



# Gifted adults and their preferred style of learning

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## SUMMARY

A study of 120 gifted adults shows that this group has a very strong preference for what is called the 'meaning-oriented' style of learning (one of the four styles defined by Vermunt). This article discusses what this entails for the gifted adults and their teachers and counselors.

## INTRODUCTION

'Do gifted adults have a preferred learning style? And if so, is it different from adults that are not gifted?' These were some of the questions posed by the audience of the Gifted Café meeting on September 30<sup>th</sup> 2011. In that year the Gifted and Talented Adults Foundation (IHBV) organised five Gifted Café-meetings. An informal get-together combined with an educational segment for gifted adults, their partners and others who are interested in the subject. That night's theme was 'The gifted brain, about learning by gifted adults'.

### Where did the question originate

On September 30<sup>th</sup> 2011 education expert Heleen Florusse ([www.florusseotc.nl](http://www.florusseotc.nl)) delivered a presentation about learning by gifted adults. Amongst other things, the four learning styles of Vermunt were mentioned. One of the participants asked if gifted adults are likely to have one preferred style and whether that would be a different style from adults that are not gifted. A spontaneous decision was made to start a study into this subject. The project team was assembled on the spot.

### Learning styles

For many years the learning cycle as described by Kolb was seen as a kind of law that defined the way we thought about learning, mostly where (professional) education for adults was concerned. Kolb stated that all learning is in fact a cycle of four phases, that all phases must be executed and that people differ only in the entry point into the phases.



Diagram of the learning cycle of Kolb

Vermunt (and others) found that there wasn't enough evidence to support this theory and has tried to find another way to describe learning. He took into account three different learning activities:

- Cognitive learning activities: memorise, repeat, process, select, apply, relate, structure, analyse, make concrete.
- Affective learning activities: ascribe to, motivate, concentrate, value, exert, judge oneself, elicit emotions, expect.
- Metacognitive regulation of (learning) activities: orient, plan, guard the process, test, evaluate, diagnose, adjust, reflect.

Vermunt builds his four learning styles from several components. Besides the three mentioned above he also uses mental learning models and learning orientations (for example competitive, or intrinsic interest). These last two learning orientations influence learning activities.

The four learning styles as described by Vermunt (1992) have the following characteristics:

*The undirected learning style*

- People with an undirected learning style have trouble selecting important parts of the material. They underline almost everything in books or have unlimited notes. This makes it difficult to see the connections.
- They are not sure of what they know already.
- They often feel disappointed about themselves and feel that their surroundings are not active enough.
- They feel that cooperation is important. (Studying together is part of the mental learning model according to Vermunt)
- They are very focused on external guidance.

*The reproduction directed learning style*

- People with a reproduction directed learning style are mostly focused on reproducing the knowledge for tests and exams.
- They often find that they don't have enough time.
- They expect their study counsellor to tell them what's important, in order to focus most of their attention on those subjects (external regulation).
- Discussing subjects doesn't help them much.

*The application directed learning style*

- People with an application directed learning style try to use practical examples and use that to learn how to solve problems.
- They focus on being up-to-date.
- Besides the set learning goals they have personal goals as well.
- They want what they learn to be of practical use in their own (work) situation. That's what makes them appreciate the course.

*The meaning directed learning style*

- People with a meaning directed learning style try to make connections and form their own opinions. They want to understand the material.
- They try to find out what the subject is actually about.
- They can make selections from the learning material and try to give their own examples and use their own words to describe the subject.

*Overview of learning styles*

Key words are used to describe the four learning styles of Vermunt (1992):

Learning style	Undirected	Reproduction directed	Application directed	Meaning directed
<b>Parts</b>				
<b>Learning skills</b>	Very little processing	Memorise and separate	Apply in a concrete situation	Create relationships and review them
<b>Regulation of learning</b>	Aimless	External guidance	Internal and external guidance	Internal guidance
<b>Preference learning motivation</b>	Not clearly aimed at one thing	Aimed at diploma or certificate	Aimed at learning a profession	Aimed at personal interest
<b>Concept of learning</b>	Needs to be stimulated by others	Digest material, remember and be able to reproduce	Use material in future profession	Increase material. Keep learning more

## **Why it's important to know about learning preferences**

According to Vermunt (1992) a meaning directed learning style could generally produce higher academic results than the reproduction directed or undirected learning style. However, the effectiveness of a learning style also depends on the course the person is taking. (Vaags, 1999). Various results from studies by Vermunt are partly replicated in follow-up studies (Vaags, 1999).

