



*On the way*

.....

a manual for teachers from who have a visually impaired student in their classroom

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Marten van Doorn

Orientation and Mobility  
advisor

Crosestein 3124

3704NK Zeist

The Netherlands

0031610843016

[martenvandoorn@gmail.com](mailto:martenvandoorn@gmail.com)

[www.vandoorn-zeist.nl](http://www.vandoorn-zeist.nl)

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Author: Marten van Doorn  
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## 1. On the way to .....

On the way to .... is a manual for teachers from who have a visually impaired student in their classroom. They must be able to support the orientation and mobility skills of students with visual impairments. The booklet is in line with the Dutch O&M categorical course for education (formerly the level B course). Although the content is written from the knowledge of the school and intended for school staff, it is also very suitable for the living groups or in the home situation. It is not a complete manual for the training of people with visual impairments.

The manual was written by Marten van Doorn, more than 40 years of orientation and mobility specialist at Bartiméus education and published (in private) on his retirement in May 2019.

**My vision on O&M is that I work from the concept of orientation and not from mobility. This is especially important for children and young people. If you improve orientation, there is a greater chance of success than if you improve mobility.**

Orientation and navigation are the basis of O&M training. When things go wrong somewhere in the mobility of a visually impaired person, its most of the time the cause of a poor or undeveloped orientation. That is the reason that he loses his way, cannot cross straight and cannot follow the instructions of others.

Mobility problems such as a broken pavement, or no pavement, a busy street can almost always be solved. These are also location specific. Adult training often consists of these skills. At that point the O&M trainer for adults differs from the O&M trainer for young people.

An O&M trainer for adults is more problem-solving oriented in the short term (fast learning routes to work and shops). While an O&M trainer for young people is much more problem-solving-oriented in the long term (orientation training which means there are fewer problems later).

Finally, a comment about the title.

Orientation and mobility instruction support students with a visual impairment in the ability to learn to move independently, to choose a mobility goal themselves, in short:

**“on the way to ..... ..”**

## 2. Good guiding is an art

Have you ever considered what it might mean for our students to be guided by someone with whom he has just had an argument or by someone he doesn't know? I think it is difficult to feel "safe" in such a case. But our students often have no other choice and then it is nice if that person has mastered the art of good guiding.

If you work with visually impaired persons, you have to deal with guiding. This can be within a school or in public buildings, but also outside in a busy traffic situation or in public transport. Going out with a student does not only have a fun side. There is a difference between accompanying and guiding. But for both methods it is important that it done safely and effectively.

### What skills does a student need for safe and effective guidance?

- The student should be able to walk actively and smoothly instead of letting himself pull by or hang on the guiding person.
- Walking must be natural and coordinated.
- The student must be able to understand verbal and non-verbal instructions from the guiding person.

When these skills are not present, there is no question of effective guidance, but more of bringing a student from A to B.

### There are two ways of guiding:

- A. Assisting in making a rapid transfer from A to B.
- B. Guiding to explore / learn / discover the route from A to B.

### Method A

Hereby the student is taken to the other point and he learns little or nothing. This method of guiding is strongly discouraged, but sometimes it is necessary (e.g. bad weather conditions or departed too late for an appointment or departure time of bus / train). This method of guiding makes the student less attentive to his environment but can also give uncertainty because he does not feel safe. He has no control over the situation.

### Method B

The student gains many experiences with this method of guidance. Make the student attentive to changes in direction and orientation points such as houses, walls etc. where he passes by (echolocation). Colourful landmarks and possibly the guidelines. Do not cut pieces but walk the route as the student also must walk later. So an important role for instructors

The 3 golden rules for guidance are:

- The student holds you and not the other way around. If the student holds you, he must follow and pay attention; If you grab the student, he can follow and he don't have to pay attention. The student can give you a hand or an arm or hold on to the elbow or shoulder. Always ask this.
- You adjust to the walking speed of your student. That does not mean that you should not ask the student to move on when he is slow. As long as you don't drag. Walk quietly in an unknown area.
- When the student is used to handling a cane, he should take it with him. When you walk in a shopping area or busy street, it is enough if the student carries the cane upright as a signal function. Optionally, the student can hold the cane halfway and hold it diagonally in front of the body. The advantage is that you can keep walking next to each other because it is recognized that you are walking with a visual impairment.



