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Geocaching as a basic for orientation training for visually impaired children and adults.

I'm an Orientation and Mobility specialist for almost 40 year and busy with orientation and navigation

I'm a geocacher for almost 15 year and busy with orientation and navigation

But I never thought about it to combine these two - until I met Meg Robbertsen 2 years ago in Montreal.

Dia 2: What is Geocaching??

Now we are 2 years later and we developed an curriculum for geocaching with blind persons and I will tell you later more about the results and of course we are going to geocache. First a little bit theory about Navigation and how it connects with geocaching.

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I'm not telling anything new if I say that the basic for good mobility depends of good orientation and navigation abilities. As soon if you want to go from A to B you have to be able to navigate.

This means that you have to think how can I go from A to B.

On school we all learned that the shortest way between two points is a straight line, but in the daily live it is never a straight line.

If you want to implement your navigationplan is orientation very important. Time after time you have to ask yourself: Where am I? And in which direction I have to go.

Only when the client knows where he is (A) and where he want to go (B) he can decide how he gets there, along which route and by which means.

That is navigation. In your mind trying to figure out the route you have to walk.

Nowadays we have GPS who can take over that but it is still a very important skill you have to practise with your clients.

Blind children who have a bad orientation and difficulty to remember, must navigate. But you have to learn how to navigate and you must get the time to navigate.

By that I mean that you don't have an instructor who tells you in advance how the situation is and what to do. As an instructor you have to guide the child to learn to navigate.

An example!!

In a classroom the teacher says: it is lunchbreak go and wash your hands

Most blind children stand up right away, turn and start walking instead of thinking how to go.

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It’s better to say: In 5 minutes it is lunchbreak you have to wash your hands. Now he has 5 minutes to navigate and figure out the route he has to walk.

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What would be easy if this child on his desk already knows the direction of the sink,

for example by means of an arrow, braille or a symbol.

He knows that the sink is left of him against the wall. He also knows there is a wall behind him

He stands and turns a half circle because he has to follow that wall.

The moment he has turned the teacher would have to ask where the sink is now. Now it is right.

Then the child already knows that he has to go to the right at the wall.

Once there, turn right and then the teacher asks again where the sink is. Now the sink is in front of the child.

So basically after each turn ask where the goal is. The teacher can support this in the beginning to stand near the sink so that the child can hear the direction.

He can also support by working together with the child to make the turn. The child must feel and be aware of his turns.

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The same is with a route on the campus of Bartiméus. We can walk straight from school to the bell tower. But in between is a big building (atrium) which we have to pass. We can’t get over or through this building. Again the same procedure. And sometimes we have to choose right or left while our GPS says straight on or direction12 o’clock

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We can support that for those who can see something with a Garmin with a big arrow. For those who can’t see we can support that “in which hand is your cane when you turned” or of course with left and right.
Later on we can use the app Kompas or Blindsquare.

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But for the last app your client must be able to understand a clock. He doesn’t have to read the time but knows in which position and order the numbers are. Map reading. At the last IMC I presented a method for using the clock by learning how a roundabout works.

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And geocaching is a mean to fulfil all these needs because you will come in the same situations especially on rural grounds (outside the normal streets)

Geocaching is a game based on orientation, navigation and mobility and therefore also suitable for people with visual impairments. Although there will have to be made some adjustments and sometimes a sighted guide is needed. Our package contains a number of lessons for clients, the conclusion if this sport is suitable for our clients and which problems they have to face and which solutions may be.

To my students I explain GPS as follows …….

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Imagine that you are completely lost. You wake up one morning in a strange hotel room and have no idea where you are. You go downstairs and ask the hotel receptionist, "Where am I?"

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"No idea," he says, "but I can tell you that you are 200 km from Amsterdam."