For those who want to start a course, knowing about their preferred learning style can help them determine if they are following a course that fits their style. Or it can help them to choose a course that is in tune with their preferred learning style. And if they decide to want to take a course that isn't completely suited to their preferred learning style, they can decide to adjust their learning strategy.

It can be important for teachers or counselors to know which preferred learning style their students have. They can adjust their curriculum and method of instruction to this, or motivate them in a more focused way. We will get back to this issue at the end of the article.

## **METHOD**

### *Target group*

The target group has been defined: gifted adults. Because this is an exploratory study we have chosen to include all adults who think that they are gifted to participate. We did ask them if they had ever taken an IQ test, and if so, what the results were.

### *Approaching the target group*

The target group has been approached in several ways: members of Mensa in the Netherlands have been asked to participate, an appeal was posted on several LinkedIn groups and the internet forum for gifted adults in the Netherlands: [www.hb-forum.nl](http://www.hb-forum.nl).

### *Questionnaire*

Vermunt has developed a list of questions that can assess someone's learning styles profile called LSI (learning style inventory). We used a shortened electronic version of it (<http://lerenleren.majestic-communications.com/test/testvermunt.htm>). The owner of the site told us that the test had been placed there in the past for a course they were taking. The owner of the site has no commercial interest and allowed us to use this test for free.

The questionnaire (see appendix I) consists of 40 questions. Answering categories for each question were: yes, no, sometimes. Every question is related to one of the four learning styles, and for each style there were 10 questions. When a person answers yes, this question gets 2 points for that learning style. When the answer is no, then they get 0 points, and sometimes they get 1 point. This means that the maximum number of points for a learning style is 20 points. We defined as a preferred learning style any style that scored ten or higher. This means that a person can have more than one style with a preference score.

### *Information collected about the participants*

The participants were asked to fill in the test on-line and send us the following information:

- Test score (number of points per learning style)
- Gender
- Age
- IQ tested higher than 130 (130 is generally used as the minimum value to speak of giftedness) or not tested

## **RESULTS**

### **Respondents**

In the period October 1st to November 30th 2011 120 respondents have sent their information to the project team. Below are a number of tables that give an overview of the characteristics of the respondents.