Points of attention:

- Always approach curbs straight
- Remember that together you are almost 2 meters wide
- If your student is taller; think of obstacles at head height
- Warn in good time about steps, escalators, lifts, crossings
- Actively involve the student in opening and closing doors, getting into the car and finding a place
- Narrow passages you will have to let the student walk behind you
- Pay attention to the body language of the student. You can see from that whether he feels safe with your guidance

**Students who are guided active learn a lot, students who are taken to their destination learn almost nothing.**



### 3. Orientation and Navigation, basic of independence

If you analyse the "mobility" of a blind person in more detail, there are at least three important factors:

- A. Self-confidence and the courage to dare something
- B. Mobility
- C. Orientation and navigation

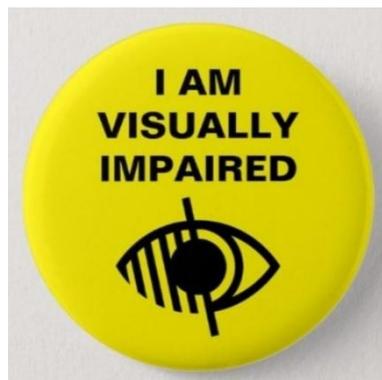
**A. Daring and self-confidence is very important.** A fundamental step in this is that the instructor knows the student well and that the student has faith in the instructor. After all, the student comes into situations that can be threatening or confusing. The student must feel safe and must know that the instructor will always guide him and help where necessary. If the relationship is good, the coach hardly needs to motivate the student for O&M training, especially if the student also experiences the training as useful. Investing time in building a good relationship is a condition for mobility training and should not be underestimated.

Knowing your student is very important in this case and then not only what his O&M skills are but also what for example his hobbies are, what the home situation is like and how he is doing on school. If your student has questions to which you do not immediately have the answer, it is important to return to the following lesson. Don't stand above your student but beside it. You are not equal to the student, but you are equivalent.

#### **B. The mobility**

Mobility is the factor that everyone knows and that catches the eye the most. You won't get anywhere without moving. But moving is - to a certain extent - dangerous. Aspects that can be counted as part of mobility are rather obvious.

- Stay on the "straight path" and not be hindered by obstacles of all kinds. In addition to trees, posts, displays and other obstacles, there are of course the sidewalks, stairs and pits (with or without puddles of water) that can make your path "very hard".
- Walking safely in traffic. On this point, the white cane, as a legally recognized road sign, naturally still plays the most important role.
- Show that you are a "different" road user and moreover one from a risk group.



### C. Orientation and navigation

I tell nothing new when I say that the basis for good mobility starts with good orientation. If you (as sighted people) go from your house to work, you know where to go. After a few times you don't even have to think about it anymore. It becomes routine. You recognize buildings, trees and streets. But if you go the same route at night you have much more trouble. And what would it be if you had never even travelled that route during the day, but only at night. What information do you have at night to orientate yourself? At night you hardly have any landmarks or other landmarks than during the day.

Orientation is the ability of a student to determine his position in the environment that surrounds him. The core lies in the spatial relationship between the student and the environment. Is the exit left or right, at what distance is the teacher, how far is it to the other side of the street and what is the shortest (bicycle) route to the store?

These are all questions that have to do with the location in the space. This spatial relationship is constantly changing due to changes in the environment and the position of the student himself. Only when the student knows where he is (A) and where he wants to go (B) can he determine how he gets there, along which route and by what means of transport.

If you are going to walk to a point you can walk it along different ways. But the shortest route is not always the safest route. Perhaps there is a very difficult crossing. It is also useful if you know an alternative, if, for example, the street you always walk is broken up.

