



DEMOCRATIZATION OF PRIMARY EDUCATION

**DESIGN AS POLITICS
WE THE PEOPLE**

Sanne Brander

Democratization of primary education

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We the people

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INTRODUCTION

1. PROJECT DESCRIPTION

2. RELEVANCE

3. METHODOLOGY AND PHASING

4. THEORETICAL FRAMEWORK

5. PRELIMINARY RESULTS

Van meer naar beter

Krimp in NL, Drenthe, Assen, Over VNB, VNB websites

Nieuws

Krimp stelt basisonderwijs Drenthe voor grote opgave

Krimp nieuw? De uitdaging

News op de kaart

Netwerk

DAGBLAD NOORDEN

Krimp stelt basisonderwijs Drenthe voor grote opgave

DRENTHÉ – Scholen in Drenthe kampen met dalende leerlingaantallen. In heel Drenthe zal het aantal kinderen in de basisschoolleeftijd in de periode tussen 2011 en 2020 krimpen met 13%. In zes gemeenten gaat het zelfs om 23-30%. Concreet gaat het om een daling van 6.550 kinderen in Drenthe in nog geen tien jaar tijd. Dit stelt het basisonderwijs voor grote vraagstukken, met name op het gebied van financiën en onderwijskwaliteit. Om goed onderwijs bereikbaar te houden voor alle kinderen worden schoolbesturen en gemeenten snel in actie moeten komen en gezamenlijk op zoek gaan naar oplossingen.

De provincie Drenthe heeft met de provinciebesturen van Assen, Emmen, Haren, Nieuw-Amsterdam, Peize, Steenwijk, Vries, Westerveld, Zuidoost-Drenthe en Zuid-Drenthe een werkgroep opgericht om gezamenlijk naar oplossingen te zoeken. De provincie heeft met de provinciebesturen van Assen, Emmen, Haren, Nieuw-Amsterdam, Peize, Steenwijk, Vries, Westerveld, Zuidoost-Drenthe en Zuid-Drenthe een werkgroep opgericht om gezamenlijk naar oplossingen te zoeken.

Gedegen onderzoek naar de gevolgen van het dalend kindertal in Drenthe voor het basisonderwijs

De groep o tot 4-jarigen in Westerveld is van het jaar 2000 tot en met 2011 met 28% gedaald. En hoevel die daling in Drenthe als geheel 13% bedroeg, is de grote teruggang van het aantal jonge kinderen in Westerveld niet uniek: De Wolden spant de kroon met 32% minder, gevolgd door Borger-Odoorn met 30%.

Tot aan 2020 zet die daling in Westerveld naar verwachting door met 11%.

Verkiezingstijd: CDA belooft geld voor krimpgebieden

27 augustus 2012

Het CDA gaat extra investeren in onderwijs in krimpgebieden. Deze toezegging deed CDA-lijsttrekker Sybrand van Haersma Buma zaterdagavond in Doetinchem, zo meldt de Gelderlander.

Krimpgebieden zijn heel mooi, maar er moet wel goed onderwijs zijn, anders kunnen de inwoners er hun kinderen niet naar school sturen. Het CDA investeert in onderwijs, maar we gaan extra investeren in onderwijs in krimpgebieden: zo alle regionale krant de CDA-lijsttrekker. Van Haersma Buma noemde geen bedrag.

Demografische krimp wordt in steeds meer regio's een actueel thema. Daarom heeft VOS/ABB voor leden in het primair onderwijs een **handreiking** samengesteld over de wijze waarop schoolbesturen met deze problematiek kunnen omgaan. Binnenkort volgt een vergelijkbare handreiking voor VOS/ABB-leden in het voortgezet onderwijs.

In de handreikingen van VOS/ABB is specifiek aandacht voor de positie van het openbaar en algemeen toegankelijk onderwijs in krimpgebieden.

KRIMP & KRACHT de nieuwe realiteit in drents perspectief

stammi

'Overheid moet krimp scholen tegemoetkomen'

Schoolbesturen pleiten voor versoepeling onderwijswetgeving

maakt. Vanmiddag, op een bijeenkomst in Drenthe, willen ze Tweede Kamerleden overtuigen de regelgeving te versoepelen.

Door Gea Meulders Assen. Twee kleine scholen in een dorp. De een openbaar, de ander protestants-christelijk. Beide hebben het moeilijk, doordat ze elk jaar minder kinderen krijgen. Zeven maanden eerder, leraren en schoolbesturen willen graag dat dit soort scholen fuseert om de school voor het dorp te behouden.

Maar schoolbesturen lopen aan tegen landelijke wet- en regelgeving die dat niet altijd mogelijk

Bevolkingskrimp en onderwijs

Afscheid van 450 scholen?

De provincie Drenthe heeft met de provinciebesturen van Assen, Emmen, Haren, Nieuw-Amsterdam, Peize, Steenwijk, Vries, Westerveld, Zuidoost-Drenthe en Zuid-Drenthe een werkgroep opgericht om gezamenlijk naar oplossingen te zoeken.

KRIMPEN MET PERSPECTIEF

stammi

Het einde van de kleine dorpschool

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POSITION PAPER KRIMPEN MET PERSPECTIEF

stammi

KRIMP & ONDERWIJS DE UITDAGING

DRENTHÉ 2011-2020

Bevolkingskrimp en onderwijs

Afscheid van 450 scholen?

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Talents

Home Stichting Talents Scholen Onderwijs Medewerkers Internet links Contact FAQ

Met hoeveel procent krimp krijgt stichting Talent te maken?

De prognoses variëren van 25-35% krimp tot 2018. Dit is zeer fors. We kringen van ongeveer 1500 leerlingen in 2008 naar 1000 leerlingen in 2018. Dat betekent dat we een derde deel van onze leerlingen verliezen, maar ook verlies van vele banen en grote leegstand op de scholen.

Wat betekent dit voor de scholen?

Wat is het beleid van de stichting inzake krimp?

Zullen er gedwongen ontslagen vallen?

Komt er ook een sociaal plan?

Onderwijs

Praktijk / kennis Nieuws Agenda Wat is krimp? Over K&O Links Contact VNB websites

Maak uw Keuze

Onderwijs

Borger-Odoorn: Minder leerlingen tot 2022

Agenda

Werkconferentie Krimp en Onderwijs

Symposium UCF: op weg naar een nieuwe master

Visiepresentatie jonge architectenteams

Voorbeelden

Naar een duurzame portfoliostategie voor Noordelijke basisscholen

INTRODUCTION

The research can be described according to the three main themes, which are primary education, a low-density shrinking area and democracy. The ultimate goal is to design a space for a new form of primary education in a low-density shrinking context by using the principles of democracy.

Primary education

The Greek philosopher Plutarch (46-120 A.C.) had already a very interesting viewpoint on education:

'The mind is not a vessel to be filled, but a fire to be kindled.'

If education doesn't mean, filling the pupil with as much knowledge as possible, but rather to lighten a fire, the question that immediately arises is: how can you lighten that fire? I believe by using pedagogical concepts that recognize the differences between individuals and that support each individual to develop in their own way and to the biggest extent. Therefore multiple smaller researchers are done, including the learning styles of David Kolb and the multiple intelligences theory of Howard Gardner.

Low-density shrinking area

The context of the project is situated within the municipality of Westerveld, which is located in the province of Drenthe, close to both Friesland as Overijssel. The research focused on both the physical and social situation as shrinking related issues, such as liveability. The distance to all kind of facilities seems to be a crucial factor, but is that true? According to Madama Deffand:

The distance doesn't matter; it is only the first step that is the most difficult.

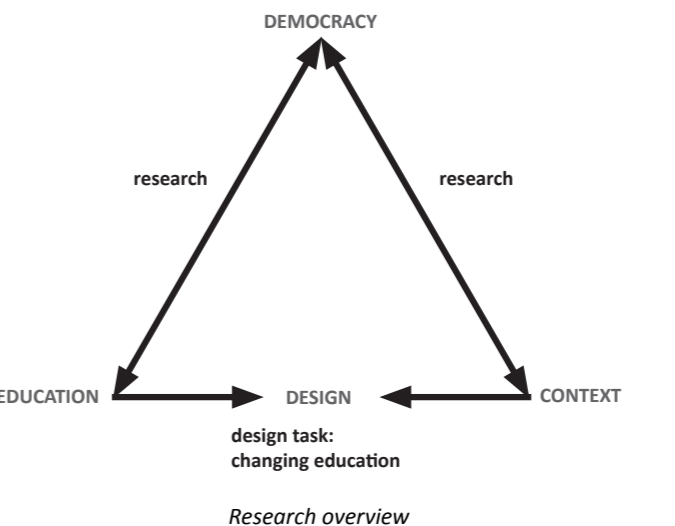
Democracy

The relation between democracy and education is explored by reading and analyzing multiple texts written by the American philosopher John Dewey. Democracy is more than a form of governance, especially a way of living. There can only be true democracy according to Dewey, if education is based on a democratic society.³

Report structure

The report consists of five parts. Firstly the project description, which describes both the situation in the municipality of Westerveld as the starting points for the further research. Secondly the relevance, which is divided in an academic, social, political and ethical part. Thirdly, the methodology and phasing is showing how to continue. Fourthly, the political aspect is made clear by means of an written essay. Fifthly, the preliminary results describe the first steps towards the design.

1. OWP / P Architects, VS Furniture, Bruce Mau Design, 2010, p. 53
2. Hospers, 2010, p. 57
3. Dewey, 1968, p. 99





INTRODUCTION

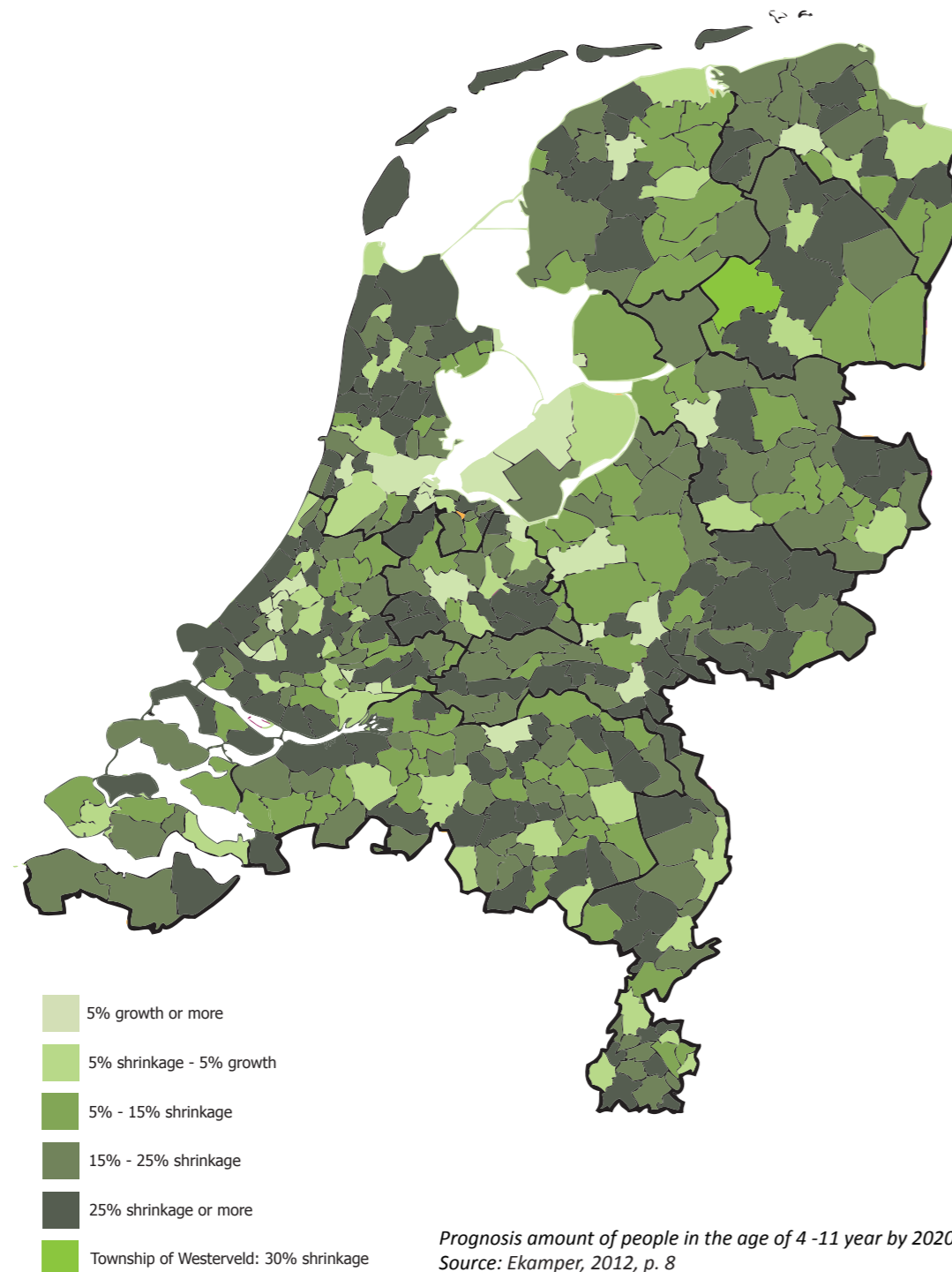
1. PROJECT DESCRIPTION

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5. PRELIMINARY RESULTS



Prognosis amount of people in the age of 4 -11 year by 2020
 Source: Ekamper, 2012, p. 8

1.1 MOTIVATION

To choice for this theme is three-part. The actual, social and academic relevance together formed the basis to start this project.

As a result of reading an article in the journal 'Demos' about primary schools and shrinkage in the Netherlands, my attention was caught. The article showed that quite a lot of municipalities are going to face shrinkage in the age of 4 - 11 years coming ten years. The author made a quick calculation and suggested that 450 primary school would be closed by 2020 if the current regulations are maintained. Shrinkage is challenging society to develop new methods to cope with this new situation.¹ Already quite a lot of municipalities are working on this topic, but in the municipality of Westerveld, they are still in the starting phase. Combined with the fact that the municipality of Westerveld is one of the municipalities that will face the biggest shrinkage in the age of 4 - 11, namely 30%, the choice for this area was made.²

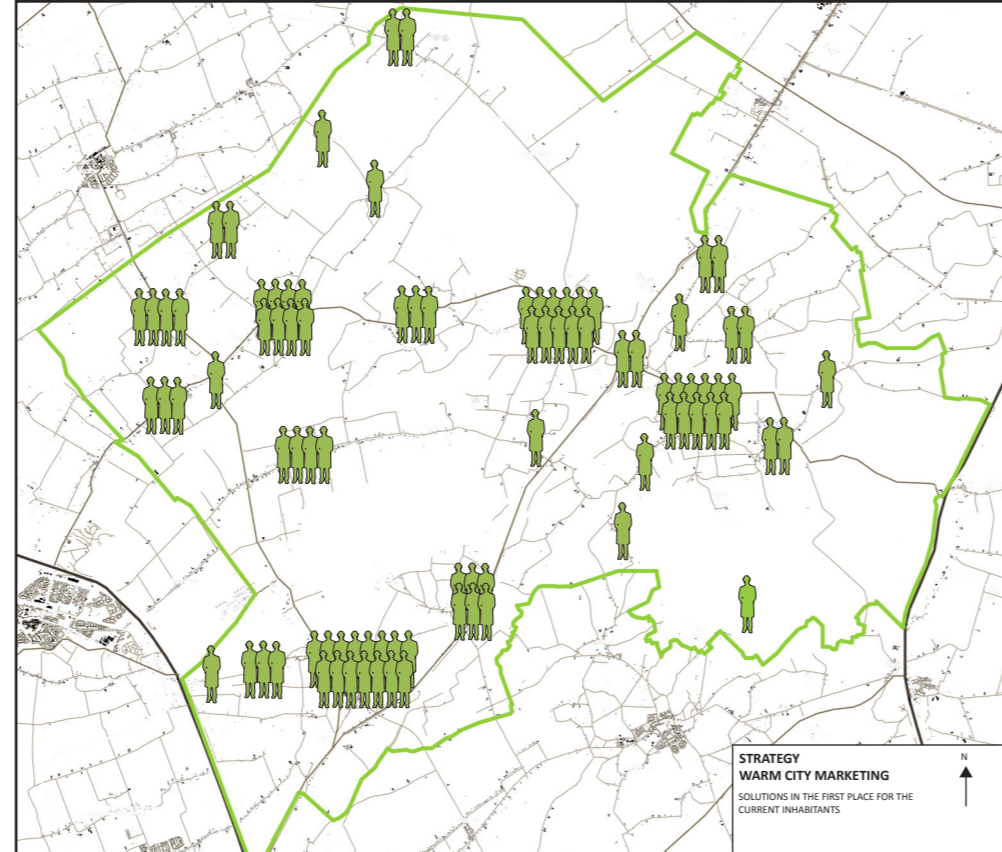
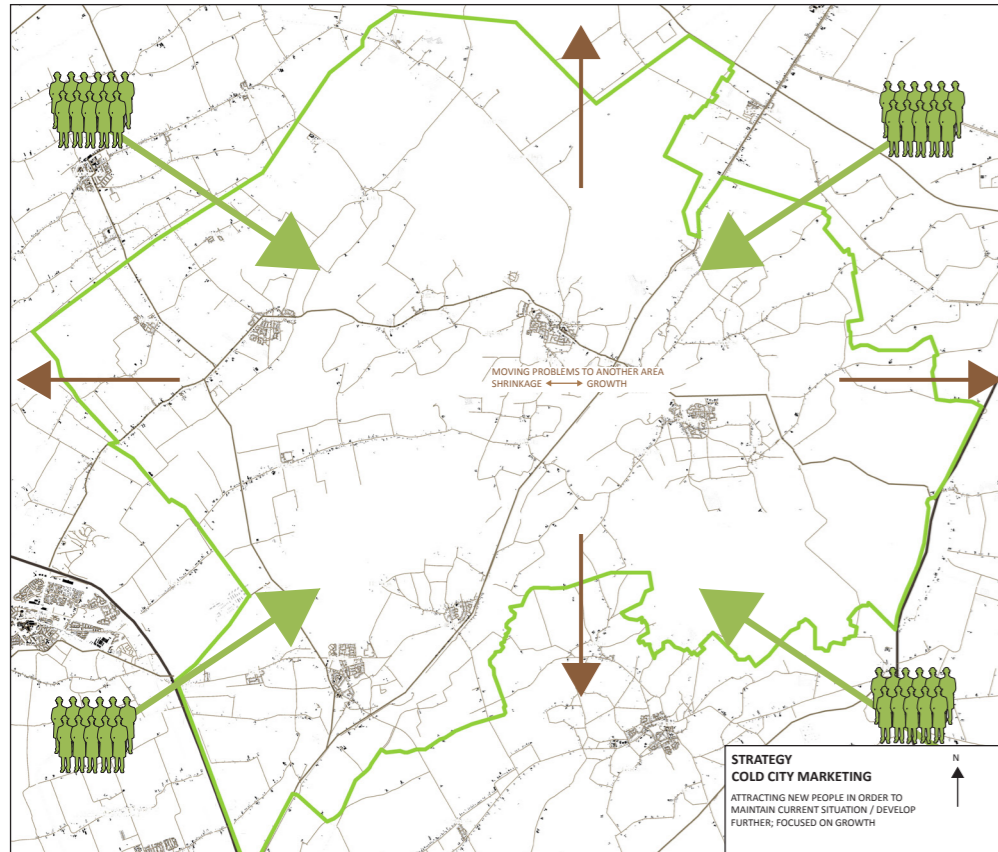
The second reason is that educational buildings are extremely interesting, because they reflect the ideas about the position of the child in society and how the most effective forming of the student can be achieved. School buildings show which basic competences are the most important for the client, user and the architect. Furthermore, primary schools belong to the most important public buildings, not only spatially, but also in a human life.³

The third reason is about the academic relevance. The field of the architect is to translate pedagogical ideas into space. Ofcourse, already a lot of school buildings are built. But pedagogical concepts of David Kolb and Howard Gardner are barely translated into space. The research aim is to give a contribution to that.

1. Ekamper, 2012, p. 8

2. Leer, Haan, Wijnstra, Janssens, 2012, p. 32

3. Hertzberger, 2008, pp. 8-9



1.2 PROBLEM FIELD DEFINITION

Approach

Roughly there are two different approaches in this field. The first one is the cold-city marketing, which focusses on attracting new inhabitants. This approach presumes a competing attitude between villages, cities, municipalities or provinces. After all, there where new inhabitants are attracted, are at the same time in another are inhabitants leaving. Growth and shrinkage are going hand in hand. This means that problems are moving from one to another area, and not solving problems. Therefore, the strategy used in this project, is that of warm-city marketing. This strategy focusses on the current inhabitants of an area.⁴ The aim of this approach is to find a strategy which could be a strong basis for the current inhabitants, to avoid that they will also leave the area.

Issues location

Westerveld is a low-density area and shrinking. By 2020, the amount of children in the age of 4 - 11 years will be reduced with 30%.⁵ Besides that, the composition of the population is changing.⁶ How will that affect schools? Literature is showing that closing a school, doesn't mean that the community will close.⁷ When it comes to shrinkage, one of the main issues is the liveability of a village or area. The liveability depends on five aspects, which are accessibility and mobility, meeting place, relation to other facilities and unoccupied buildings.⁸

Rethinking the current education in Westerveld, is possible by using the law for freedom of education. This law allows every citizen to start a school under certain conditions, which are explored in the procedure of starting a school. Furthermore the policies about schools are investigated and valued.

4. Hospers, 2012, pp. 45-51

5. Leer, Haan, Wijnstra, Janssens, 2012, p. 32

6. Provinciale staten van Drenthe, 2012, p. 49

7. Leer, Haan, Wijnstra, Janssens, 2012, pp. 60-61

8. Leer, Haan, Wijnstra, Janssens, 2012, pp. 59-63



1.2.1 WHAT

The following pages will show an overview of both the physical situation as the social situation of the municipality of Westerveld.

Physical situation

The description of the physical situation focusses on the current situation and the prognosis. First of all, the low-density of Westerveld is shown by using the drawing technique of Nolli. Another map shows about how many people we are actually talking. Secondly, the facilities and tourism is investigated. Thirdly, the size of current schools is made visible in a map. The map shows how many pupils a school has, where it is situated and if the school has a certain denomination or not. After this, a map is showing the prognosis for 2020 of the size of all schools.

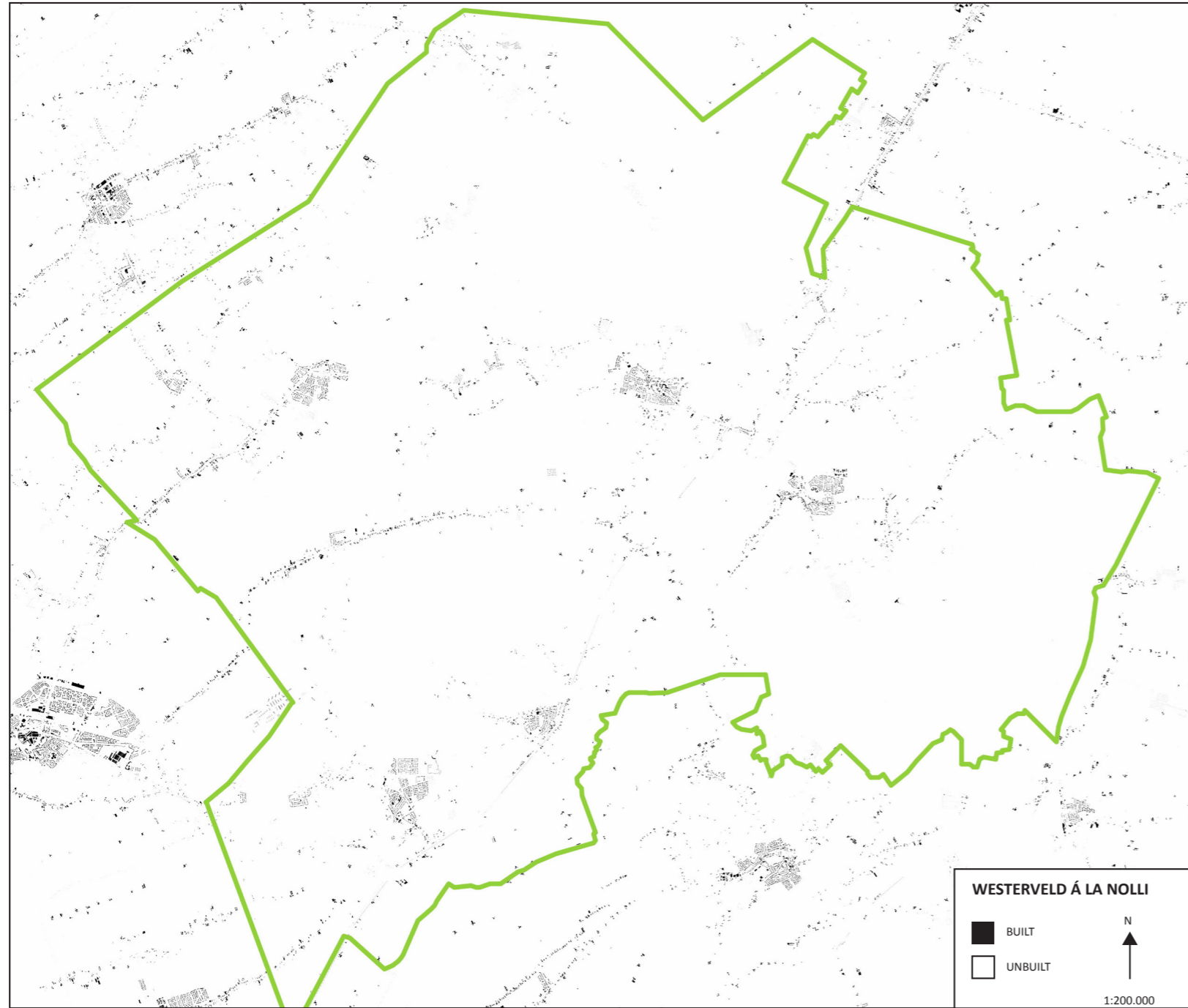
Social situation

The main topic when discussing the field of shrinkage, low-density areas and the social situation, is the liveability. The liveability of an area is a complex phenomenon, because many factors influence the liveability. Especially unwanted changes that are made only a short period ago, affect the liveability in a negative way.

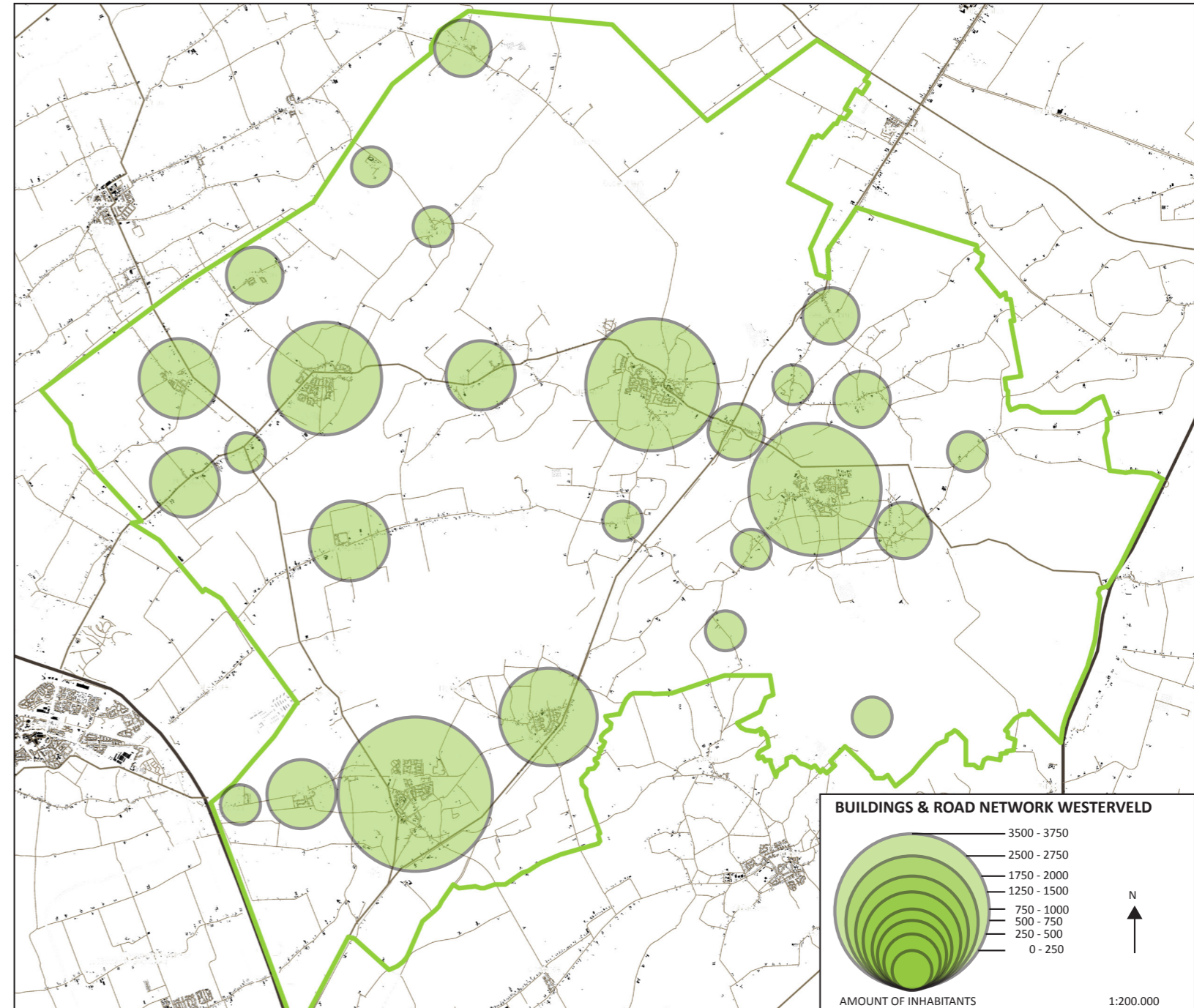
The social situation will be determined in the future especially to which extent the liveability of the area is defined as good. Crucial factors for liveability of an area are the mobility and accessibility, a meeting place in a village, relation of school buildings to other facilities and unoccupied buildings.

The accessibility and mobility of facilities is important. Public transport can play a crucial role in that. People are for some facilities more willing to travel a bigger distance than for others. This means that for some facilities a walking distance is appreciated, where for other facilities a 'driving-distance' is also fine. A meeting place is important for the community feeling. The relation to other buildings is important, because closing a school, which is sharing the building with other functions, can accelerate the closing-process for those other facilities. Finally, unoccupied buildings gives the area a bad image and can therefore also accelerate the shrinking process more.





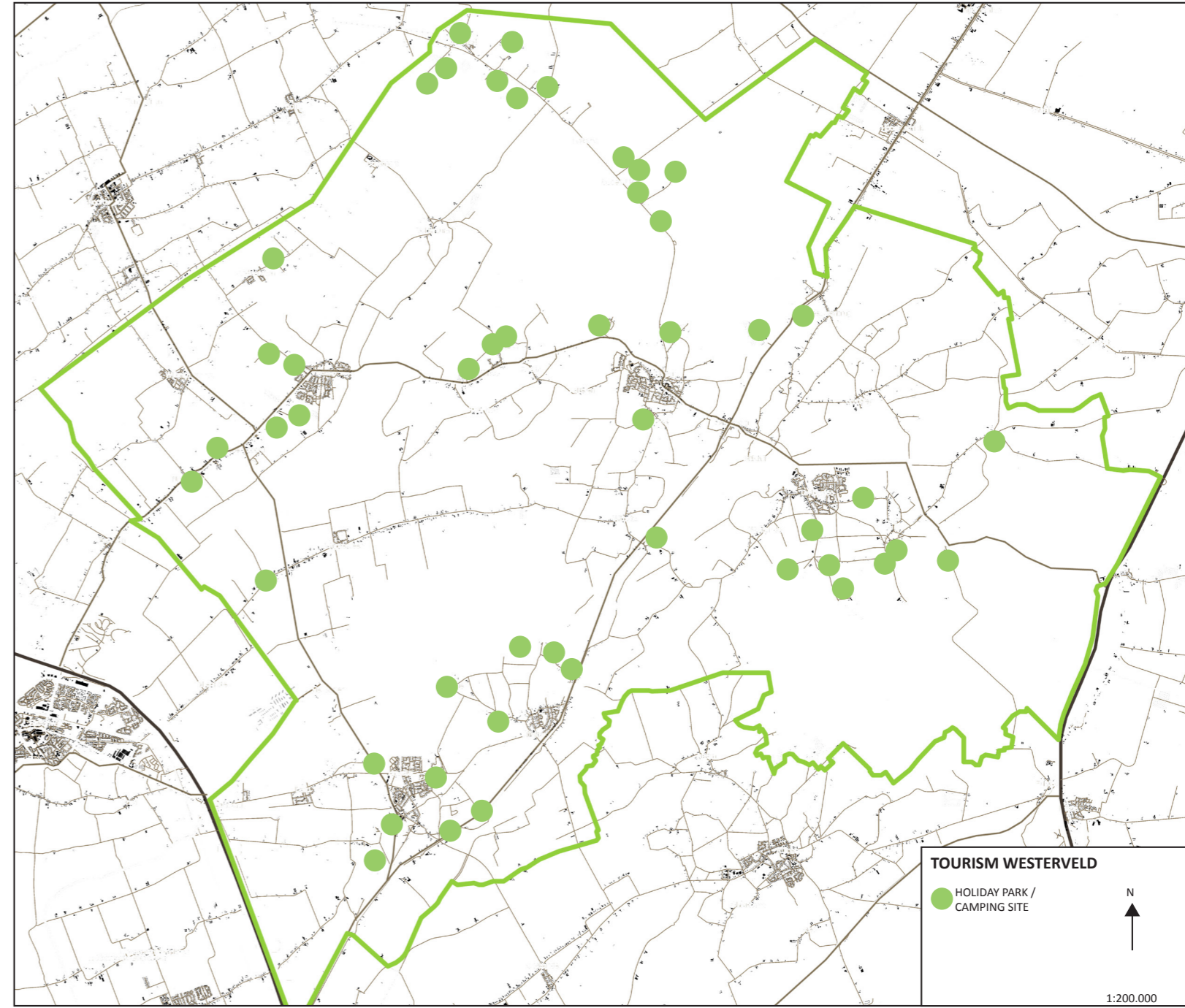
The map is showing the low-density of the area. There are some centered orientated villages, but the built parts mostly consist of ribbon development.