Gender distribution

male	49	41 %
female	71	59 %
total	120	100 %

Average age

male	43 year and 3 months
female	41 year and 7 months
total	42 year and 6 months

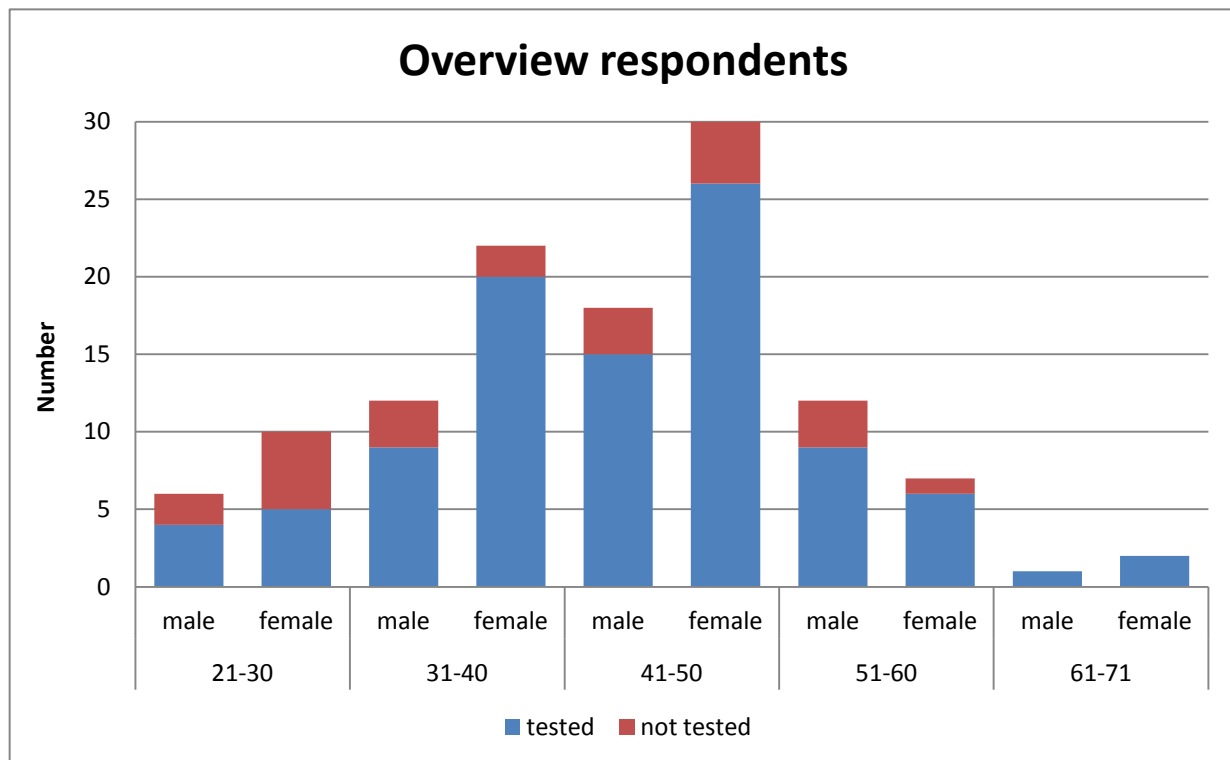
Age distribution

	21-30	31-40	41-50	51-60	61-70
male	6	12	18	12	1
female	10	22	30	7	2

IQ tested higher than 130

	Yes	No	Total	% with IQ >130
male	38	11	49	77%
female	59	12	71	83%

This graph shows a summary of the characteristics of the respondents:



## Learning styles

These are the results (see also tables in appendix II and II).

### *The meaning directed learning style*

Of 120 respondents there are 90 (75%) that favour the meaning directed learning style. They consist of 38 men (78%) and 52 women (73%).

For 22 people (18%) the meaning directed learning style is in second place.

This makes this learning style the absolute favourite among the respondents. The average score on this learning style is 15.5 (maximum is 20).

There are no significant differences between men and women or between age groups. There is also no perceivable difference between the people that had never taken an IQ test or those that had and scored over 130.

### *The application directed learning style*

Runner up is the application directed learning style. With an average score of 12.9 this can still be classified as a preferred learning style. 27 Respondents (22.5%) had this style as a personal preference and for 80 (66.7%) it was the second favourite learning style. Here, also, we didn't find any significant differences when looking at gender, age and whether or not they had done an IQ test.

### *The undirected learning style*

The undirected learning style got an average score of 8.2 for all respondents. Because this is below the threshold of 10 points this is not classed as a preferred learning style. There were 10 people (8.3%) who had this style as the preferred style and in total there were 31 people (25.8%) who scored over 10 for this style.

### *The reproduction directed learning style*

4 Respondents have the reproduction directed learning style in first place. The average score of the 120 participants was only 6.6 points. For 70 respondents this learning style scored lowest. For 16 respondents (13%) this style was the preferred learning style.

## DISCUSSION

### *Method*

Because this is an exploratory study, we found the method of asking people who consider themselves gifted (instead of only people who have taken an IQ test) acceptable. The fact that there were no differences in the results for people who had been tested and who hadn't confirms our suspicion that these groups are similar. We think that the number of 120 respondents is enough for an exploratory study. In order to make more definite claims we recommend a follow-up study with only respondents that have been tested with a very high IQ. We also think that in a follow-up the education level of the respondents needs to be registered.