However, as soon as you want to move yourself from A to B, you must also be able to navigate. This means that you must make a navigation plan how to get from A to B. At school we learned that the shortest connection between two points is a straight line, but in daily life this does not always seem to be true. If you want to implement the navigation plan, then orientation is very important. Over and over again the student must ask himself the questions: where am I and in which direction should I move and where did I start.

**One of the most important skills when learning orientation or being busy with orientation is to think before you do something, not just get up and walk, but first set out a route in your mind.**

I always speak of ONM training and then the N stands for navigating. And in Dutch the N stands also for nadenken (thinking). And that thinking does not only apply to the student but also to his instructor. That the instructor starts to think about how he will guide him. That the student will orientate himself based on his own observations and not based on instructions

It does not help the student if you as a teacher tap on the table and then call to the student; "Here you must sit" because then you are his landmark and next time he still doesn't know the route and he stops to wait until you call again "you must sit here"

In this case it is important that the student finds landmarks that help him find his table. If that fails alone, you can help him by asking where he is passing, at which landmark he should turn. In the first instance the student will find his way to his table through all kinds of straight patterns, but as he gets more experience, he can let go of those straight lines and walk to his table more naturally. You can possibly support it by asking where the door is where the student entered and whether he knows how his table is in relation to the teacher's table. All points that can help him find his own way in the classroom.

And well-meant encouragements like "you're almost there" or "just a little bit" don't really help either. The student really must do it himself. The next time or with someone else in the class, he does not receive those encouragements. You can also ask yourself whether the student knows what a little bit is. And that a little bit for one student or instructor is longer than for the other one. It's better to say "another 3 meters / steps and then you are there". But preferably not because the student does not know from which point he still must walk 3 meters and that point is unlikely to be found next time.

When a student walks down the hall to look for his classroom and clearly gets lost, you don't help by telling him where to go. It is much better to ask, "why are you stopping now?" Or "where are you now?" The student must learn to orientate himself.

This is called the "Self-Directed Discovery Process". Most blind students receive too much help (pampering) and hardly develop this at all. A student who will receive instructions from his social environment (instructor) when he has problems will get lost in every following situation and will not learn to solve situations himself but will become dependent on that social environment (instructor or teacher).

Every step under guidance is a missed opportunity, as much as possible must come from the student himself and we, as instructors or teachers, must support it. If it takes a very long time for a student to cross the road and you ask him "can we cross?" Then the student knows from your reaction that it was possible to cross the street. It is much better to say: you can cross when you think it is possible and if that takes a long time you can ask "what is the problem" and not "can we cross?"

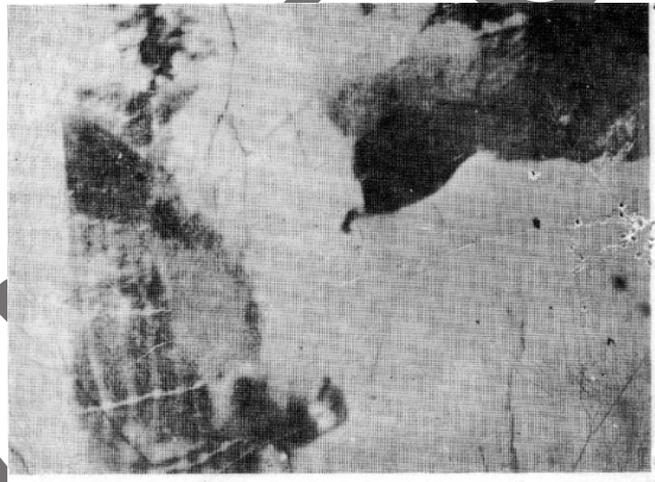
When the student has achieved his destination, you can ask on what basis (which landmarks) he knows that is on the right place. Only then he will be able to go independently to that point the next time. So let him find landmarks themselves and don't tell the landmarks he has to use. Recognize the tree so that he crosses at the right tree the next time and not the next tree that happens to be opposite the water.