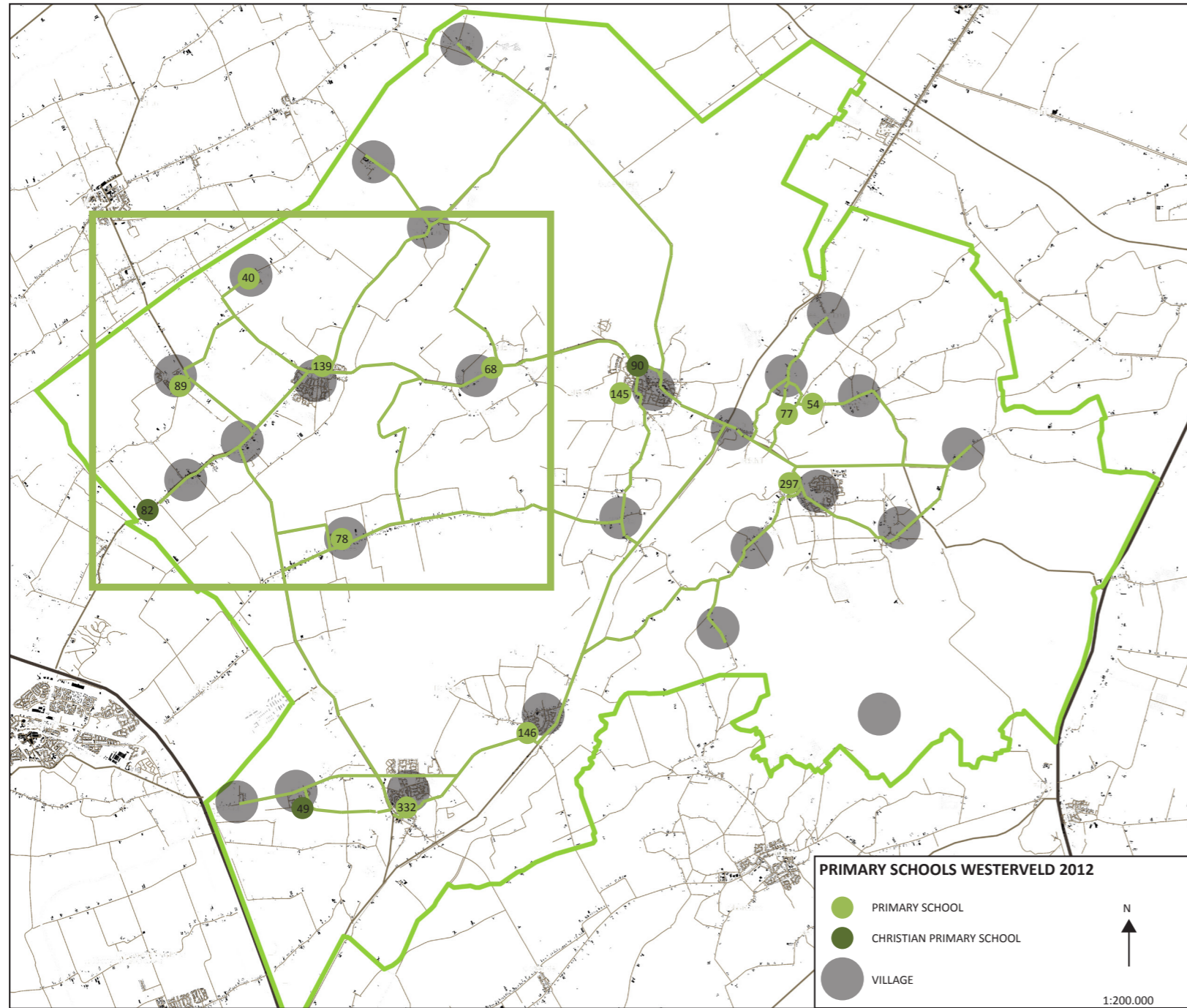
The biggest village in the area has around 3500 inhabitants. There are four main clusters, which all were in the past own municipalities. Those villages have the most facilities. Besides that, there are some villages that have around 800 inhabitants. Some really small villages only have about 200 inhabitants.



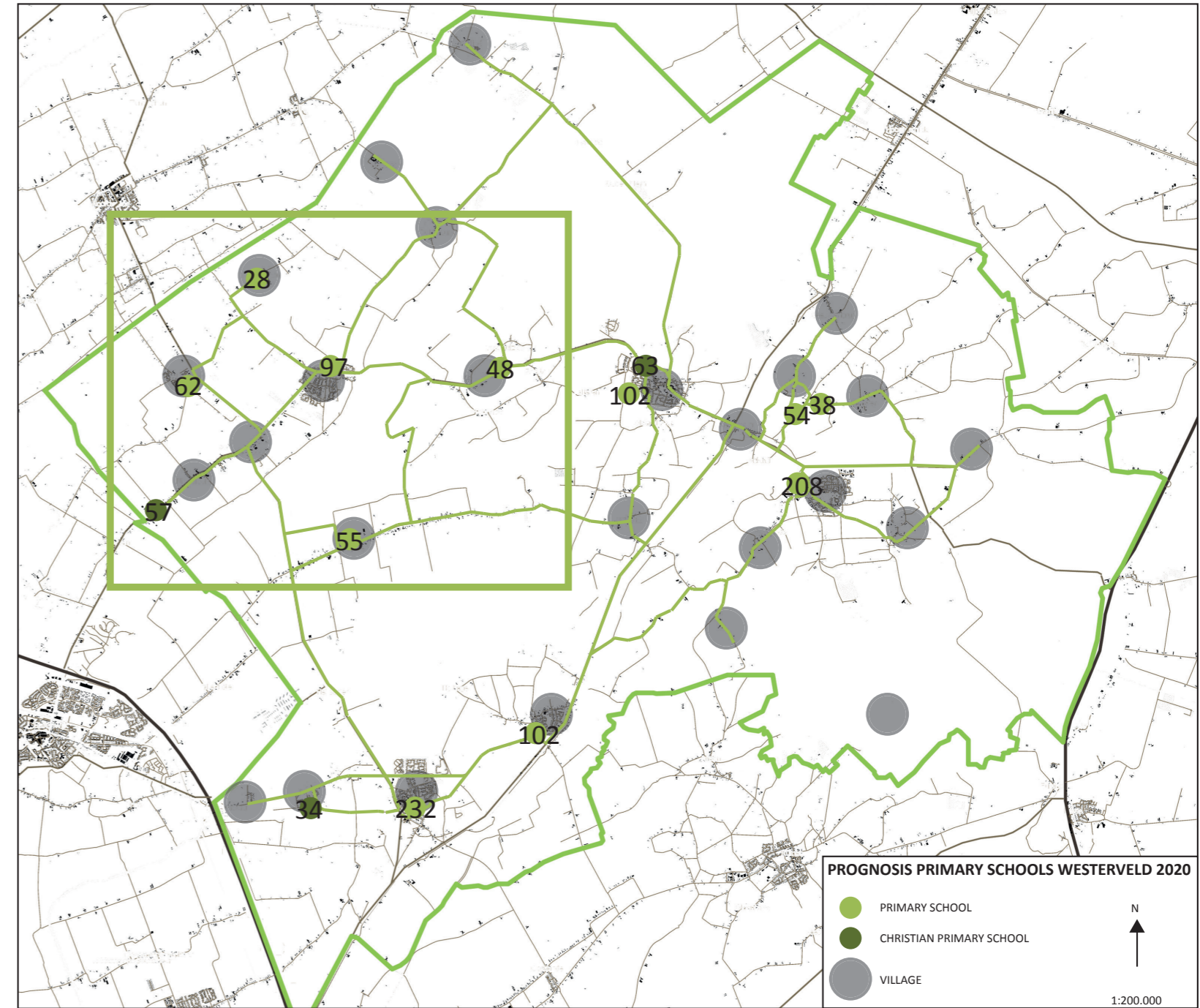
There are four main clusters for the facilities in the area. Those have facilities like health care, education, recreation and supermarkets. The smaller clusters mainly have a primary school, day care and a meeting centre.



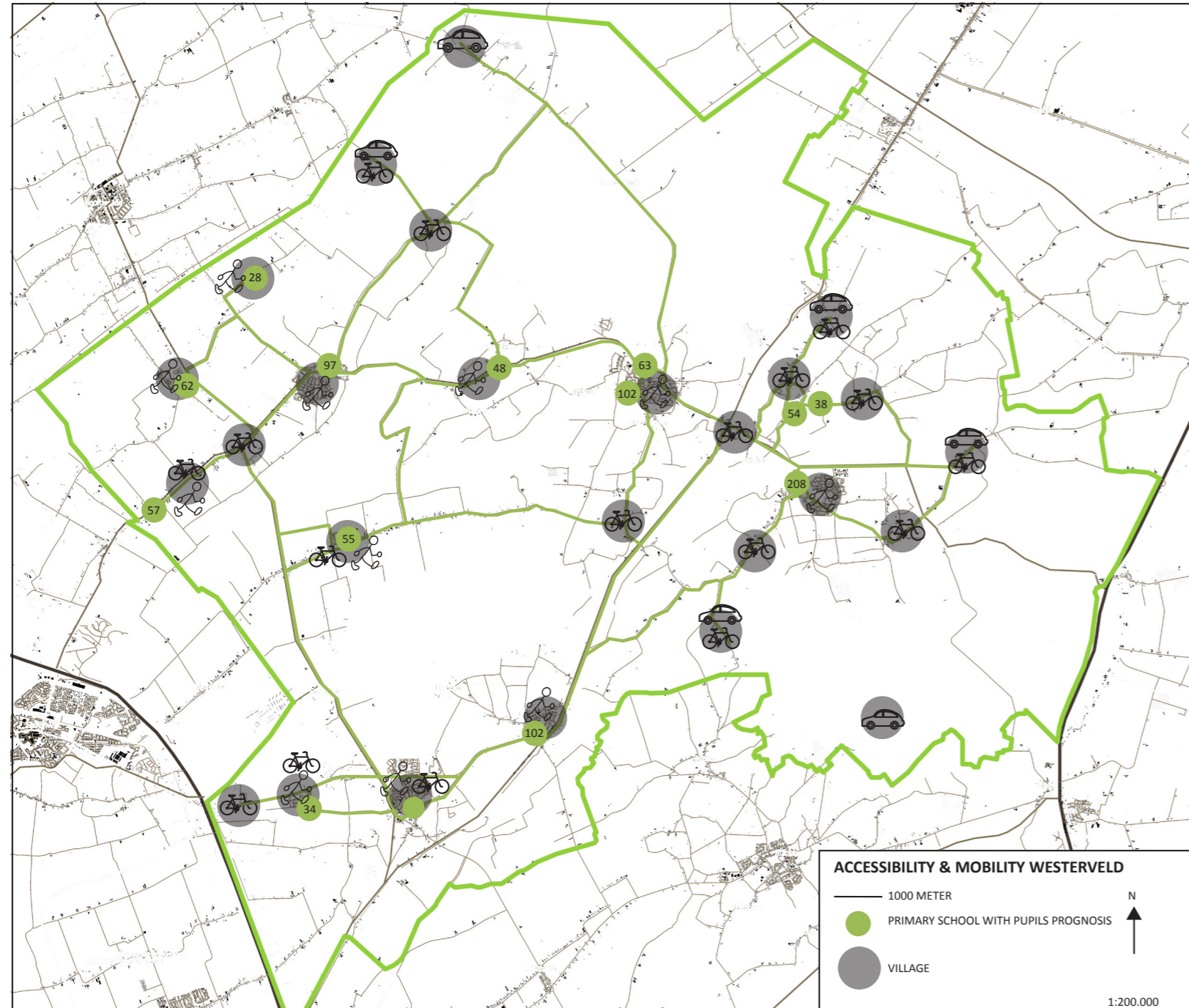
Due to the characteristics of the landscape there is a lot of tourism during the holidays. There are many holiday parks and camping sites.



The current situation in 2012 of all primary schools in the municipality of Westerveld. Only two schools don't belong to the so called 'small schools'. A school gets the label of a small school, when it has less than 150 pupils. The green square shows the focus area of this project.



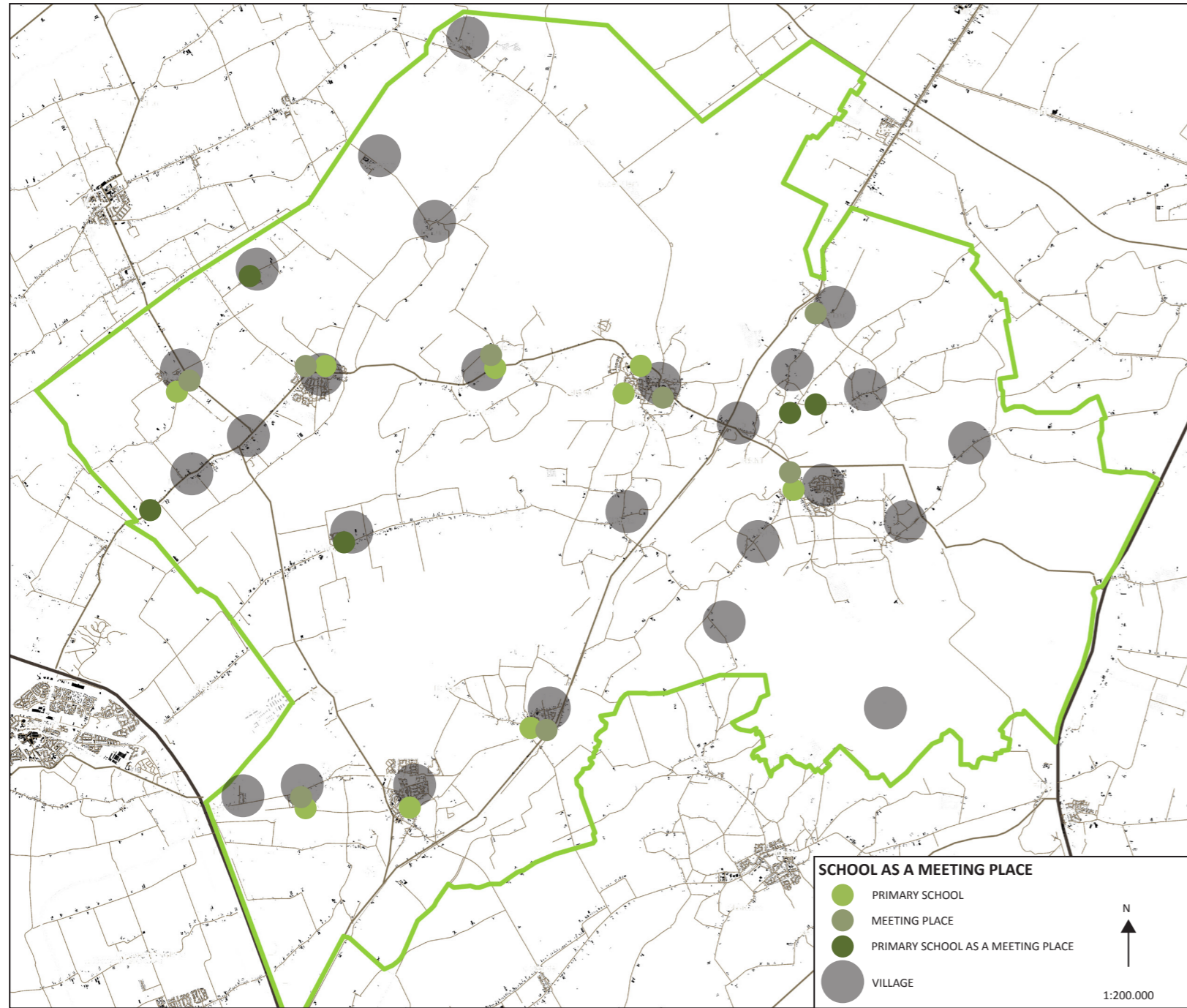
An overview of the expected amount of pupils that will visit the different schools in the municipality of Westerveld by 2020. Apart from two schools, the schools will have by 2020 on an average 60 pupils per school. The green square shows the focus area of this project.



One of the issues related to the liveability of an area is the accessibility of facilities and the related mobility. The map shows for each village how the people on an average reach their school.



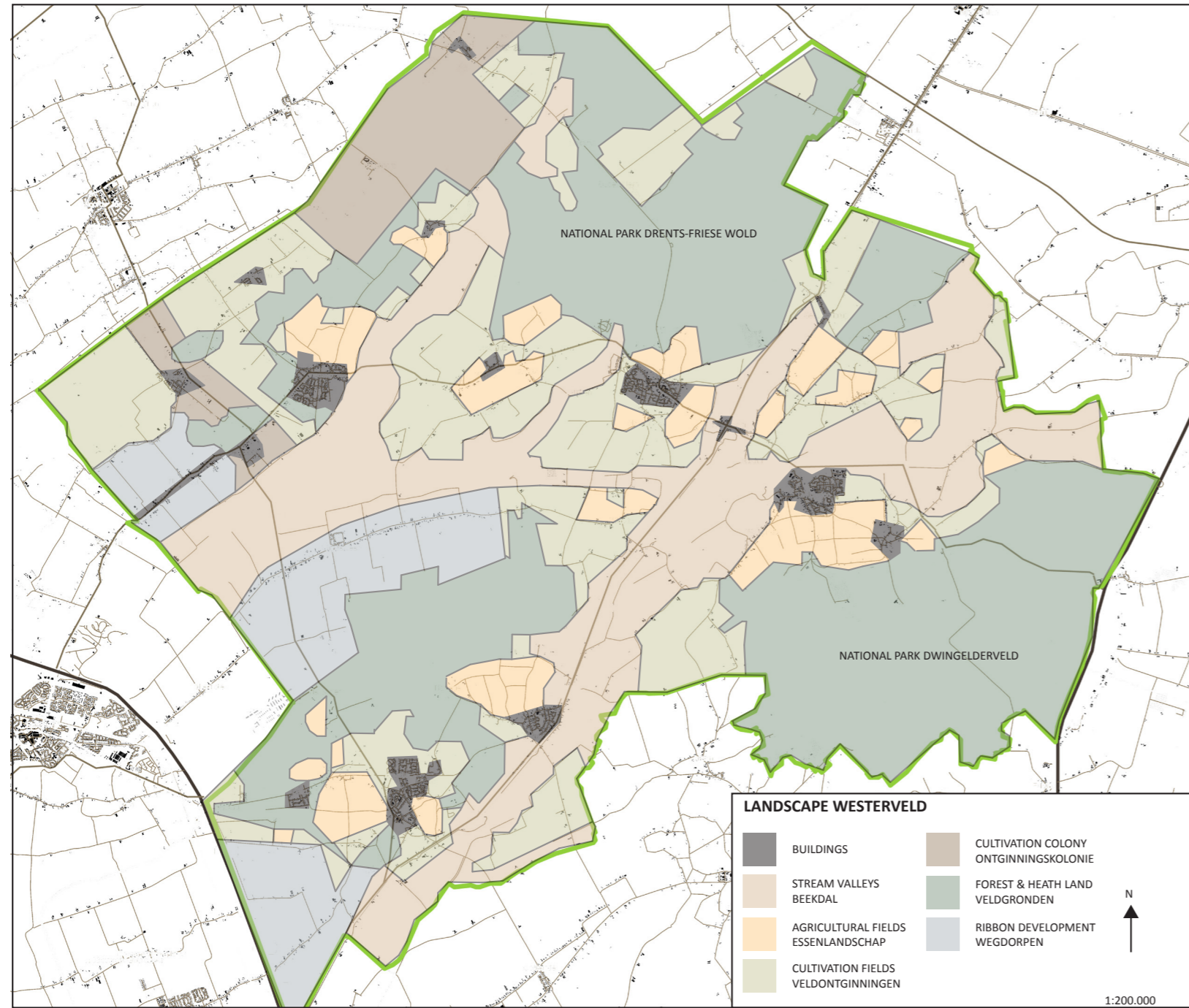
One of the issues related to the liveability of an area is the functional relations of schools to other facilities. The map shows where education is given in the same building as other facilities, and if that is the case, with which facilities education is sharing a building.



One of the issues related to the liveability of an area is the school as a meeting place. The map shows in which villages the primary school also has to a large extent the function of meeting place. The other schools also serve as a meeting place, but also have another place within the village to meet.



One of the issues related to the liveability of an area are unoccupied buildings. Those type of buildings can give the area a bad image, not only when passing by, but also for example in the media. A bad image can accelerate the shrinking process.

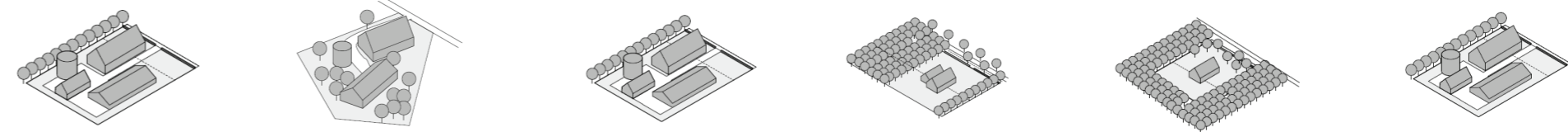


Within the landscape the beauty of this area can be found. Six landscape types within Westerveld can be defined.

1.2.2 WHERE

The spatial characteristics of the area can be found in the nature environment. Since there is not much built, a lot of unbuilt land can be seen. The unbuilt land can be divided in six landscape types. Each landscape has its own origin, morphology and typology.

Furthermore, the condition of six selected schools in the villages Wapse, Wapserveen, Vledder, Nijensleek, Wilhelminaoord and Vledderveen are shortly analyzed.



Each landscape type is explained by showing its morphology, typology and an image.

O.B.S. DE HEIDEHOEK, VLEDDERVEEN

Current amount of pupils in 2012: 40
Expected amount of pupils in 2020: 28

This will be the smallest school in the municipality of Westerveld. The building is built in 1907, and consists of multiple parts. Besides a school, there is a sports centre and a meeting centre within the building. The buildings looks like a shed.



O.B.S. DE KIEVITSHOEK, WILHELMINAORD

Current amount of pupils in 2012: 89
Expected amount of pupils in 2020: 62

The building has a very clear lay-out. The classrooms are already from the outside visible through its independent form. There are four classrooms which all penetrate into the communal space. The school was built in 1972.



C.B.S. DE BRON, NIJENSLEEK

Current amount of pupils in 2012: 82
Expected amount of pupils in 2020: 57

The first part of the school was already built in 1923. By then the school consisted of two classrooms. During the time both at the back of the school as at the front, new parts are added. The newest development was done in 2004.



O.B.S. TEN DARPERSCHOELE, WAPSE

Current amount of pupils in 2012: 68
Expected amount of pupils in 2020: 48

Of all the six schools presented here, this building is the oldest and the most monumental. The building dates from 1873. Remarkable about this school is the height of the building. The height is equal to two storeys right now, what can be seen at the new added part at the back side of the building.



O.B.S. WAPSERVEEN, WAPSERVEEN

Current amount of pupils in 2012: 78
Expected amount of pupils in 2020: 55

This building not only houses a school, but also a lot of other facilities. In 1981 it was designed as a multifunctional building. Apart from a school, day care, a meeting centre and sport facilities can be found within the building.



O.B.S. DE HOEKSTEE, VLEDDER

Current amount of pupils in 2012: 139
Expected amount of pupils in 2020: 97

Of all schools, this is the most regular seventies Dutch school building. The school building doesn't have any character. The classrooms are set up around a dark communal space, which gets its natural light from roof windows.





Diagram showing the different agents and their values involved in the issues about primary education.

1.2.3 WHO

The diagram is showing both the different agents which are involved as the most important values related to education and shrinkage. The pupils, parents and teaching staff are the most concerned about the quality of education. As apposed to them, the government and the township of Westerveld is mostly interested in the finances, since it's their responsibility to distribute the money of the government.

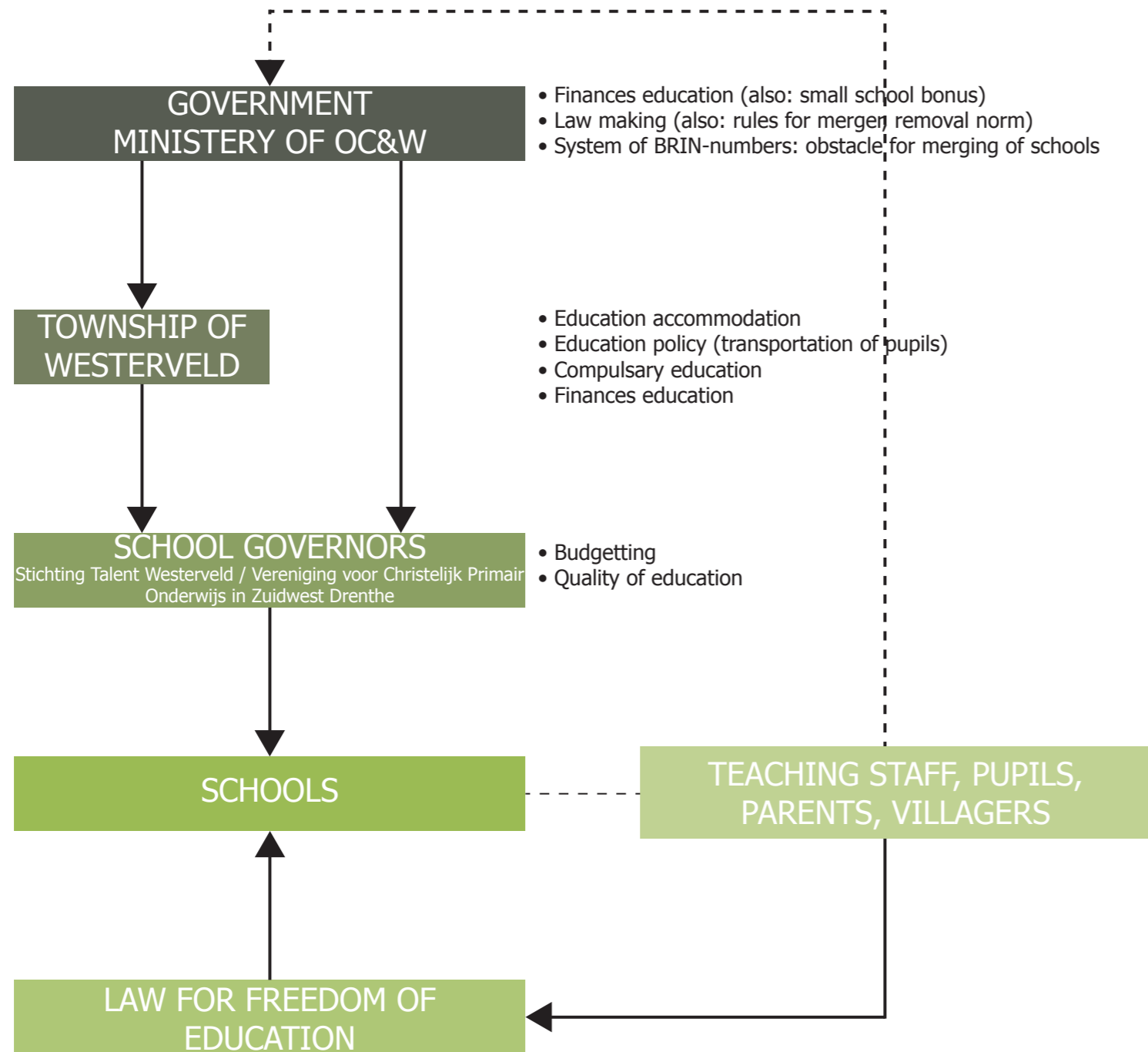
For each value are the agents involved mentioned. The agent with the most interest to that specific value is made bold. The different agents and values are the follow:

Different agents

- # Government
- # Township of Westerveld
- # School governors
- # Teaching staff
- # Parents
- # Pupils
- # Villagers

Values

- # Quality
- # Management
- # Liveability
- # Diversity education supply



The organogram shows the political system about primary education. It gives insight to who has the power what to do. Remarkable is that every citizen initially has the right to start a school.

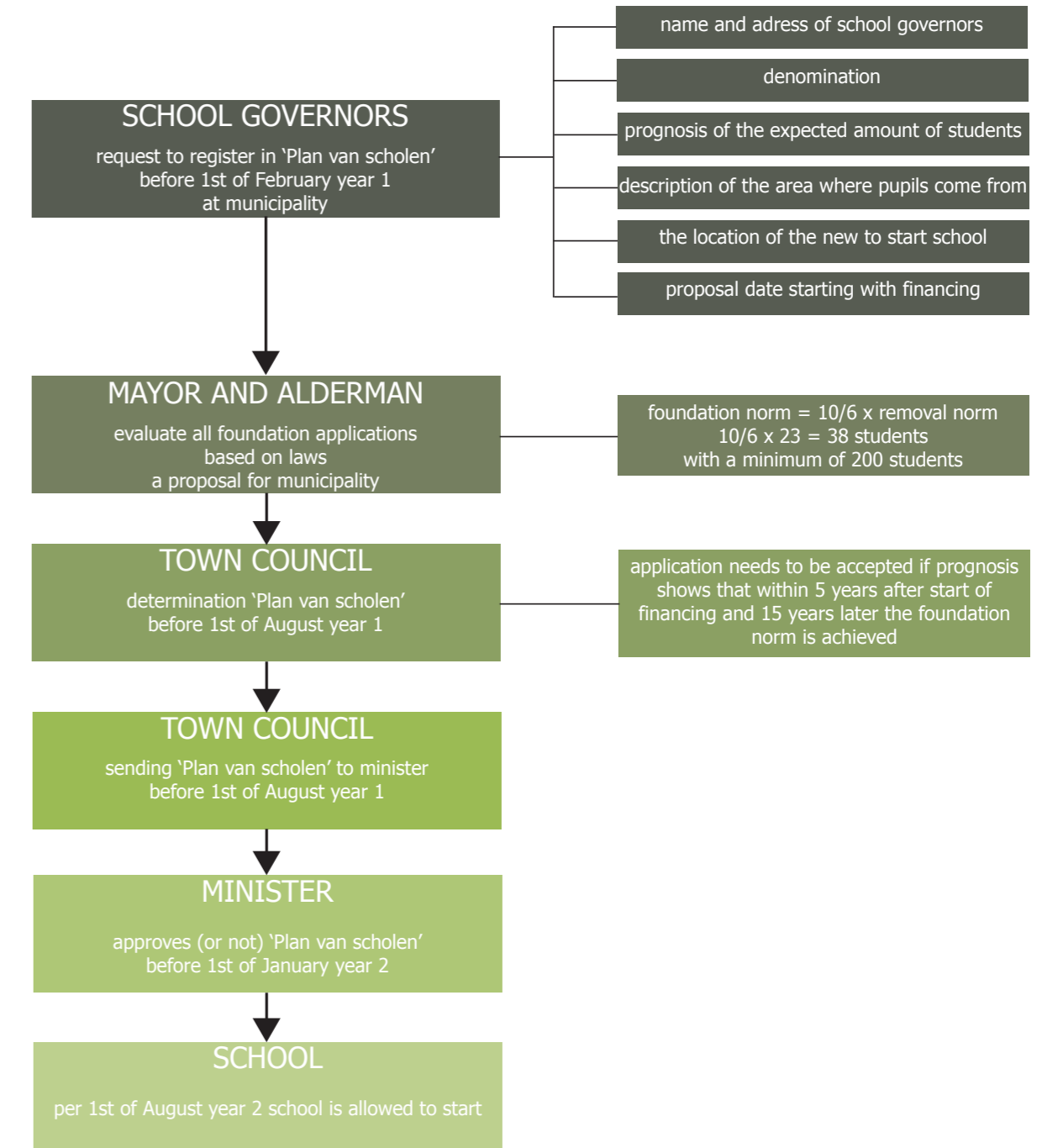
1.2.4 POLITICAL SYSTEM

Political system

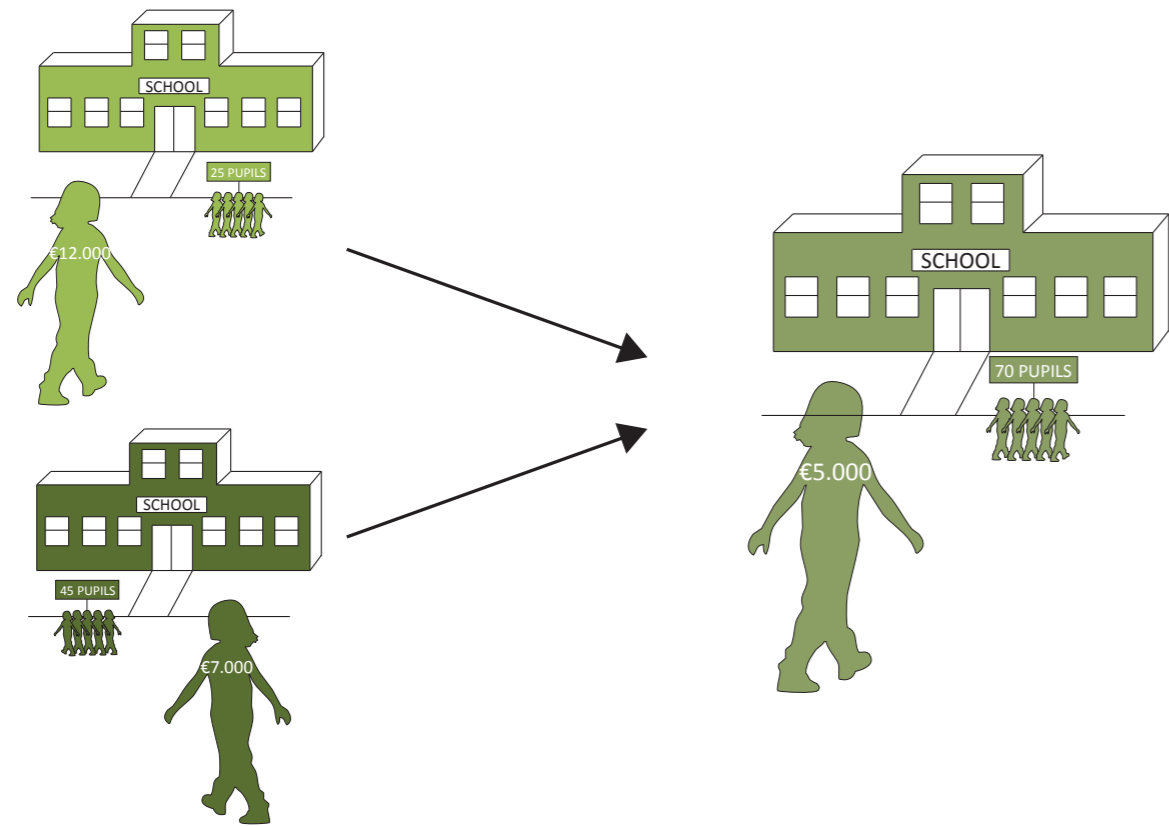
The organogram on the left is showing the political system about education, including who is responsible for what. Interesting is that the finances and the accommodation is organized top-down, but the type of education can be arranged bottom-up: the law for freedom of education gives each individual to start a school with an own chosen denomination and pedagogical foundation.

