

Special contents UDLA-campus map

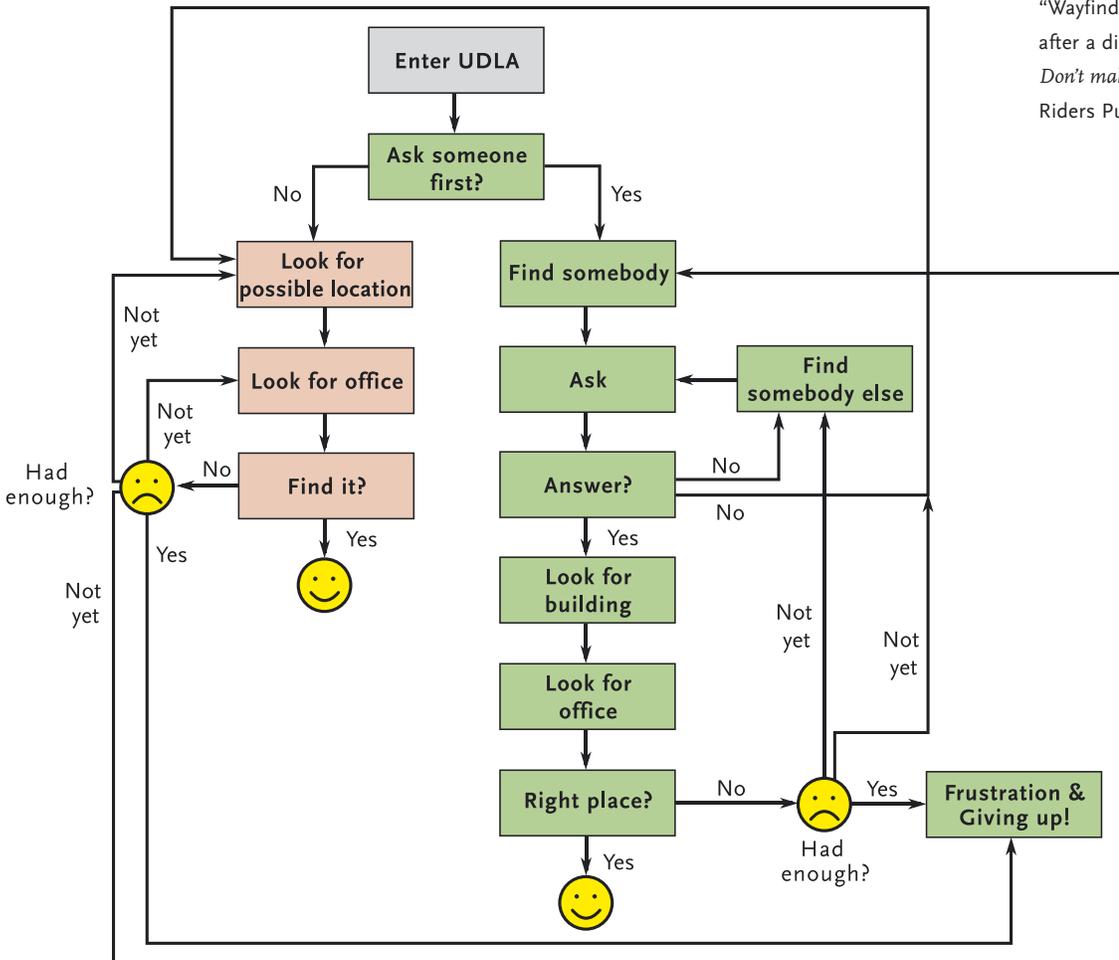
Wayfinding and orientation in the UDLA

»Wayfinding means knowing where you are, knowing your destination, following the best route to your destination, recognizing your destination when you arrive, and being able to reverse the whole process and finding your way back out.«

Janet R. Carpman, Carpman Grant Associates

Janet R. Carpman, Carpman Grant Associates, *Wayfinding in Health Facilities*, available from the World Wide Web: www.wayfinding.com

UDLA is like a small village, with 38 buildings on a 73.2-hectare ground. The assumption is that most of the UDLA population knows where to find various destinations, but about 1,700 new students enter UDLA every year and about 300 exchange students come every semester from all over the world to study. These people need help to orient themselves, meaning they need external knowledge sources, like a person, to tell them where to find what they are looking for, or a guide, a map or signs. Not knowing where to go or how to find their destination can cause disorientation, and nobody likes the feeling of being lost. In addition, they have to deal with a foreign language and culture and living far away from family, friends and what they are used to-- therefore getting lost in an unknown environment can worsen the whole situation for a foreign student. Wayfinding within the UDLA is determined through try and error, which leads to frustration.



“Wayfinding in the UDLA” after a diagram of Steve Krug in *Don't make me think!*, Indianapolis: New Riders Publishing, p. 52/53

Investigation wayfinding and orientation within UDLA

To get to know what kind of aid would help find the right way on the UDLA campus, I had to start an investigation to get to know what kind of problems people have, what they think important and what they know about the campus. I wanted to question the people at the UDLA to get into dialogue with others about wayfinding and orientation. I divided the UDLA people in three groups: Mexican students, foreign/exchange students and employees, to see if there were differences between Mexicans and foreigners, employees and students etc.

I was really interested in the kind of problems others were having, to see if the kind of problems I had are only had by foreigners coming to the UDLA, or if the Mexicans had the same ones. It seemed as if only the foreigners have looked for a map of the campus – as used in Europe or the United States. Would a map solve the problem? Would it be used by the Mexicans or how should it be to be useful?

I decided to make a two-sided approach to my research. It would be one that included questions and another that let people work with cognitive mapping. I started developing a questionnaire (see Appendix A) in English and Spanish, which helped me in asking people on the campus. In the first part I wanted to know what the person is doing in the UDLA (student, exchange student or employee), where they are from and how long he or she has been studying or working there.

I chose a mixture of multiple choice and spaces for descriptions, to make it easy and fast to fill out the questionnaire and to make it easier for me to assess the results, and also making it possible to compare the answers.

In the next part I wanted to get information about orientation problems on campus, to get to know what people find difficult to find.

I divided the UDLA into parts: Administration, Academics, Medical Aid, Recreation and Services, to make it easier to see what area causes more problems, what is well known or if one is not important at all.