Learning skills, remembering certain knowledge and solving a problem also depends on the intellectual capacity of the student. When skills are mastered, it is important that the student can apply them in similar situations. But also, the ability to act in unexpected situations, to come up with an alternative and to take initiatives depend on this. The student can learn to walk a route, do a message, but if he does not know what to do if problems arise, he will never be able to walk the route independently or do the message alone.

There are many GPS systems on the market today for that part of "orientation" and "navigation". But what if you can't handle a GPS or does not understand how it works. And those modern GP systems really do not help you cross the difficult roundabout independently.

And if you really want to guide the student well, it is easy if you know what he is sees and how he discovers landmarks. Suppose your student sees nothing with both eyes on the right side (half-sided hemianopsia) then he will not find landmarks on the right. And the same route is suddenly very different on the way back. The student no longer sees the identification points found on the way to the left on the way back.

And if you know how your student orientates, it is easier to map out a route. A student who does a lot with his hearing will look for and find many auditory landmarks but it should help if he also discovers landmarks that he can feel with his feet and / or cane. Other way around; a student who discovers a lot of recognition points with his cane and / or feet must learn to listen to recognition points. Incidentally, one does not exclude the other. Try to teach a student who does a lot with his hearing to also discover tactile landmarks. If the student has both mastered well, there are many more recognition points to use and you often also have double security.



**What do you see?**

**See for the solution see page 14.**

By observing him during his O&M, giving him small tasks that he already knows and questioning him on known routes to his landmarks, you can find out whether your students is a "taster" or a "listener".

If he already knows the route to the bus stop, for example, ask the student to describe it. If he then uses a lot of auditory landmarks, it is typically someone who does a lot with his hearing and will feel less.

You will also notice that a student will not mention the terms left and right in those directions. He would rather say "I keep following the guideline with the turn" because he feels it.

It is often said that our students first have to master good spatial concepts. What is right and left, what is in front or behind, etc.? For mobility instruction it is desirable if we can work with these concepts, but then it is more in the interest of communication. If he wants later to ask for directions, it is important that he knows what the first street on the right is or, for example, walk another 200 meters and then turn left.

### **Three skills are important for a good orientation.**

- An adequate observation of the environment
- Being able to control the destination
- Being able to control the departure point

Sighted people rely almost entirely on their visual perception. After all, in our environment there are always visually observable points. Someone without a sense of direction usually knows how to find his or her way. If you lose your way for a while, a signpost or church tower always pops up, which offers support. Although nowadays people rely (too much) on the TomTom and are therefore no longer so focused on the environment.

When this perception is wholly or partially lost, other skills, senses and knowledge must be used. It is obvious that it is important to train any residual vision and other senses (hearing, smell). And that is not all. The blind or partially sighted will also have to be able to properly interpret and integrate the various observations. One of the pillars on which orientation is based is the perception of the environment. When instructing, it is therefore important to look for suitable environments to practice this. Tactile perception is the most important thing for body-close orientation. Observing surfaces, objects and natural guidelines with the foot, cane and possibly the hand.

It is precisely the transition from one characteristic to the other that is noticed and provides information (hard-soft surface, wall that becomes a hedge). By tapping the cane, someone not only feels the surface but also hears it. The same applies to your own footsteps. Linking the sound to the touch creates the possibility to anticipate what is to come. And it is precisely this orientation on distance (the sound) that enables the student to better anticipate the things to come. Eventually he will remember that when he hears or feels a certain sound or landmark, he must turn right after 4 meters. Hearing perception therefore plays a major role in orientation on distance. Permanent sounds (a road) can provide information about the environment. They can be used to walk to, along or even from. Examples of permanent sounds: traffic flows, fountains, audible traffic-lights, generators. Non-permanent noises such as sliding doors or other pedestrians can also be very useful.