How to start a school

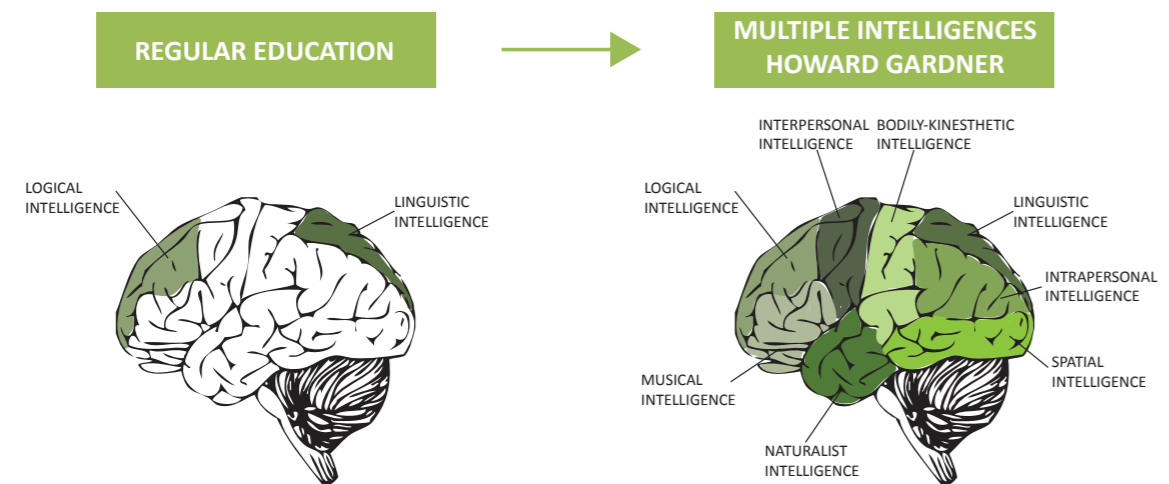
The organogram on the right is showing which steps need to be taken in order to start a school. If a new application is approved mainly depends on how many pupils the school expect to have. The minimum set by the government is two-part. On one hand the rule is $10 / 6 \times$ removal norm (which is in Westerveld 23). That means 38 pupils. On the other hand, the government set a minimum of 200 pupils. In this area, there is not even one school with 200 pupils. This minimum-rule is nobody giving the opportunity to start a school in shrinking low-density areas, since 200 pupils are to many for in such a region.



The diagram shows which steps needs to be taken in order to start a school. The most important issue in the procedure is that the one who is setting up a school needs to prove that enough pupils will visit the new school.



The small school bonus is not supporting small schools to merge to one.



National tests encouraged by the national government only test the logical and linguistic intelligence whilst there is a much broader conception of intelligence and ability available to us.

1.2.5 RED TAPE

Small school bonus

The small school bonus is a barrier for small schools to merge, because the new school get's significant less money than the two separate schools together. This can be a problem for small schools, because while merging the amount of teachers most of the time is not decreasing that fast.

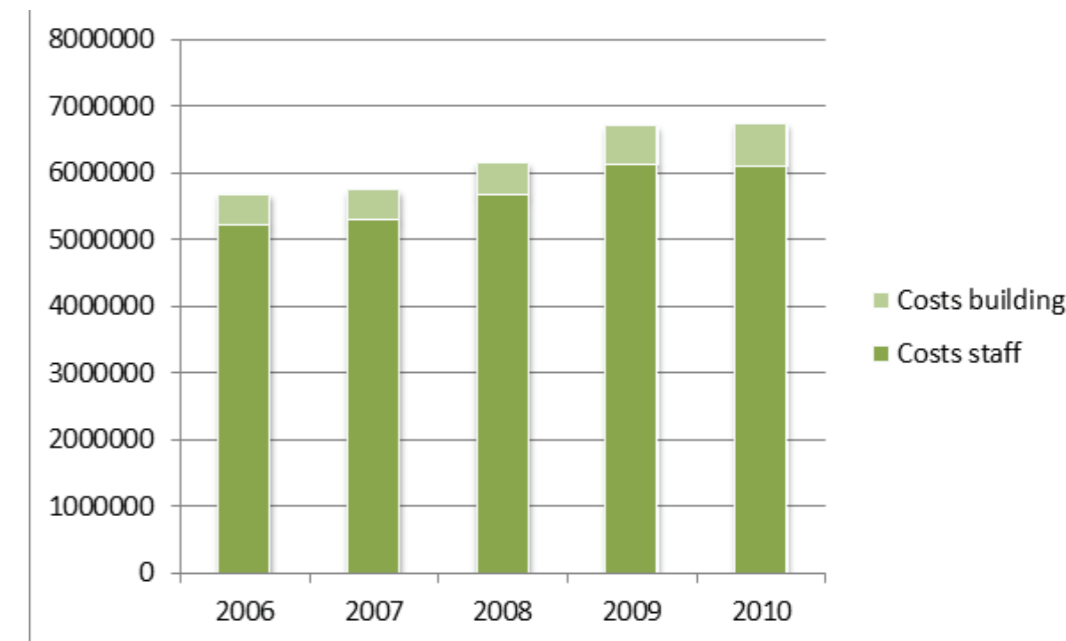
Intelligences

In regular schools, mostly the linguistic and logical-mathematical intelligence is developed. The national tests, such as Cito, which determine to a big extent if a school is of good quality or not, also mainly testing math and language. This is in discrepancy with the intelligences that exist according to Howard Gardner.

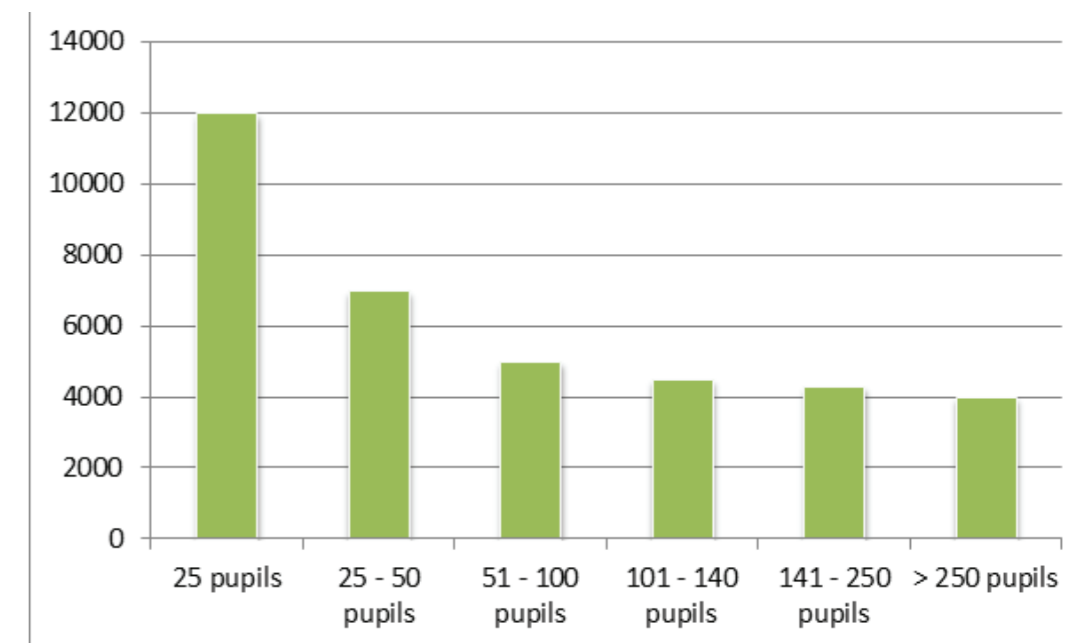
Finances

Costs for the building are in comparison with the costs for staff very low. This means that if you want to save money, reducing at staff is the most effective.

Costs per pupil in relation to school size, rise exponentially when the school size is shrinking.



Costs school building in relation to costs staff of Stichting Talent Westerveld (11 schools)



Costs per pupil in relation to school size

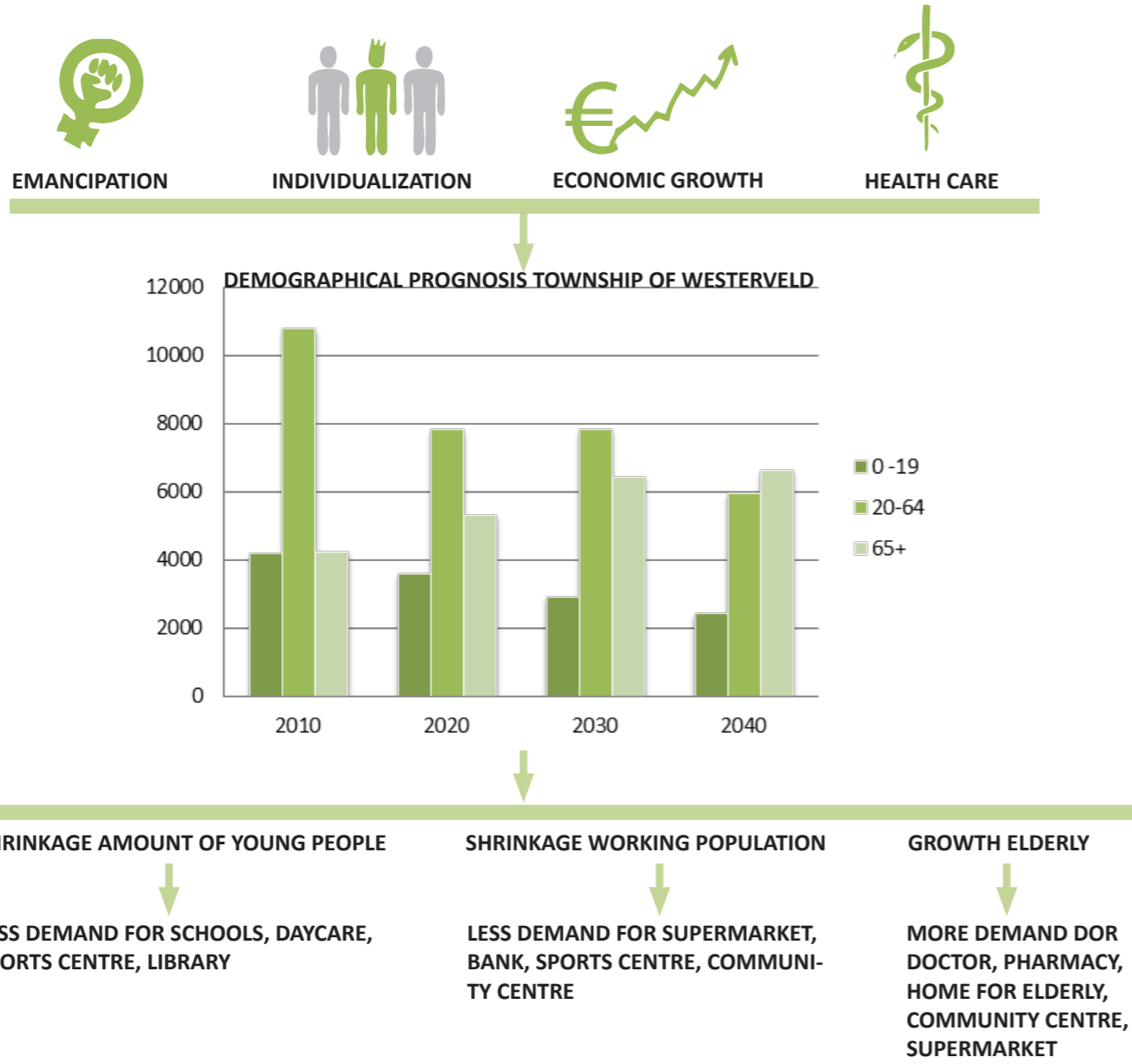
SOCIAL CULTURAL CHANGE
ECONOMIC CHANGE
PLANNING



DEMOGRAPHICAL CHANGE



CHANGE IN AMOUNT & TYPES OF FACILITIES

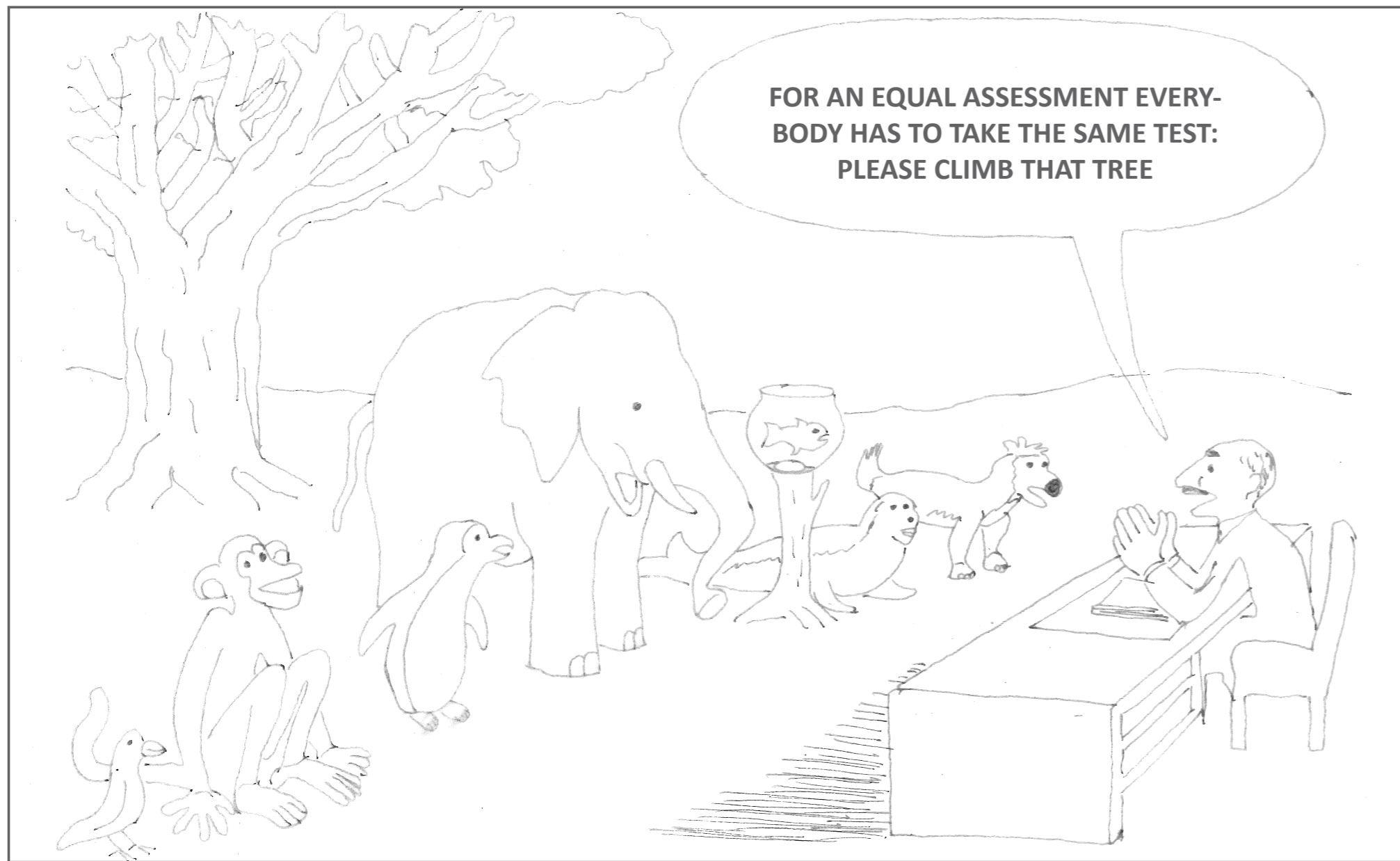


1.2.6 THE PEOPLE

The role of the people can be found in the social cultural and economic change. Four aspects were causing change: emancipation, individualization, economic growth and improvement of health care. Due to these changes, nowadays the composition of the population is changing. There are now less women to get birth to new children due to emancipation and individualization, which is not visible in a less birth rate than some years ago. Economic growth and health care are the underlying aspects for people getting older.

The changed behaviour is now becoming visible in an altering composition of the population. This affects the amount and type of facilities. One can imagine that less schools are necessary, but that more elderly homes are essential.

The diagram shows how social cultural changes and economical changes influence the demography and the amount and type of facilities.



The third problem statement is captured in a drawing. The animals are the symbol for the pupils. For each animal, we all know directly its quality and capacity. How different the animals are, show also how different pupils can be and that education should take that into account.

1.3 PROBLEM STATEMENT

The problem statement can be summarized in four parts which all affect in a particular way the spatial characteristics and structure of school buildings and their urban context. The first two are related to the physical context, the last two to the educational context.

Firstly, there will be a growing discrepancy between the supply and demand of facilities. Due to emancipation, individualization, economic growth and improving health care, the composition of the population is changing. This demographical change means less children will be born, the working population is shrinking and the amount of elderly is growing. This shift in the composition of the population, causes a shift in the amount and types of facilities.

Secondly, closing a school in a village affects the surrounding on different levels, such as accessibility, mobility, meeting place, other facilities and unoccupied buildings. In order to make the right decision all these aspects should be taken into account, otherwise the liveability of the village can be in danger.

Thirdly, current primary education is not providing opportunities for the development of distinctive capacities and individual contributions for each individual. According to John Dewey, education is a miniature of society. Since we are living in a democratic society, this implies education should be a small democratic society in itself. In order to understand democracy as a way of living, all pupils need to get the opportunity to develop and discover their individual qualities and capacities.

Fourthly, regular education is producing more passive than active citizens. In order to understand democracy as a way of governance, pupils need to experience to create and share opinions in order to understand how this works. This means to enable pupils in groups and as individuals to develop social attitudes to one another.

Future developments have to take into account both the physical and social context as the educational context related to democracy.

1.4 AIM AND EXPECTED OUTCOME

The focus of this project firstly is to explore and understand the location and its spatial characteristics, the political context and the educational context, all in its relation to democracy. Secondly, the aim is to develop a position towards the development of education in a shrinking low-density area, and thirdly to apply the collected knowledge and the position into a design on both a regional scale as a building / interior scale. The overall aim is to find a new spatial translation for the existing educational landscape of Westerveld, and to define generic aspects that can be applied to other areas with the same characteristics.

The expected outcome is firstly that this research can be an example for the people in general to start rethinking the current educational system. Secondly, especially for the architects among us, the project can be the beginning of a change, of a next step in designing school buildings.

1.5 RESEARCH QUESTIONS

Main research question

How can the educational landscape of Westerveld be developed in terms of democracy, both on a regional as a building scale?

Secondary research questions

What is the physical and social situation in Westerveld?

What are the spatial characteristics of Westerveld?

What is the current condition of the existing primary schools in Westerveld?

What is the current political system related to education? Who are involved and what is their role, what are the policies?

In what way is democracy related to education and the physical/social context?

What spatial characteristics do support individual / group learning?

What are the features of the learning styles theory of David Kolb and how can these be spatial translated?

What are the features of the multiple intelligences theory of Howard Gardner and how can these be spatial translated?

Which spatial elements do support pupils to have a say within their school?



INTRODUCTION

1. PROJECT DESCRIPTION

2. RELEVANCE

3. METHODOLOGY AND PHASING

4. THEORETICAL FRAMEWORK

5. PRELIMINARY RESULTS



Examples of school designs that recognize the plurality of intelligence.
Source: www.fieldingnair.com

2.1 ACADEMIC RELEVANCE

The academic relevance of the project can be found in the research done about education. Almost all school buildings in the Netherlands are built up two different pieces: classrooms and communal space. Especially since the 70ties, the communal space is altering and transforming from only circulation space towards a combination of circulation space and study space. The communal space is nowadays the place in the educational buildings which offer a varied spectrum of study spaces. However, the classroom itself has barely changed. And that's exactly where the challenge lies: is it possible to step out of that stubbornly classroom pattern?

The research is exploring how space can influence the teaching and learning process in educational buildings. Space includes the form, size of a place, the use, furniture, colors, lighting, materialization and the urban context. In general this means, to figure out which elements a school building needs. If it doesn't need a classroom, what else is needed?

The following chapter aims to be an addition to the architectural academic field. After exploring the development and current state of primary education buildings and the relation between education and democracy, four themes are explored in different ways, such as plan analysis, collages and mind-mapping drawings. The themes are explored in the following order:

Process-based learning of David Kolb

Multiple intelligences theory of Howard Gardner

- linguistic intelligence
- logical-mathematical intelligence
- musical intelligence
- naturalist intelligence
- bodily-kinesthetic intelligence
- spatial intelligence
- intrapersonal intelligence
- interpersonal intelligence

From uniform to individual education

Spatial elements that stimulates pupils having a say

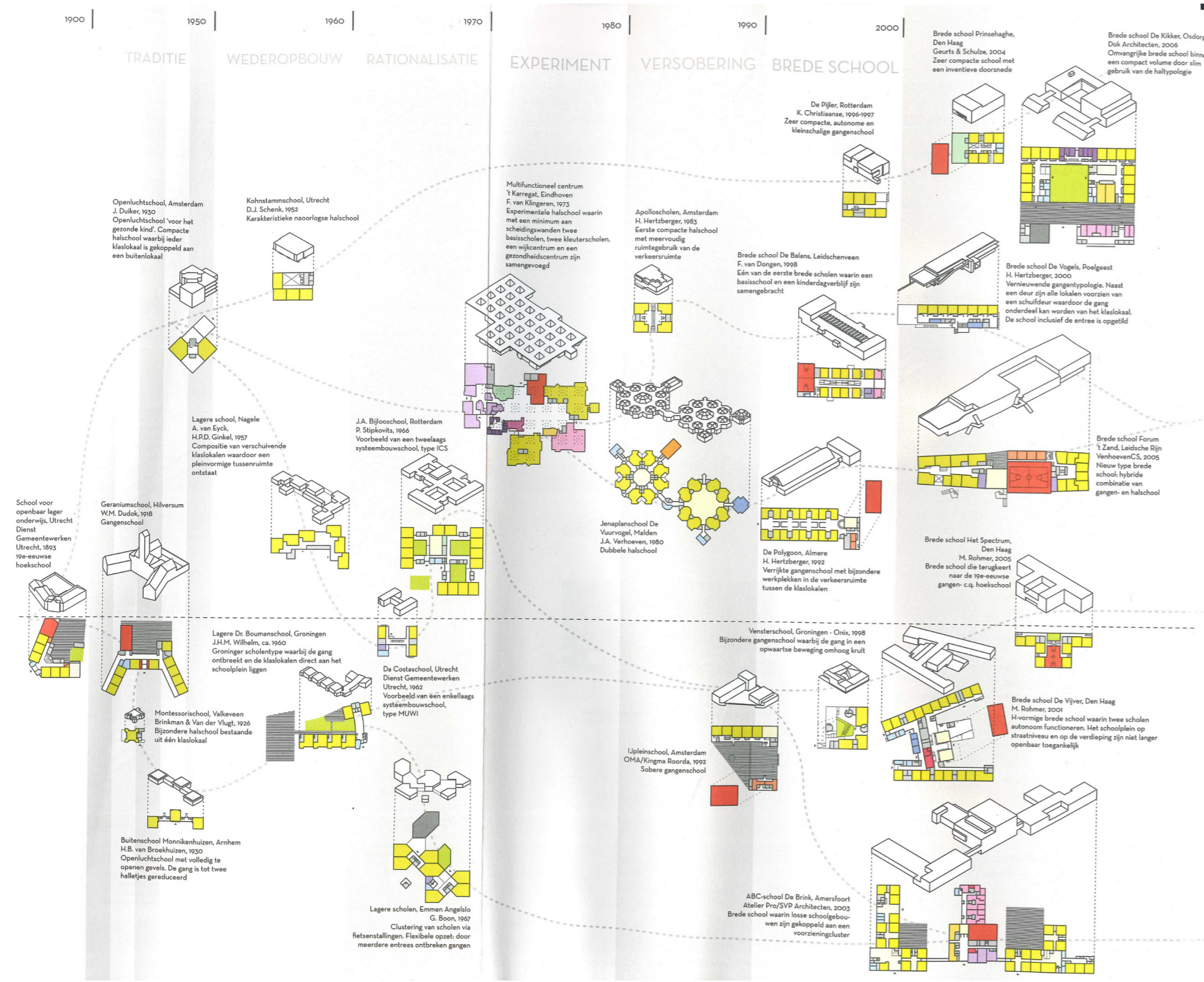
2.2 SOCIAL RELEVANCE

The social relevance of the project can be found in the change the project aims to make in the educational debate / school buildings. Educational buildings affect all people, because everybody will attend school for at least some years in their life. Actually, in a very important period in human lives. During the primary school period, a big part of the character, the social skills, the physical condition and the cultural luggage of people are formed.

School buildings reflect the ideas about the position of the child in society and how the most effective forming of the student can be achieved. School buildings show which basic competences are the most important for the client, user and the architect. Furthermore, primary schools belong to the most important public buildings, not only spatially, but also in a human life.

To acknowledge multiple forms of intelligence and ways of learning, is the start to make education more effective and efficient for pupils and teachers. The possibility to discover and develop every talent an individual has, can be the start for each individual of becoming more successful in life.

This starts with a new generation of children, but as they grow older, the whole society will benefit of the education they had. The educational space aims to give the opportunity to each individual to flourish.



Development of primary education buildings in the Netherlands
 Source: Rodermond, Wallagh, Leun, 2009, pp. 57-58

DEVELOPMENT OF THE PRIMARY EDUCATION BUILDING

The development of primary education buildings started around the end of the 19th century. The traditional school consisted of classrooms along a corridor. The corridor changed slowly into a hall or even disappeared in some schools completely. In those schools, the classrooms were directly accessible from outside. In the first schools the corridor was purely circulation space. Not only the form of the communal space was changing, but also the function. It also got the function of learning space or space for lunch or free time activities.

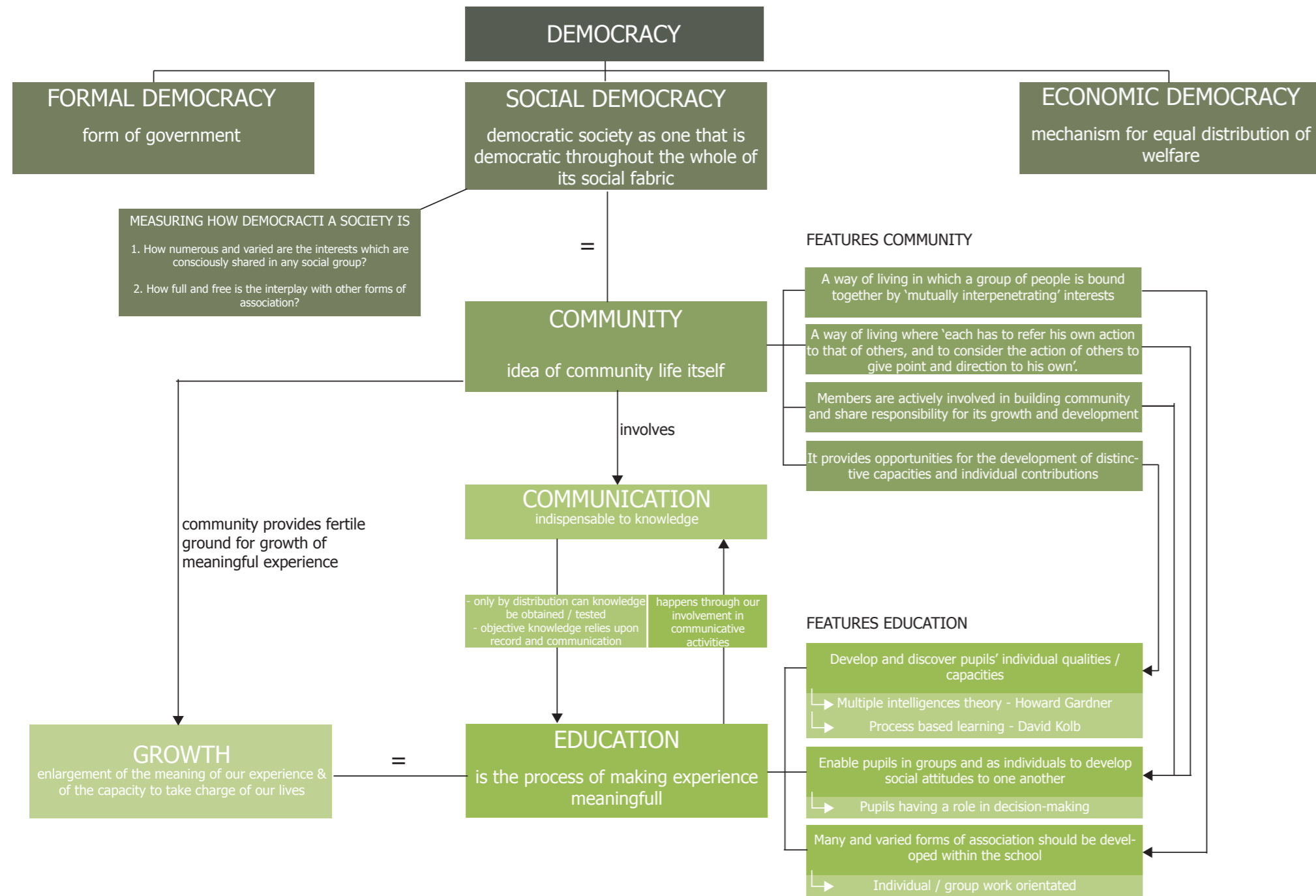
In the fifties and sixties some architects are playing with the classroom. Since then it always had a rectangular form. Architects like Hertzberge changed this into a L-shaped classroom. Those kind of classrooms can especially be found in Montessori schools and Jenaplan schools.

Until 1985, pupils of the age 4 and 5 went to separate schools as those which were 6-12 years old. In 1985 'de wet op het Basisonderwijs' merged those age-groups together in one building. The size of school buildings therefore increased.

Since the nineties a new development is going on, namely that of the 'Brede school'. The educational building gets a lot more functions, such as day care, kindergarten, sports centre or other free - time activities. Sometimes there are even multiple schools in one building. The school gets through its wide offered programm, a social function within the community.¹

While studying the development of primary education, one aspect is very remarkable. The rectangular classroom pattern seems to be a stubbornly structure of school buildings. Why is that? The classroom pattern remained the same because the pedagogical idea behind it didn't change. This idea is that all pupils should learn in the same space, without paying attention to the possibility that some types of intelligences need another type of learning space. This means that by having this classroom pattern in educational buildings, there is a discrepancy between the learning space and the plurality of intelligence and the corresponding activities. To have this more in balance, to make it more democratic, is important for each individual, so that all of them can flourish and not only a few.

1. Rodermond, Wallagh, Leun, 2009, pp. 57-58



Philosophical theory of John Dewey about the relation between education and democracy.

RELATION BETWEEN EDUCATION AND DEMOCRACY

A philosophical theory of John Dewey

The relation between education and democracy is further explored by John Dewey (1859-1952), who was an American philosopher and teacher. According to Dewey, there are three types of democracy.

Democracy as a way of governance is the most well-known type. Besides that, Dewey distinguishes economical and social democracy. Economical democracy can be seen as a mechanism that provides equal distribution of welfare. Within the social democracy, the relation between democracy and education is becoming clear. Dewey defines social democracy as a democratic society that is democratic throughout the whole of its social fabric.²

Social democracy is the idea of community life itself. Within this community there are numerous and varied groups with different interests and people belong to different groups. Between the groups there is a free interplay. To the extent that those two aspects are happening, that's how democratic the community is. Community also includes communication. And communication is essential for knowledge, because only by communication knowledge can be tested and obtained.³

Education is the process of making experience meaningful. Experience that a person is not aware of, is not meaningful and therefore not educating. The enlargement of meaningful experience is called growth. Within a democratic community there are many, free, and varied forms of groups communicating and is therefore the fertile ground for growth, for education. The more democratic the community is, the bigger the growth will be.⁴

This means that the democratic community is the basis for education. Actually it goes one step further; education should be a miniature of a democratic community. In order to achieve this, the features of a democratic community need to be translated into the educational situation.

Pedagogical ideas

Four main features of the democratic community will be described and will be translated into the educational situation, to pedagogical concepts.

The first characteristic is that such a community gives to each person the opportunity to develop his / her talents.⁵ In educational terms, this means that pupils should be able to develop and discover their individual qualities and capacities. Pedagogical concepts which stimulate this, are the experiential learning theory of David Kolb and the multiple intelligences theory of Howard Gardner.

The second characteristic is that community is a way of living in which different groups of people are connected by having the same interests.⁶ To make this as varied as possible in education, means that many and varied forms of association should be developed within the school. This can be done by making education group work orientated rather than uniform, where pupils work in different groups from time to time.

The third and fourth characteristic are that persons have a social attitude to each other and that they all together are actively building their community.⁷ These two characteristics can be both translated into the educational situation by making all pupils more actively involved in building their own small community. This means, by giving them a say within school, like setting up rules together.

The next part describes each pedagogical idea in more detail and shows how the pedagogical concept influences space. The pedagogical ideas are presented in the following order: experiential learning theory of David Kolb, the multiple intelligences theory of Howard Gardner, individual / group working and giving pupils a say within school.

2. Berding, 2011, p. 194

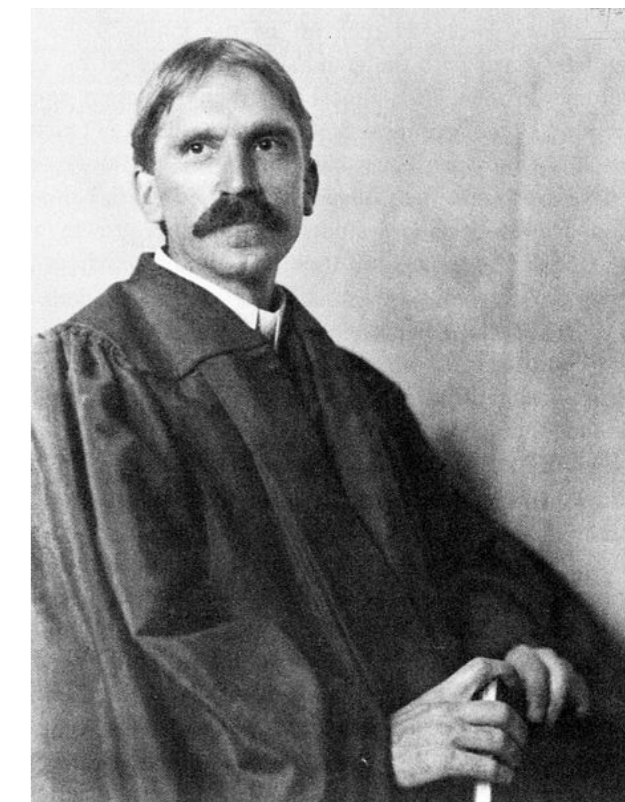
3. Cam, 2000, pp. 158-181

4. Cam, 2000, pp. 158-181

5. Dewey, 1968, p. 99

6. Dewey, 1968, p. 99

7. Dewey, 1968, p. 99



John Dewey, 1859-1952



LOGIC WILL GET YOU FROM A TO B.

