Children's perception of environment from geographical perspective

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The aim of the lecture

To present:

- an insight into the personal perception of the environment
- the results of the research study on children‘s perception of the environment in the suburban area of Ljubljana
- some geographical content/ideas which teachers can use when walking outside with children

Outdoor learning

Interdisciplinary connections

The perception of places

Do this task in 3 steps!

1. Remember the route you took to the Faculty today. (If you are at home, you may remember the last route you took.)

2. Describe your route!

Verbally describe it to the colleague next to you or write the description on a piece of paper!
It can be as long as you wish.
You can describe it in your own way.

3. After giving the description, go to the next slide!

Is your description of the route really done?

If not, please write down your memory of the last route you took anywhere – maybe to your friend, on foot or by bike, by car, by bus …

If yes,  continue, please!

You may do an analysis of your description using the following slides.

Describing your route, did you indicate the beginning and the end of it? Did you use any geographical names?

START

In your description, is the segmentation of the typical parts of the route evident?

END

Describing your route, did you mention the beginning and the end of it? Did you use any geographical names?

START

➡ Location?

Is the segmentation of typical parts of the route evident?

➡ Similarities, differences?

➡ Individual components?

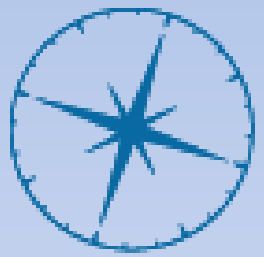
➡ Connections between places?

END

In your description, did you name the features from different categories?

What was your vocabulary?
Did you use nouns or adjectives, too?

Did you use the words for directions (left, right, straight, north, south, west, east)?

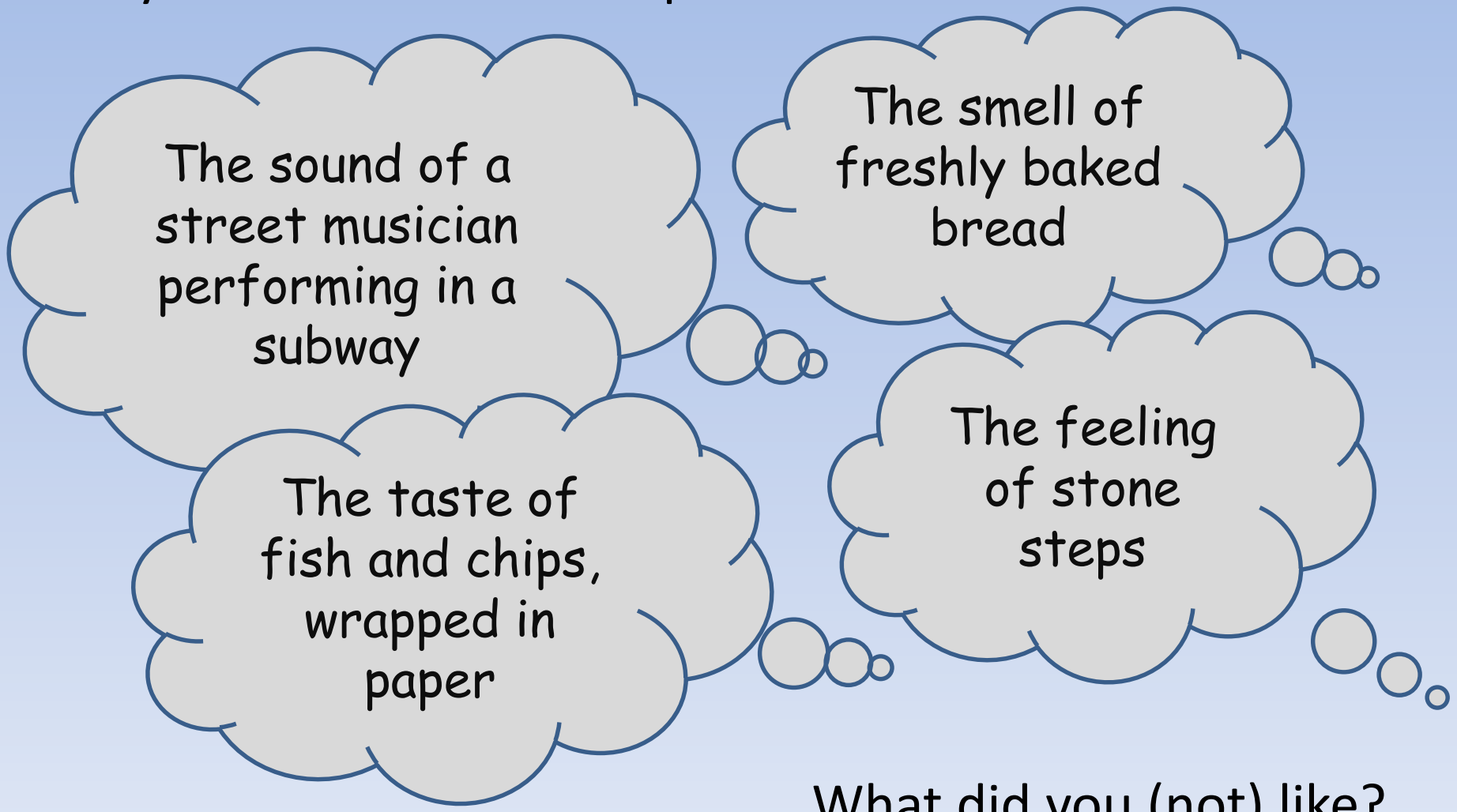


- Geographical vocabulary/terminology? (e.g. wooded hills, cultivated fields, narrow valleys, grassy plains …)
- Details? → Better understanding of the route surroundings

Did you use the words which describe what we can:

Perceiving the environment is more than just seeing.
All of our senses create the experience.