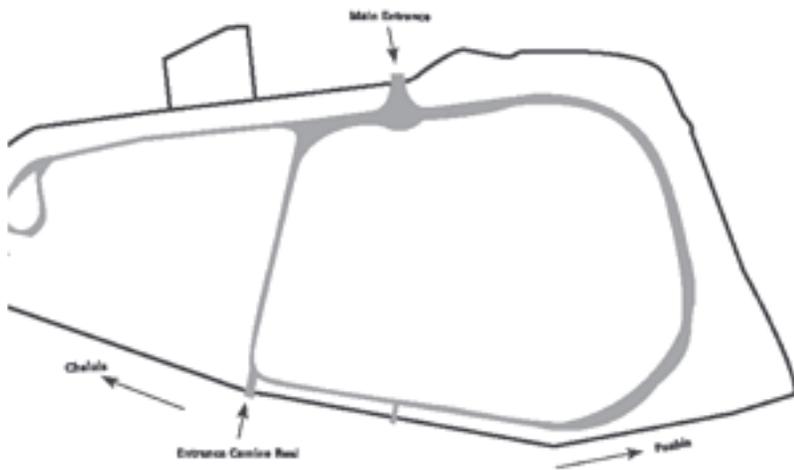
I realised that using maps is not very common in Mexico. I have often tried to get a map of a location (like in the UDLA), but failed with this attempt. So, I wanted to know how many of the people normally use maps or how they get help for finding their way.

In the next part I wanted to know what kind of information the people want on a map of the campus. I wanted to see if there are differences between the three groups (Mexican students, foreign students and employees), what kind of information is the most important, which is the least important for them, etc. With the following part I wanted to get to know what the people know about special things the UDLA offers them. This kind of information is not in the information brochure you can get about the UDLA, and I got to know these things by chance or by asking around.

The last part of the questionnaire to be filled out was about distances. Because having a feeling for a distance also helps to orient, to know how things are located to each other. I chose four different ways on the campus whose distances are more or less the same, to see how people will appraise it.

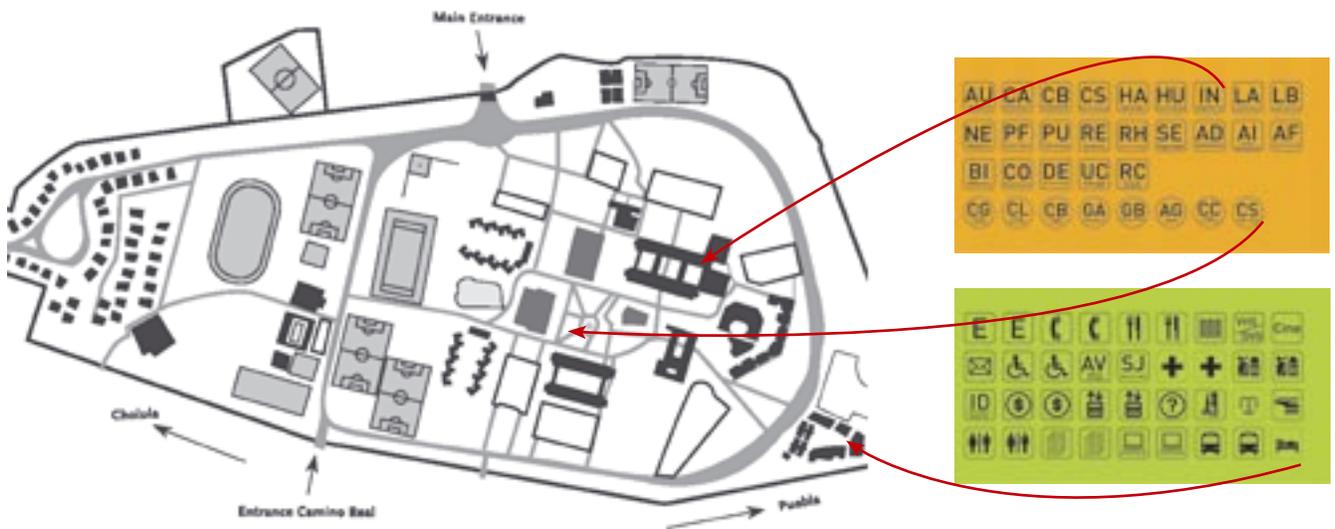
In the second part of my research I wanted to test if and what kind of mental model the people have of the UDLA-campus and how their capability is to read and understand maps.

I tested in three different ways, to one group I gave a map of the campus which only contained the campus-surrounding street with the marked entrances. The person had the task to draw a map of the campus, to locate the buildings, sports fields and landmarks. But they had to remember what is on the campus; I did not give them a list with the names of buildings or other things.



Another group got a complete map of the campus and had to mark with stickers all buildings and services.

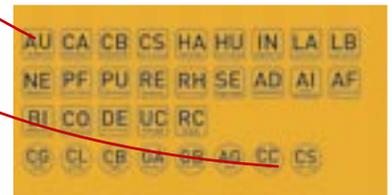
The orange sticker contained little stickers with all buildings and a lot of the institutions that are located on the campus. The green sticker contained little stickers to mark all the services you can find on the campus as e.g. cashiers, kiosks, computer-rooms or bus stops.



The third group had to mark in a complete UDLA map with the buildings and the locations a few of photos showed. The blue sticker contained little numbers that matched with the numbers on the photos. With these numbers the questioned person had to mark where the location could be found that the



photo showed. With the orange stickers they had to mark, just as the other group, the buildings and some institutions on campus. I made this test to get to know if the person knows not only where a building is located but also if they have entered it once and know how it looks inside. Also I tested if they could recognise landmarks such as art sculptures, gardens and the fountain. A test about mental mapping can be used to get to know what kind of mental image a person has of a location. It shows a representation of what a person thinks is true, not necessarily what is actually true. They show what a person knows about a place or what is most important for him or her.



Cognitive mapping

Cognitive mapping is a process composed of a series of psychological transformations by which an individual acquires, stores, recalls, and decodes information about the relative locations and attributes of the phenomena in his everyday spatial environment.

Downs and Stea, 1973

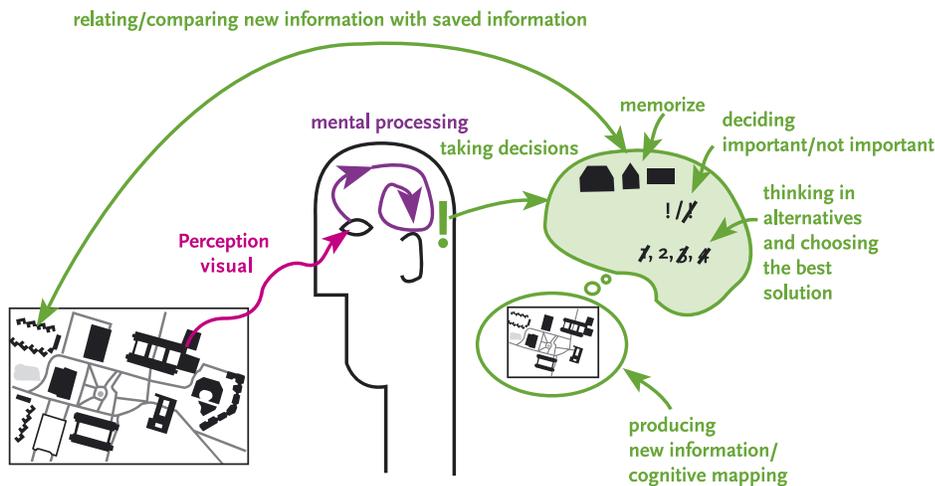


Diagram explaining the process of cognitive mapping.