IMAGINATION WILL TAKE YOU EVERYWHERE.

ALBERT EINSTEIN, THEORETICAL PHYSICIST

PROCESS-BASED LEARNING DAVID KOLB

David Kolb - learning styles

David Kolb is an American social psychologist with a main interest in education. In the 1970s he developed the Experiential Learning Model, which is composed of four elements: experience, observation, conceptualization and experimenting. Each individual has a preference to start learning from one of those elements. In order to have an as effective learning process as possible, it's necessary to go through all the four phases.

Display learning

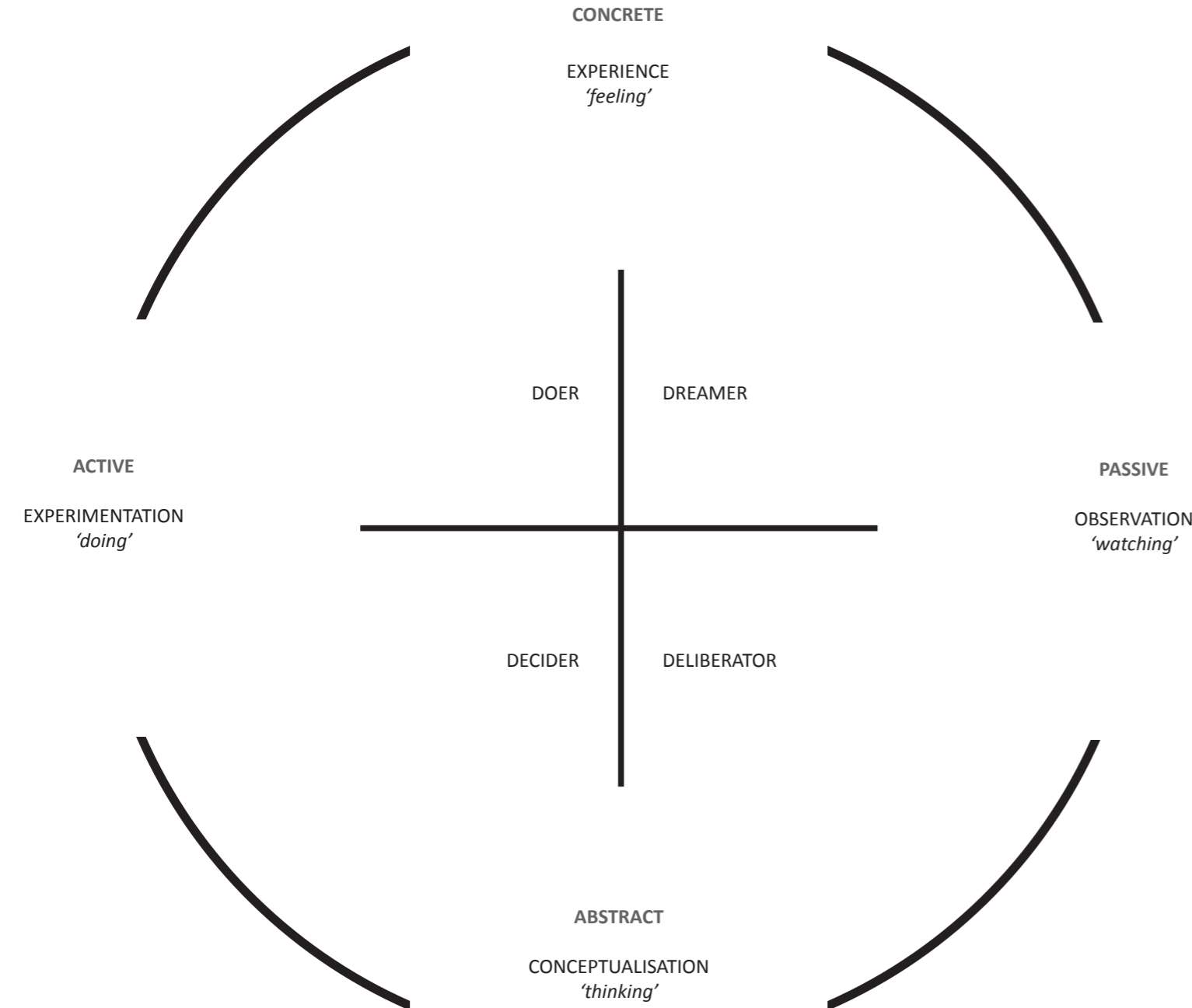
Display learning can be used for mainly three different purposes. By showing the work of pupils of both the past and the present, progress can be made visible. In this way, the pupil is more aware of the learning process he or she is going through. When pupils are looking at work from other pupils, they can learn from them. They see other possibilities to make all kind of different things and get a feeling of how they improve themselves. The last purpose is not directly about learning from yourself or others, but about making a connection to the neighborhood / surroundings.

Albert Einstein

The quote of Albert Einstein 'Logic will get you from A to B. Imagination will take you everywhere' implies a learning environment which is paying attention to the process of learning. Logic is a linear process and will direct you to one answer. Imagination on the other hand will lead into multiple directions and outcomes. This means that a teacher is guiding the process, rather than focusing on one specific outcome.

Order

Firstly the learning circle and the learning styles will be explained. Secondly, some examples of display learning will give an overview of the widerange of architectural possibilities.



David Kolb defines in his book 'Experiential Learning', published in 1984, four different learning styles: concrete experience, observation and reflection, forming abstract concepts and active experimenting. The learning styles are organized in an experiential learning circle. For an optimal learning process, each student should go through all learning styles. There is no fixed starting point; where a student starts within the learning circle depends on their own learning style.

There are mainly four aspects within this theory that play an important role:

1. A learning process going through all four phases will result in a better learning outcome.
2. Differences between students are besides their frame of reference, upbringing, background and earlier experiences determined by their difference in learning style.
3. If students are able to start learning from their own learning style, the motivations to learn will increase.
4. Collaboration between students can be structured according to their learning style.

Concrete experience Senses Colourfull & attractive Multifaceted Subjective	Reflective observation Diverse sources & perspectives Research Develop opinion
Abstract concept Scientific Abstract & theoretical Diagrams & models Objective	Active experimenting Testing Active Realizing plans Practical ⁸

Collages of all the learning styles show the differences between them in the following order: dreamer, deliberator, decider and finally the doer.

8. Kolb, 1984, pp. 40-42

MATRIX SPATIAL FEATURES LEARNING STYLES

	LEARNING MODALITIES	DREAMER	DELIBERATOR	DECIDER	DOER
	INDEPENDENT STUDY		X		
	PEER TUTORING	X			X
	TEAM COLLABORATION	X	X	X	X
	ONE-ON-ONE STUDENT - TEACHER		X		
	LECTURE FORMAT		X	X	
	SEMINAR STYLE INSTRUCTION	X		X	X
	PROJECT - BASED	X	X	X	X
	DESIGN - BASED	X			X
	PLAY - BASED	X			X
	PERFORMANCE - BASED	X			X
	NATURALIST LEARNING	X		X	X
	SOCIAL / EMOTIONAL / SPIRITUAL LEARNING	X			X
	STUDENT PRESENTATION			X	
	STORYTELLING	X			X

	SCALE	DREAMER	DELIBERATOR	DECIDER	DOER
	INDIVIDUAL		X		
	SMALL GROUP; < 8	X	X	X	X
	GROUP; < 20	X			
	LARGE GROUP; > 20	X			

	SPACE TYPES	DREAMER	DELIBERATOR	DECIDER	DOER
	CLASSROOM		X		
	STUDIO	X		X	
	LEARNING CENTRE	X		X	X
	CAMPFIRE SPACE		X	X	
	INTERACTION	X			X
	CAVE SPACE		X		
	LIBRARY		X		
	GYMNASIUM				X
	PERFORMANCE	X			X
	EXHIBITION SPACE	X			

	FURNITURE	DREAMER	DELIBERATOR	DECIDER	DOER
	INDIVIDUAL		X		
	GROUP WORKING	X		X	X
	DISPLAY SPACE	X			X
	DIGITAL DISPLAY	X	X	X	X
	WRITING PANELS	X	X	X	X
	MAGNETIC PANELS	X			X
	ATELIER	X		X	X

	MATERIAL	DREAMER	DELIBERATOR	DECIDER	DOER
	BRIGHT COLORS	X		X	X
	SOFT COLORS		X	X	
	SMOOTH	X	X		
	ROUGH	X			X
	TRANSPARENT	X		X	X
	TRANSLUCENT	X	X		

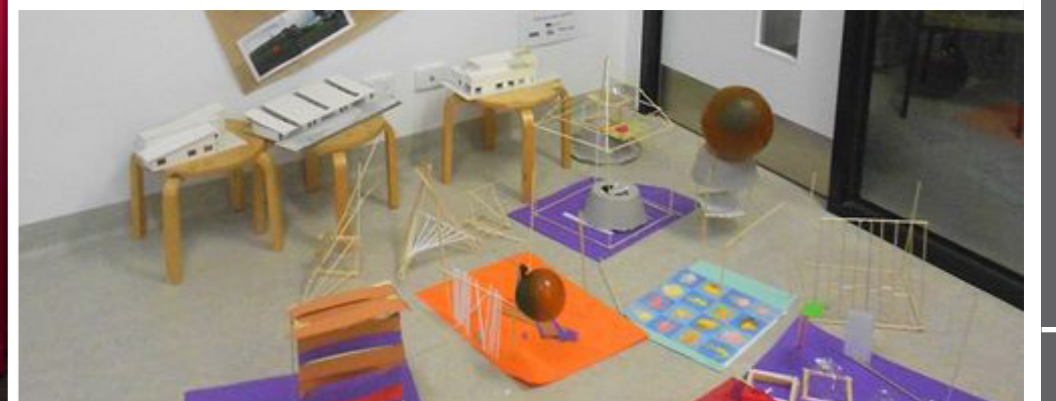
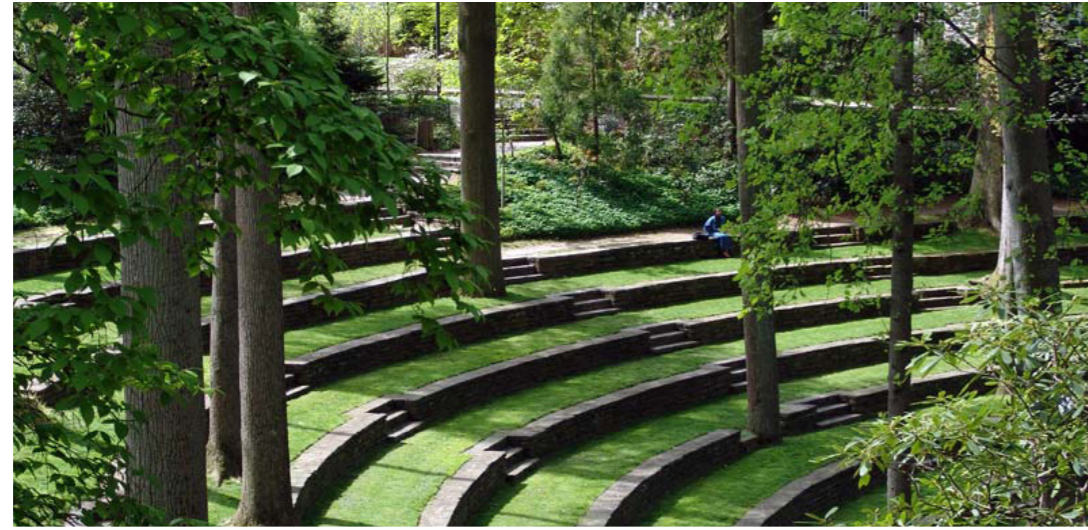
	LIGHTING	DREAMER	DELIBERATOR	DECIDER	DOER
	SPOTS	X			X
	BRIGHT	X		X	
	DIMMED	X	X		

DREAMER

Goal
Experience and reflection

Characteristics
Emotion
Imagination
Personal meaning
Senses
Fantasy
Observing
Creative
Generate new ideas⁹

Activities
Working within a theme
Group conversations about personal thoughts and feelings
Making use of senses: feel, smell, taste, see, hear
Brainstorming
Mindmapping
Role play
Designing
Making poems
Making collages





DELIBERATOR

Goal

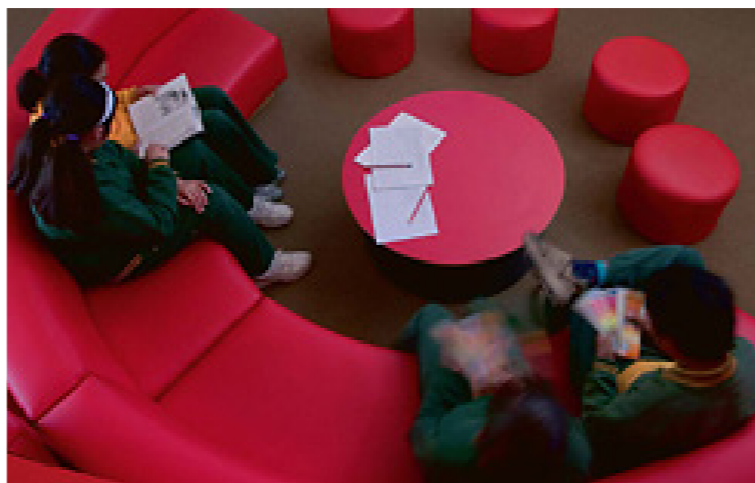
Observing situations and conceptualize them

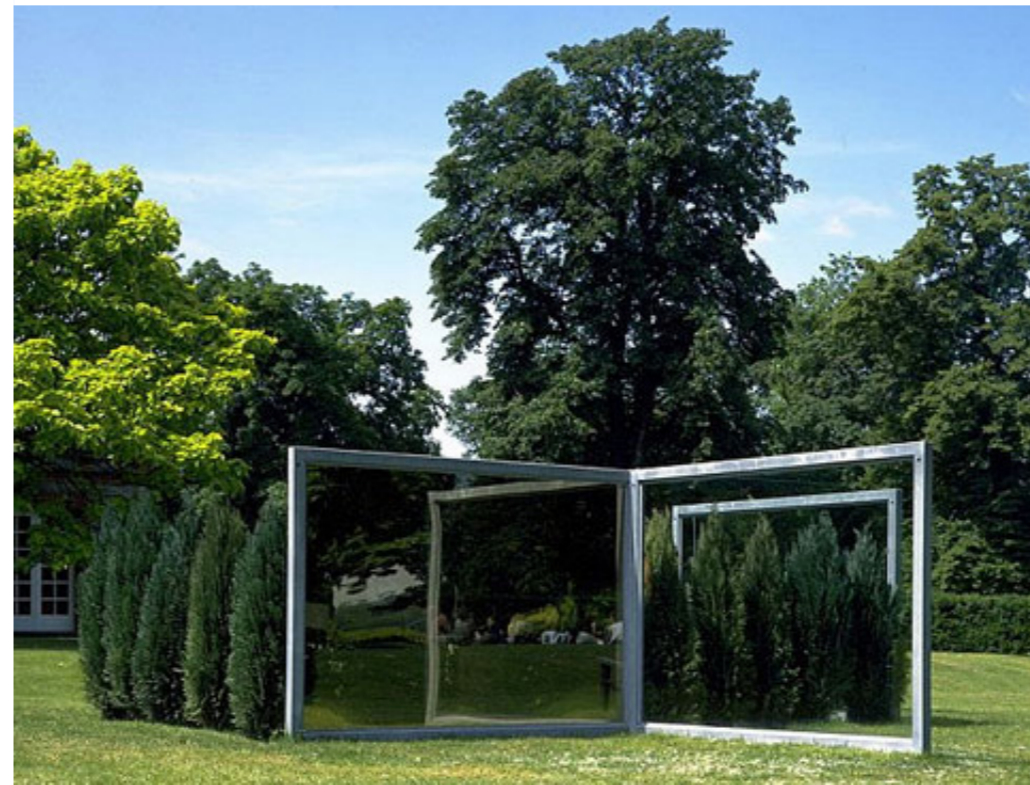
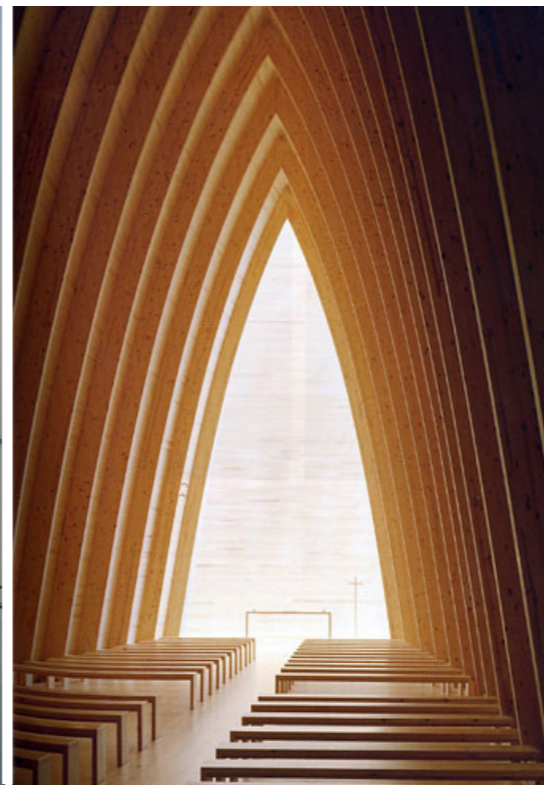
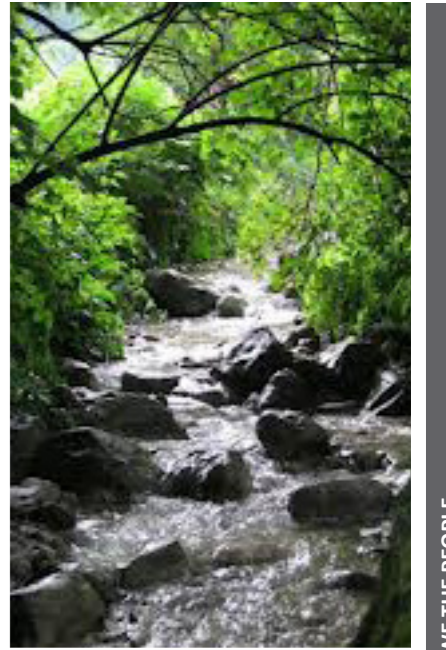
Characteristics

Characteristics
Gathering information, statistics, theories
Analyzing information
Observing and writing
Comparing opinions / develop own opinion
Learning by research¹⁰

Activities

Receiving background information, text and explanation
Comparing opinions
Analyzing theoretical models
Asking questions
Exploring connections
Making summaries
Debating





DECIDER

Goal

Problem-solving thinking and testing of theories in practice

Characteristics

Knowledge should be applicable
Abstract conceptualizing
Active experimenting
Problem-solving thinking
Taking decisions
Translating theories into practice
Efficiency
Technical
Trying new things
Result: one answer
Teacher controlled¹¹

Activities

Proceeding from a problem statement
Testing methods in practice
Structurized exercises
Experimenting
Demonstrations of machines
Step-by-step plan





DOER

Goal

Active experimenting and concrete experience

Characteristics

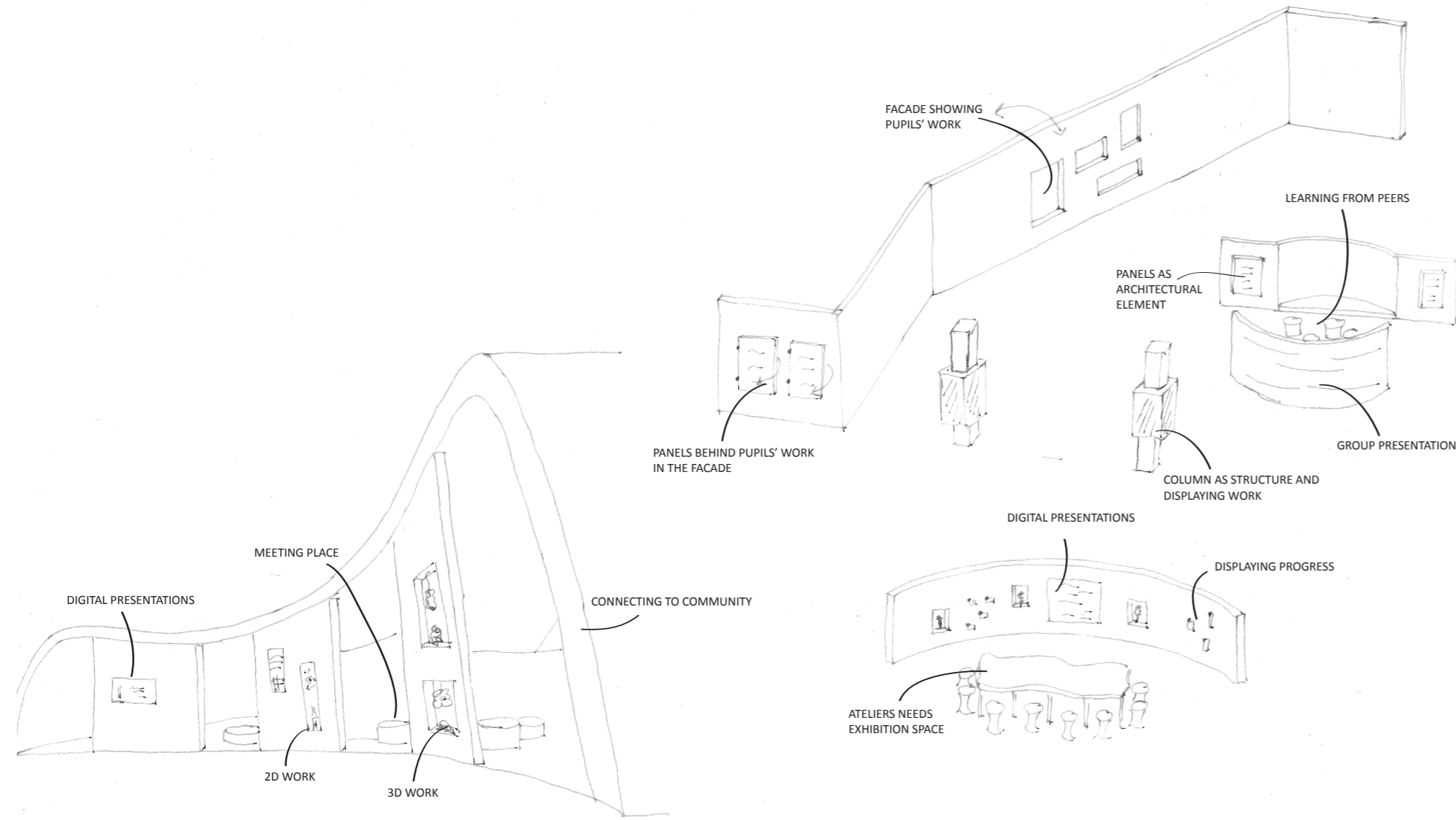
- Action
- Excitement
- Competition
- Moving
- Lively
- Sensational
- Learning by doing
- Competences
- Images¹²

Activities

- Doing, experimenting
- Making collages, movies, presentations
- Role play
- Games
- Collaboration
- Interviewing
- Having conversations
- Using body







DISPLAY LEARNING

Displaying pupils' work can be done in different ways and for different purposes. This paragraph gives an overview of some possibilities. The aim of displaying is mainly threefold:

- # Displaying progress
- # Learning from peers
- # Connecting to the community

The way this can be done depends on the kind of work that is going to be exhibited. There are mainly three types:

- # 2D work
- # 3D work
- # Digital work

DISPLAY SPACE
CONNECTING TO THE COMMUNITY

What
Pupils designed paving stones. All together they are called the 'Walk of learn' and are leading to the school.

Where
Hoogeveen - Verzetsbuurt - path is leading to the Juliana van Stolbergschool

Principle
This is one way to connect the school to the community, since the pupils' work is not only visible in the school building itself, but also outside further away from the school. This principle can also be used in for example abris. To integrate space for posting pupils' work in the abri, the abri becomes more than only a waiting space.

What
Pupils' work are shown a lot of times in front of the facade. But in most cases, the windows aren't designed for exhibition purposes.

Where
Groen van Prinstererschool in Urk

Principle
Showing the pupils' work in the school, but visible for the people outside, is another way of connecting the school to the community. Integrating space for showing pupils' work in the facade needs to be done on three different levels. There should be space for 2D-work, 3D-work and for digital work.

DISPLAY SPACE
LEARNING FROM OTHERS & DISPLAYING PROGRESS

What
Display learning inside the school building means that there should be space for posting students' work of both the past and the present.

Where
Rulang Primary School in Singapore

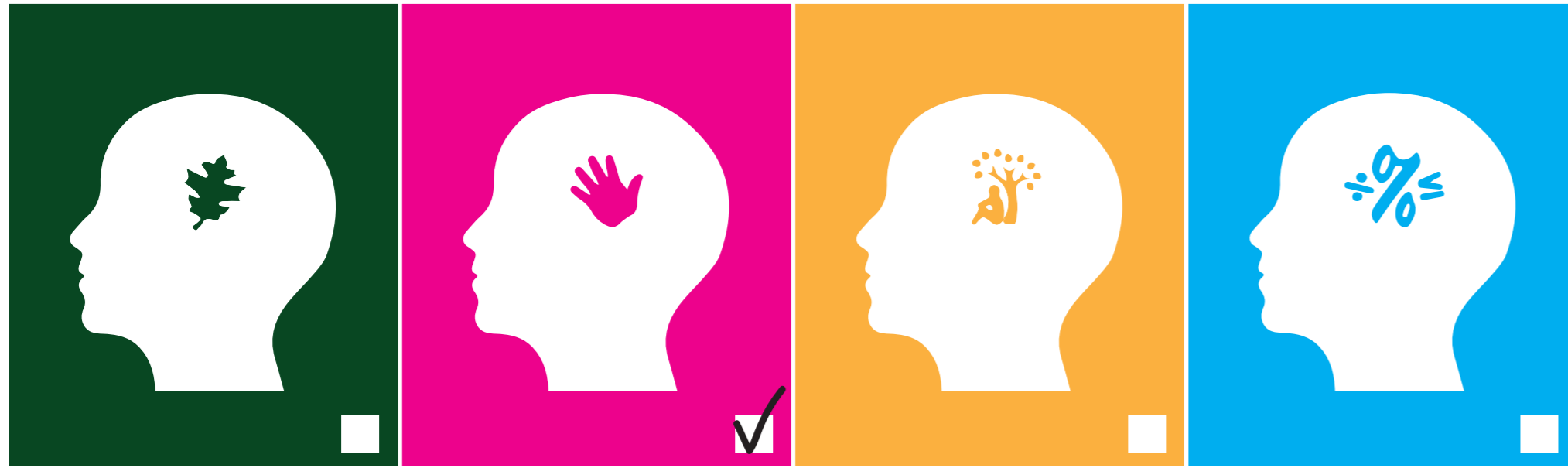
Principle
Architecture can play a central role in defining display spaces. These include spaces on the wall, in the wall (work is visible in two spaces) and spaces for digital projection. Not only to show the progress of students, but also to learn from peers.

What
It's also possible to create 'Museum - spaces' within a school. This is especially interesting for schools using project-based learning.

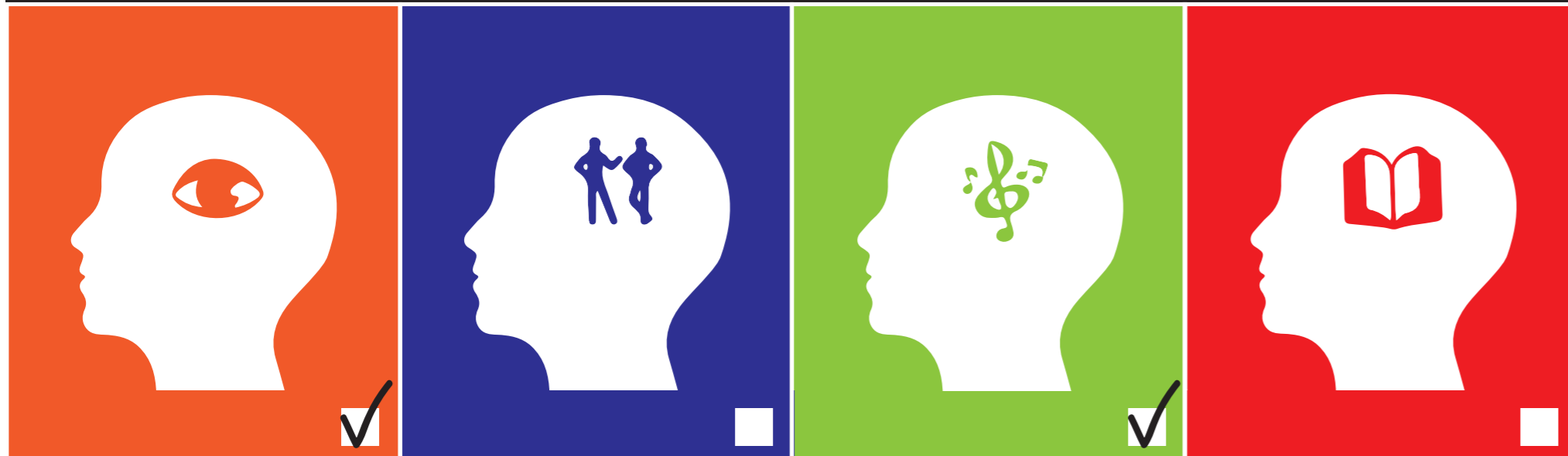
Where
New Acropolis museum in Athens

Principle
During and after each project the space can be used for exhibiting the work done by pupils so far. In that way pupils also learn how they can present their work in order to tell a certain message.





HOW ARE YOU SMART?



MULTIPLE INTELLIGENCES THEORY HOWARD GARDNER

Theory

In 1983 Howard Gardner publishes his multiple intelligences theory in the book 'Frames of mind'. He argues that there are more types of intelligence than only the logical-mathematical and linguistic intelligence, which were and still are mainly taught in primary schools. On average pupils who are doing good in these subjects are the ones that go later on to university. However, most pupils don't go to the university, but follow another type of professional training. This means, if a school is mainly teaching math and language, most of the pupils will never score good on these subjects. Furthermore, pupils also aren't discovering and developing other skills they may have. This is a missed opportunity in my point of view.