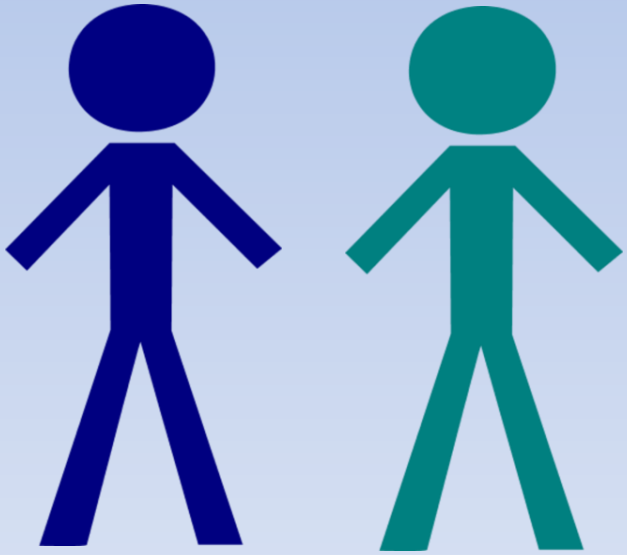
Did you mention for example:



What did you (not) like?

The perception of place is a subjective process.

For different people, this process has a different meaning and importance.



While one person may appreciate and point out ecological aspects of a neighbourhood, another may value and point out primarily social aspects.

The perception of the environment can be regarded as the sensory perception with sight, sound, touch, smell and taste. It is not intentional and conscious but occurs spontaneously and automatically.

The perception of the environment (from a geographical perspective) includes:

a) a global, integrated approach (the perception of the general appearance of the environment, the intertwining in the sense of natural and social connection to the environment) and

a) the perception of details (i.e. the visual perception of parts of the environment, auditory differentiation, and analysis), excluding cognitive processing.

Children’s perceptions of places differ from adults' perceptions.

(Yarwood and Tyrrell, 2012; Christensen, Mygind, and Bentsen, 2015)

https://www.researchgate.net/figure/Childs-drawing-of-her-special-place-in-nature_fig2_269192756

Children often see and interpret environments in a more detailed and personalised way than adults do.

(Tunstall, Tapsell, and House, 2004; Nabhan and Trimble, 1994)

Some results from research studies can help teachers to better understand children‘s perception.

https://www.researchgate.net/figure/Childs-drawing-of-her-special-place-in-nature_fig2_269192756

Next:

- The Australian study on children’s perceptions of their environments
- The Slovenian study on children’s perceptions of the unfamiliar environments

Australian study on children's perceptions of their environments

(Hume, Salmon, and Ball, 2005)

The sample consisted of 147 10-year-old Australian children, who drew maps of their home and neighbourhood environments. A subsample of children photographed places and things in these environments that were important to them.

- The maps were analysed for themes and for the frequency with which particular objects and locations appeared.

Six themes emerged from the qualitative analysis of the maps and photographs:

1. Family home;
2. Opportunities for physical activity and sedentary pursuits;
3. Food items and locations;
4. Green space and outside areas;
5. School and
6. Opportunities for social interaction.

This was important to the children.

Slovenian study on children's perceptions of the unfamiliar environments

(Hergan, 2013, 2018)

The research was done to determine how 10-year-olds perceive the surroundings of a route in an unfamiliar environment during their wayfinding when they focus on the task of successfully orienting.

N = 122 children from 6 primary schools
Location of research: the suburban area of Ljubljana

Children were walking in a circular route (length: 1,750 m):

- the first half of the way using a mobile navigator and
- the second half of the way using a paper map.

All children individually (consecutively) covered the same route.
They walked with their own tempo and were accompanied by an observer who followed them approx. two steps behind.
The condition for children to take part in the research was that they had never before visited the area included in this study.

A girl and a researcher on the part of the route using a paper map

Method

Direct observation of individual behaviour of children.

After returning from the field, the children individually answered an oral questionnaire (structured interview) and their answers were noted by the researcher.

The perception of the environment was determined individually after a verbal description of the route and by recognising and classifying the photographs shown to children.

Every child identified what they recognised among 20 photographs on display, and afterwards classified the identified features in the same sequence as they appeared along the route.

Both the quantitative and the qualitative approach were used.