In our daily life we make hundreds of spatial decisions in order to move in an environment, most of the time without any external reference, such as maps. Instead, we rely on our knowledge of where places are. A mental map is a representation of the real world and resembles how we learn, process and use spatial information of a place, meaning how we think and what kind of knowledge we have about it. A mental map is structured the same way as a cartographic one. By understanding which kind of spatial knowledge a person has, we can understand their behaviour in an environment. We get information about how a person is learning, processing and remembering information. And with this information we can improve the design of environments, can facilitate the way-finding process and prevent disorientation.

By understanding how people read and use maps, we can develop maps or other navigation aids which can be used efficiently and effectively and which help a person to find what he is looking for.

Kitchin and Blade identified three techniques to generate two-dimensional data about cognitive mapping: the graphic task, the completion task and the recognition task.

The graphic task means to ask a person to draw a map of a certain location. To make it easier for them to start you can provide them with a small portion of the map to give them an idea of the environment, as I did with giving them the UDLA roundway on a sheet of paper. With this test I could see what is important for this person, what is he or she remembers and if the person knows how buildings are related to each other.

Rob Kitchin and Scott Freundschuh,
Cognitive Mapping, Past, present and future, (London: Routledge, Taylor & Friends Group), 11.

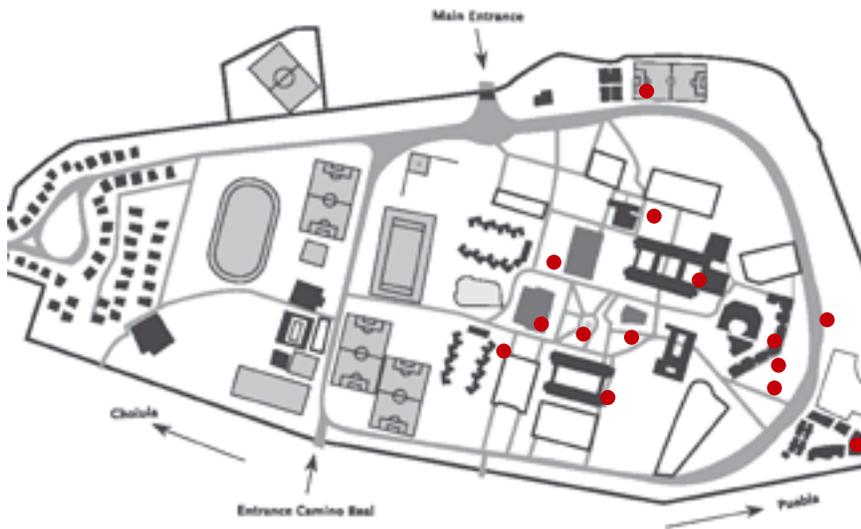
In the completion task you present the questioned person a certain amount of data and require them to complete a task in relation to the given data. I asked one group to mark buildings and services on an UDLA map. With this test I wanted to see if the questioned person is able to understand the map and has certain knowledge about the language of cartography. Further I wanted to know which buildings and services are known to this person, or if they know where a building is located.

The recognition task measures how successfully things can be identified, for example on a map. You can also give them for example a textual description of how to get to one place and they have to decide if it is right or wrong. I decided to test if people can identify and locate places on the campus. I showed them a paper with 36 photographs of UDLA locations and they had to mark on a map where to find this place. This test should help me to get to know if the person just knows where a building is located on campus or if they have actually visited the place.

The validity and utility of some of these techniques has been questioned. Especially the drawing task has been questioned, because it depends on the drawing abilities, knowledge of cartography, the size of the paper, and later additions will be influenced by the first drawn objects and often show less information than the respondent knows. For me, this part of my testing has been successful and provided me with interesting facts about how people use maps, what kind of problems they have and what knowledge they have about the campus (see pages 110–118).

Observations during the testing

I started questioning people on the campus on Wednesday the 24th of September and continued with this part of my investigation for one week. I tried to find Mexican students from different semesters and courses, employees in different parts of the campus and foreign students from different countries to get a good cross-section of all the UDLA population. I change my location for questioning people continuously.



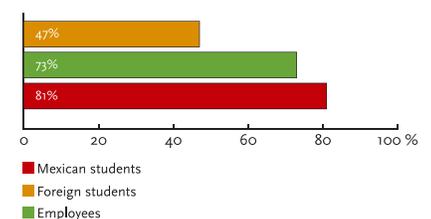
First of all I noticed that the Mexicans (students and employees) are very helpful, nearly nobody denied taking part in the questioning. Even if they had classes soon, they tried to fill in the questionnaire and draw a map. One student could not finish before his class started, but when he later met me again on the campus, he asked if he could complete the questionnaire then. Employees who were very busy asked me to leave the questionnaire and to come back later or the next day to pick it up.

I experienced this helpfulness before, asking people in town for directions. Even if they could not help me, they tried to find somebody else to help me or gave a guess where to go. In Europe it is often different. If somebody does not know how to help you, or he has no time, he would just tell you that he is not able to help you and will leave – this behaviour seems rude to foreigners. Also in my investigation I experienced this European behaviour, I had more foreigners who did not want to take time for the questioning. And only 47% of the foreigners I questioned agreed to continue in the investigation process and to check the interactive webpage, but 73% of the employees and 81% of the Mexicans gave me their e-mail address and the permission to question them again about the interactive webpage.

My next observation was that most of the male interviewees said that they had not had any orientation problems when they first came to the UDLA, but marked that classrooms, departments and administration buildings are difficult



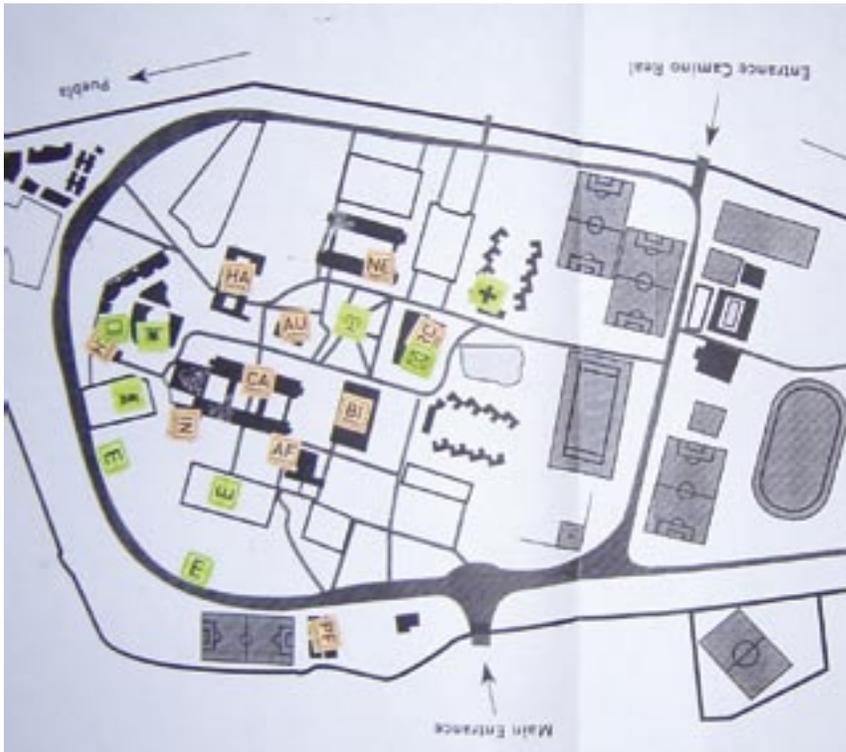
I took these photos while the persons have been busy with the cognitive mapping test.