And of course, the phenomenon of echolocation: echolocation is an aspect of hearing, in which one can observe echoes. We mainly know echo from calling in a cave or resounding from a gunshot. It does not only have to be sound that comes directly from a sound source (e.g. sound from a moving car): we also

perceive more than just the light that comes directly from a light source. It is precisely through reflection of the light that we can perceive the environment. Think of the moon and the sun. The moon does not itself give light but reflects that from the sun.

You could say the same of sound. For a blind person, echolocation provides information that goes beyond the length of the cane. It can provide information about poles, walls, passages, stairs, pedestrians, cars and vegetation. A bus shelter is often on the other side of the cycle path. With the help of echolocation, it is possible to find the bus shelter while walking on the sidewalk. The echo has the same characteristics as the object on which it reflects and is therefore recognizable for the experienced listener and usable for its orientation.



**Clickers**

That means that he must first have been there under supervision. This requires the student to be able to properly store all landmarks in his memory and to call (recognize) if necessary. This also requires special skills from us, namely that we do not fill in too quickly what the student hears. Let him first try to get out of it himself. The student hears something, we give it meaning through comments such as "what could it be, do you recognize anything about it, have you heard that before, can you compare it to anything?" Do not enter too quickly.

If you walk with a student and he hears the gym on the right he will ask "what is there?" I do not answer "that is the gym" but start asking questions.

- What does it sound like?
- Is it high?
- Is it far away?
- Have you heard that before in another situation?
- Do you recognize it?

Charged; if the student says, "that is a cow", I think that's fine with me and I won't correct him. When we walk the next lesson there again and the student says "hey, there is that cow again" I know that he has recognized the place and the sound and has therefore found a landmark himself. The next step is still not to say that it is the gym, but we will continue to explore the building.

- What does the entrance sound like?
- What does stone sound like?
- What does it sound like when you walk past the building?
- Can you also hear the building earlier?
- Can you also determine the distance?

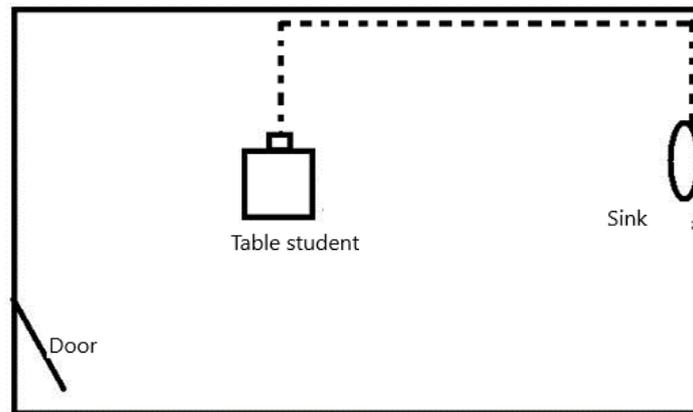
In this way the student recognize echoes and sounds and he builds up a whole library of sounds in his memory that he can recall anywhere and anytime.

Orientation often involves thinking ahead. The student must know where he is going, where the destination is, and he must have some idea of how to get there. We may not realize that checking where you come from is the basis for your orientation. If you can maintain the position of the starting point in your thoughts and movements, you will not get lost easily. We also call that navigating. (ONM)

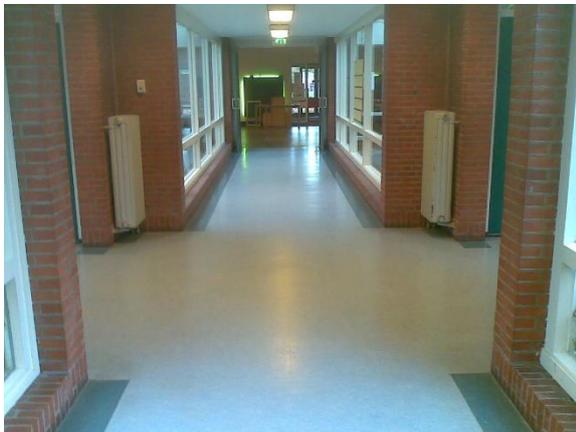
After all, you can go back on your steps and try again. It is therefore important that during mobility instruction you practice walking back to the starting point. So, we teach going to a point and return in parts at the same time. Precisely where things go wrong, going back is more important than continuing. That doesn't apply for example for students with CVI. Encourage the student to remember where he comes from (point and describe) and ask him to walk back. Always ask him during the route what is the next but also previous landmark. Use all available environmental information to find and use landmarks; think in particular of audible - often invisible - information. Pay attention to the departure and destination points of the route.