Intelligences

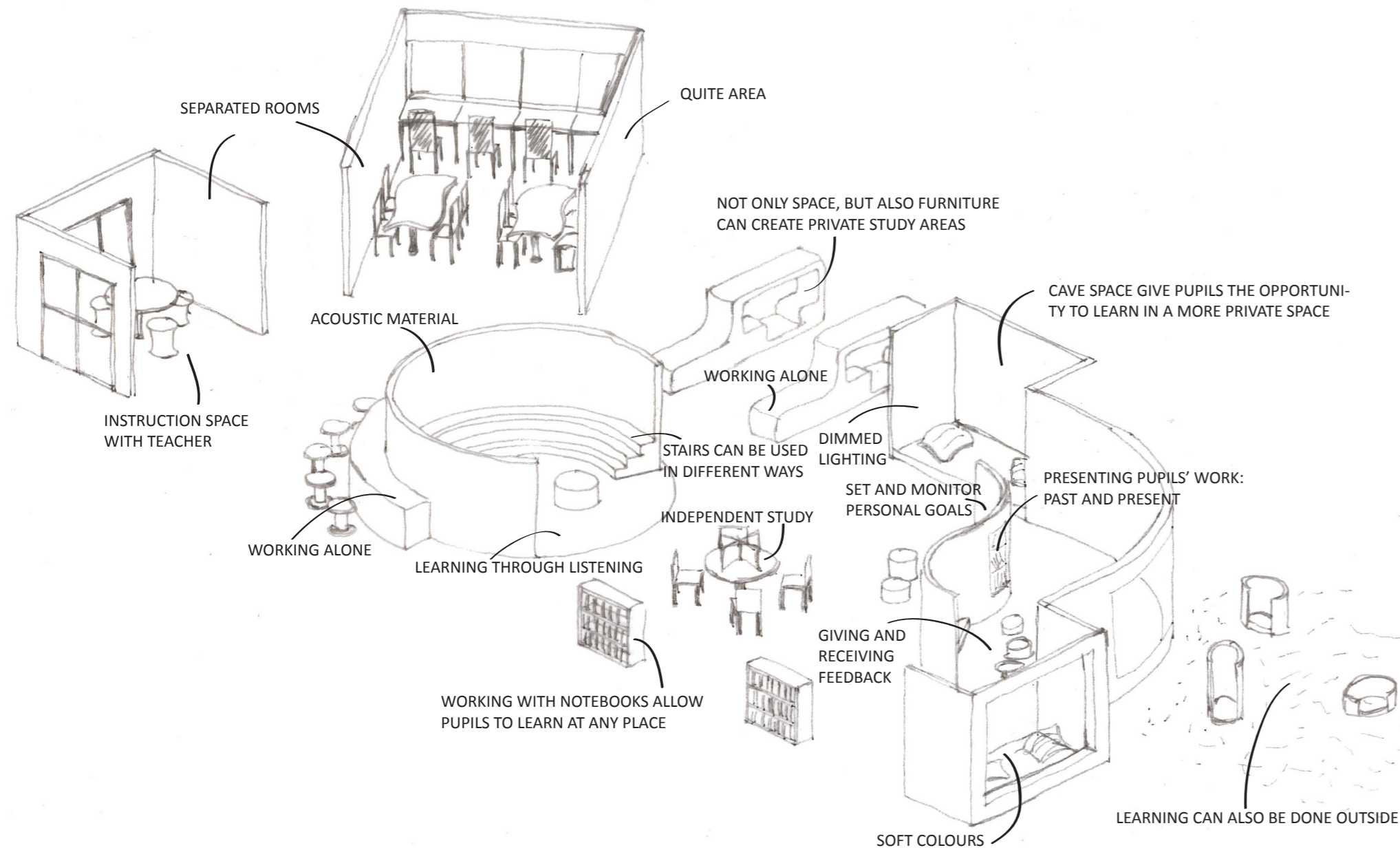
Each intelligence will be explained in this chapter. Besides, a connection between the intelligence and space will be made in the following order:

- Intrapersonal intelligence
- Interpersonal intelligence
- Musical intelligence
- Linguistic intelligence
- Spatial intelligence
- Naturalist intelligence
- Kinesthetic intelligence
- Logical-mathematical intelligence¹³

13. Gardner, 1993, pp. 8-12

14. Hoerr, 2000, p. 7

22. Hoerr, 2000, p. 7



INTRAPERSONAL INTELLIGENCE

Definition

Access to one's emotional life as a means to understand oneself and others

Strong skills

- # Reflect
- # Control own feelings and moods
- # Pursue personal interests
- # Set individual agendas
- # Learn through observing and listening
- # Use metacognitive skills

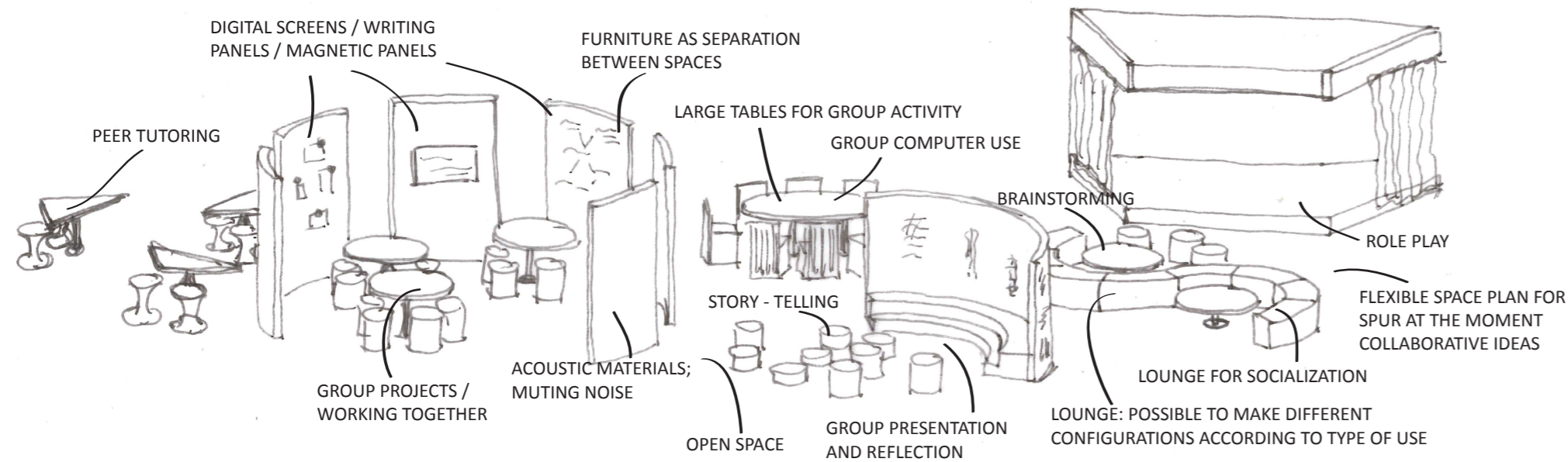
How space can contribute to the intrapersonal intelligence

- # Allow students to work at their own pace
- # Create quiet areas within the room or allow students to go outside to work alone
- # Help students set and monitor personal goals
- # Provide opportunities for students to give and receive feedback
- # Involve students in writing journals¹⁴



14. Hoerr, 2000, p. 7





INTERPERSONAL INTELLIGENCE

Definition

The ability to understand people and relationships

Strong skills

- # Enjoy many friends
- # Lead, share, mediate
- # Build consensus
- # Help others with their problems
- # Be an effective team member

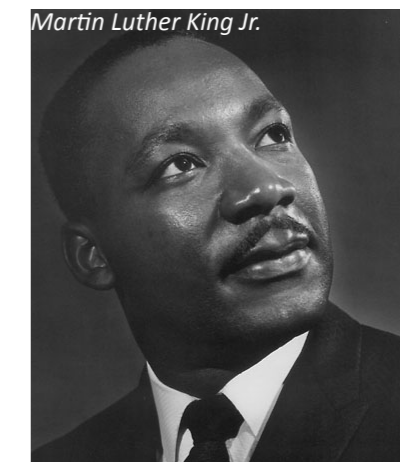
How space can contribute to the intrapersonal intelligence

- # Use cooperative learning
- # Assign group projects
- # Give students opportunities for peer teaching
- # Brainstorm solutions
- # Create situations in which students observe and give feedback to others¹⁵

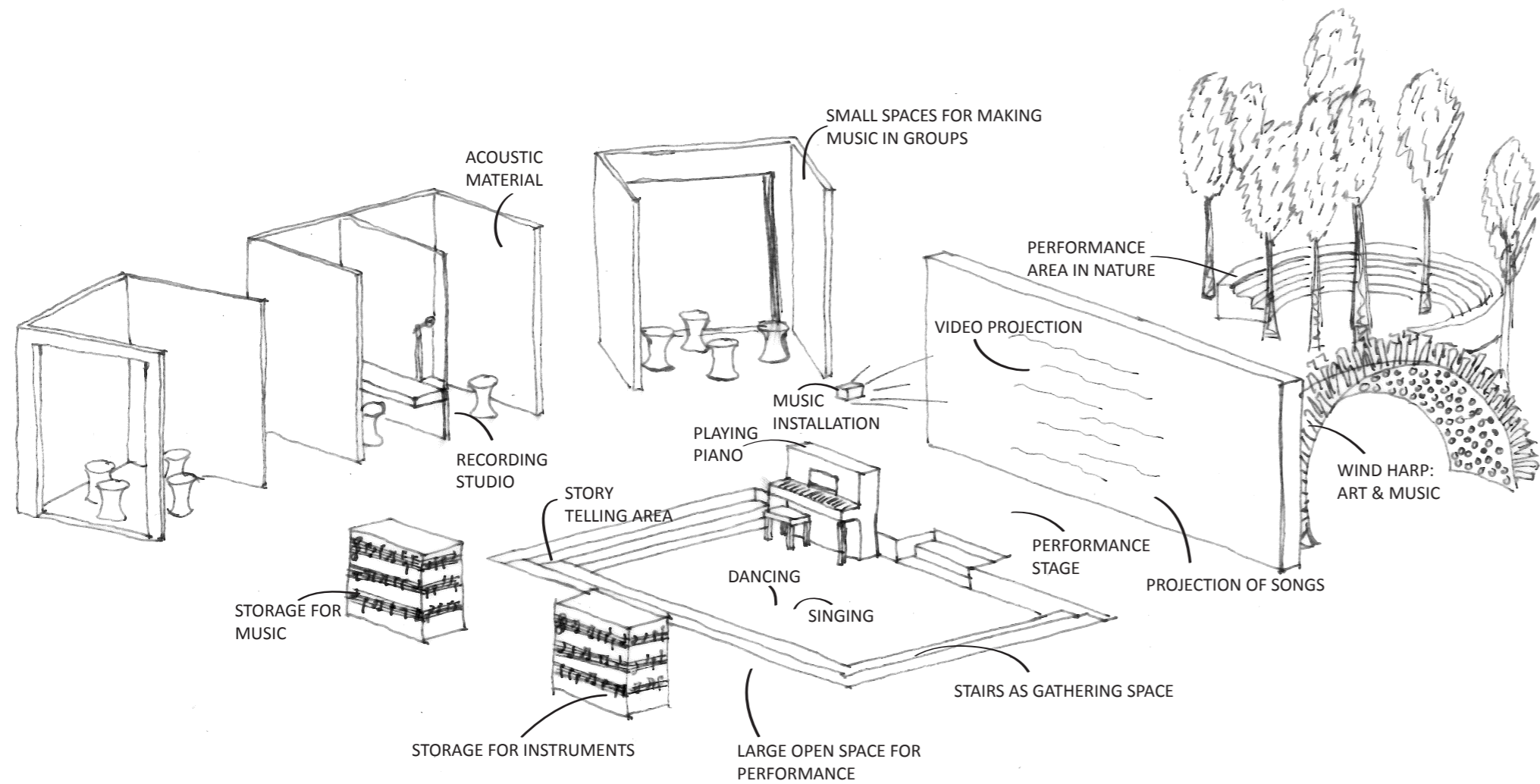


Colin Powell

15. Hoerr, 2000, p. 7



Martin Luther King Jr.



MUSICAL INTELLIGENCE

Definition

Sensitivity to pitch, melody, rhythm and tone

Strong skills

- # Listen to and play music
- # Match feelings to music and rhythm
- # Sing and hum
- # Create and replicate tunes

How space can contribute to the intrapersonal intelligence

- # Rewrite song lyrics to teach a concept
- # Encourage students to add music to plays
- # Create musical mnemonics
- # Teach history and geography through the music of the period and place¹⁶

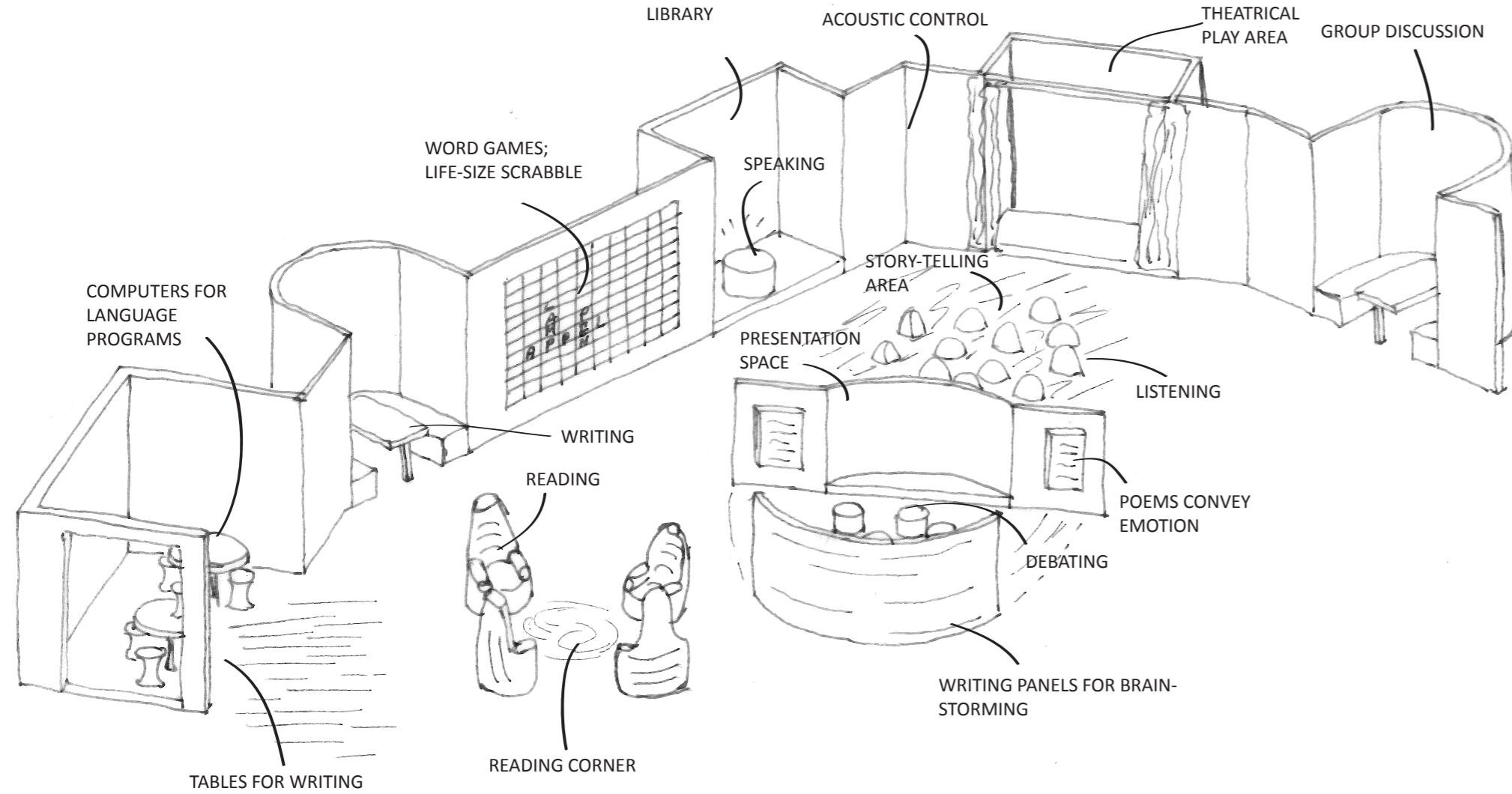


Ray Charles

16. Hoerr, 2000, p. 6



Carly Simon



LINGUISTIC INTELLIGENCE

Definition

Sensitivity to the meaning and order of words

Strong skills

- # Write stories and essays
- # Tell jokes, stories, puns
- # Use an expanded vocabulary
- # Play word games
- # Use words to create images

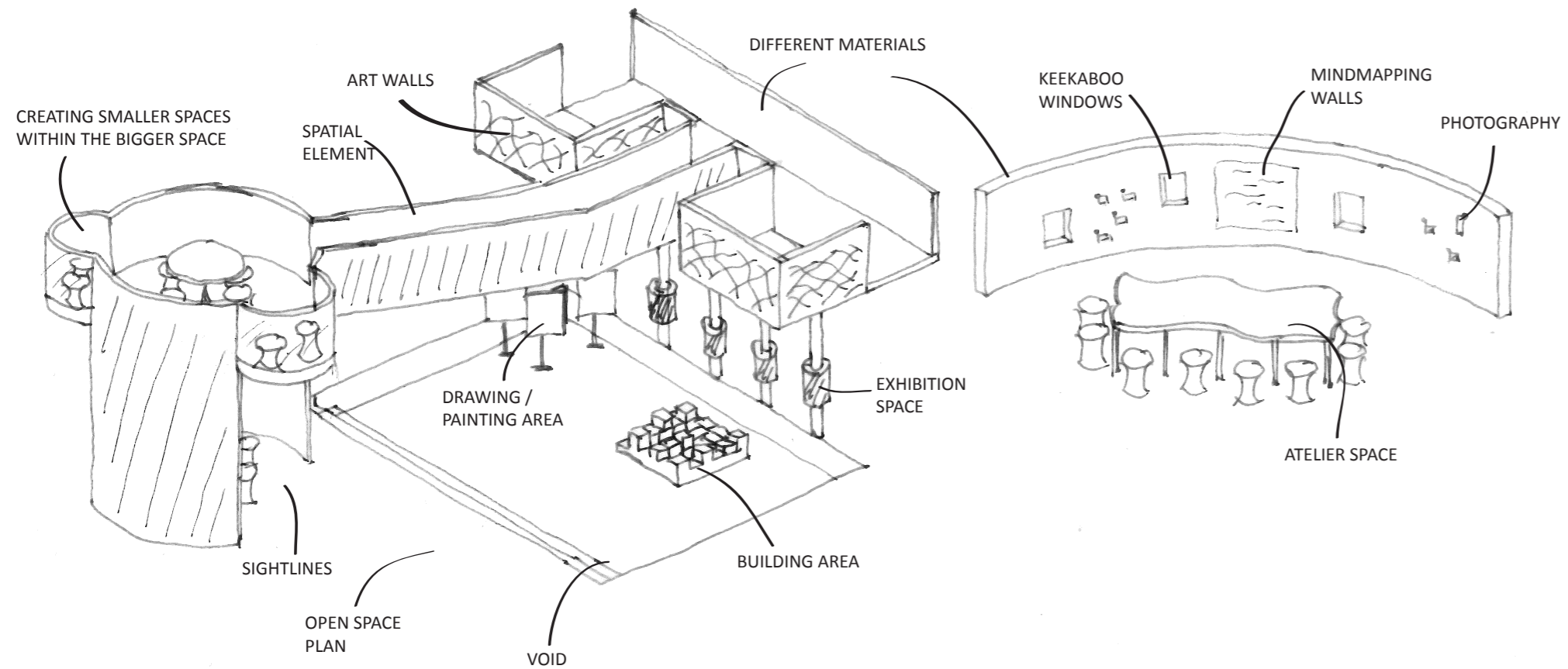
How space can contribute to the intrapersonal intelligence

- # Encourage the use of outrageous words and palindromes
- # Involve students in debates and making oral presentations
- # Show how poetry can convey emotion¹⁷



17. Hoerr, 2000, p. 6





SPATIAL INTELLIGENCE

Definition

The ability to perceive the world accurately and to recreate or transform aspects of that world

Strong skills

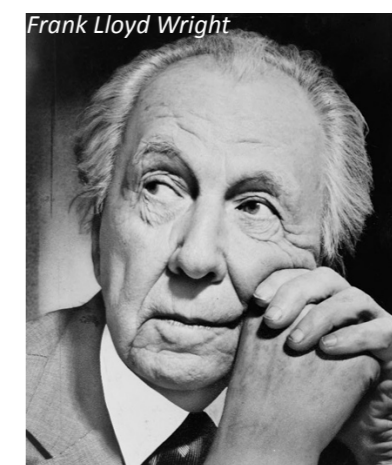
- # Doodle, paint or draw
- # Create three-dimensional representations
- # Look at and create maps and diagrams
- # Take things apart and put them back together

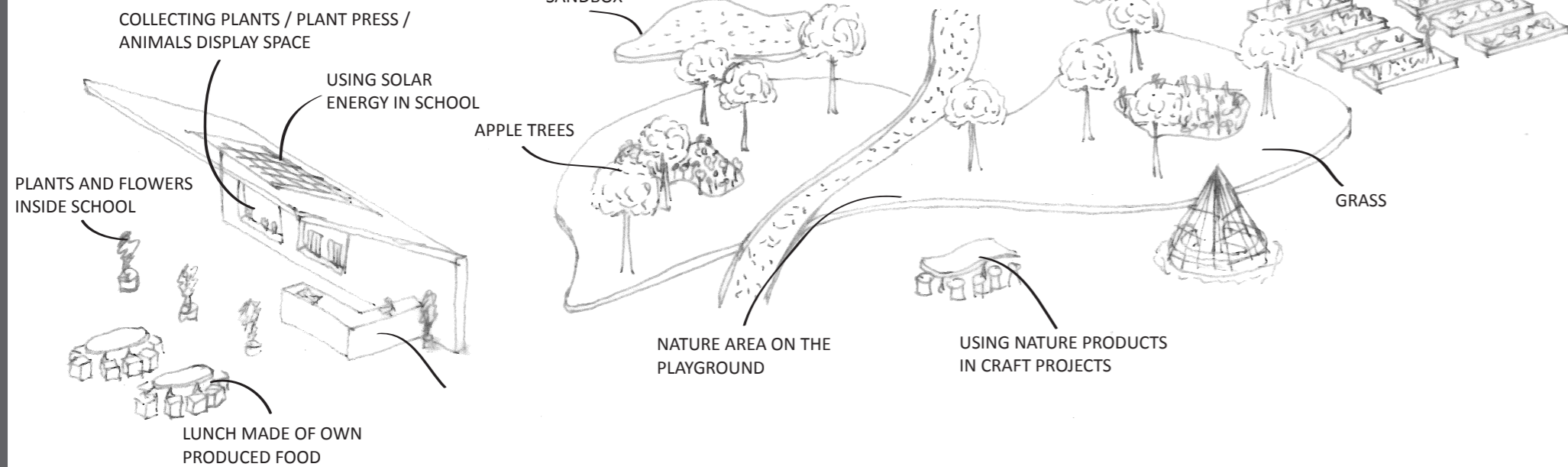
How space can contribute to the intrapersonal intelligence

- # Draw maps and mazes
- # Lead visualization activities
- # Teach mind mapping
- # Provide opportunities to show understanding through drawing
- # Have students design buildings, clothing, scenery to depict an event or period¹⁸



18. Hoerr, 2000, p. 6





NATURALIST INTELLIGENCE

Definition

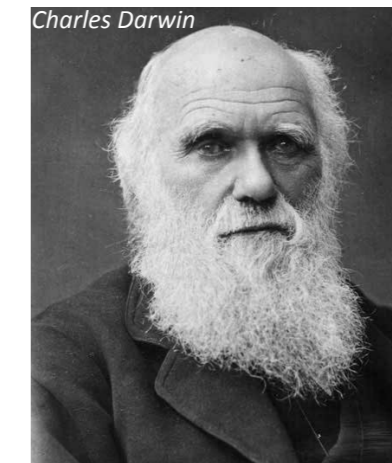
The ability to recognize and classify the numerous species, the flora and fauna, of an environment

Strong skills

- # Spend time outdoors
- # Collect plants, rocks, animals
- # Listen to outdoor sounds
- # Notice relationships in nature
- # Classify flora and fauna

How space can contribute to the intrapersonal intelligence

- # Use outdoors as a classroom
- # Have plants and animals in the classroom for which students are responsible
- # Conduct hands-on experiments
- # Create a nature area on the playground¹⁹

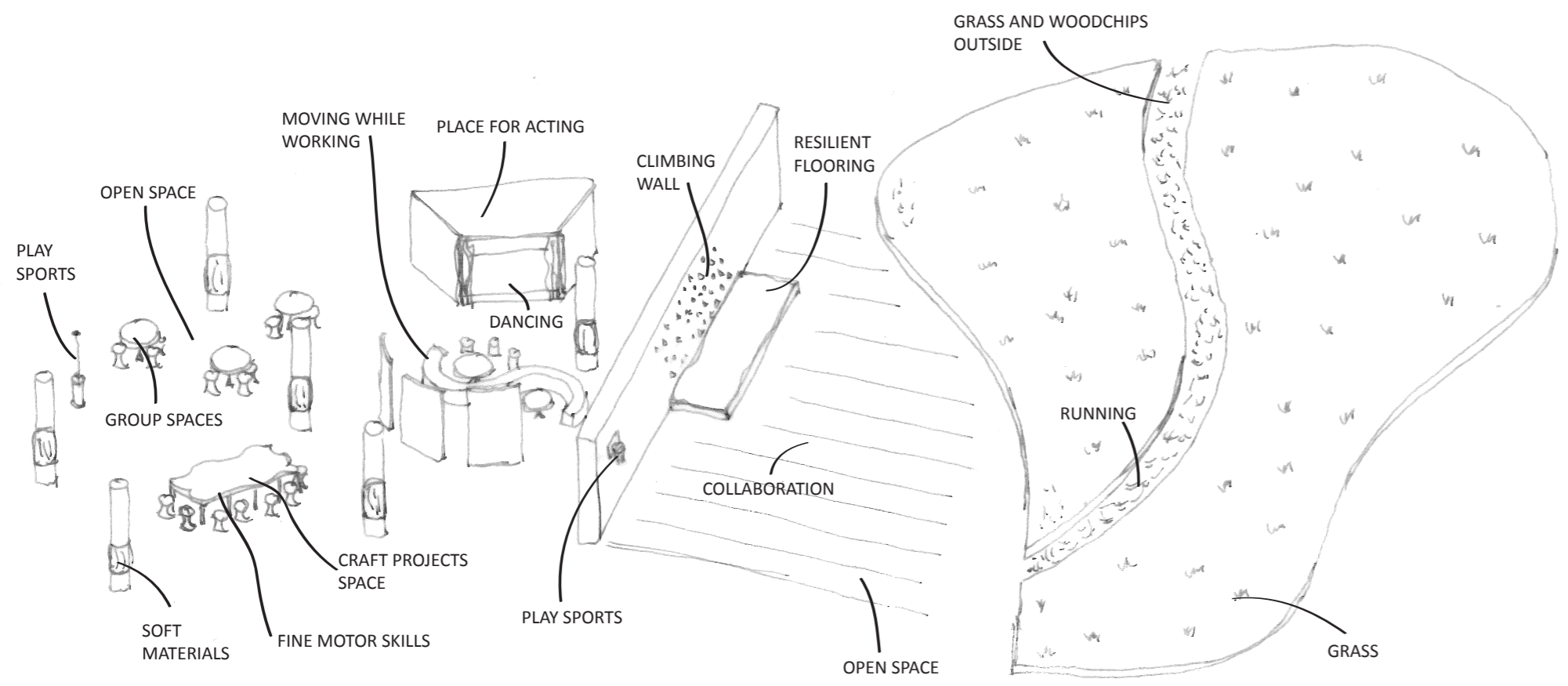


Charles Darwin

19. Hoerr, 2000, p. 6



Jane Goodall



KINETHICAL INTELLIGENCE

Definition
The ability to use the body skillfully and handle objects adroitly

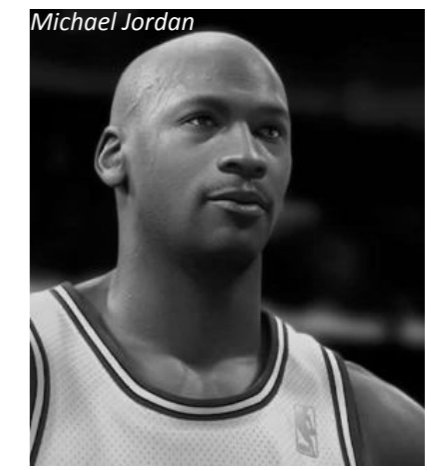
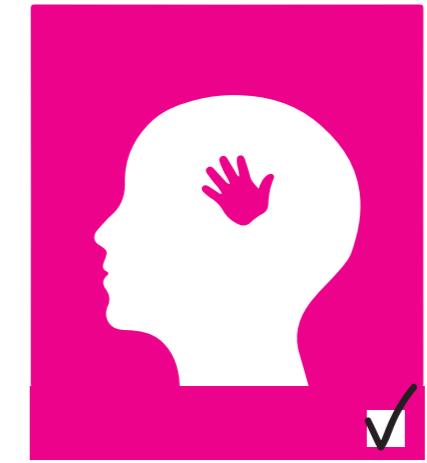
- Strong skills**
- # Play sports and be physically active
 - # Engage in risk taking with their bodies
 - # Dance, act, and mime
 - # Engage in crafts and play with mechanical objects

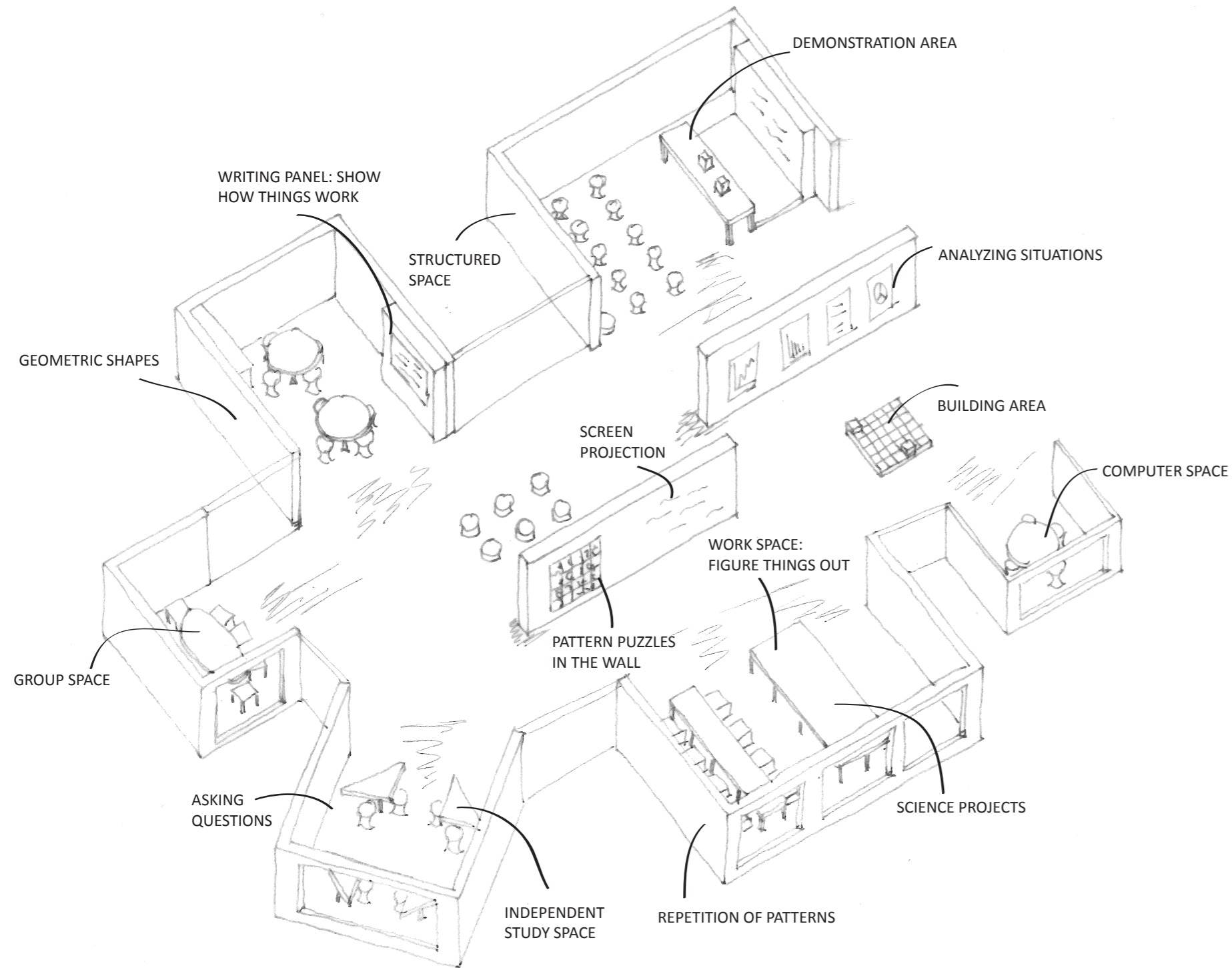
How space can contribute to the intrapersonal intelligence

- # Provide tactile and movement activities
- # Offer role-playing and acting opportunities
- # Allow students to move while working
- # Use sewing, model making and other activities that require fine motor skills²⁰



20. Hoerr, 2000, p. 6





LOGICAL-MATHEMATICAL INTELLIGENCE

Definition

The ability to handle chains of reasoning and to recognize patterns and order

Strong skills

- # Work with numbers, figure things out, analyze situations
- # See how things work
- # Exhibit precision in problem solving
- # Work in situations with clear answers

How space can contribute to the intrapersonal intelligence

- # Use Venn diagrams to compare and contrast
- # Use graphs, tables, and time lines
- # Have students demonstrate using concrete objects
- # Ask students to show sequences²¹



21. Hoerr, 2000, p. 6





THE MIND IS NOT A VESSEL TO BE FILLED,

BUT A FIRE TO BE KINDLED.

PLUTARCH, GREEK HISTORIAN AND BIOGRAPHER

FROM UNIFORM TO INDIVIDUAL EDUCATION

Uniform education

The essence of uniform education is the believe that all individuals should be treated in the same way. Every pupil has to learn the same subjects in the same way and should be judged in the same way. At first sight this appears very fair, because to nobody is given any preference. But if you think one step further, you will notice that one can find inequality in uniform education. This type of education is based on a wrong assumption, namely that all pupils are the same and thus that uniform education will work the same for all children and therefore is impartial. But people not only look different, they also have different characters and even more important, they have different brains. Therefore uniform education is not fair at all.²²

Individual education

Individual education, on the other hand, takes individual differences seriously and tries to develop methods, in which different types of brains get a chance. The crucial element is to be involved in the personality of individual pupils. That means teachers shoul get to know their pupils and their strong and weak skills in order to make the right educational decisions for each pupil. Thus this type of ecudation recognizes and accepts differences between pupils and tries to develop children in their own way. Therefore individual education is much more fair in comparison to uniform education.

Plutarch

Plutarchus, a greek philosopher who lived from 46 - 120, stated that 'the mind is not a vessel to be filled, but a fire to be kindled'.²³ I believe that lighting your fire is only possible if education is pupil-orientated. Since all pupils are different, there is no uniform way to lighten the fire for all in the same way. Therefore education should be organized far more individual, to the pupils' own needs and interests. Get the fire lightened!