This diagram is showing how many percent of the three groups gave me their e-mail address and agreed to continue participating in the investigation process.

to find. Most of the females answered 'Yes' to this question and took time to describe in detail the problems they had.

The next thing that came to my attention was that a lot of Mexican students rotated the map I gave them into the direction of old UDLA maps with the main entrance pointing down before they started drawing or marking. Some of the Mexicans and the exchange students aligned the map to their location like a You-Are-Here Map with the top in the direction in front.



The foreigners often tried to orient themselves by looking around on the campus from the point where they were sitting before they started drawing, and checked the locations of buildings in between. A lot also seemed to ask their mental map, they seemed to look 'inside' to check where something had to be drawn on the map.

When they heard that the topic of my investigation is wayfinding on the campus and that they had to complete a map, a lot of Mexicans told me 'oh, I'm not good with maps,' or 'I don't understand maps.' I myself noticed during this process that a lot of the Mexican students seem to have problems with reading and understanding a map. Some of these students had problems identifying what is a building, what is a parking place etc.



Maps turned up side down to fulfill the task



A map aligned to the interviewees position on the campus.



And what was confusing me is the fact that they often marked one part of the map right and another wrong, or turned one part in 90°. I still do not know why this happened. It seemed as if this problem comes when the person is not used to maps and because of this does not understand the language of cartography. What this means is that elements of the same kind will always be shown the same way, for example buildings will be black, parking places white with black outline, sport fields grey with lines inside.



The nextstanding picture shows one example of a completed map which shows the described problem. In the green circle, the Hacienda and the Auditoria are marked right (this black elements have been identified as buildings and they are also named correctly.) In the red circle the person has located buildings on the parking places (white place with black outline). The area in the yellow circle has been turned for 90° to the left.



I also noticed that the Mexican employees seemed to be more used to maps than the Mexican students and because of this have a better cartographic knowledge and understanding. They marked – as the foreign students – more correctly and drew with a feeling for scale and dimensions.

The Mexican students drew very big buildings which were overlapping sometimes other buildings. They drew much quicker than the employees or foreign students. It seemed to be a more ‘about there’ than an exactly located thing.

What I found amazing is that the kind of knowledge a person has about the campus seemed to be independent of the time he or she already spent at the UDLA. I met a lot of exchange students who had a very good mental map of the campus after two months of being there but did not know quite well where to find what kind of service.

But some people seemed to know only the part of the campus, where they have their classes, even after two or three years spent studying at the UDLA.

It seemed as if the centre of the campus from Centro Social to Humanidades is well known to most of the UDLA population, but the outer areas are mostly unknown. The most chaotically drawn part was all the time the sporting area, which led me to conclude that this area is quite unknown to most of the people.

A lot of students have been astonished about the possible services the UDLA offers – I asked them about these possibilities in the last part of my questionnaire. Nearly nobody seemed to know that it is possible to rent digital cameras or where to get sport information.



Map drawn by a Mexican student. The drawn buildings are sometimes overlapping others.



On the left the map completed by a first semester student, on the right from a fourth semester student

I enjoyed doing this part of my research a lot. It was nice to communicate with so many different people on the campus, to get information about the problems others had with wayfinding on the campus and to see that most of the people have been interested in my project. Above all, it was interesting that most of the people questioned want to have more information about services, offered possibilities and locations of buildings, departments and institutions, which means that the questioned people are interested in the UDLA.



Analysis of the research data

On the whole I have been questioning 64 people on the UDLA campus.

32 **Mexican students:** 4 firstsemester-students, 3 from the 2nd semester, 6 from the 3rd semester, 3 from the 4th, 3 from the 5th, 2 from the 6th, 6 from the 7/8th and 5 from the 9th semester from the following careers: 3 Administración de Empresas, 1 Contaduría y Finanzas, 13 Diseño de Información, 2 Ingeniería en Alimentos, 2 Ingeniería Electrónica, 1 Ingeniería Industrial, 1 Ingeniería Química Ambiental, 1 Música, 1 Negocios, 2 Negocios Internacionales, 4 Psicología, 1 Teatro.

17 **Exchange students:** 2 from USA, 1 from Spain, 6 from France, 1 from China, 4 from Germany, 1 from Australia and 2 from Japan

15 **Employees:** 5 are since 1 year at the UDLA, 2 three years, 2 five years, 3 six years, 1 ten years, 1 fourteen years and 1 twenty-five years working as: 2 Auxiliar Administrativa, 2 Coordinadores, 3 Empleadas de los Colegios, 2 Encargado, 3 Professors, 3 Secretary

Questionnaire

Have you had problem with disorientation when you first came to UDLA?

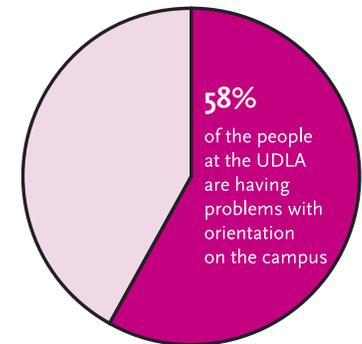
56% of the Mexican students and 60% of foreign students and employees confirmed that they had orientation problems when they first came to the UDLA. One big problem seems to be the size of the campus. The exchange students also said they had language problems. The most problems are caused by finding something inside a building, like classrooms and departments. The signage on the campus only shows the way to a building, but does not explain the inside.

Another difficulty is the use of different terms for one building that leads to confusion. For example Humanidades is also called edificio 31, which is an old term for this building, but still used by some people.

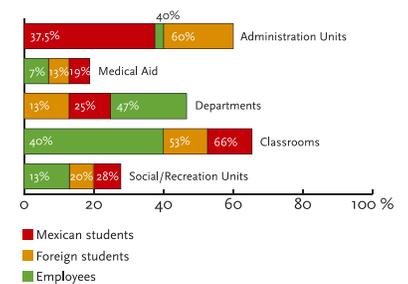
What has been difficult to find?

The diagram on the right is showing how many percent of each group found it difficult to find the listed things.

It is also showing which group has to deal with which location more often, because when you have to deal with special parts more often, you will recognise more easily what is difficult to find. The foreign students, for example, have to arrange a lot of paperwork in the administration units after their arrival, so 60% of them said, that they had problems to find these locations. Students need to find more often classrooms than employees, so 53% of the foreigners and 66% of the Mexican students name the classrooms difficult to find but just 40% of the employees.