Research questions

- What will children perceive during their walking?
- How detailed will the description of the covered route by the majority of children be?
- Which spatial terminology will be used in their descriptions?

The questions we asked every individual child were open-ended:

1. Please describe the route you have just covered.
2. What did you perceive along the way (saw, heard, felt, smelled, and/or touched)?
3. With the following questions a), b), and c), the observer wrote down children‘s answers relating to 20 shown photographs:
   a) A couple of photographs were taken along the route you covered. Point them out, please.
   b) Put the selected photographs in the correct order of sequence according to what you saw first and what you saw last.
   c) What did you definitely not see along the way?

Results

Children’s perception of an unfamiliar environment was better when they were walking and wayfinding using a paper map.

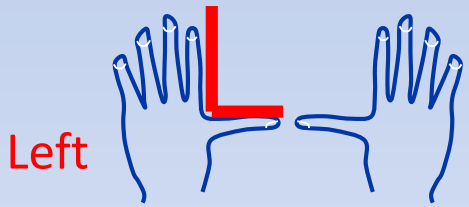
In the part of the route where children walked using a mobile navigator, they recognised fewer motifs in the photographs, compared to the part of the route where they walked using a paper map.

Boys achieved better results listing the details of perceiving the surroundings based on the recognition of visual features, while no differences were observed between genders on the basis of verbal communication.

The most (a, b, c) and the least (d, e, f) recognised photographs from the route

It was determined that the children were relatively imprecise in their descriptions of the route.

While the understanding of the environment develops very quickly in children, they still have many problems (i.e. linguistic or mathematical, logical) expressing their understanding or symbolic codes (Gardner, 1995).



For example, even if children think of the left direction (as correct within the context), they may name it incorrectly (as the right).

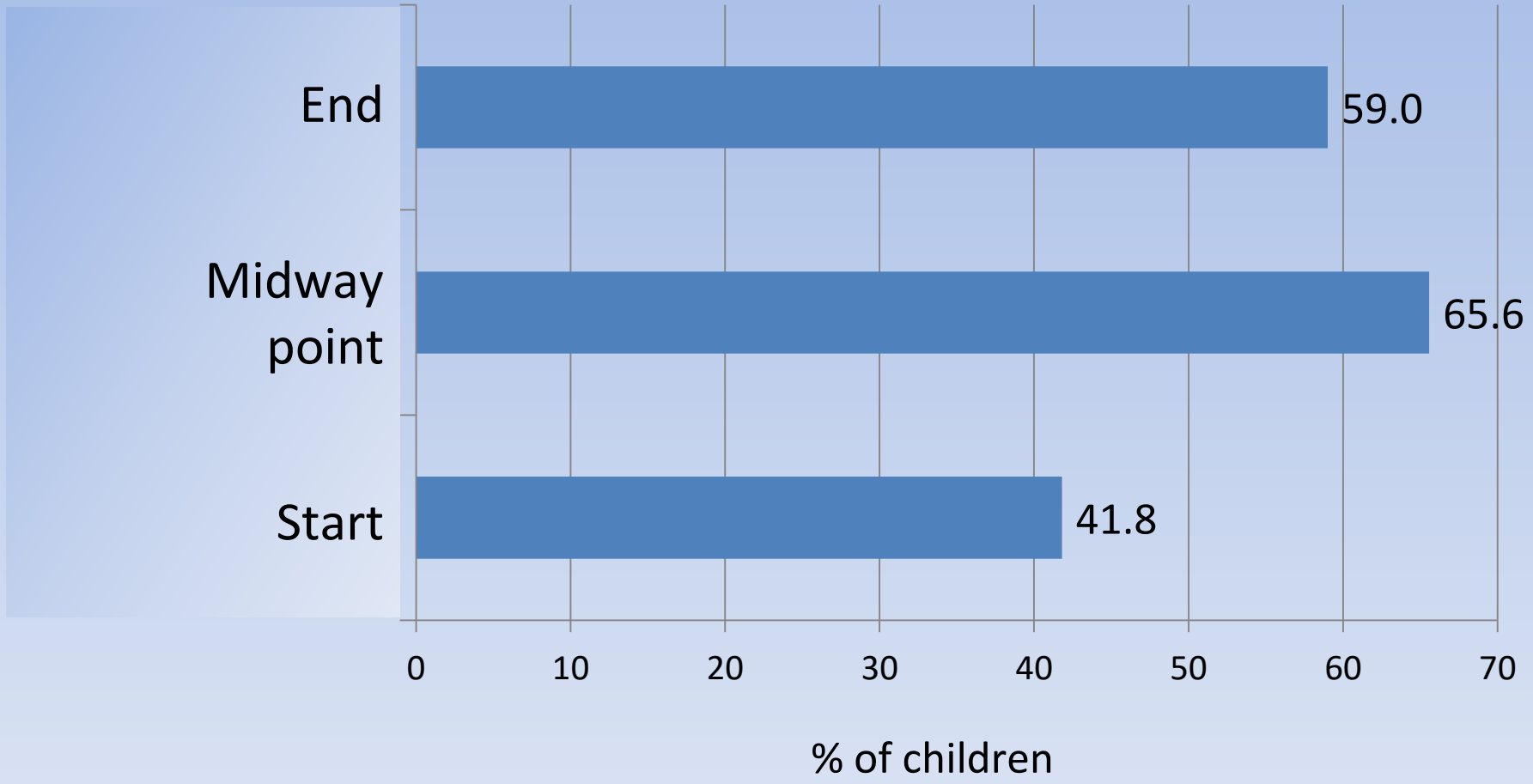
44% of children used the expressions "left" and "right" in their free descriptions of the route, which proves the importance of these two words when describing the route.