22. Nair, Fielding, Lackney, 2009, pp. 25-26

23. OWP / P Architects, VS Furniture, Bruce Mau Design, 2010, p. 53

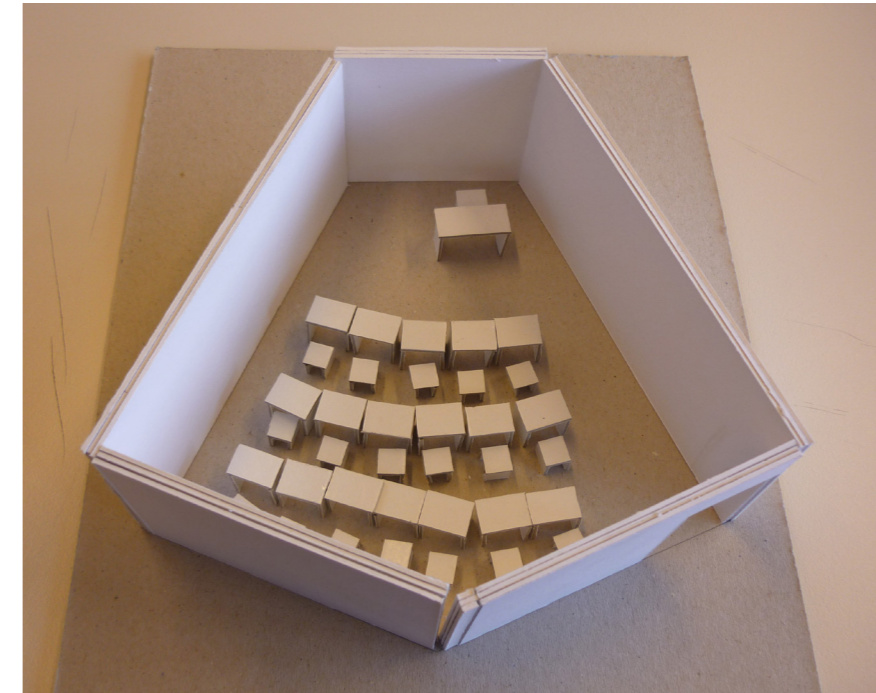
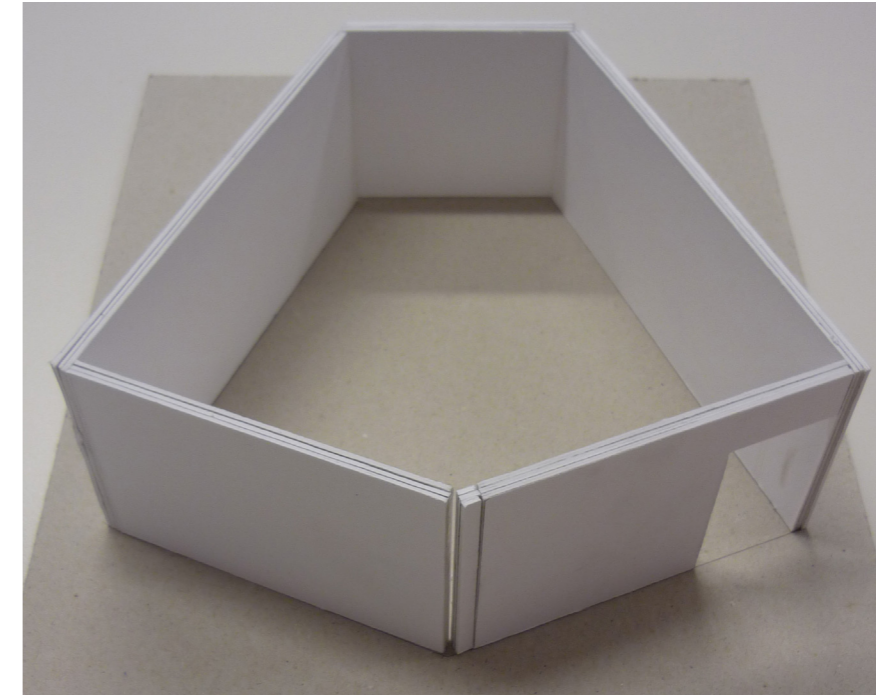
TEACHER FOCUSED

School
Elementary school

City
Chengelpet

Country
India

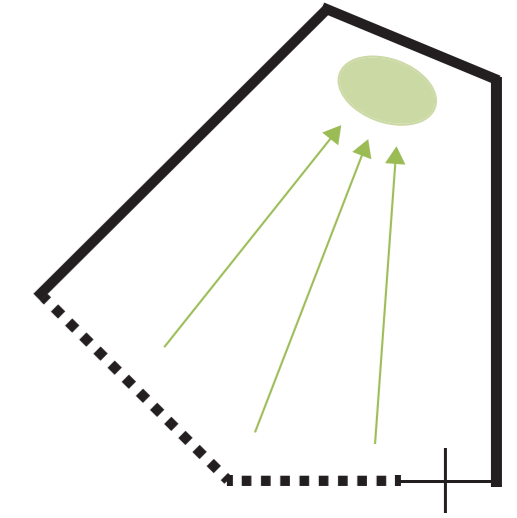
Architect
Shilpa architects and interior designers



TOOLBOX

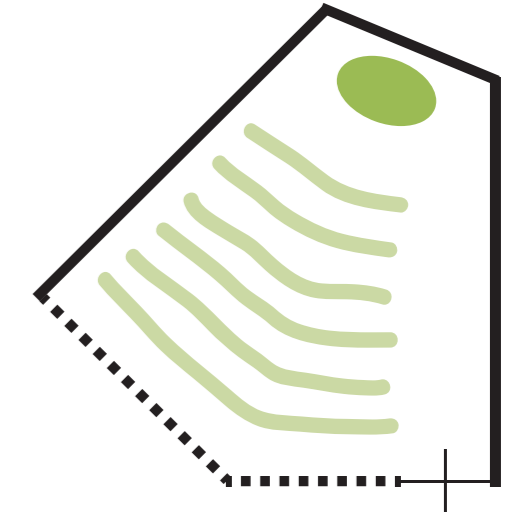
Goal
Teacher focused education

Tool
Creating space that focuses on one spot



Goal
Uniform education

Tool
Creating same places for all pupils; no differentiation



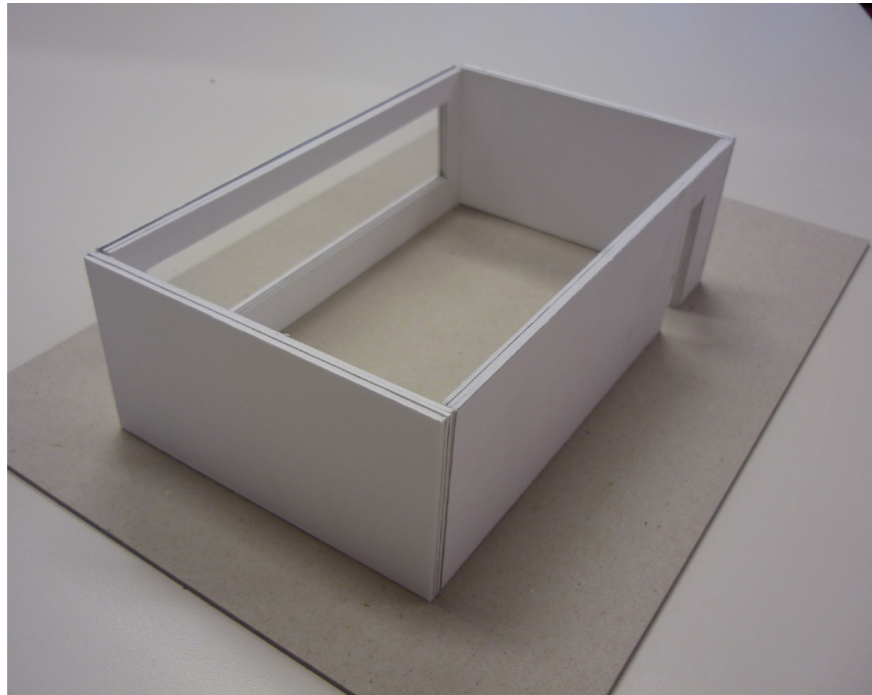
REGULAR CLASSROOM

School
Elementary school

City
Any

Country
The Netherlands

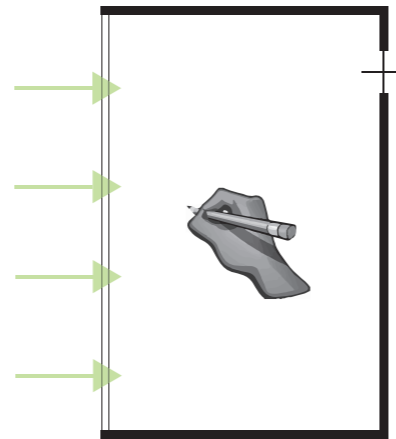
Architect
Any



TOOLBOX

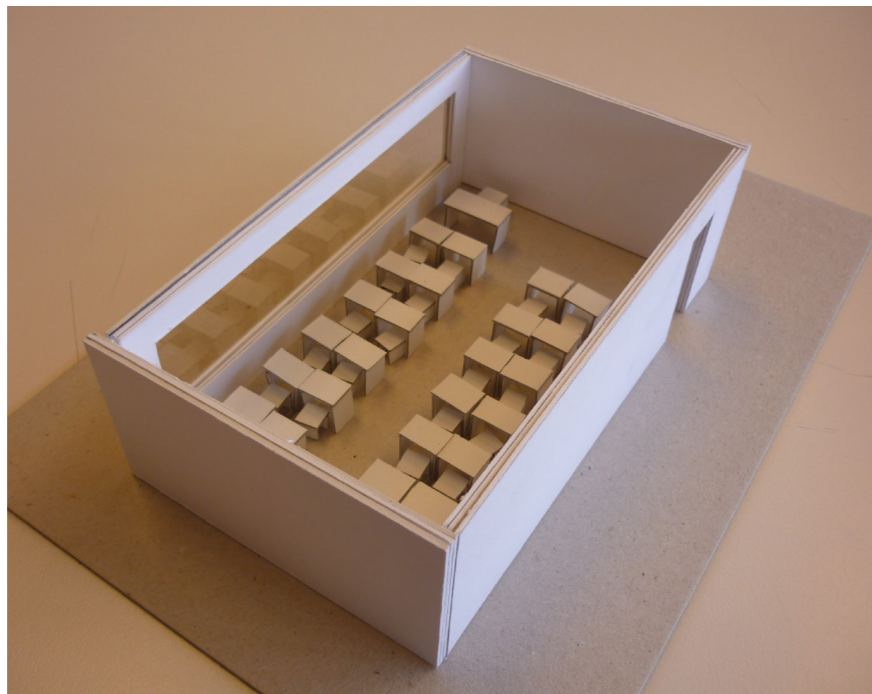
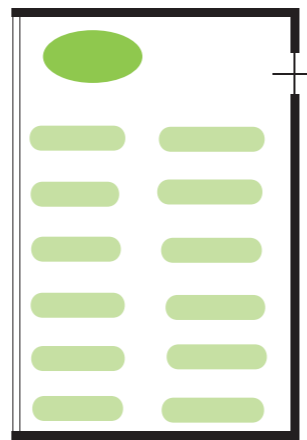
Goal
Daylight from one side in order to get on the other side shadow; only allowed to write with right hand

Tool
Creating one open facade, others are closed



Goal
Uniform education

Tool
Creating same places for all pupils; no differentiation



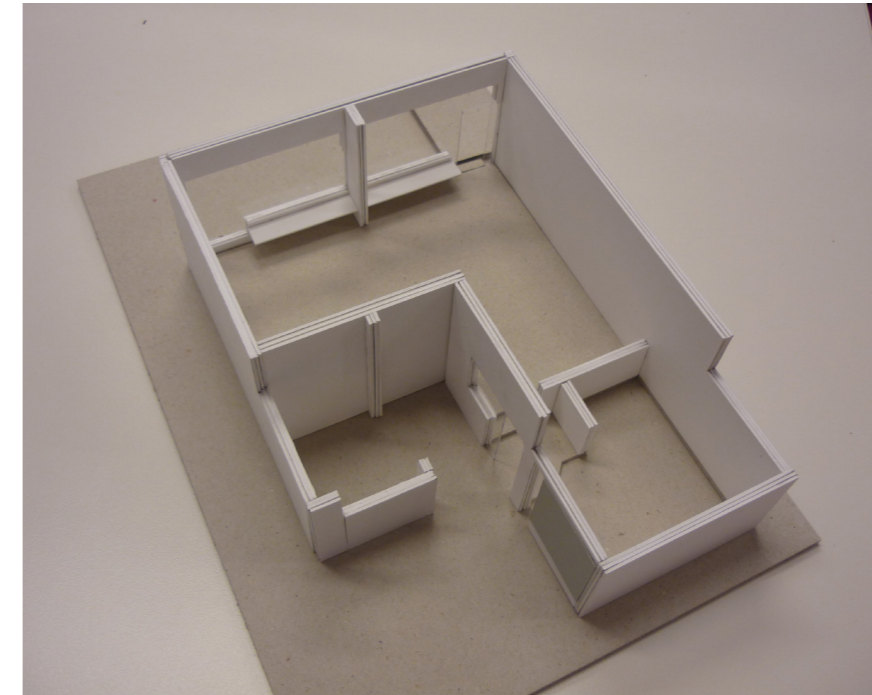
CLASSROOM FOCUSED ON INDIVIDUAL / GROUP EDUCATION

School
Montessorischool

City
Delft

Country
The Netherlands

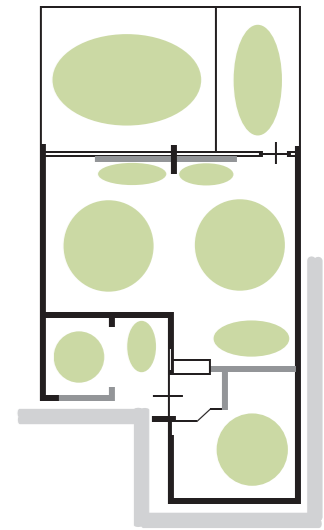
Architect
Herman Hertzberger



TOOLBOX

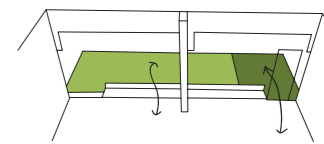
Goal
Diverse centres of attention

Tool
Creating smaller spaces within the larger space



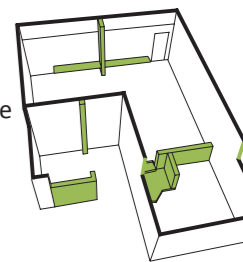
Goal
Connection to outside

Tool
Creating functional relation with the surrounding by designing terrace and garden for each classroom



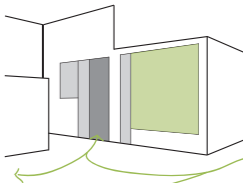
Goal
Individual, small group space / Private space within communal space

Tool
Creating stairs, steps, low walls, differentiation in ceiling height, working benches at facade, columns



Goal
Exhibition space for pupils' work

Tool
Using wall at entrance of classroom; both visible for the pupils and for pupils from other classes



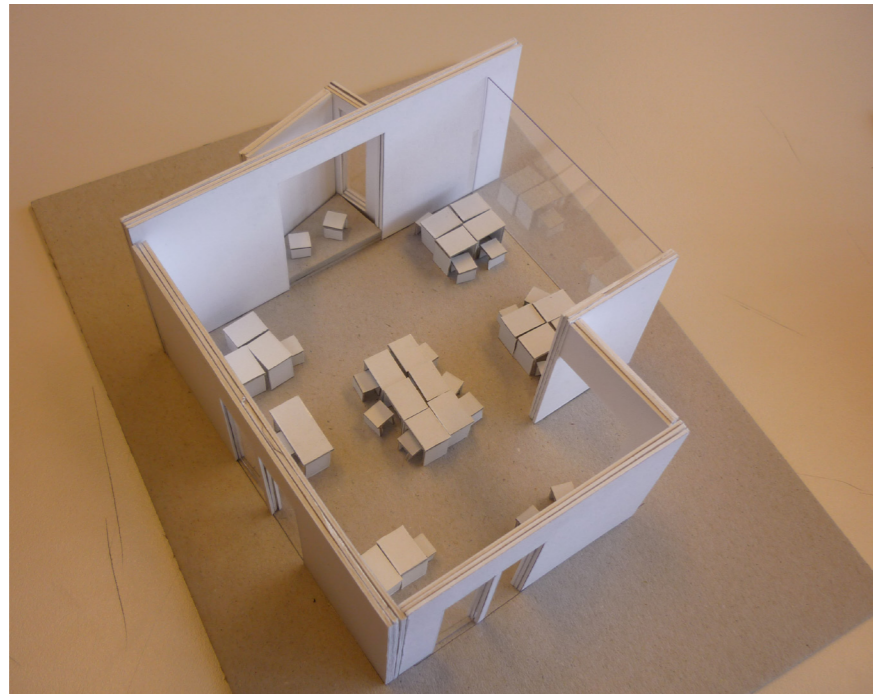
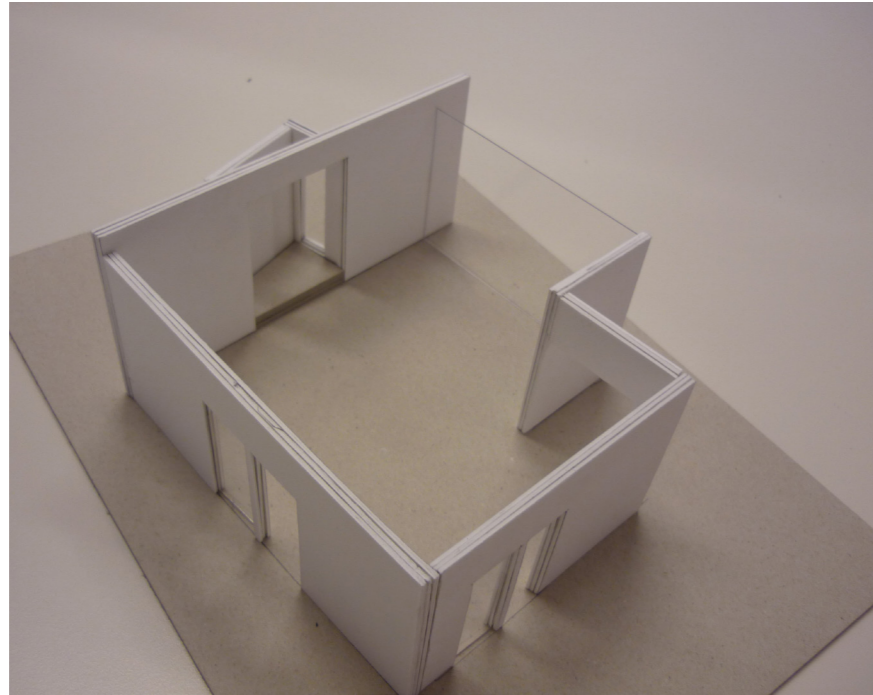
**CLASSROOM FOCUSED ON
INDIVIDUAL / GROUP EDUCATION**

School
Galilee Catholic Learning community

City
Aldinga

Country
Australia

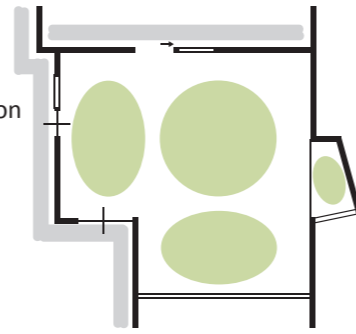
Architect
Russel & Yelland Architects



TOOLBOX

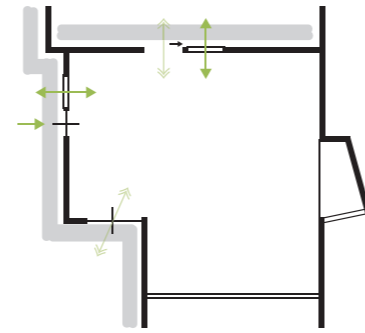
Goal
Diverse centres of attention

Tool
Creating smaller spaces
within the larger space



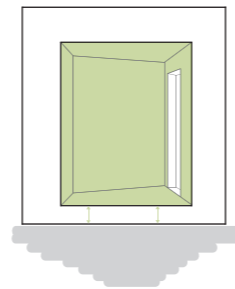
Goal
Visual and physical
connection to other
classrooms

Tool
Creating windows,
doors or passages to
adjacent spaces



Goal
Individual, small group space /
Private space within communal space

Tool
Creating a niche; by raising the
floor the small space becomes
both more private and a stage
dependent on the activity.



Goal
Exhibition space for pupils' work

Tool
Creating spaces in the facade



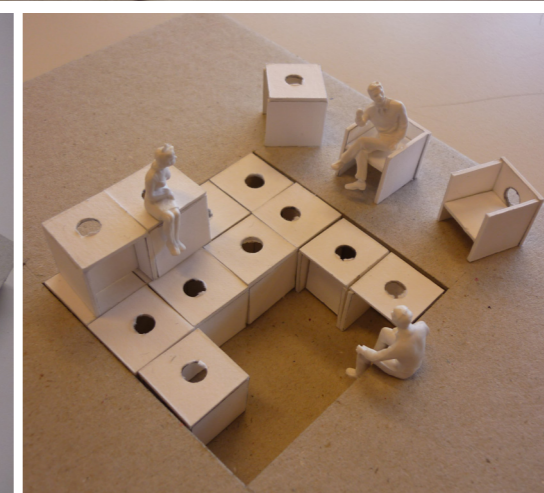
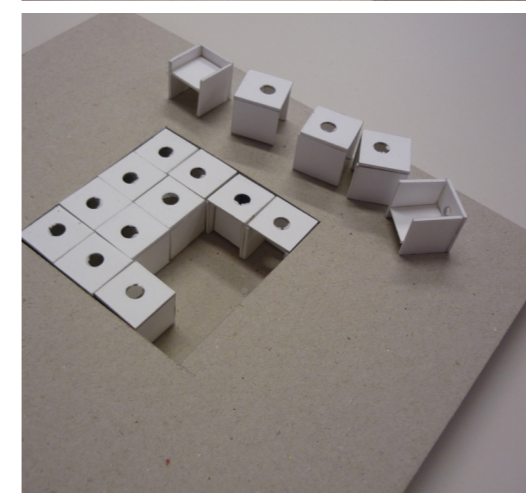
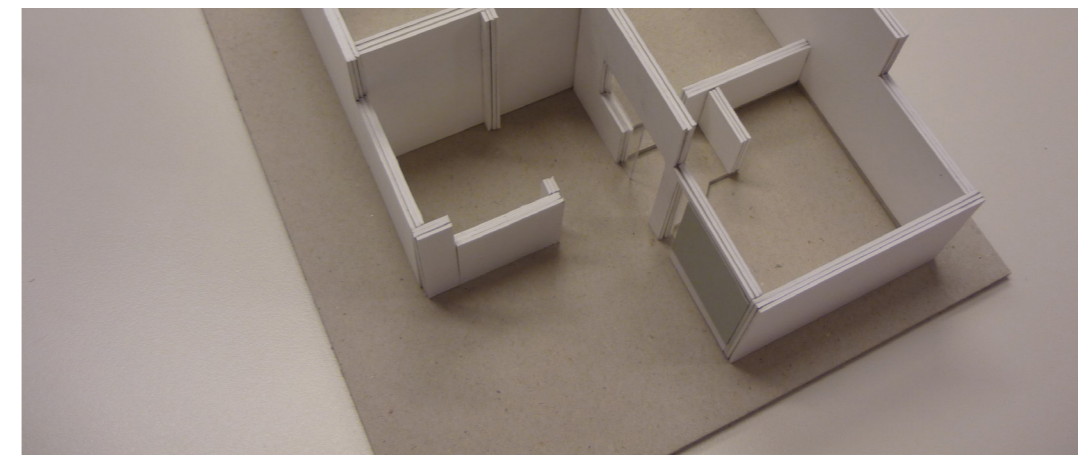
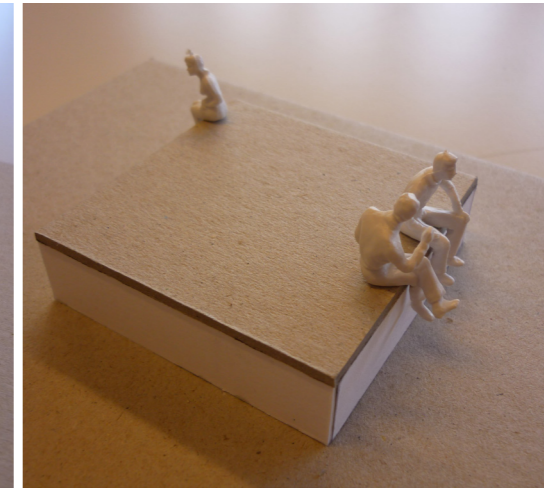
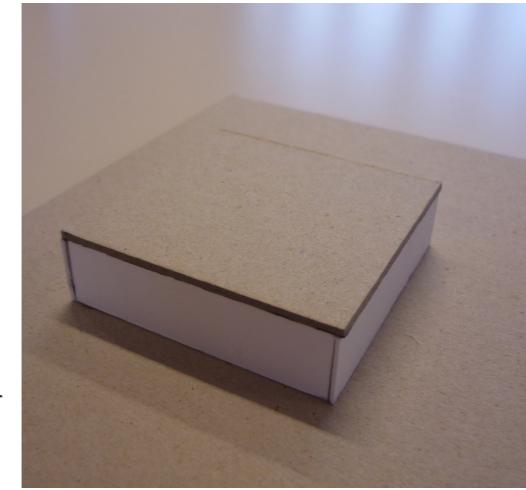
OBJECTS

School
Montessorischool

City
Delft

Country
The Netherlands

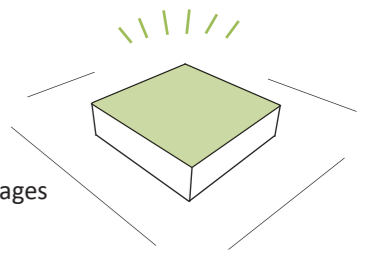
Architect
Herman Hertzberger



TOOLBOX

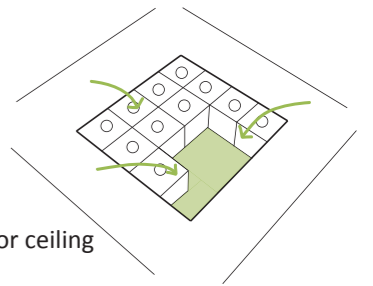
Goal
Extrovert place

Tool
Creating raised platforms, stages



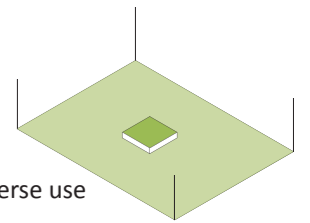
Goal
Introvert place

Tool
Creating lowered floor and/or ceiling



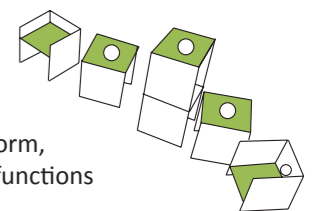
Goal
Anchorpoint

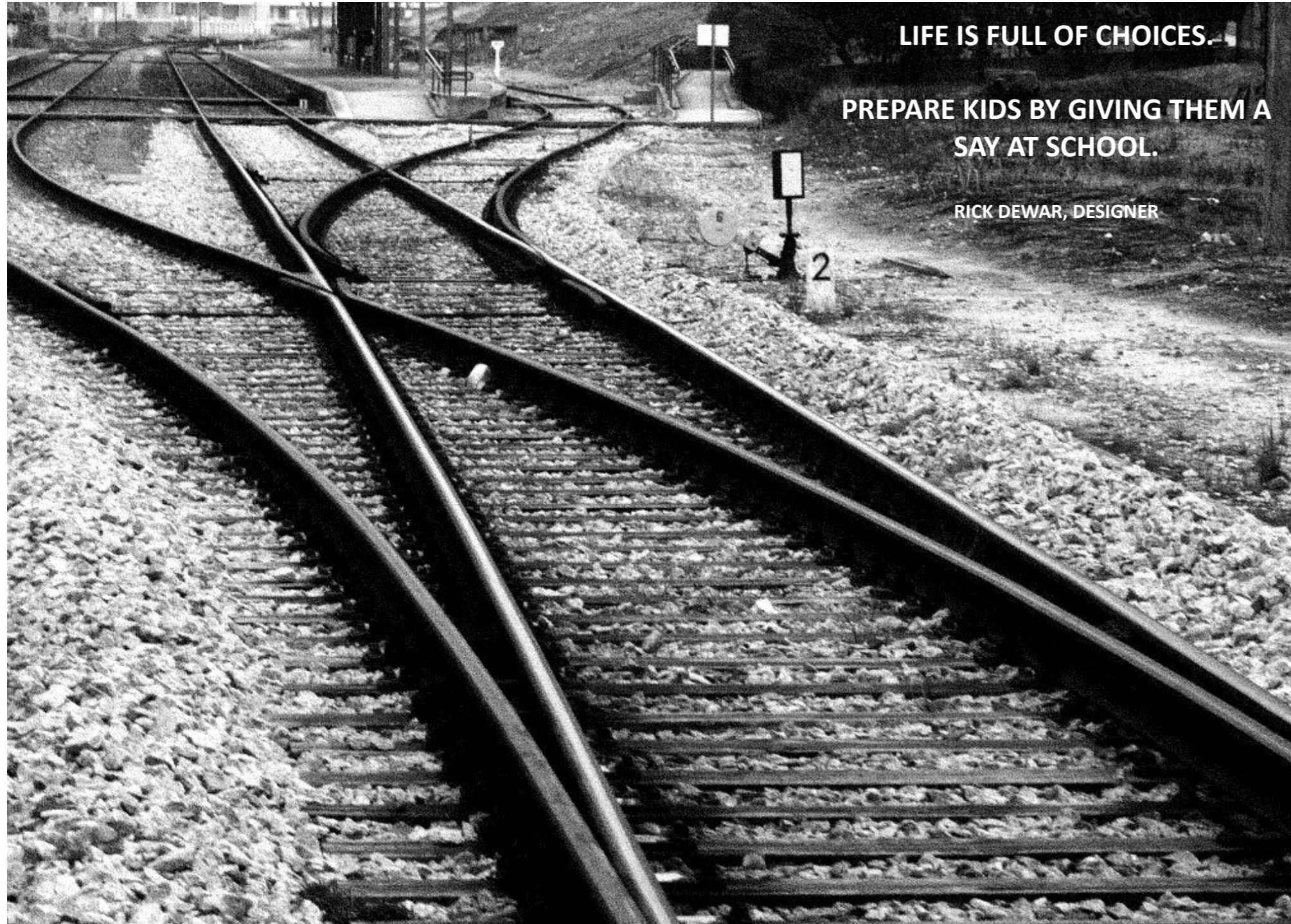
Tool
Creating objects in bigger spaces
which function as a reason for diverse use



Goal
Multiple use

Tool
Creating objects with a certain form,
which can be used for different functions





LIFE IS FULL OF CHOICES.

**PREPARE KIDS BY GIVING THEM A
SAY AT SCHOOL.**

RICK DEWAR, DESIGNER

SPATIAL ELEMENTS FOR GIVING PUPILS A SAY WITHIN SCHOOL

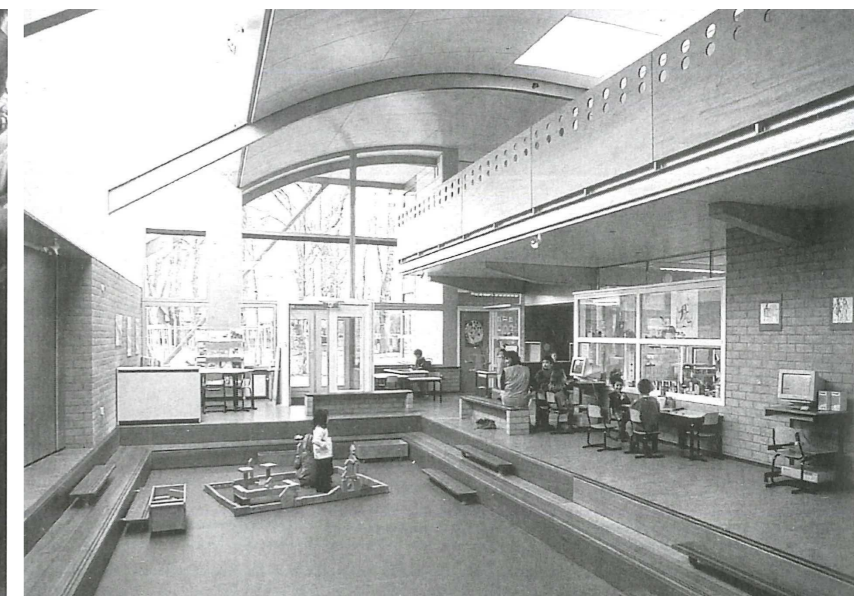
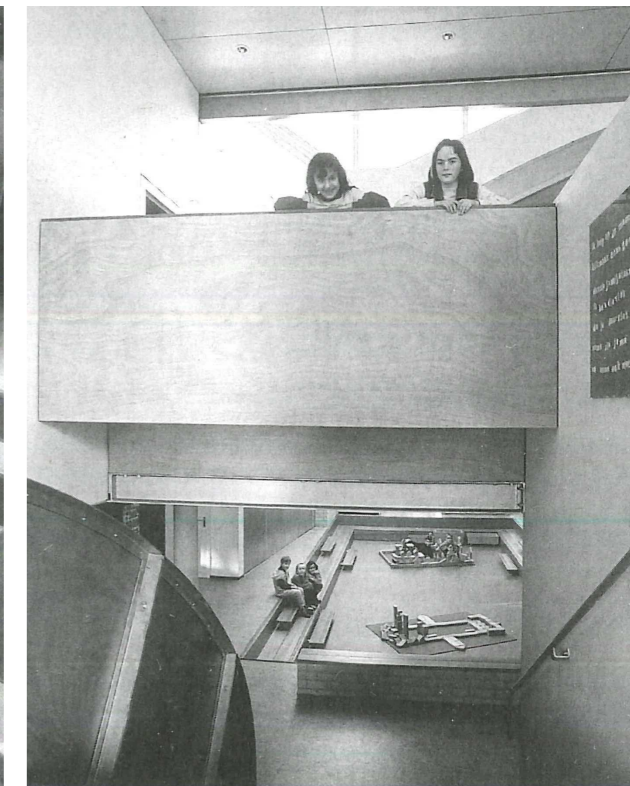
To empower pupils is already done to a large extent by implementing the theories of Kolb and Gardner in the school design, because the varied types of spaces gives the pupils the opportunity to learn at different places and in different ways within the school. But this is more focused on the individual pupil. All pupils together also form a small community.²⁴ All together they are building the community and in doing so, they need space for that too. A space where all pupils can gather and do activities together as a community and for example to set up their own rules.

The way this can be done in spatial terms is twofold. Gathering together can be done in a separate space, but also in a space that normally belongs to the learning space. The former is more effective in bigger schools, the latter especially in smaller schools, because the space is used in a more flexible way.

24. Hertzberger, 2008, pp. 135-136



Assembly hall Haupt- und Grundschule in Marl-Drewer, designed by Hans Scharoun. Source: Blundell Jones, 1995, pp. 148-151



Hall primary school 'De Koperwiek' in Venlo, designed by Herman Hertzberger. Source: Hertzberger, 2008, p. 142



Conflict between the education space and the plurality of intelligence.

2.3 STUDIO WTP RELEVANCE: POLITICS

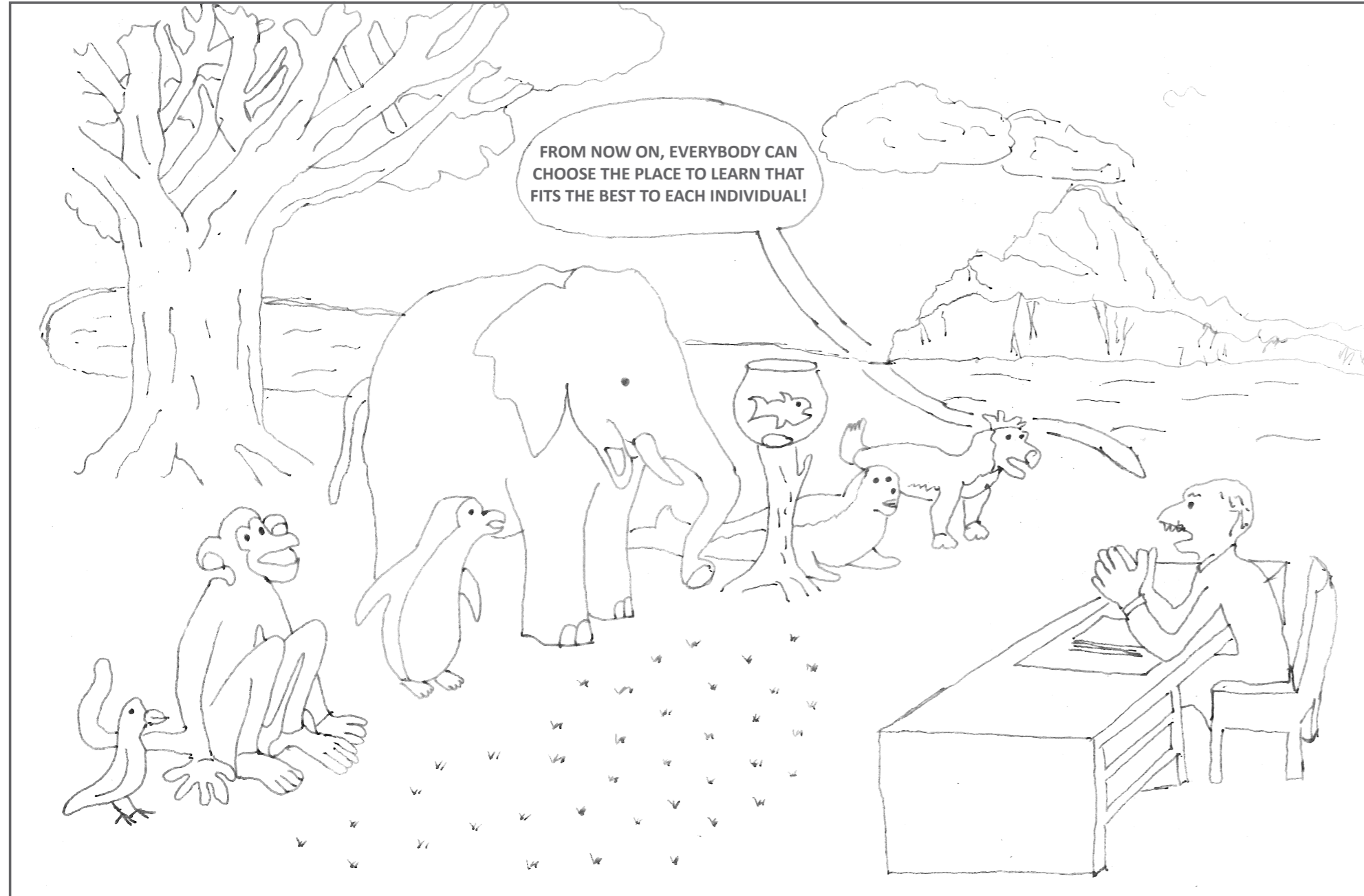
2.3.1 POWER STRUGGLE

The drawing on the left shows the current power struggle within the school building. Probably the fish will be very happy with a lake as classroom, but the monkey not at all, and the elephant only if the lake is not too deep so that it still can walk. This situation is also going on in the lay-out of current educational buildings. The main piece of the school design is already since the nineteenth century the rectangular classroom. Within this classroom each child has its own table and chair where it needs to learn five days a week.