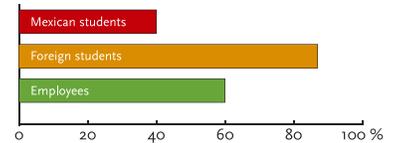
58% of the UDLA-population had problems with orientation when they first came to the UDLA-campus.



How many percent of each group found it difficult to find the listed things.

Are you used to use maps for orientation or traveling?

Something interesting for me was to get to know was that 87% of the questioned foreigners confirmed that they normally use maps for orientation or traveling, but only 60% of the employees and just 40% of the Mexican students said the same. This result explained to me the problems the Mexican students had with reading a map in the cognitive mapping test. Understanding of maps is a case of experience, the more often you consult a map, the easier you will understand the cartographic language that will be used in other maps. The foreign students are used to consult a map for orientation and could understand more easily what is a building, what is a parking place and had a better feeling for dimensions.



The diagram is showing how many percent of each group are normally using a map for orientation.

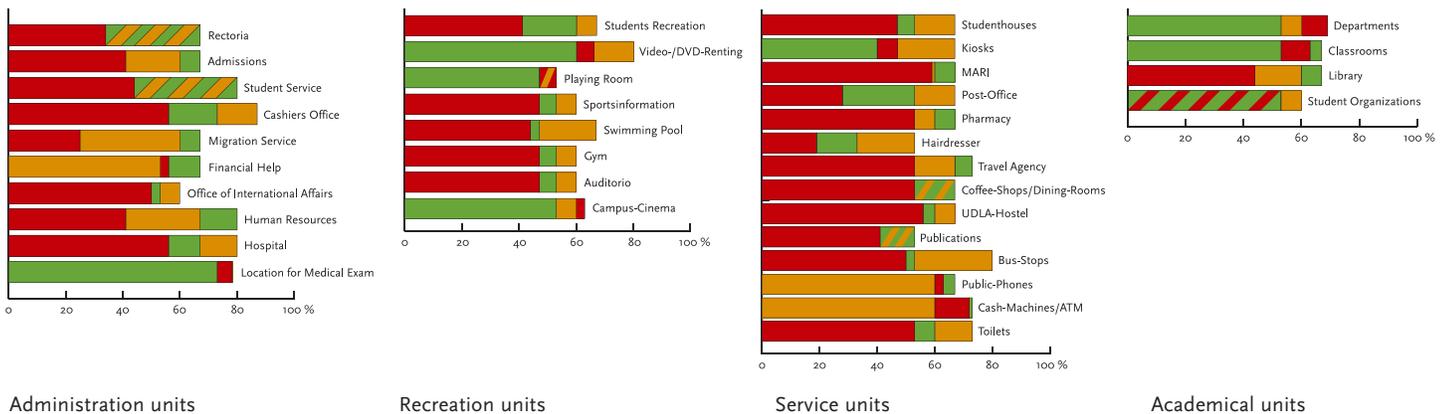
In fact the employees use maps more often than the Mexican students do and that explains their better results in the cognitive mapping test. Most of the employees are older than the students and have more travelling experience—to the United States or to Europe—where you can get lost without a map easily, because the signage is in a foreign language, the people in the streets are perhaps not speaking the same language as you and the structure of the European cities is a lot different to the chess-patterned cities you can find often in Mexico.

The no map users answered the question about how they get help for orientation with the use of landmarks or signals and asking other people.

Hence Mexicans are using communication with others to get help for finding a way.

Which information would you like to find on a map of the UDLA-campus?

It was interesting to see what kind of information is more important for which group.



The administration units are most important for the employees and next for the foreign students. I think this is because these groups have to deal a lot with these units, therefore it is important for them to know where to find them. For example the migration service is very important for all foreigners (foreign employees and students), therefore they are very interested in this information on the map. The financial aid is not important for the exchange students,

because they are normally not applying for a scholarship in the UDLA; instead they have one from their home country.

In the part of recreation it is interesting for me to see that apparently the Mexican students who do not belong to any sport team of the UDLA are not so interested in sports. Recreation offers such as Video-/DVD renting, game room and campus cinema seem to be more important to them.

However the exchange students are interested in the whole offer.

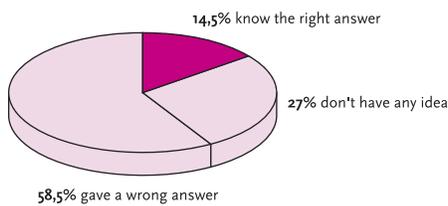
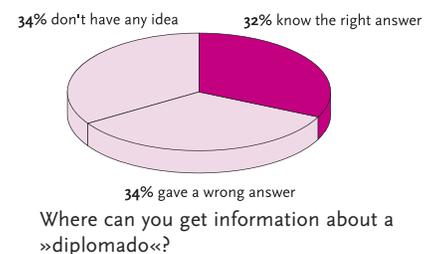
In cases of service units I was surprised how important public phones and cash machines (ATM) on the campus seem to be for Mexican students and employees.

And it shows that 80% of the foreign students want information about the bus stops, because they do not normally have a car.

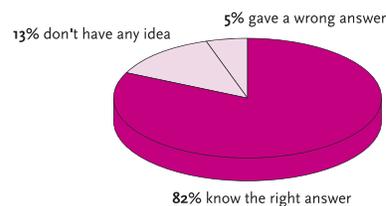
In the academic area, departments and classrooms are more important for students (Mexican and foreign ones) than for employees. But only less than 50% of the Mexican students are interested in the information about the library. Finally I could say that each group always wants the information they need the most in their daily life on the campus.

How well do you know the UDLA?

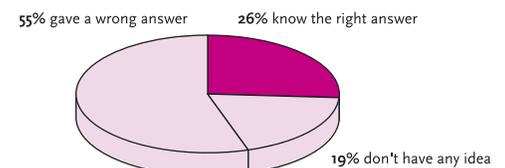
In this part I wanted to know what the UDLA population knows about services the university offers. I had experienced before when I was talking to people on the campus, that a lot of people did not know about camera renting, travel agency or sports information. I wanted to know if it was by coincidence that I met so many people lacking that knowledge or if it was fact for most of the UDLA people.



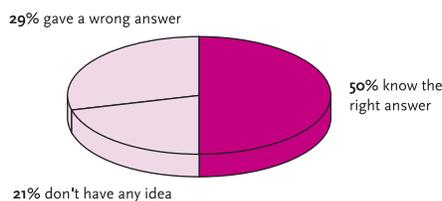
Where can you rent a digital camera?



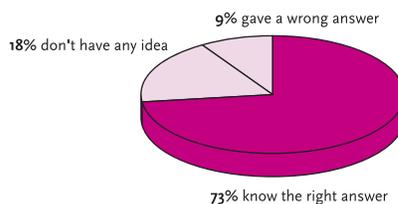
Where can you buy the tickets for the UDLA-bus?