Cardinal directions (north, south) were mentioned by 3.8% of children.

7.7% of children mentioned actual lengths in metres.

For example, "After 50 metres, I took a turn across the road."

Which part of the route was mentioned?



What did children mention in their descriptions of the route?

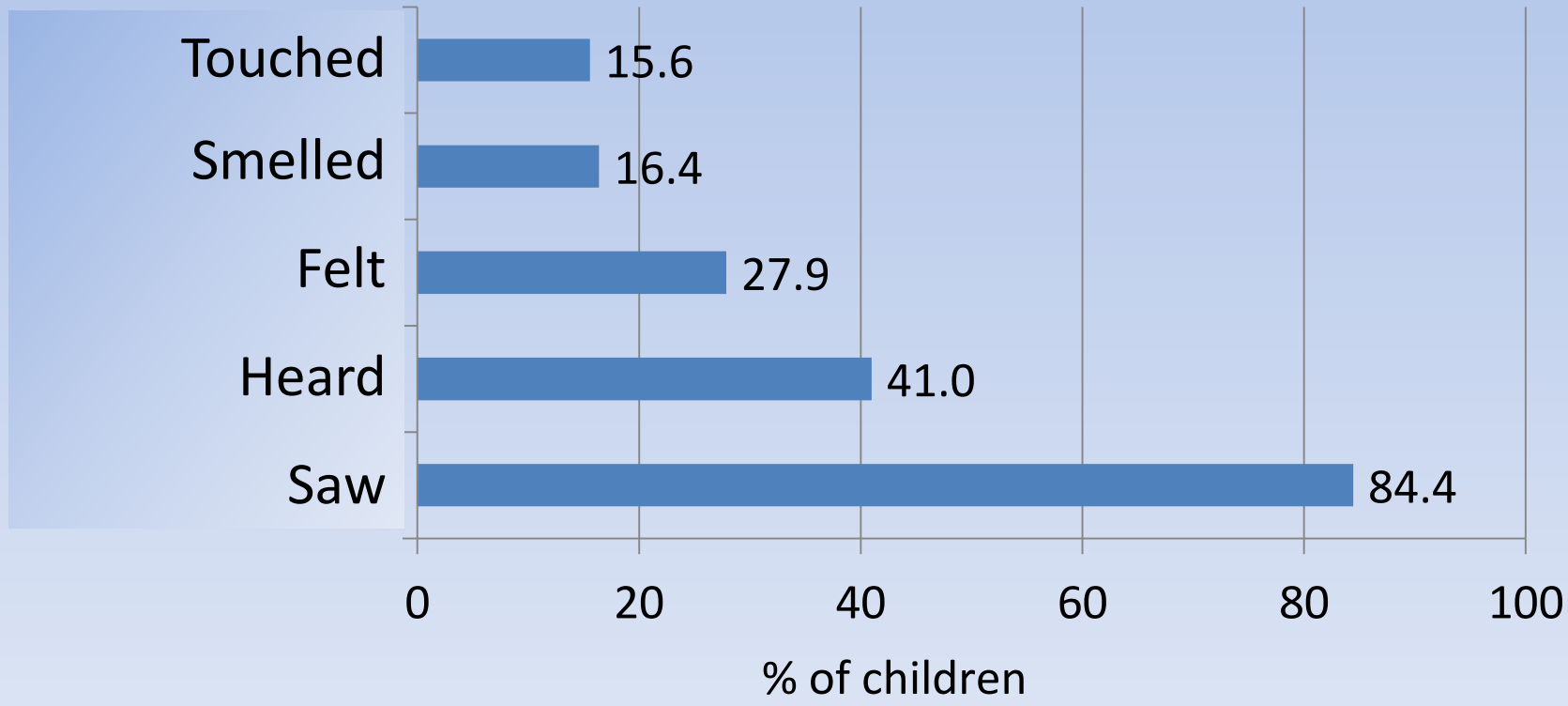
We noticed the segmentations of the route relative to the following characteristics:

Description	% of children
Cross the river/bridge	84.4
Among the buildings	77.0
Past the playground	35.2
To the intersection/crossroad	19.7
To the end of the street/road	12.3

12.3% of children used specific street names.

The frequency of perceived details by sense

With the question “What did you perceive along the way?” we wanted to determine the amount of words that indicate the predominant perceptual area. The details listed by the children were categorised into 5 categories according to their wording (saw, heard, felt, smelled, touched).