But just as the animals all have different qualities and capacities, do all pupils also have different strengths. Each person is intelligent in his own way and space should anticipate on that. Some intelligences can develop very well in a regular classroom, but others barely don't. This means that not every pupil gets the full opportunity to flower and flourish.

To teach in classrooms is deeply rooted in our history of educational buildings. It especially gives the teacher a good overview over all the pupils. The teacher as a controller. But changing the lay-out of the school design, can also help the teacher to teach in a different way with more eye for individual differences between pupils.

Especially the pupils will in the first place be empowered through the design. Space will give each individual more opportunity to flourish than to only a few. This means that the growth for each individual will increase and therefore after a while the society as a whole will grow more than now is happening. The society will on the long term benefit from the change made in education.



The way to solve the conflict between the education space and the plurality of intelligence.

2.3.2 POWER DISTRIBUTION

The distribution of power takes place within the design of the educational building. The design will consist of a varied spectrum of spaces, which acknowledge the differences between pupils and the way they learn. The space, designed by the architect, is distributing the power: pupils get the power, are stimulated by the space, to learn in different ways. By designing more or less equal amounts of spaces for different learners, all pupils get about the same opportunity to learn in their own specific way. Besides that, the space is also helping the teaching staff to change their way of working with the pupils.

The space will allow everybody to learn in their own specific way and make sure that all pupils will flourish. To achieve this, the design needs to consist of spaces that accommodate all the four learning styles of Kolb, spaces that contribute to all the eight intelligences of Gardner, spaces that give the opportunity to work alone and in groups and spaces that give the pupils the opportunity to be and to feel the small community they are forming.

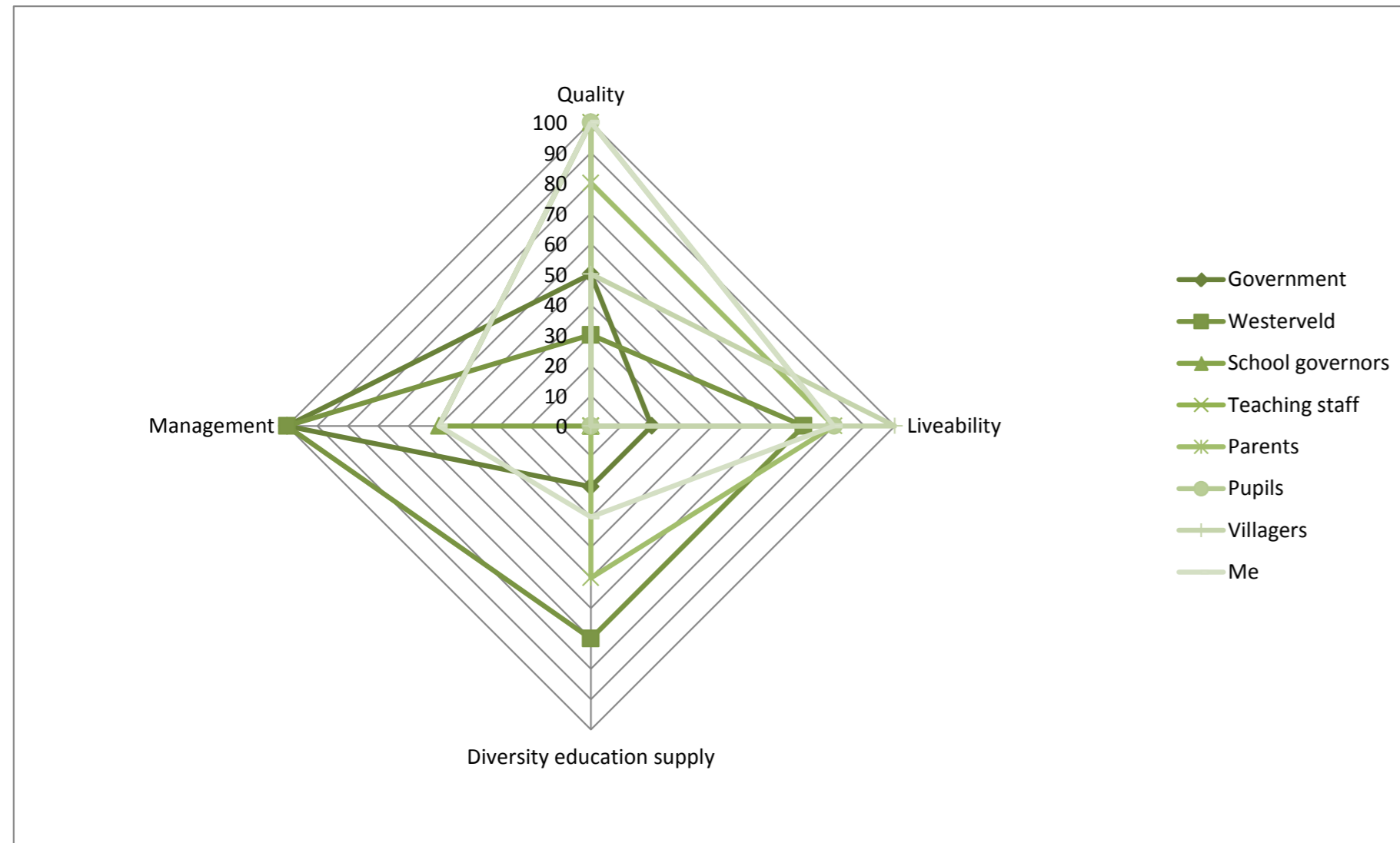


Diagram of all the values and agents involved in the subject of education and shrinkage.

2.4 ETHICAL ISSUES

2.4.1 CONFLICTS OF VALUES

In relation to education and shrinkage, four values can be defined: quality, liveability, diversity education supply and management. The conflict is that each agent has its own priority and those differ from each other, as made visible in the diagram on the left.

I position myself in the diagram in especially the upper and right part. Good quality education is essential for the further development of people and therefore for the further development of society as a whole.



INTRODUCTION

1. PROJECT DESCRIPTION

2. RELEVANCE

3. METHODOLOGY AND PHASING

4. THEORETICAL FRAMEWORK

5. PRELIMINARY RESULTS

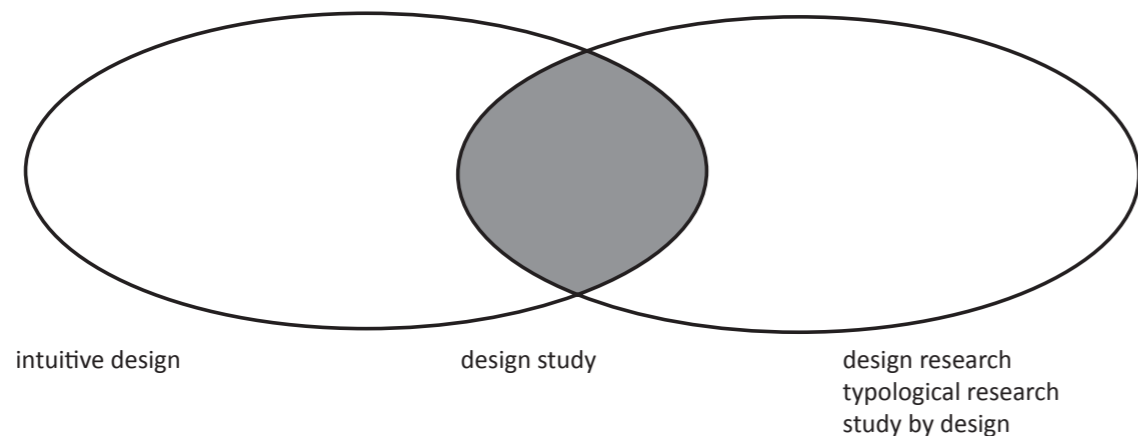


Diagram showing the relation between the domains and methodology.
Source: Jong, Voordt, 2002, p.21

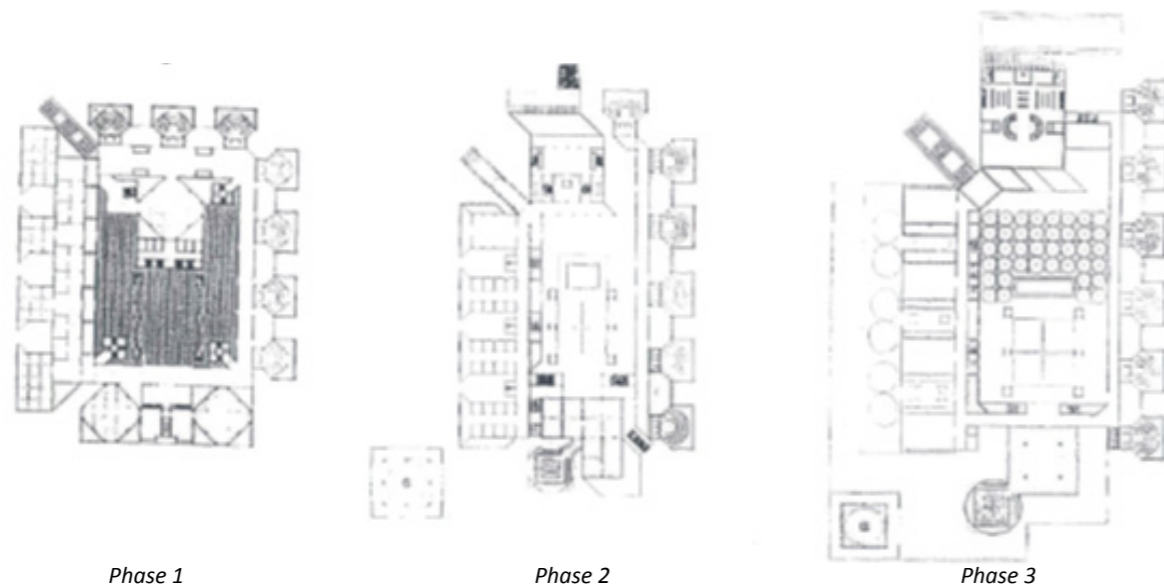


Diagram showing three phases in the design process of Louis Kahn.
Source:

3.1 METHODOLOGY

Method description

The method description can be divided in two parts. The first part is mainly the research part (MSC3), whereas the second part is mainly the design part (MSC4). All components of the research done in MSC3 are the input for the first steps of the design phase.

MSC 3 Research

The research consists of three parts: site analysis, political analysis and an educational analysis. Since those are based on literature, typological research and site analysis they belong to the science part. Those analyses together form the input for the design combined with intuition, which means that this phase belongs to the design study approach.

1. Site analysis – literature research and site analysis

- # Physical situation
- # Social situation
- # Spatial characteristics
- # Shrinkage related items

2. Political analysis – literature research

- # Agents involved
- # Political system
- # Policies
- # Role of the people
- # Power struggle and distribution

3. Educational analysis – literature research, typological research

- # From uniform to individual education
- # Process-based learning of David Kolb
- # Multiple intelligences theory of Howard Gardner
- # Spatial elements for governing

4. First design steps – design study

- # Research findings
- # Design requirements
- # Concept forming
- # Design pitch

MSC 4 Design

The design process can be divided in mainly three phases, as a design example of Louis Kahn is showing. Important is to design from big scale to small scale and vice versa. The first phase shows that the form and character of all parts are derived from the main idea: the whole determinate the parts. Phase two is showing exactly the opposite. The parts of the design are designed further according to the demands of those specific parts. The result is a design which exists of parts that determinate the whole. In phase three phase one and phase two are coming together. The parts and the whole determinate each other mutually.

For each phase the design task is divided in smaller components. Passing through every stage will result in a complete design. The overall approach within the design phase is that of design study: a combination between science and art.

Phase 1: the whole determinate the parts

Within this phase each sub phase consists of a combination of plan analysis and design. The plan analysis functions as the input for the design. The design parts consist of plan drawings, perspectives, section-perspectives and models.

- 1.1 Structuring mass and space
(A) Reduction drawings; (D) Plan drawings 1:200
- 1.2 Develop building order / appearance
(A) Reduction drawings; (D) Plan drawings 1:100
- 1.3 Define the relation between the building and location, the structure and façade, the structure and program, the program and façade
(A) Principal drawings; (D) Section perspective 1:100
- 1.4 Development of architectural elements (which are not defined by a specific program), like arcades, porticos, stairs, patios, galleries, roof garden, court yard etc.
(A) Hand drawings / perspective drawings; (D) Section perspective 1:100 / 1:50
- 1.5 Place and object
(A) Hand drawings / perspective drawings; (D) plan drawings 1:100

Phase 2: the parts determinate the whole

Within this phase each sub phase consists of a design task on the urban scale and on the building scale. The design parts consist of plan drawings, perspectives, section-perspectives and models.

- 2.1 Discover and define several strong centres in the building and in the area around
Isometric drawing 1:100 and 1:50
- 2.2 Design of walking area, space and objects by using building technology, material and colour
Storyboard through plan, section-perspective 1:50
- 2.3 Develop façade with certain intention to surrounding and develop objects like elements
Collage like drawing of façade, section-perspective 1:50
- 2.4 Design entity of façade in detail
Plan drawings 1:20 of façade, details 1:5

Phase 3: the parts and the whole determinate each other mutually

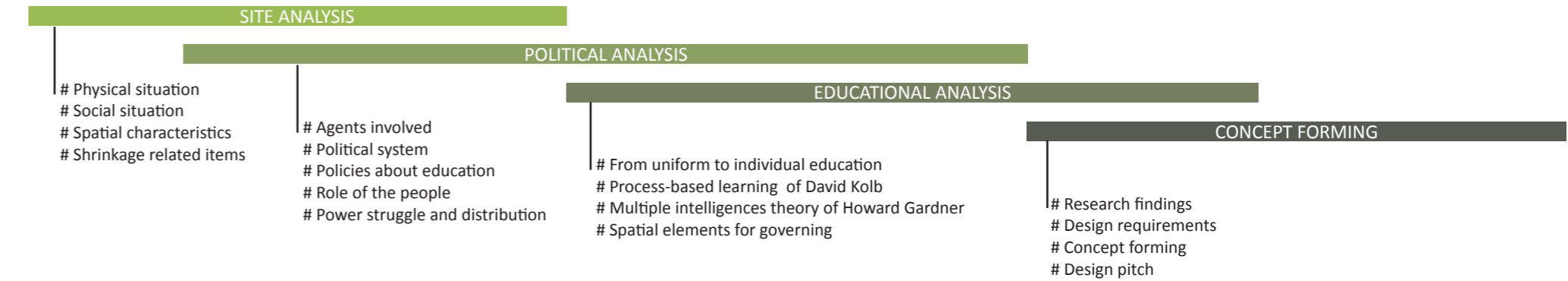
This phase is combining the knowledge found in phase one and two.

- 3.1 Structuring mass and space
Situational drawings 1:500 / 1:200, plan drawings 1:100 / 1:50
- 3.2 Develop building order / appearance
Plan drawings 1:20 / 1:5
- 3.3 Develop impressions
Storyboard through the area, models, schematic overview of whole location

3.2 PHASING

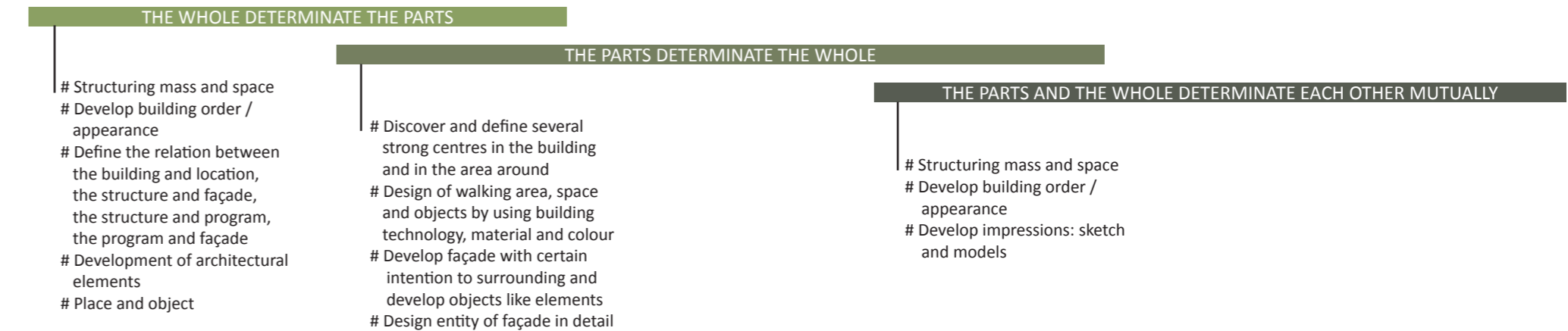
MSC 3

START 3-9



MSC 4

START 11-2





INTRODUCTION

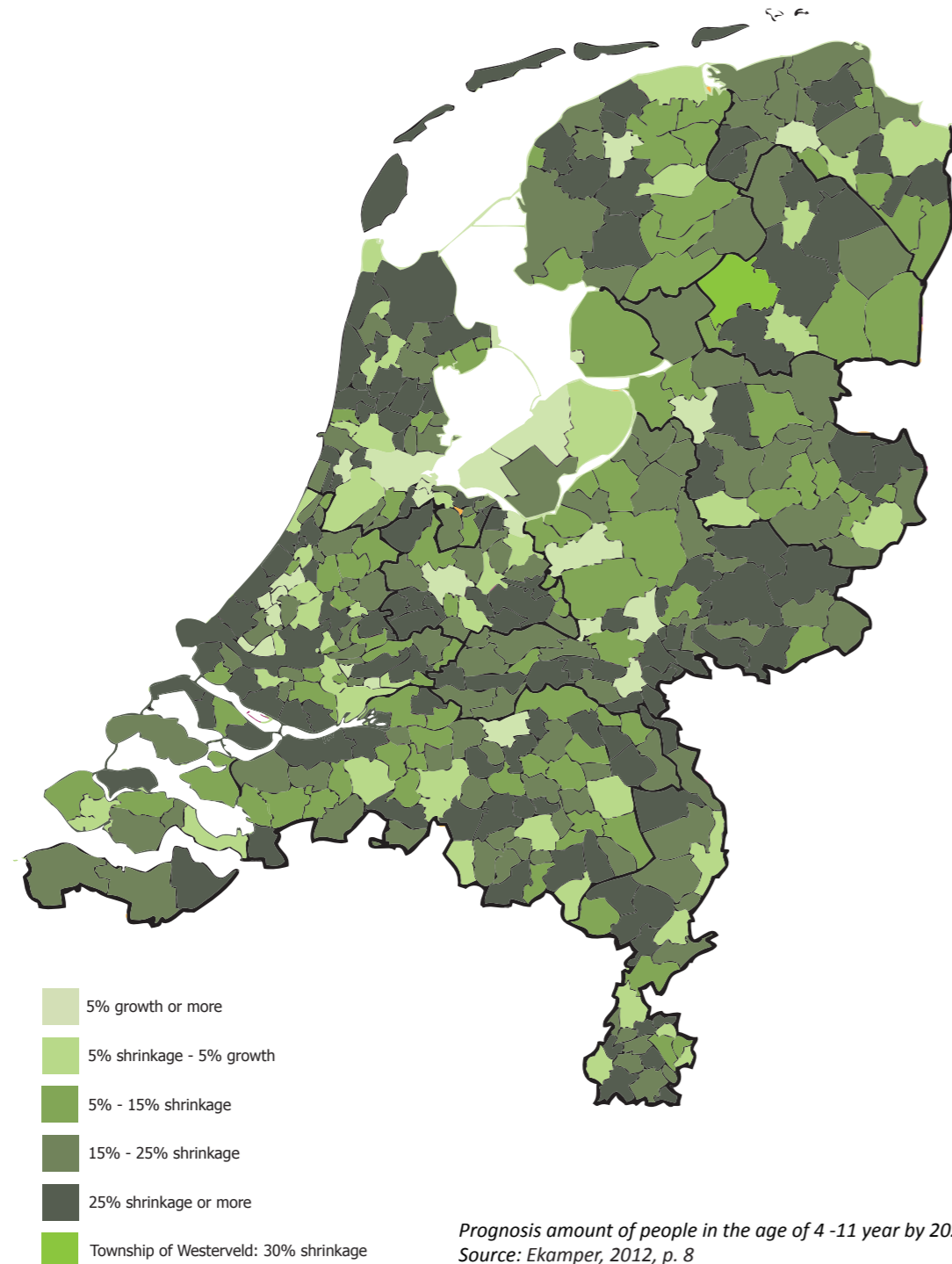
1. PROJECT DESCRIPTION

2. RELEVANCE

3. METHODOLOGY AND PHASING

4. THEORETICAL FRAMEWORK

5. PRELIMINARY RESULTS



Prognosis amount of people in the age of 4 -11 year by 2020
Source: Ekamper, 2012, p. 8

DEMOCRATIZATION OF PRIMARY EDUCATION

Already during the first century AD, the Greek historian and biographer Plutarch stated that **'the mind is not a vessel to be filled, but a fire to be kindled'**.¹ This suggests that education will only succeed, if the interest of each pupil has been aroused. Therefore education needs to be organized to the pupils' own needs and interests, in order to get that fire lightened.

Observing primary education shows us that mainly math and language are taught.² Succeeding in those subjects depends on the pupils' intelligence. Actually, if they succeed or fail is written in their genes. At the same time there is a much richer conception of intelligence and ability available to us than is promoted by conventional education. This means that a lot of pupils don't get the opportunity to develop their capacities as to the extent that pupils being clever in math and language get. This is not democratic, since democracy in education means that all pupils should get an equal opportunity to discover and develop their own qualities and capacities. The problem statement therefore is that **there is a discrepancy between primary education and the plurality of intelligence.**

From a social and pedagogical perspective this is relevant. Educational buildings belong to the most important public buildings, not only from a spatial point of view within the urban fabric, but also in a human life. During the primary education period, the character, social abilities, physical condition and the cultural baggage of a child is being formed to a large extent. The school design is based on a view about the most desirable form of education.³ This means, pedagogical ideas about the child and the upbringing are in the first place the input for the school design. Therefore it's all the more important that educational buildings meet the current needs.

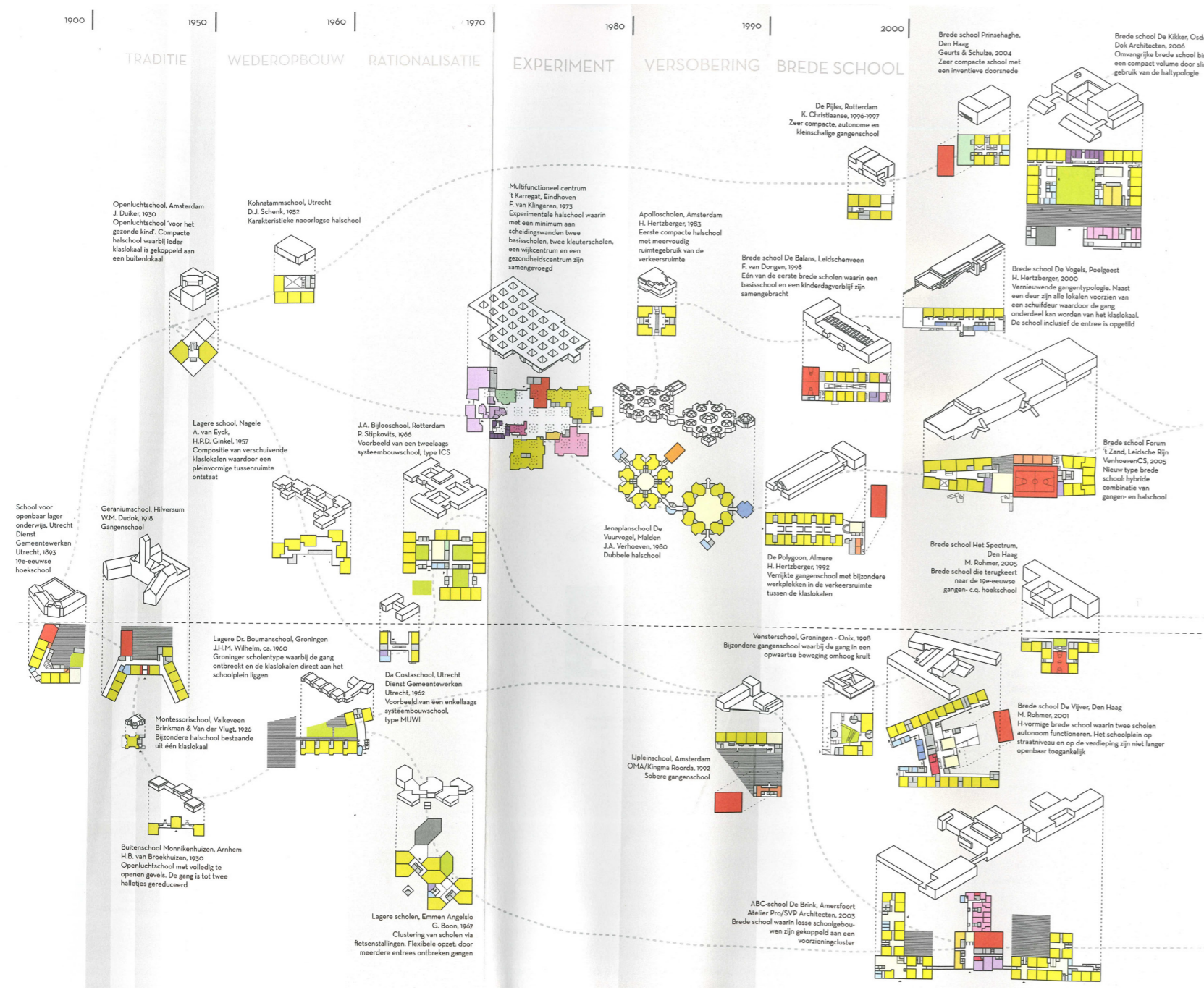
This paper is not only exploring the relation between primary education and democracy, but also the relation between democracy and a certain context. STAMM CMO published a report about shrinkage and education in Drenthe, called 'Krimpen met perspectief'. According to this research, the municipality with the most extreme expected shrinkage in the age of 4 – 11, is the municipality of Westerveld: 30% shrinkage in 2020 compared to the current situation.⁴

Due to emancipation, individualization, economic growth and improving health care, the composition of the population is changing.⁵ This demographical change in Westerveld means less children will be born, the working population is shrinking and the amount of elderly is growing.⁶ This is causing a growing imbalance between the supply and demand of facilities. One of those facilities are the schools. This means that this change in the composition of the population influences the educational landscape. The problem statement therefore is that **there will be a growing discrepancy between the population and the facilities.**

The relevance of this context is that this is a nationwide issue. Spread over the Netherlands many regions are going to face a shrinkage of 25% or more in the age of 4 – 11.⁷

Main research question to be answered within this paper is **how the educational landscape of Westerveld can be developed in terms of democracy, both on a regional as a building scale.** In order to achieve this, the research consists of two parts. Firstly, the relation between democracy and education is explored. Secondly, a close look is taken at the relation between democracy and the context.

1. OWP / P Architects, VS Furniture, Bruce Mau Design, 2010, p. 53
2. OWP / P Architects, VS Furniture, Bruce Mau Design, 2010, pp. 56-58
3. Hertzberger, 2008, pp. 8-9
4. Leer, Haan, Wijnstra, Janssens, 2012, p. 32
5. Dam, Groot, Verwest, 2006, pp. 23-27
6. Provinciale staten van Drenthe, 2012, p. 49
7. Ekamper, 2012, p. 8



Development of primary education buildings in the Netherlands
Source: Rodermond, Wallagh, Leun, 2009, pp. 57-58

RELATION DEMOCRACY AND PRIMARY EDUCATION

CURRENT SITUATION EDUCATION

The development of primary education buildings since more than a century ago till now, shows mainly two developments. The first schools consisted of rectangular classrooms along a corridor. In the fifties, slowly the corridor altered into a bigger space or even a hall and was no longer used as only circulation space, but also as learning space. In the nineties the idea of the 'Brede school' developed. This type of school building has a lot more functions than a conventional school building, such as day care and kindergarten. Sometimes it even has multiple schools in one building.⁸

While studying the development of primary education, one aspect is very remarkable. The rectangular classroom pattern seems to be a stubbornly structure of school buildings. Why is that? The classroom pattern remained the same because the pedagogical idea behind it didn't change. This idea is that all pupils should learn in the same space, without paying attention to the possibility that some types of intelligences need another type of learning space. This means that by having this classroom pattern in educational buildings, there is a discrepancy between the learning space and the plurality of intelligence and the corresponding activities. To have this more in balance is important for each individual, so that all of them can flourish and not only a few.

POLITICAL SYSTEM

The political system gives insight in how this discrepancy can be tackled. The key to make a change in education and within the educational building, is the law for freedom of education. Whereas all other policies are implemented top-down, this law gives each citizen the opportunity to make a change bottom-up.⁹ In principle everyone can start a school based on an own defined pedagogical concept. To make current education more democratic, can be done by translating democratic principles into the educational situation. From this derives a democratic pedagogical concept. The philosophical theory of John Dewey is used to explain the relation between education and democracy.¹⁰

JOHN DEWEY

The relation between education and democracy is further explored by John Dewey (1859-1952), who was an American philosopher and teacher. According to Dewey, there are three types of democracy.

Democracy as a way of governance is the most well-known type. Besides that, Dewey distinguishes economical and social democracy. Economical democracy can be seen as a mechanism that provides equal distribution of welfare. Within the social democracy, the relation between democracy and education is becoming clear. Dewey defines social democracy as a democratic society that is democratic throughout the whole of its social fabric.¹¹

Social democracy is the idea of community life itself. Within this community there are numerous and varied groups with different interests and people belong to different groups. Between the groups there is a free interplay. To the extent that those two aspects are happening, that's how democratic the community is. Community also includes communication. And communication is essential for knowledge, because only by communication knowledge can be tested and obtained.¹²

Education is the process of making experience meaningful. Experience that a person is not aware of, is not meaningful and therefore not educating. The enlargement of meaningful experience is called growth. Within a democratic community there are many, free, and varied forms of groups communicating and is therefore the fertile ground for growth, for education. The more democratic the community is, the bigger the growth will be.¹³

This means that the democratic community is the basis for education. Actually it goes one step further; education should be a miniature of a democratic community. In order to achieve this, the features of a democratic community need to be translated into the educational situation.

8. Rodermond, Wallagh, Leun, 2009, pp. 57-58
9. Leer, Haan, Wijnstra, Janssens, 2012, pp. 66-67
10. Dewey, 1968, pp. 81-99
11. Berding, 2011, p. 194
12. Cam, 2000, pp. 158-181
13. Cam, 2000, pp. 158-181



Collage of learning spaces and other spaces that belong to a specific learning style
Dreamer (on top), deliberator (below)



PEDAGOGICAL IDEAS

Four main features of the democratic community will be described and will be translated into the educational situation, to pedagogical concepts.

The first characteristic is that such a community gives to each person the opportunity to develop his / her talents.¹⁴ In educational terms, this means that pupils should be able to develop and discover their individual qualities and capacities. Pedagogical concepts which stimulate this, are the experiential learning theory of David Kolb and the multiple intelligences theory of Howard Gardner.

The second characteristic is that community is a way of living in which different groups of people are connected by having the same interests.¹⁵ To make this as varied as possible in education, means that many and varied forms of association should be developed within the school. This can be done by making education group work orientated rather than uniform, where pupils work in different groups from time to time.

The third and fourth characteristic are that persons have a social attitude to each other and that they all together are actively building their community.¹⁶ These two characteristics can be both translated into the educational situation by making all pupils more actively involved in building their own small community. This means, by giving them a say within school, like setting up rules together.