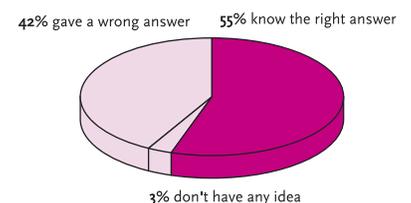
Where can you get your international student card?



Where can you get information about sports-courses?



Where is the students recreation office?



Where do you have to go for the first part of your medical exam?

And after testing them I can say that most of the people do not have any clue what the possibilities they have at the UDLA are, and that a lot of people do not know where these services are located and give wrong information, which is frustrating for a person who is asking them for directions. I experienced this myself when I was looking for something and had to go to four different buildings before I found what I was looking for. One of my observations during the tests has been that a lot of first semester students have not had a clue about their possibilities but have been very interested in the information.

I think it is a pity that so many people cannot use what the UDLA is offering because they do not know about it. Just the things people really need to know like where to buy a bus ticket or where to go for the medical exam are well known. The recreation office is well known, because they advertise their tours on the campus with posters and flyers and at least the exchange students know the office, because they have to go there during a rally they do in the first days after their arrival.

The last part of my questionnaire was answered totally different from what I expected. I chose four ways on the campus, which take nearly the same time to walk. The questioned people had to mark on a timeline how many minutes it will take for walking from one building to another. And none of the groups had a uniform opinion. For a walking distance of 6 to 8 minutes I got answers from 2 to 10 minutes in all groups. It seems as if just a few of the questioned people had a correct feeling for time and distance. I do not know why the answers vary so much. If it would be linked with a bad mental map, I could understand it, but this is not fact.

Cognitive Mapping Test

The most important feature for wayfinding is landmarks. They help you to get orientated, to get to know where you are. It has been conspicuous that all the questioned foreigners have drawn or marked the fountain on the map. They have used this landmark for locating the other buildings on the campus.

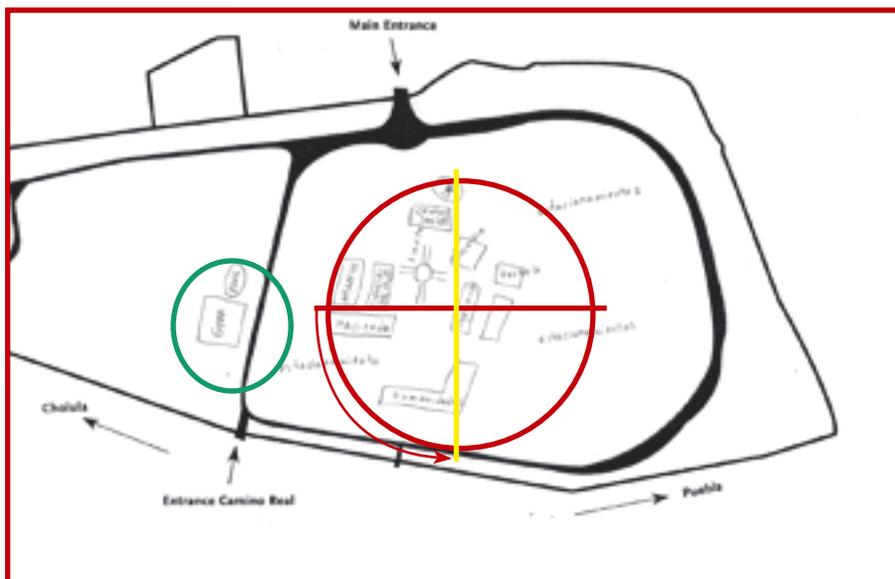


On the right: Examples of the marked or draw the fountain by foreign students in the cognitive mapping test.

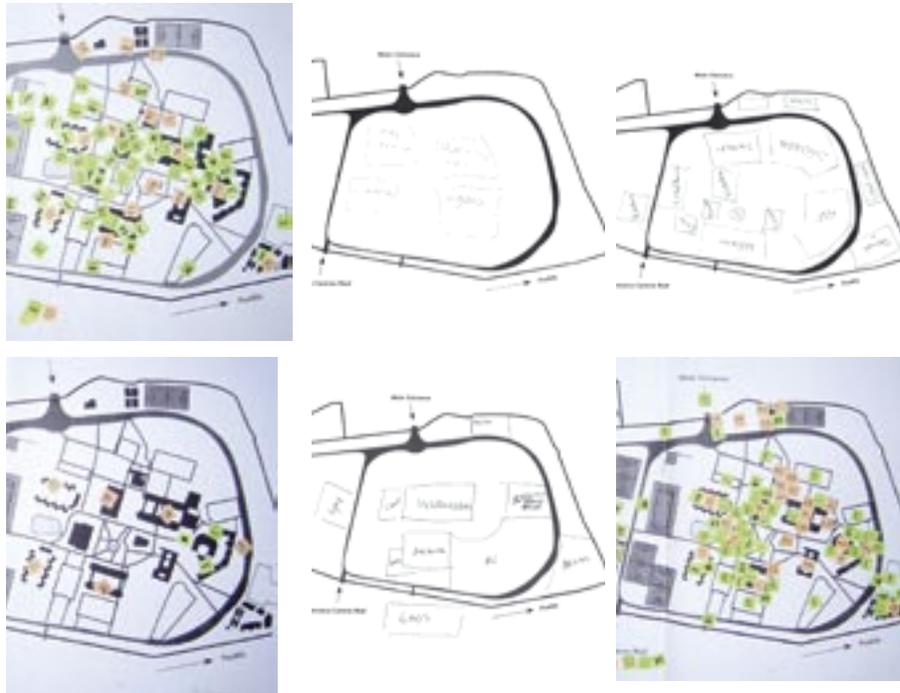
By using maps, we get used to having one view of a location, from which we know how places are related to others, and can check where to go. Some of the questioned Mexicans rotated parts on the map. It seemed to me as if they do not have a complete mental map in their mind and instead are changing their mental point of view while thinking about where to find what. This could be an explanation of the fact that the buildings belonging to the rotated group are related correctly to each other, but not to the other parts of the campus.



This both maps show the problem of rotated parts above described. The green marked area is correctly marked or drawn, the red marked area is drawn or marked rotated. The arrows and the yellow squares show where the buildings are really located. The relation of the buildings belonging to this group to each other is correct.



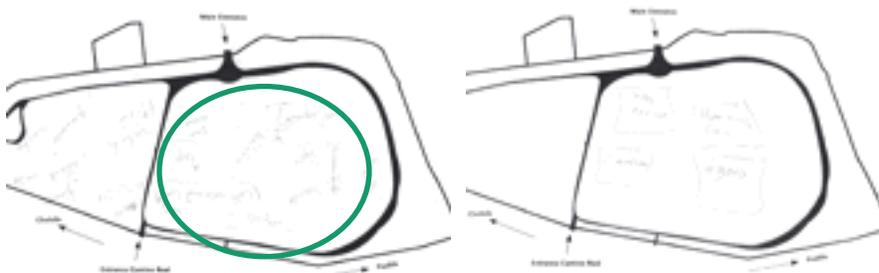
Here the sportarea is marked correctly, but the whole inner part of the campus is rotated 90°. All buildings are correctly related to each other.