Perceived environmental features listed by children

Category and num. of references	Points of reference listed by children and frequency expressed in percentages
Saw 65 references	– apartment buildings (84.4%), houses (59.0%), bridge (33.6%), kindergarten (28.7%), playground (18.9%), garages (13.1%), other*: school, fence, shop, monument, village, courtyards, garden, construction site, shelter, – people/pedestrians (46.7%), other*: children, baby, kindergarten teacher, mailman, – road/path/streets (37.7%), pavement (10.7%), other*: street signs, traffic signs, car park, street lamps, car park barriers, road signs, turns, traffic lights, house numbers – river/stream/brook (49.2%), trees (38.5%), grass/park (16.4%), plants (12.3%), other*: hills, forest, clouds, sunlight, – car (49.2%), other*: bike, dustcart, bus, – dog (21.3%), cat (18.0%), other*: birds, squirrel, ducks, – other*: dumpster, graffiti, flower pots, clothes, wall, sand, puddle, rain, benches, pacifier, GPS device, map;
Heard 14 references	– cars (43.3%), talk/children (35.2%), birds (27.9%), river (16.4%), other*: dog, wind, walking, music, cats, ringing, rain, chainsaw, sweeping;
Felt 15 references	– cold (34.4%), other*: sun, wind, ground, rain/humidity, hot, joy, fresh air, classes, pain, fog, heartbeat, fear, fatigue;
Smelled 12 references	– fresh air/nature (18.9%), other*: exhaust, food, fire/smoke, garbage collectors/garbage, cold, cigarette smoke, people, manure;
Touched 9 references	– GPS navigator (29.5%), map (27.0%), other*: fence/pole, bush, apartment building, car, jacket, umbrella.

*Other: Points of reference listed in this category occur in less than 10% of the descriptions.

Children who used the expressions for direction (left, right) listed more environmental features than their colleagues.

Children used a surprisingly small amount of adjectives: among 122 descriptions, only 4 children used the adjectives describing **colour**, in the phrases as “the red house”, “the pink-coloured house”, “the house with the yellow or white doors”, and “the house with the white windows”.

There was only 1 unique answer – describing the houses as “weird, as big as protruding pimples”.

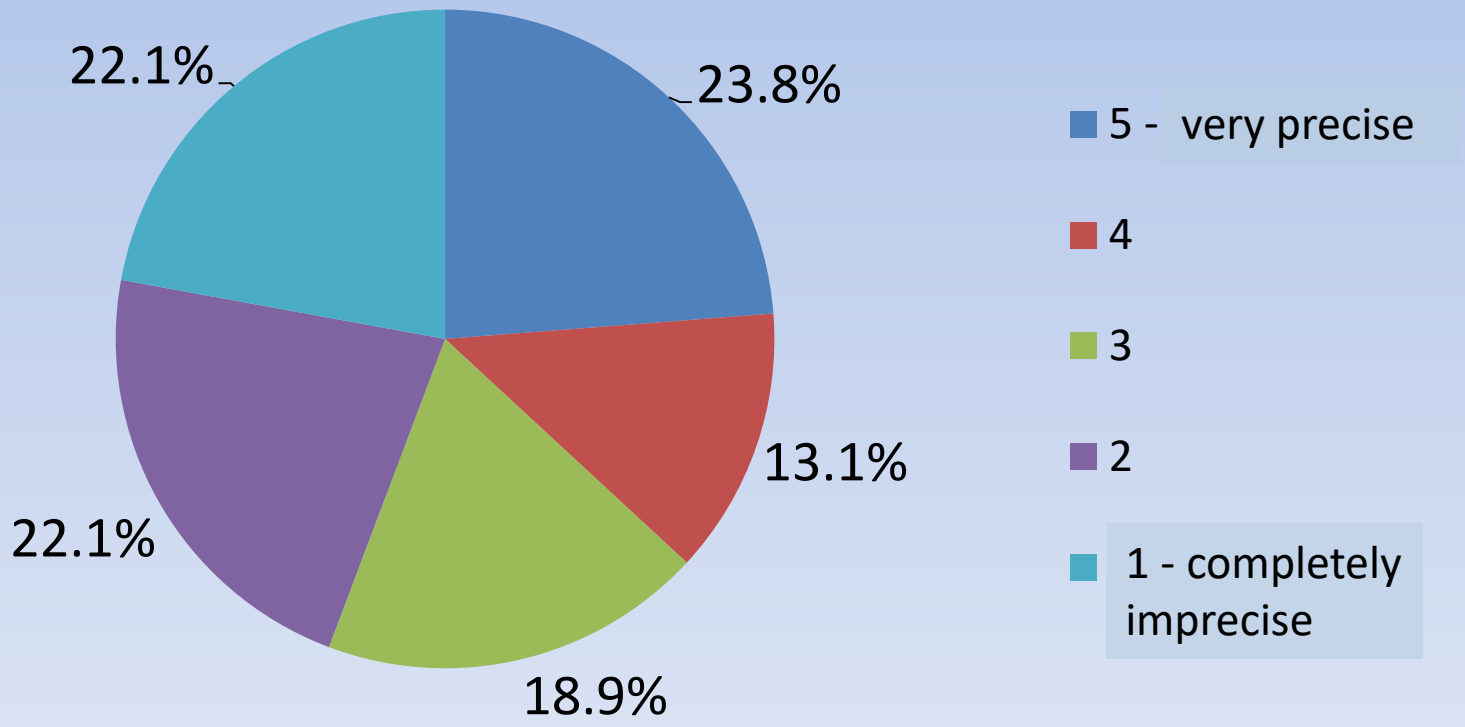
Most 10-year-olds verbally expressed themselves according to the Piaget‘s phase of concrete thinking.