I go to the teacher in the class and tell his student: In 5 minutes you have to wash your hands. How easy it would be if the student on his table already knew the direction of the sink, for example by means of a symbol or Braille. His table is a map of the class. He then knows that the sink to his left is against the wall. And so he has 5 minutes to think about how he will get there. The student stands and points where the sink is (to his left). He turns around because there is the wall that he walks past. The teacher asks where the sink is now. The student will then point to the right. If he does not do so because he does not understand, there is a substantial orientation problem and it is wise to call in an O&M specialist. Arriving at the wall, the student knows he must go to the right. Perhaps there is something hanging on the wall there so that he knows before returning that he has to cross over to his seat. The moment the student is turned to the right by the wall, the teacher should ask where the sink is now. Then it is right for you. So after each turn, ask where the goal is.

**Tip for the teacher/instructor . Do not stand every lesson on the same place. The student will use you as a landmark.**

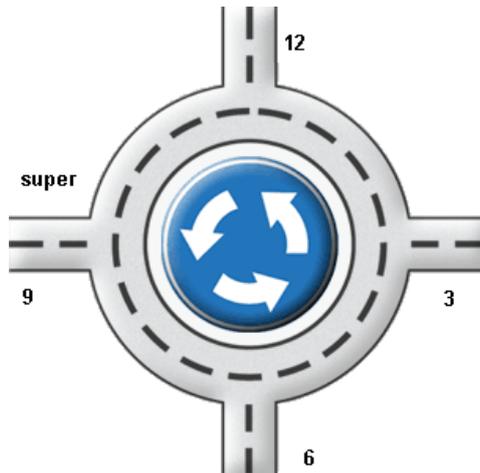


**Orientation therefore starts at the first step and requires continuous guidance without giving any concrete information or clues.**



In the school in Zeist we had a crossroads in the SO department (picture left). When the student comes out of his class and walks to the video room, he comes to that intersection, must go straight on and then turn right. Too often we say when the student at the crossroads doubts which way he should go: "Keep walking, you're on the right way" instead of asking questions such as "what do you hear right / left and for you?" take much longer before the student knows the way to the video room than when he can and may discover with our support.

This also applies to the above situation (picture right). Students who are warned with "be careful a staircase" do not get the chance to discover this themselves and to respond to the tactiles. They do not learn this, nevertheless all stairways and also many pedestrian crossings are secured in this way.



In O&M you often use the clock method for directions. And certainly, at roundabouts (but also intersections) that is easy. The street you walk on is street 6. A visually impaired student who can watch the clock then knows that he must turn left to the super. The most important navigation app for the visually impaired is "Blind square". It only works with instructions according to the clock method. It is therefore important for our students to practice.



In addition, "signing" is a commonly used method at O&M. Something that you draw on the student's hand becomes much better remembered. In a room you can indicate where the door is, where the student is at that moment and where the screen is. You can also indicate outside that there are several roads to the same point. You can get to the roundabout by first walking straight ahead and then left, but also by first turning left and then right. Hand drawing can also be on the top of the hand when the student feels uncomfortable in the hand.

A cow facing you

The warm sun on your head

A bowl custard

A dandelion

How would you describe Yellow?

It smells like Christmas

The taste of a cucumber

A frog

How would you describe Green?

Blood goes to your head

The fire brigade

A fresh strawberry

How would you describe Red?