1-3 Maps of first semester students
 4 Map after 2 years of studying
 5-6 Maps after 3 years at the UDLA

The spatial knowledge a person has seems to be independent of the time someone spends in the UDLA. In my tests I found students (Mexicans and foreigners) had a good knowledge and a usable mental map of the campus after two months, as well as students who did not know the whole campus after 2 years of studying. It seems to be more dependent on how interested a person is if he wants to know what is going on or if he is just interested in his courses and is only spending time in the same area.

But I noticed in my communication with students during the test that a lot of them are interested in the UDLA, but getting information about something is perhaps too difficult, so they give up looking for it. Or, they have never thought about this possibility and because of this never tried to find out.



Locations in the centre of the campus are more well known than locations at the edge. The centre from Centro Social to Humanidades is well known, also in



This maps are showing that the centre part of the UDLA-campus seems to be better known than locations at the edge. People are marking and drawing better the inner part.

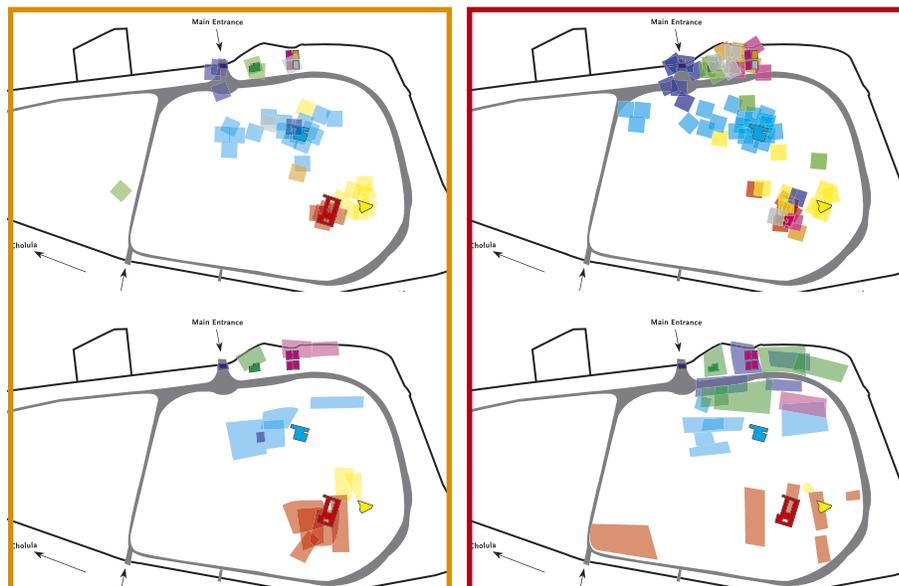
the test with the assignment of location photos to the map, people did recognise much more situations in the central part than at the outer part. The sport area, the northern area with administration units like Recursos Humanos and the student houses which lie at the edge (Bernal and Gaos), have often been marked wrong or not at all by all groups. It seems as if most of the people do not spend time exploring the campus and just move in the campus centre where most of the things they need are located.



The left drawing is showing where the foreign students located the sport locations – the fountain (cyan coloured circles) is marked more or less correct, but in the outer sport area is marked totally confused.

The right drawing is showing where the mexican students marked the student houses. The in the middle of the campus laying studenthouses Cain-Murray and Ray-Lindley are well known, the outer laying houses Bernal and Gaos are not marked as correct.

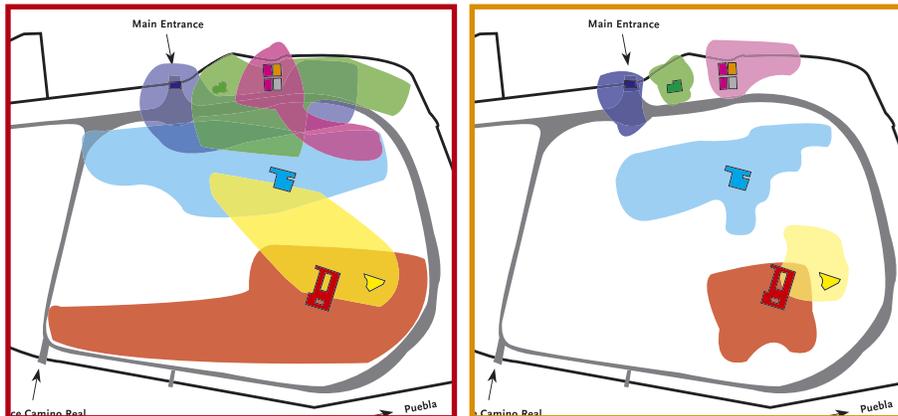
And as you can see in the drawings, the people know best the locations they had to go once. This has been very recognisable testing the exchange students. All of them arrived about two month before I carried out the questioning, I did know where they had to go for arranging their papers and where they have been during a rally. These locations have been drawn and marked by this group much better than by the Mexican students who do not have to go to these locations a lot.



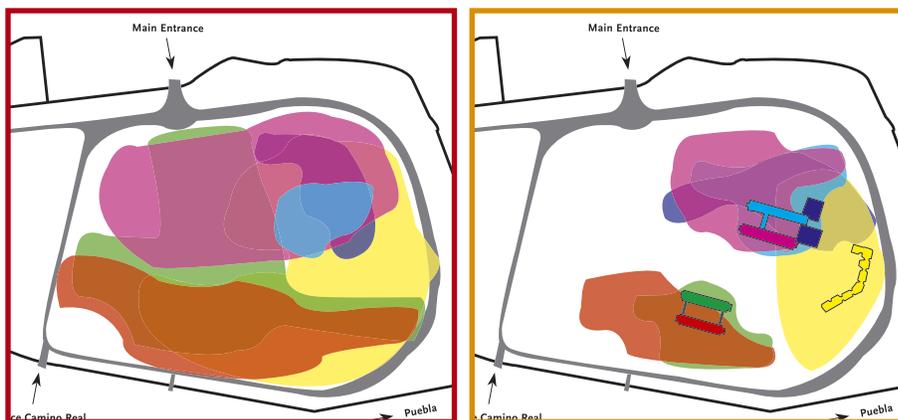
The left pictures are showing where the foreign students located the administration units as Rectoría, Hacienda, International Affairs, Security, Planta Física, Publicaciones and Human Resources – the Rectoría is more or less marked in the right area, the Hacienda and International Affairs very exact. There the students have been welcomed, had to go for the migration process and could find help. But the whole outer area is nearly unknown to them, just a few of this group could mark or draw this buildings.