Examples of children's free verbal route descriptions

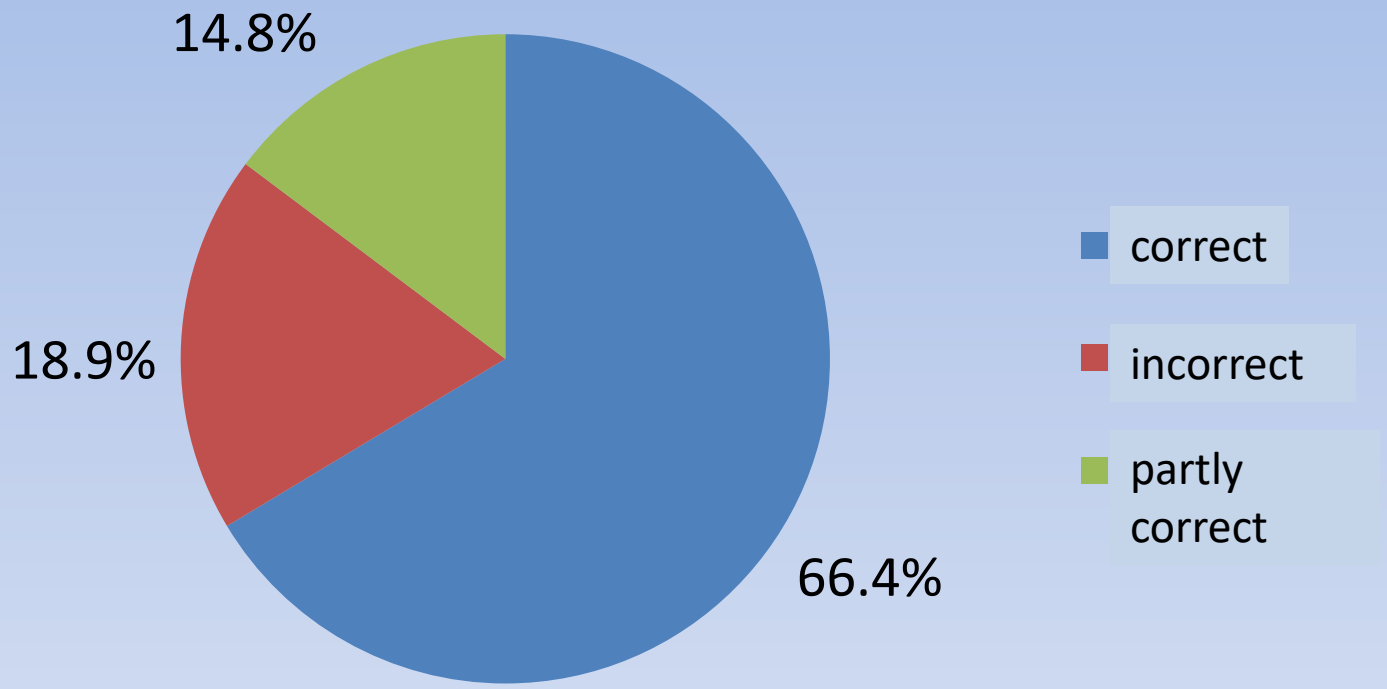
Assessment of the accuracy and precision of the described sequence	Children's route descriptions
A precise description in the correct order of sequence	"First, I stood in front of the school, then I received a GPS device, turned left, and crossed the river. A bit past the flower-pot pedestal next to the car park barrier I turned right, walked among the apartment buildings, and then turned left at the first opportunity. I walked straight ahead towards the intersection, where I turned right and reached the goal with the GPS. With the map, I first walked straight ahead, then turned left in between two bigger apartment buildings. Once past them, I turned right, then left; afterwards, I walked straight ahead to the car park barrier and back the same way."
A moderately precise description in the correct order of sequence	"Heading out from the school, I crossed the bridge and went past the apartment buildings, the garages, and the car park; I arrived at the road, walked to the house and back to the road again, then to the car park, past the car park, and among the apartment buildings back to the school."
A moderately imprecise description in a partly correct order of sequence, with no description of environmental features	"First you walk about 50 m straight ahead, turn right, then straight ahead again, then, I think, left, straight ahead, left again, straight ahead and right, then straight ahead and diagonally, straight ahead, left, and straight ahead again."
An imprecise description in no particular order	"The route is winding, paved. We crossed the bridge, the walk was long, and it was interesting."