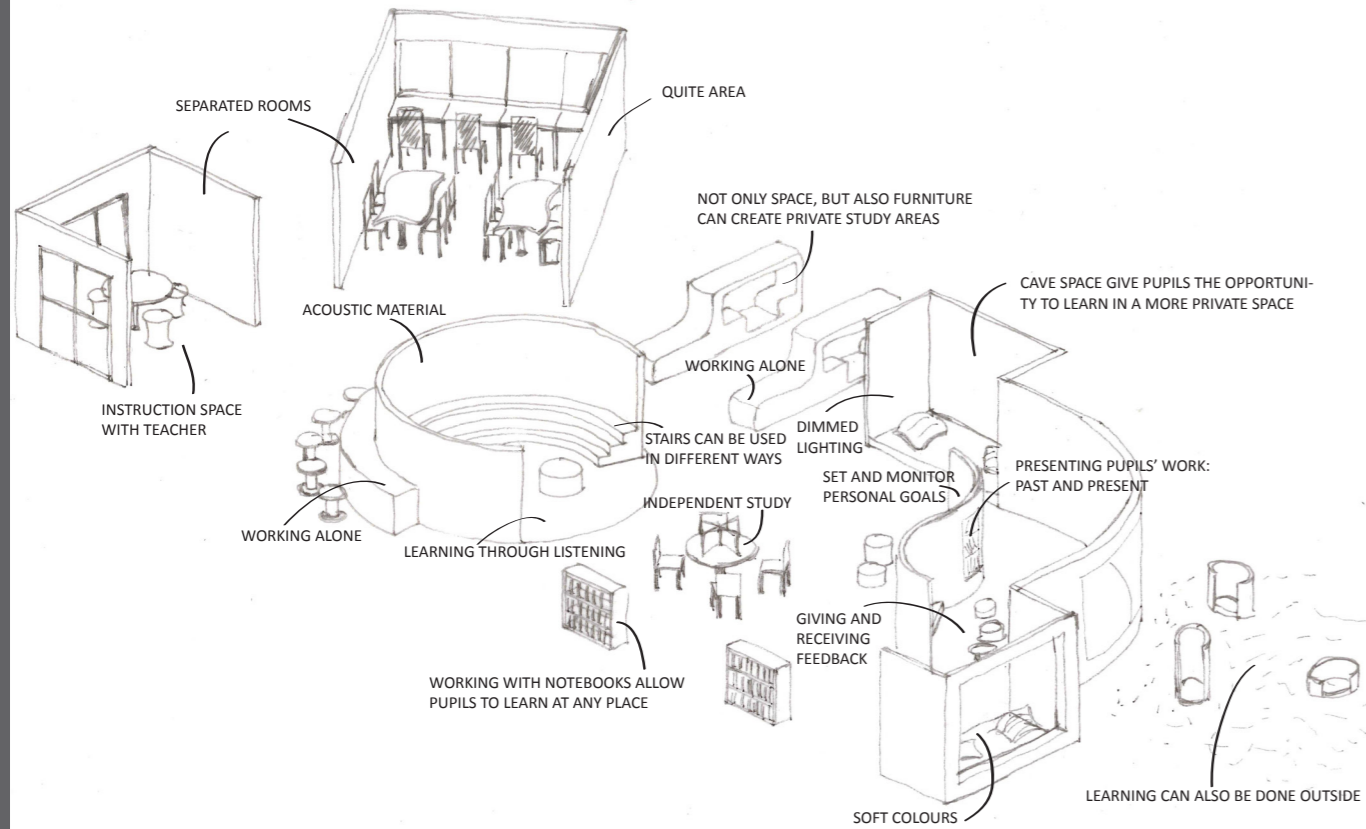
The next part describes each pedagogical idea in more detail and shows **how the pedagogical concept influences space**. The pedagogical ideas are presented in the following order: experiential learning theory of David Kolb, the multiple intelligences theory of Howard Gardner, individual / group working and giving pupils a say within school.

LEARNING STYLES OF DAVID KOLB

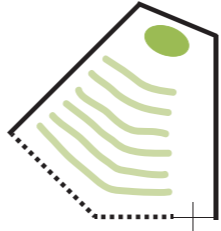
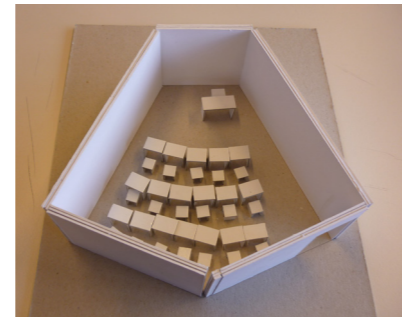
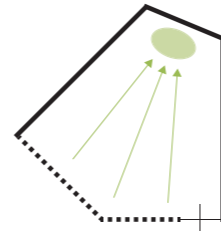
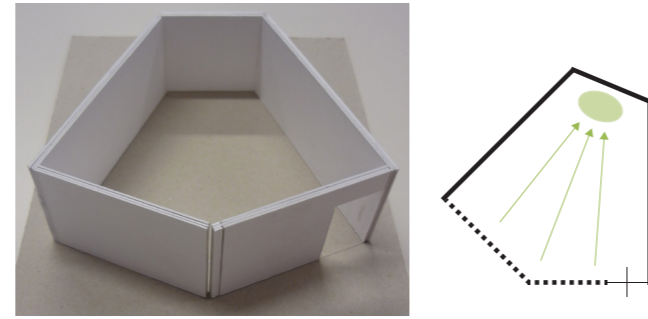
David Kolb defines in his book 'Experiential Learning', published in 1984, four different learning styles: concrete experience, observation and reflection, forming abstract concepts and active experimenting. These correspond respectively with the following types: the dreamer, deliberator, decider and doer. The learning styles are organized in an experiential learning circle. For an optimal learning process, each student should go through all learning styles. There is no fixed starting point; where a student starts within the learning circle depends on their own learning style.¹⁷

Each type has its own characteristics and therefore preference for certain activities. These activities can be subsequently translated into for example learning modalities, scale, space types, furniture, material and lighting. I will strengthen this by comparing the dreamer with the deliberator. The dreamer loves to work within themes, to have group conversations about thoughts and feelings, to do brainstorming, mind mapping, role play, designing and making poems.¹⁸ **This results in space with features like performance space, exhibition space, studios, bright colours, display learning and ateliers.** The deliberator on the other hand prefers to analyse models, explore connections, make summaries, compare opinions, debate and to receive background information and explanation.¹⁹ **These kind of activities needs a space consisting of independent spaces, such as cave space, campfire spaces, libraries and soft colours and dimmed lighting.**

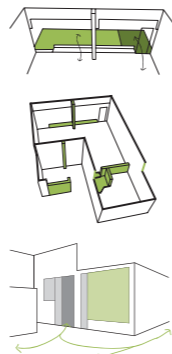
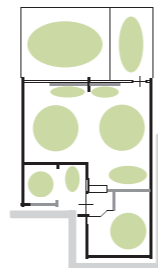
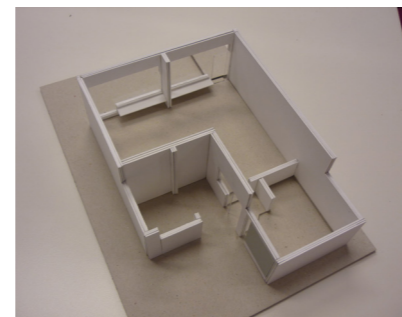
14. Dewey, 1968, p. 99
15. Dewey, 1968, p. 99
16. Dewey, 1968, p. 99
17. Kolb, 1984, pp. 40-42
18. Kolb, 1984, pp. 76-78
19. Kolb, 1984, pp. 76-78



Mindmap drawing of two intelligences
Interpersonal intelligence (on top), intrapersonal intelligence (below)



Models of two existing schools
Elementary school in Chengelpet, India (on top)
Montessorischool in Delft, The Netherlands (below)



MULTIPLE INTELLIGENCES THEORY OF HOWARD GARDNER

In 1983 Howard Gardner published his multiple intelligences theory in the book 'Frames of mind'. He argues that there are more types of intelligence than only the logical-mathematical and linguistic intelligence, which were and still are mainly taught in primary schools. On average pupils who are doing good in these subjects are the ones that go later on to university. However, most pupils don't go to the university, but follow another type of professional training. This means, if a school is mainly teaching math and language, most of the pupils will never score good on these subjects. Furthermore, pupils also aren't discovering and developing other skills they may have. Gardner distinguishes the following intelligences: the intrapersonal, interpersonal, musical, linguistic, spatial, naturalist, kinesthetic, logical-mathematical intelligence. It's no longer a question if you are smart, but **how are you smart?**²⁰

Each intelligence is based on different strong skills. These skills assume a preference for certain activities, which need space. The architect can translate those activities into space. An example is for instance the intrapersonal and interpersonal intelligence. The former has a certain talent for reflecting, controlling feelings, pursuing personal interests, setting individual agenda, observing and listening.²¹ This results in activities such as working in own pace, in quiet areas, working alone, setting and monitoring personal goals, receiving feedback and writing journals. These kind of activities need individual study spaces, such as cave space or furniture where you can work alone. But also space to display the progress of a pupil is necessary.

The strong skills of the latter are for example enjoying many friends, leading, sharing, mediating, building consensus, helping others with problems and being an effective team member.²² Activities that belong to those skills are such as cooperative learning, group projects, peer teaching, brainstorming, observing and giving feedback. This results in spaces such as lounges, big tables for group work, mind-mapping walls and stages. The main difference between those intelligences is, that the intrapersonal intelligence needs more private spaces to work, whereas the interpersonal intelligence is asking for a very open space plan.

INDIVIDUAL / GROUP EDUCATION

The essence of uniform education is the belief that all individuals should be treated in the same way. Every pupil has to learn the same subjects in the same way and should be judged in the same way. At first sight this appears very fair, because nobody gets any preference. But this type of education is based on a wrong assumption, namely that all pupils are the same and thus that uniform education will work the same for all children and therefore is impartial.²³ **But people not only look different, they also have different characters and even more important, they have different brains.**

Moving from uniform to individual education can be made very clear in a spatial way by showing two examples of schools. The first one is an elementary school in Chengelpet, India. The form of the classroom is directed towards one point, the spot where the teacher is working. Every pupil within this classroom is working in the same type of space, directed to the teacher. This is an extreme form of teacher-orientated education. The opposite situation can be found in the Montessori school in Delft, designed by Herman Hertzberger. Different tools are used to design varied spaces, such as stairs, steps, low walls, differentiation in ceiling height and columns.²⁴

PUPILS HAVING A SAY IN SCHOOL

To empower pupils is already done to a large extent by implementing the theories of Kolb and Gardner in the school design, because the varied types of spaces gives the pupils the opportunity to learn at different places and in different ways within the school. But this is more focused on the individual pupil. **All pupils together also form a small community.**²⁵ All together they are building the community and in doing so, they need space for that too. A space where all pupils can gather and do activities together as a community and for example to set up their own rules. The way this can be done in spatial terms is twofold. Gathering together can be done in a separate space, but also in a space that normally belongs to the learning space. The former is more effective in bigger schools, the latter especially in smaller schools, because the space is used in a more flexible way.

As written in the introduction, this paper is not only exploring the relation between education and democracy, but also the relation between the context and democracy. The coming part will focus on the latter.

20. Gardner, 1993, pp. 8-12

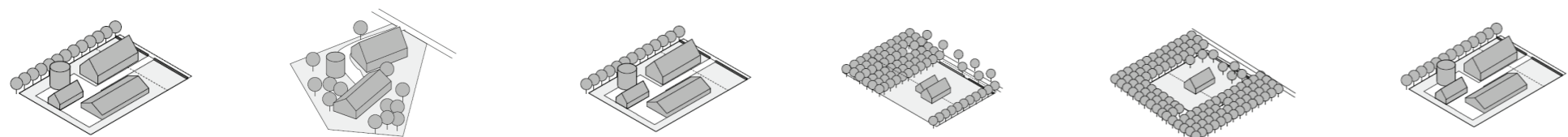
21. Hoerr, 2000, p. 7

22. Hoerr, 2000, p. 7

23. Nair, Fielding, Lackney, 2009, pp. 25-26

24. Hertzberger, 2008, pp. 31-39

25. Hertzberger, 2008, pp. 135-136



Overview of the character of the municipality of Westerveld
Source: Olie, Siebring, Luten, Bierema, 2010, pp. 36-119

RELATION DEMOCRACY AND CONTEXT

PHYSICAL SITUATION

The physical situation in the municipality of Westerveld in Drenthe can be described as a very **low-density area**. Only 19.370 inhabitants live on 28.300 hectare. The biggest village has around 3500 inhabitants, but most villages have around 800 inhabitants. Since there is not that much built, the area has a very rich landscape. Agricultural land, ribbon development, heath and forest, stream valleys, cultivation fields and cultivation colonies determine the character of the area.²⁶

SOCIAL SITUATION

Due to social cultural and economic change, such as emancipation, individualization, economic growth and better health care, the composition of the population is changing.²⁷ The amount of young people and the working class is shrinking, but the amount of elderly is growing.²⁸ This shift in the composition of the population, is causing a discrepancy between the amount and type of facilities and the population. To bring this back into balance, the facilities have to adapt to the expecting new composition of the population. And this will influence the educational landscape.

A shrinkage of 30% in the age of 4 – 11 by 2020 means that on an average every school will get 30% less children. The focus area of the municipality of Westerveld is the north-west part. Here are currently six schools. The expectation is that by 2020 one school will have around 100 pupils, four schools around 55 pupils and one school around 30 pupils.²⁹ The appearance of the six schools are completely different. Some look quite monumental, where others look like a regular seventies Dutch school building or even a shed.

When making a decision about the educational landscape, the issue of liveability is very important.³⁰

Crucial for the liveability in low-density shrinking areas are mainly three aspects. The first aspect is the accessibility and mobility of facilities. The second aspect is the relation of a school with other functions. Sometimes a school is in the same building as for example day care or a meeting centre. Closing a school can then accelerate that same process for the other facilities. The third aspect is that it is important that people are able to meet somewhere, like in a meeting centre.³¹ Research is showing that a school itself is not a crucial factor for the liveability of a village or region.³²

CHANGING THE EDUCATIONAL LANDSCAPE

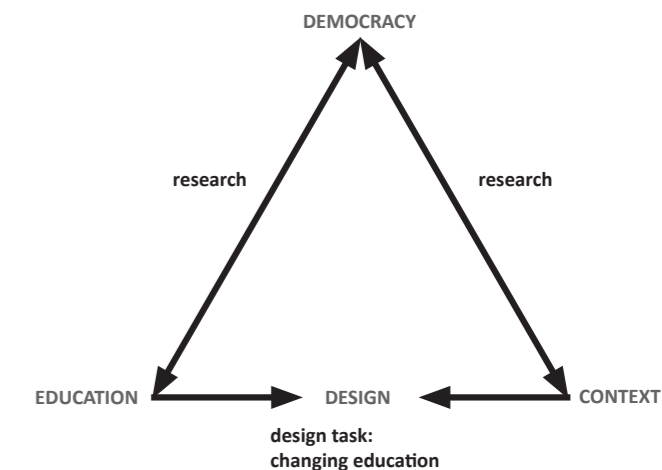
THE POSITION OF THE ARCHITECT

The role and position of the architect within the change in the educational landscape can be summarized in a diagram. The diagram shows the subject in a context, in which both are directed by democracy. In this study, the subject is primary education, the context is the low-density shrinking area of Westerveld and the overall theme is democracy. Both democracy and primary education, and democracy and the context influence each other mutually. The research focused on these relations. To change education and the context, democracy is used as the input, as a direction, for change. In case of democracy and education, the relation is explored by investigating the philosophy of John Dewey. In case of democracy and context, the relation has been found in the changing behaviour of the people, which nowadays is causing a change in the composition of the population. Both parts of the research are the input for the design, and since the outcomes of the research are directed by democracy, the design will automatically be based on democracy too.

On two different scales can the educational landscape be developed in terms of democracy. Firstly, on a building scale, as the research about the relation between education and democracy showed. The educational landscape can be developed on an abstract level by implementing John Dewey's theory about education and democracy. On a concrete level, this means that the pedagogical ideas, derived from Dewey's theory, get a spatial translation within the school design. Secondly, on a regional scale, the educational landscape can be developed by making an overall plan for all schools without disturbing the liveability. That means that if the liveability isn't affected, it's possible to close some schools.

The design can change the learning and teaching process **by approaching the physical environment as the third teacher**, as the Italian teacher and psychologist Loris Malaguzzi in 1940 determined. According to Malaguzzi, children develop through interactions. Firstly by interacting with adults, the parents and teachers, secondly with peers and thirdly with the environment.³³ As an architect I can change the learning environment, and by doing so, I hope I will, just as Plutarch said already 2000 years ago, kindle the fire in pupils a little bit more.

26. Olie, Siebring, Luten, Bierema, 2010, pp. 36-119
27. Dam, Groot, Verwest, 2006, pp. 23-27
28. Provinciale staten van Drenthe, 2012, p. 49
29. Leer, Haan, Wijnstra, Janssens, 2012, p. 116
30. Leer, Haan, Wijnstra, Janssens, 2012, pp. 63-66
31. Leer, Haan, Wijnstra, Janssens, 2012, pp. 59-63
32. Leer, Haan, Wijnstra, Janssens, 2012, pp. 60-61
33. OWP / P Architects, VS Furniture, Bruce Mau Design, 2010, p. 258



The relation between research and design and the position of the architect

BIBLIOGRAPHY

- Berding, J. (2011). *John Dewey over opvoeding, onderwijs en burgerschap. Een keuze uit zijn werk*. Amsterdam: Uitgeverij SWP
- Cam, P. (2000). Philosophy, Democracy and Education: Reconstructing Dewey. In: In-Suk Cha. *Teaching Philosophy for Democracy* (158-181). Seoul: Seoul University Press
- Dam, F. van, Groot, C. de, Verwest, F. (2006). *Krimp en ruimte. Bevolkingsafname, ruimtelijke gevolgen en beleid*. Rotterdam: NAI Uitgevers
- Dewey, J. (1968). *Democracy and education*. New York: Free Press
- Ekamper, P. (2012). *Bevolkingskrimp en onderwijs. Afscheid van 450 scholen?*. Demos, 28 (5), 8.
- Gardner, H. (1993). *Multiple intelligences. The theory in practice*. New York: BasicBooks
- Hertzberger, H. (2008). *Ruimte en leren*. Rotterdam: Uitgeverij 010
- Hoerr, T. (2000). *Becoming a Multiple Intelligences School*. Alexandria: ASCD Publications
- Kolb, D. (1984). *Experiential Learning. Experience as the source of learning and development*. New Jersey: Prentice Hall
- Leer, R. van, Haan, K. de, Wijnstra, M., Janssens, M. (2012). *Krimpen met perspectief. Demografische ontwikkelingen, gevolgen en kansen voor het Drentse basisonderwijs*. Assen: Stamm CMO
- Nair, P., Fielding, R., Lackney, J. (2009). *The Language of School Design: Design Patterns for 21st Century Schools*. USA: Designshare
- Olie, A., Siebring, R., Luten, M., Bierema, G. (2010). *Beeldkwaliteitsplan Gemeente Westerveld*. Diever: Gemeente Westerveld
- OWP / P Architects, VS Furniture, Bruce Mau Design (2010). *The Third Teacher: 79 Ways You Can Use Design to Transform Teaching & Learning*. New York: Abrams
- Provinciale staten van Drenthe (2012). *Bevolkingsprognose XVIII*. Assen: Provincie Drenthe
- Rodermond, J., Wallagh, G., Leun, A. van der (2009). *Geen meter te veel. Agenda scholenbouw*. Rotterdam: Stimuleringsfonds voor Architectuur



INTRODUCTION

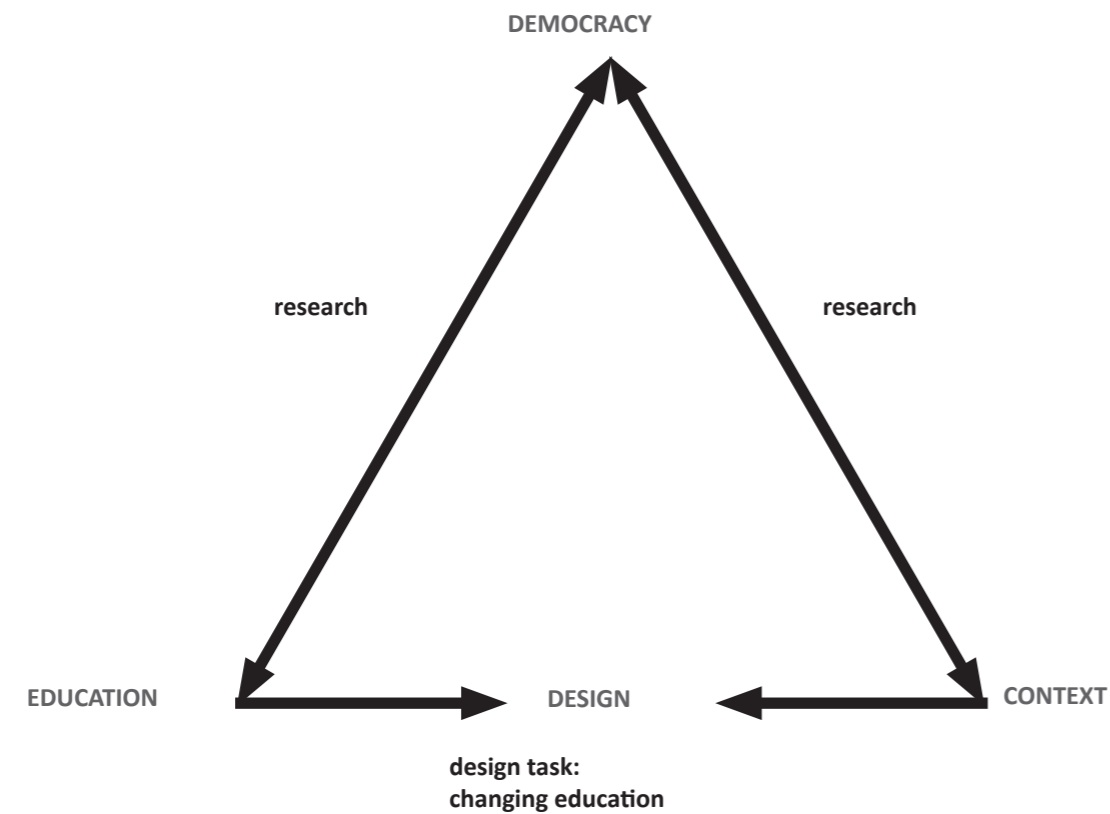
1. PROJECT DESCRIPTION

2. RELEVANCE

3. METHODOLOGY AND PHASING

4. THEORETICAL FRAMEWORK

5. PRELIMINARY RESULTS



5.1 RESEARCH FINDINGS

Main research question

The main research question to be answered within the research is:

How can the educational landscape of Westerveld be developed in terms of democracy, both on a regional as a building scale?

The regional scale is explored by the relation between democracy and the context. The building scale is explored by the relation between democracy and education. From both research parts, it's possible to get some conclusions. The conclusions show how the design of the educational landscape can be developed in a democratic way.











Democracy and education








- # By implementing John Dewey's theory about the relation between democracy and education in the design
- # By implementing the spatial characteristics belonging to each learning style (Kolb) in the design
- # By implementing display space, to show progress, learn from peers and connect to the community, in the design
- # By implementing the spatial characteristics belonging to each intelligence (Gardner) in the design
- # By implementing smaller spaces instead of classrooms in the design
- # By implementing gathering area in the design





Democracy and the context

- # By bringing the demand and supply of facilities back in balance
- # By making sure each village has a meeting place
- # By keeping education accessible
- # By avoiding that unoccupied buildings will be created





LEARNING MODALITIES	
	INDEPENDENT STUDY
	PEER TUTORING
	TEAM COLLABORATION
	ONE-ON-ONE STUDENT - TEACHER
	LECTURE FORMAT
	SEMINAR STYLE INSTRUCTION
	PROJECT - BASED
	DESIGN - BASED
	PLAY - BASED
	PERFORMANCE - BASED
	NATURALIST LEARNING
	SOCIAL / EMOTIONAL / SPIRITUAL LEARNING
	STUDENT PRESENTATION
	STORYTELLING

SPACE TYPES	
	CLASSROOM
	STUDIO
	LEARNING CENTRE
	CAMPFIRE SPACE
	INTERACTION
	CAVE SPACE
	LIBRARY
	GYMNASIUM
	PERFORMANCE
	EXHIBITION SPACE

FURNITURE	
	INDIVIDUAL
	GROUP WORKING
	DISPLAY SPACE
	DIGITAL DISPLAY
	WRITING PANELS
	MAGNETIC PANELS
	ATELIER

MATERIAL	
	BRIGHT COLORS
	SOFT COLORS
	SMOOTH
	ROUGH
	TRANSPARENT
	TRANSLUCENT

LIGHTING	
	SPOTS
	BRIGHT
	DIMMED

SCALE	
	INDIVIDUAL
	SMALL GROUP; < 8
	GROUP; < 20
	LARGE GROUP; > 20

5.2 DESIGN REQUIREMENTS

The design requirements derived from the research are all related to the interior of the educational building. Overall one can say that a varied amount and type of spaces is needed within a school. The requirements can be divided in the following components:

Learning modalities

Space types

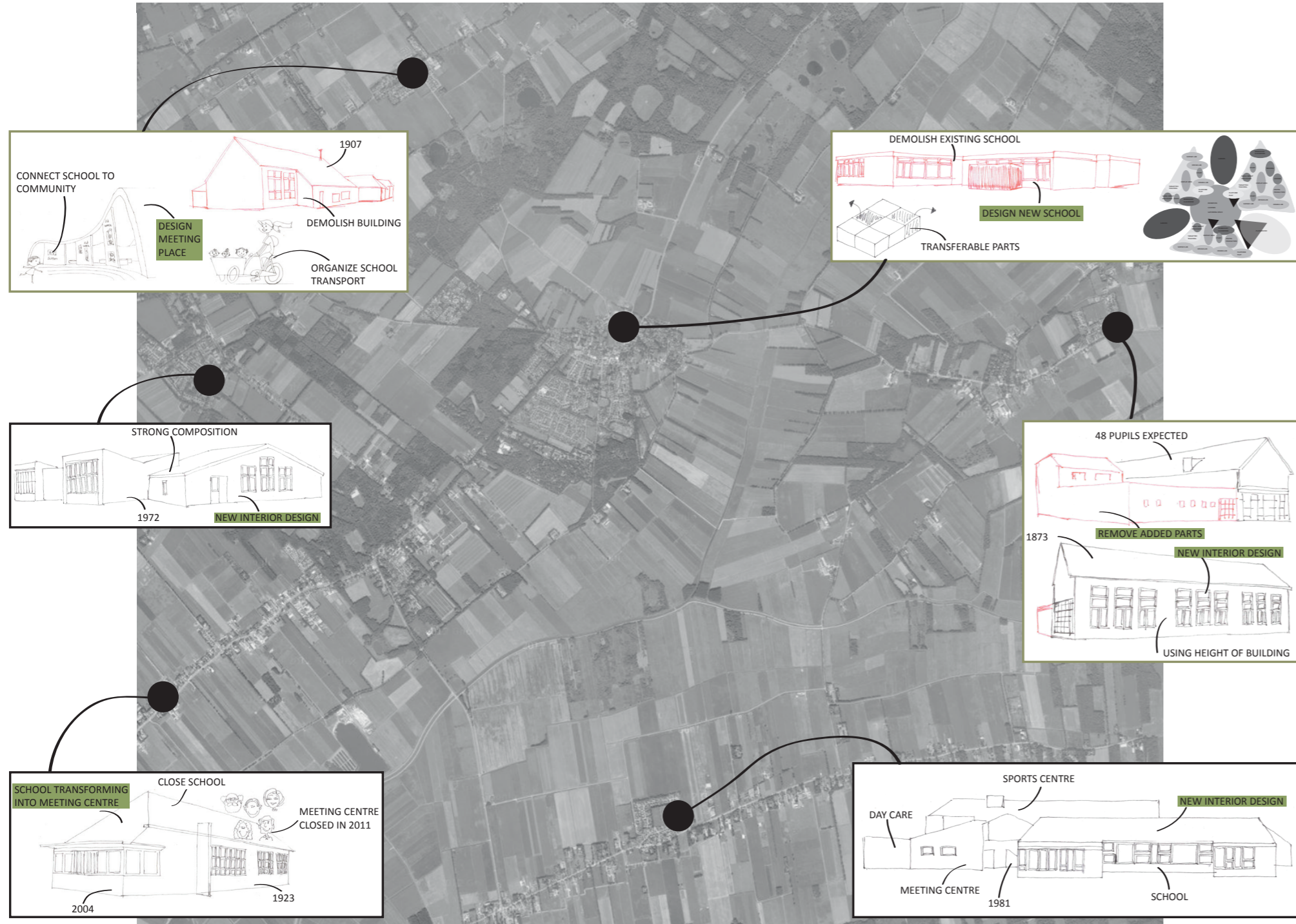
Furniture

Material

Lighting

Scale

The list on the left shows an overview of what kind of spaces a school needs in order to give the opportunity to each pupil to flower and flourish.



5.3 DESIGN PITCH

Starting at the top and going from the left to the right, the following decisions are made for each school:

O.B.S. DE HEIDEHOEK, VLEDDERVEEN

Because of the state of the building and the amount of expected pupils (only 28 by 2020), the choice is made to demolish this building. A meeting place will be designed where parents and pupils can meet each other in the morning, where pupils' work is exhibited and where people can drink a coffee.

O.B.S. DE KIEVITSHOEK, WILHEMINAARD

The lay-out of this school design is very clear. Each classroom is clearly visible from outside because the appearance is an independent form. There are four classrooms which all penetrate into the communal space. The interior design will be redesigned.

C.B.S. DE BRON, NIJENSLEEK

A small part of the current building is also quite monumental. The latest addition was done in 2004. The expected amount of pupils is about 60. People living in this village have a good connection to other villages such as Eesveen, Wilhelminaard and Vledder. Therefore this school will also close. The current building will be used as a meeting centre, since the old one closed in 2011 because there was no money to improve that building. This school is in a good current state and can therefore be used for a new purpose.

O.B.S. DE HOEKSTEE, VLEDDER

This regular seventies Dutch school building doesn't have a lot architectural quality. The classrooms are situated around a dark hall which get its natural light by roof windows. Because of the state of the building, the choice is made to demolish the school building and build a new school according to the democratic educational principles. This would be a school for about 120 pupils and due to the uncertain future of the shrinkage aspect, it's necessary that parts of the school building can be removable.

O.B.S. TEN DARPERSCHOELE, WAPSE

This is the most monumental school of all of them. There are some new parts built at the back. Due to the shrinkage, the space within the monumental part will be enough for the around 50 pupils that will visit the school in 2020. The later on added parts will be demolished and a new interior will be designed for the monumental part. The height of the building can be very usefull for that.

O.B.S. WAPSERVEEN, WAPSERVEEN

The initial design of the building was already a multifunctional building, as it is still today. Since this village is further away from the other villages around and the school is together with day-care, kindergarten, sports centre and the meeting centre in one building, this will remain the same. However, education can be democratized by changing the interior of the building.

5.4 DESIGN DOMAINS

Material

-

Form

-

Use

See list of design requirements.

Urban context

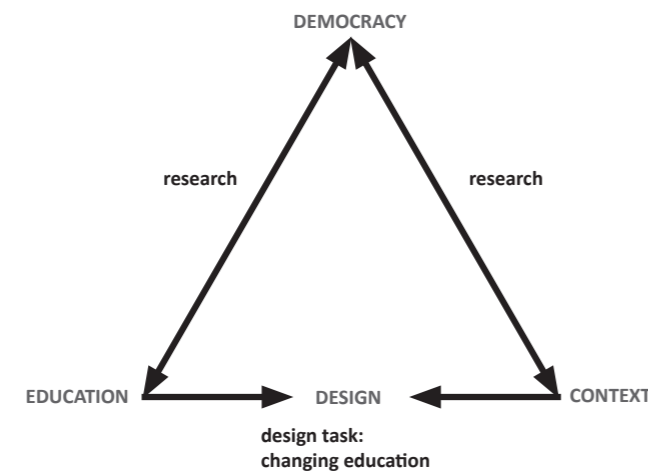
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Human context

See philosophical theory of John Dewey and the corresponding elaborated pedagogical concepts.

CONCLUSION-IN-PROGRESS

The role and position of the architect within the change in the educational landscape can be summarized in a diagram. The diagram shows the subject in a context, in which both are directed by democracy. In this study, the subject is primary education, the context is the low-density shrinking area of Westerveld and the overall theme is democracy. Both democracy and primary education, and democracy and the context influence each other mutually. The research focused on these relations. To change education and the context, democracy is used as the input, as a direction, for change. In case of democracy and education, the relation is explored by investigating the philosophy of John Dewey. In case of democracy and context, the relation has been found in the changing behaviour of the people, which nowadays is causing a change in the composition of the population. Both parts of the research are the input for the design, and since the outcomes of the research are directed by democracy, the design will automatically be based on democracy too.



The relation between research and design and the position of the architect

On two different scales can the educational landscape be developed in terms of democracy. Firstly, on a building scale, as the research about the relation between education and democracy showed. The educational landscape can be developed on an abstract level by implementing John Dewey's theory about education and democracy. On a concrete level, this means that the pedagogical ideas, derived from Dewey's theory, get a spatial translation within the school design. Those spaces give in a more equal way the opportunity to each individual to flower and flourish. Secondly, on a regional scale, the educational landscape can be developed by making an overall plan for all schools without disturbing the liveability. That means that if the liveability isn't affected, it's possible to close some schools.

BIBLIOGRAPHY

- Berding, J. (2011). *John Dewey over opvoeding, onderwijs en burgerschap. Een keuze uit zijn werk*. Amsterdam: Uitgeverij SWP
- Blundell Jones, P. (1995). *Hans Scharoun*. London: Phaidon
- Cam, P. (2000). Philosophy, Democracy and Education: Reconstructing Dewey. In: In-Suk Cha. *Teaching Philosophy for Democracy (158-181)*. Seoul: Seoul University Press
- Dam, F. van, Groot, C. de, Verwest, F. (2006). *Krimp en ruimte. Bevolkingsafname, ruimtelijke gevolgen en beleid*. Rotterdam: NAI Uitgevers
- Dewey, J. (1968). *Democracy and education*. New York: Free Press
- Ekamper, P. (2012). *Bevolkingskrimp en onderwijs. Afscheid van 450 scholen?*. Demos, 28 (5), 8.
- Gardner, H. (1993). *Multiple intelligences. The theory in practice*. New York: BasicBooks
- Hertzberger, H. (2008). *Ruimte en leren*. Rotterdam: Uitgeverij 010
- Hoerr, T. (2000). *Becoming a Multiple Intelligences School*. Alexandria: ASCD Publications
- Hospers, G. (2010). *Krimp!*. Amsterdam: Uitgeverij SUN
- Jong, T.M. de, Voordt, D.J.M. van der (2002). *Ways to study and research: urban, architectural and technical design*. Delft: DUP
- Kolb, D. (1984). *Experiential Learning. Experience as the source of learning and development*. New Jersey: Prentice Hall
- Leer, R. van, Haan, K. de, Wijnstra, M., Janssens, M. (2012). *Krimpen met perspectief. Demografische ontwikkelingen, gevolgen en kansen voor het Drentse basisonderwijs*. Assen: StammCMO
- Nair, P., Fielding, R., Lackney, J. (2009). *The Language of School Design: Design Patterns for 21st Century Schools*. USA: Designshare
- Olie, A., Siebring, R., Luten, M., Bierema, G. (2010). *Beeldkwaliteitsplan Gemeente Westerveld*. Diever: Gemeente Westerveld
- OWP / P Architects, VS Furniture, Bruce Mau Design (2010). *The Third Teacher: 79 Ways You Can Use Design to Transform Teaching & Learning*. New York: Abrams
- Provinciale staten van Drenthe (2012). *Bevolkingsprognose XVIII*. Assen: Provincie Drenthe
- Rodermond, J., Wallagh, G., Leun, A. van der (2009). *Geen meter te veel. Agenda scholenbouw*. Rotterdam: Stimuleringsfonds voor Architectuur