You now know that you are somewhere in a circle round Amsterdam with a radius of 200 km. You walk into town and stop somewhere for coffee, the waitress tells you where you are. She says, "100 km. from Brussel " and walks away. At that time you see the napkins on the table. And on these napkins is a map of Europe!

You take one, grab your handy compass and draw two circles. You now know that you are on one of the two points where the circles intersect. There are only two points that are both 200 km. from Amsterdam and 100 km. from Brussel.

Back on the street you will be called by an old man. He tells you that you are 75 km. from Bonn. You grab your napkin and compass and draw another circle. Now you know exactly where you are: Frankfurt!

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WHAT ARE THE MAIN PROBLEMS FOR VI PERSONS AT GEOCACHING?

On the app geocaching coordinates are given in a format that it can’t be read with the voice-over. When you are trying to read the coordinates of a cache on the app Geocaching it will be read split up and you can't use (or hardly) use it.

For example:

N. 052 05.518

E. 005 14.616

E 2.1 km

It will be read as:

N. E.

052 005 E

05.518 14.616 2.1 km

and it doesn't make sense for blind people.

I’m in contact with Geocaching.com and presented this problem. I got an answer that they want to customize the app for all people and that this is one of the action points. I’m now in the developing beta team with geocaching about changes at the app so that it can be used with Voice-over.

This issue is not on the computer with a braille or speech software. So it is possible to prepare at home caches in advance and convert them. But that's a lot of work and spontaneous geocaching during holidays is almost impossible.

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How do we start our search?

We always start with the coordinates of the cache in Blindsquare and launch this app.

Because this app has 3 ways of navigation:

- You can follow the cache. That means that you are directed to the cache by the clock method. Ideal for a short distance or in rural areas
- You can navigate to the cache. Blindsquare can launch an app like Google maps or Apple maps and still running on the background.
- You can travel by bus or train to the cache. Blindsquare will launch the app you need to do so. And still running on the background.

Most of the time we use apps like Google maps or Apple maps to navigate as near as possible to the cache. For the last 200 metres or when entering rural areas (outside the normal roads and paths) we switch to Blindsquare.

There is one problem.

The app "Blind Square" uses decimal coordinates. When the coordinates of Geocaching can be converted to the coordinates of Blind Square the problem is solved. All of these navigation programs use different coordinates. A converter with copy and paste could be a solution.

App Coordinates is a possibility.

App Heare (www.heareapp.com)

The disadvantage is that you only can make routes / points at home behind the computer.

You need headphones because you will be directed to the cache with a sound on your left ear, right ear or straight ahead (both ears).

An advantage is that Hear uses the same coordinates as Geocaching.com

We are investigating if the cheaper app Ariadne is an alternative for the last 200 meters.

In our lessons we used Apple iPhone. But most apps are also available in Android (exception Blind Square and Heare).

And maybe for the last few metres the blind geocacher can ask the help from a sighted person by making use of the apps Facetime and/or Be My Eyes.

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FILMPJES !!!!

IS GEOCACHING SOMETHING FOR PEOPLE WITH A VISUAL IMPAIRMENT?

The answer is yes because:

- You can go until the last 3 to 5 meters independent.
- You often work in a team and thus learn to work together
- Good for the integration into a common sport.
- It gives confidence especially in unknown places
- It is a fun pasttime.

Conclusion must be that Geocaching certainly is suitable for people with impaired vision (partially sighted) and can be used as a rehabilitation tool, courses for pupils in mainstream and special education. And particularly suitable as a hobby.

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The answer is no because:

- You still need a sighted person to find the cache for the last 3 to 5 meters
- You must be very precise set of starting points because you can easily get lost
- You are very dependent on how the cache and any hint are described.

Blind persons must have a very good orientation, motivation and solving skills to do this all by themselves. Nevertheless, the majority of my (blind) pupils are having fun in this sport which give them a great confidence and a good insight into the use of GPS and navigation in general.

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DIA 26 en 27 Websites

DIA 28 OK Let’s Geocache!!