The estimation of the accuracy of the described route

Children had to “describe the path they just walked”. We evaluated the accuracy of the descriptions from 1 (completely imprecise) to 5 (very precise).

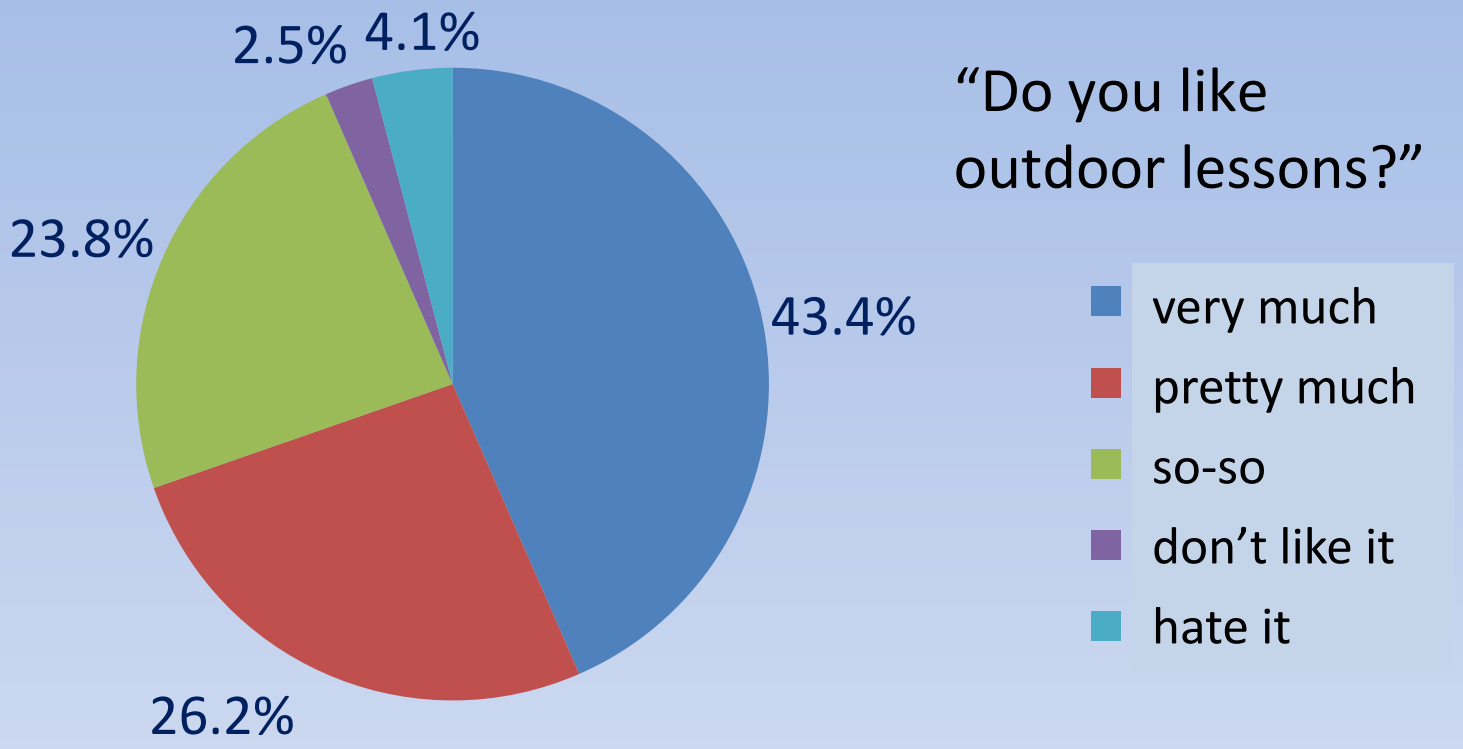


The correctness of the order of described route features



There were more children who imprecisely described the route covered in no particular order as opposed to those who described it precisely in the correct order.

