by the Key Account Manager team to consult the reason for this self-evaluation, the result showed that the girls felt “ less capable “ in the context of

virtual classes. This difference could be due to internalized biases of the girls in relation to their abilities in mathematics or a more demanding self-evaluation, given by an environment that requires that female students constantly have to show more capacities to be considered proficient or underestimate their own abilities. This is consistent with what previous studies show that: "women tend to be harder on themselves, especially in areas dominated by men (Torres-Guijarro & Bengoechea, 2017), which can be attributed to a lower perception of self-efficacy (Bastarrica & Simmonds, 2020) ".

Regarding the evaluation of the Program and the knowledge that the teachers handle about the content, it can be evaluated that the students evaluate in a favorable way the teachers and the Technovation Team, as well as the exposed contents and the self-evaluation processes.

These results account for certain differences between female and male students when starting the Program. These have to do mainly with the uses that students give technology, which is consistent with the existing evidence regarding the impact of gender stereotypes when using technology.

The fact that female students' perception of themselves is not so dissimilar to those of male students in this group of students, should be taken into account if one seeks to encourage their participation in STEM careers. In addition, promoting and implementing a non-sexist education tones that stops perpetuating gender roles and stereotypes are detrimental to the projection of future women in technological areas.

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