The right drawing is showing where the mexican students marked this units, the outer part is known quite good, the Rectoría is marked around the right place, but Hacienda and International Affairs, where they don't have to go except for special questions as an exchange or information about postgraduate courses, have been forgotten by a lot of students in the drawing task and marked quite confused in the other one.

During the test it seemed to me that the Mexican students know more or less in which area some building lies on the campus but not where exactly. This observation has been confirmed when I analysed the maps. First I combined all of the drawings on transparent paper and on another all marked maps than I marked the area in which this buildings have been marked and could compare the results of the whole group with the other two.



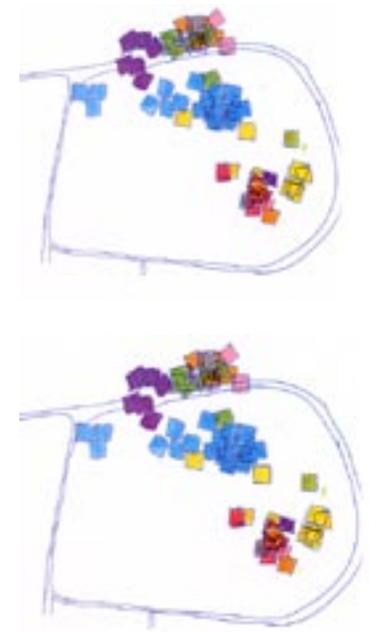
On the left the areas in which the mexican students marked the administration units (above) and the academic units, on the right the areas in which the exchange students marked them.



In the comparison you can see that the Mexican students marked whole areas, for example, the Hacienda is located somewhere in the lower part of the campus, the rectoria in the upper part etc. The exchange students located the buildings in smaller areas, around its real location.

From my point of view this could be caused by the wayfinding behaviour the groups are normally used to. The Mexicans are used to asking others for the right location, they just need to know where about their destination lies, then they just ask somebody.

80% of the exchange students are used to maps, they normally try to find their way on their own, therefore they have to know where their final destination is. And by being used to maps, they are having a better cognitive map of the campus in their mind.



I transferred all drawings (above) and marked places of one group on the same sheet of transparent paper



Drawings of mexican students.

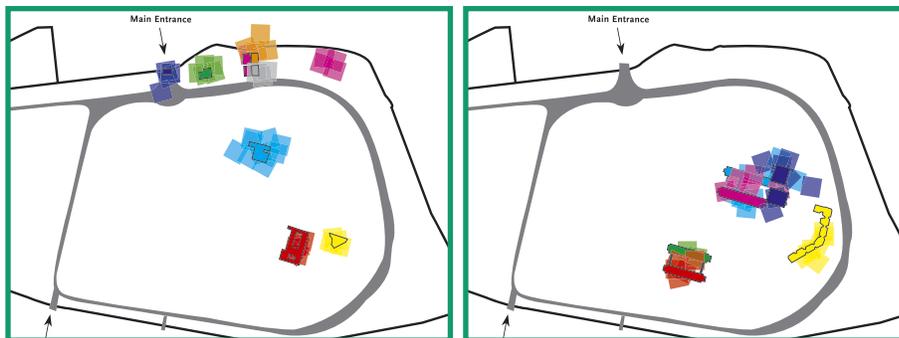
Another thing I noticed during this analysis was that the Mexican students drew very big buildings. Also the relation of one building to another in size and distance have not been correct. I think this matter is caused again by their less experience with maps.



Marked maps by a mexican student, an exchange student and an employee (from left to right).

In the left picture you can see, that a part of the buildings is marked right (green circled) but another part wrong (red circled), here the student marked parking places for buildings.

The exchange students as well as the employees marked the elements on the map more correctly. They noticed that the black coloured elements stand for buildings, that the outlined white elements stand for parking places etc. A lot



This two sketches shows the precise marking of buildings by the employees.

of the Mexican students had problems recognising the different elements. This shows that by using maps you are getting used to a “cartographic language”, the more often a person uses a map, the easier it will be the next time to recognise elements on a map.

The employees have been very good in the test about cognitive mapping. They have marked the buildings very precisely. But although the general knowledge of the campus by the employees is very good, it seems as if changes in details, for example the change of the location of the medical exam from the clinic to the laboratory A, often go unnoticed. This can be a problem when they are asked for directions and send the person to a wrong location.

Development of stereotypes

For each group I tried to define a stereotype, a fictive person with the characteristics I found during the test and as a result of the analysis.

First group: Mexican students**Aurora, 20 years old**

- has been 1–2 years at the UDLA
- will stay at least 2 more years
- not used to using maps, asks people for directions to find what she is looking for
- had a lot of problems in the beginning with orientation on the campus because of its size and the different names for one building
- can mark on a map more or less in which part of the campus a building is located, but does not have a good mental map of the campus
- is having problems with reading and understanding maps
- still lacks information about services at the UDLA
- using the internet a lot
- interested in getting more information

Proposal for a wayfinding aid

1. an interactive map of the campus on the webpage of the university
 - used to use the internet
 - access to computers on the whole campus
 - different possibilities for navigation, by using colours and actions it would be easier to understand for this group where to find what than on a map of paper
 - optional verbal explanation of how to get somewhere would be helpful, because members of this group often use verbal communication to find a destination
2. You-Are-Here Maps on the campus at entrances and decision points
 - easier to understand than a map on paper because it is aligned to the environment
 - the use of colours can help to understand what the elements on the map symbolise
 - a building index is helping to find what the person is looking for
 - shows what can be found on the campus
3. A rally on the campus in the first week
 - students get to know the whole campus and the possibilities the UDLA is offering

Second group: Exchange students**Michael, 23 years old, student from Europe**

- came to the UDLA 2 month ago
- will stay for one semester at the UDLA
- is still learning Spanish, has some problems with understanding it
- is used to using maps
- had a lot of orientation problems in the beginning
- has a good mental map containing the buildings he visited until now
- is interested in getting more information about the possibilities the UDLA is offering

Proposal for a wayfinding aid

I. a map on paper

- can be given to the student after his arrival at the UDLA
 - is easy for him to understand
 - can be taken with him and can be used to ask for a destination, if a person shows him where to find what he is looking for, it is easier to understand
2. You-Are-Here Maps on the campus at entrances and decision points
- installed on the campus, can be used by anybody
 - the use of colours can help to understand what the elements on the map symbolise
 - a building index is helping to find what the person is looking for
 - shows what can be found on the campus

Third group: Employees**Miguel, 32 years old, mexican**

- has been working at the UDLA for three years
- had orientation problems in the beginning
- knows very well where on the campus the buildings are located, but is lacks knowledge about where to find all institutions and services
- changes in details, for example the change of the location of the medical exam from the clinic to the laboratory A, often go unnoticed
- used to use maps
- his cognitive map of the UDLA campus is quite good
- no problems with reading and understanding maps

Proposal for a wayfinding aid

I. a map on paper

- can be used to get information about changes and can be consulted when somebody is asking for a location
- easier to use than the interactive map, because the working process has not been disturbed by looking for the map in the internet