The joy of outdoor lessons



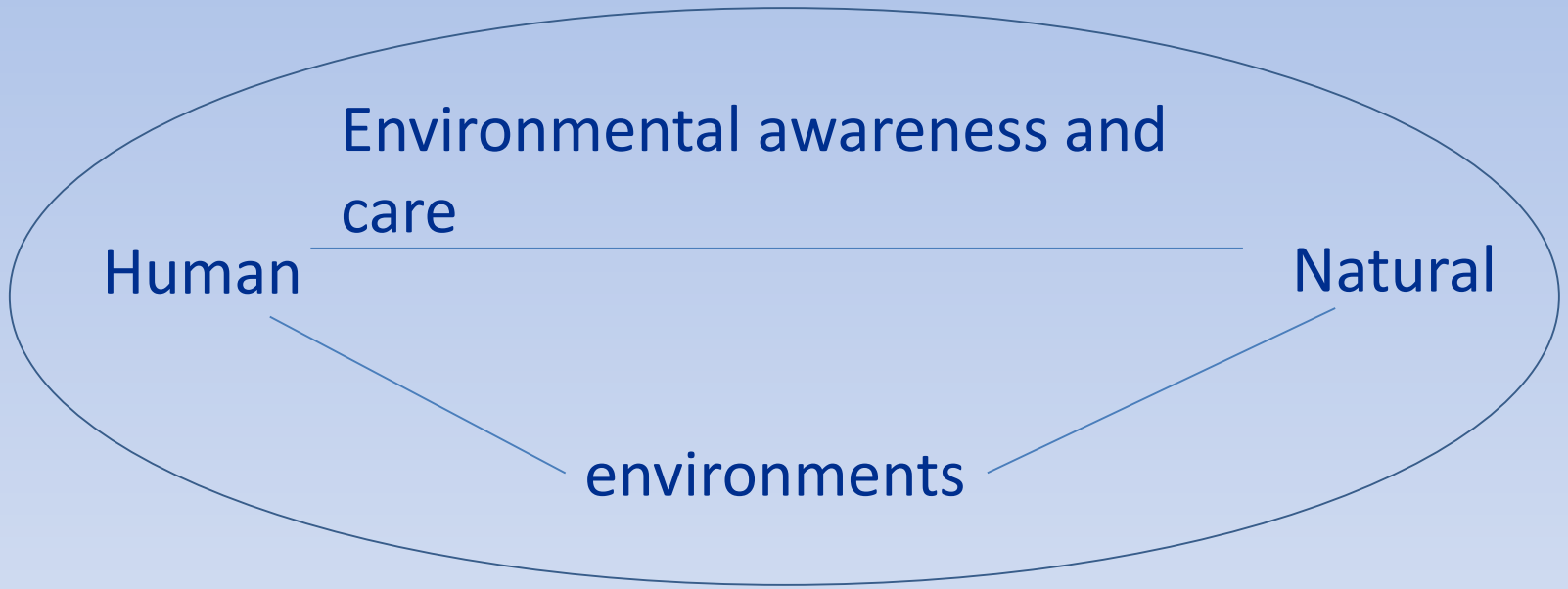
Children who expressed greater joy in outdoor lessons were not more successful in finding their way using a mobile navigator in the field than those who did not express interest in outdoor lessons.

Learning about places while walking

Walking offers multiple personal and societal benefits; however, many people walk too little to realise these benefits (Brown, Werner, Amburgey, and Szalay, 2007).

Experiencing different environments allows for the comparison of these environments with one's own environment, which leads to acquiring new knowledge and insights about one's own environment.

Environmental education can help strengthen student's attachment to their communities/cities, and to view different places as ecologically valuable.



Environmental awareness can be developed through geographical skills.

What geographical content can children learn?

Student activity	What is the goal?
Naming the start and the end of the route	Identifying the location
Doing segmentation of the route, recognising the borders	Grouping similarities, distinguish differences, the connection between places
Covering different parts of the environment	Awareness of individual components (their characteristics) and the interconnection
Naming the features	Geographical/biological … vocabulary
Using more adjectives in the descriptions	Better understanding, to learn more about the details
Using the words for directions	To develop a sense of orientation and direction, to use geographical terminology
Mentioning human beings (what they do)	Awareness of the importance of human beings
Expressing feelings/meaning, what children (don't) like	The feeling of the place (to encourage the expression of a personal impression)
Using all 5 senses	To perceive the environment in a more comprehensive/full way

Why involve different senses?

- Using different senses allows for more cognitive connections and associations to be made in connection with concepts.
- We all have different learning styles.
  It is crucial for a teacher to make lessons beneficial to each student.

What should teachers pay attention to when teaching environmental education?

- Enable and facilitate children's experiences (in accordance with the goals of the curriculum).
- Encourage curiosity in children.
- Engage children in activities that allow them to learn about their personal sense of place, including what they value about the natural, human/social, and built environment. Not to favour the care for the cognitive development of children.
- Stimulate children's interest in the environment and provide an enjoyable and active learning context.
- Be aware that emotional well-being influences educational performance, learning, and development.
- Involve co-operative working, allow them to share their own experiences with places, deepen the awareness of and sensitivity to our environment and to each other.

We only have one Earth.

Learning in the classroom about the environment cannot replace outdoor learning in a real natural/built environment.

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Photo: The girl in the autumn leaves. Retrieved from: https://www.google.com/search?q=autumn+child+environment&tbm=isch&ved=2ahUKEwi29MP8-cDsAhWnwQIHHQ3KCmkQ2-cCegQIABAA&oq=autumn+child+environment&gs_lcp=CgNpbWcQAzoCCAA6BggAEAcQHjoECAAQHjoECAAQEzoGCAAQHhATOggIABAIEB4QE1CU7AdYgrcIYJe6CGgAcAB4AIABlQGIAd8IkgEEMTIuMZgBAKABAaoBC2d3cy13aXotaW1nwAEB&sclient=img&ei=N66NX_b8CKeDi-gPjZSryAY&bih=730&biw=1449&rlz=1C1GCEA_enSI835SI835#imgrc=gSJD_TfMe6uPuM