The abbreviated questionnaire we used is not suitable for an extensive analysis of learning styles. In the abbreviated list single components have been assigned to one specific learning style, which is oversimplifying things a bit. According to Vermunt cooperation for example is applicable to both the application directed learning style as well as the undirected learning style. The abbreviated questionnaire has only one item dedicated to cooperation and that has been assigned to the undirected learning style.

A follow-up study could use the LSI questionnaire by Vermunt & Van Rijswijk (1987) where the different learning style components are investigated. One could, for example, expect gifted adults to prefer deep processing (like creating relationships, structuring and processing), self guidance and personal interest.

Even though the respondents were very sceptical about the on-line questionnaire and we agree with part of their remarks, we find that based on the findings the study did give us some valuable insights into learning by gifted adults.

## Results

In order to determine whether gifted adults score differently from other groups a short literature study found two studies that investigated the learning styles as described by Vermunt.

Bijlsma (2006) found that a group of premaster students (N=80) on average preferred the reproduction directed learning style, with an average score of 3.69 on a five-point scale. The preference for the application directed learning style was lowest scoring an average of 3.33, and the meaning directed learning style showed an average of 3.58.

Van Loonen (2005) studied 37 people with a college or university education using the LSI questionnaire by Vermunt. Only the application directed learning style (n = 30; 81%) and the meaning directed (n = 7; 19%) learning style were seen as a preferred learning style. There were no students with a preferred undirected or reproduction directed learning style.

Based on these studies we can't make any valid statements about any possible difference between gifted adults and people of average intelligence.

## CONCLUSIONS

This exploratory study among 120 gifted adults into their preferred learning style according to the model as described by Vermunt, shows that they have a strong preference for the so-called meaning directed learning style. Gifted adults want to understand and be able to explain. The application directed learning style takes second place. The order is apparently that they first want to understand and then to apply.

This study also shows that the reproduction directed learning style, just reproducing material (automate, memorise lists) scores very low. Considering the low scores for this style, we may even suggest gifted adults have an aversion against this style.

Whether gifted adults score significantly different to adults of average intelligence can't be established reliably at the moment. A follow-up study using the LSI questionnaire should be done to establish this.

## RECOMMENDATIONS BASED ON THIS STUDY

### *For gifted adults that want to enrol in a course*

- Find out what your preferred style of learning is.
- Find out if that style is useful in the course you are going to do.
- If not:
  - o Choose a course that offers the same material, but in different way, or
  - o Try using one of the other styles of learning, even if that isn't your preferred style of learning, or
  - o Try to talk about this with teachers or study counsellors, or
  - o Choose a different course that fits your preferred style of learning.

### *For study counsellors of gifted students*

- Find out what the various styles of learning are.
- Find out which styles of learning are suited to the course you advise on.
- Find out if any adjustments are possible for students that have a different preferred style of learning.
- Find out if it's possible to present the material in a different way to students who have different preferred styles of learning. (Designing learning situations in a certain way can provoke students to use a specific style of learning.)
- Counsel students who are using a learning style that doesn't match the course to try to change to a more effective style of learning.

- Insight into one's own learning styles and the results of questionnaires about learning styles can sometimes pinpoint gaps, and if you know how to fill those gaps with the proper information that gives the student more appropriate learning styles for each situation. The more options they have, the better. Educate gifted adults about the learning styles that exist.
- Explain that for some learning tasks a different style of learning, for example the reproduction directed style, works better. Gifted adults may find it interesting to read about memory enhancement techniques etcetera. This might give them the challenge they are looking for.
- If nothing works, advise students to find another course to take.
- If you have time to do research, make a list of which courses could fit certain learning styles. It seems logical that studying philosophy will require a different learning style from econometrics. Try to give as many concrete examples as possible. (For example for philosophy the student will need to make connections and do a lot of processing, whereas in econometrics attention to detail and analysis may be more important).
- And keep in mind that there isn't one course that can completely follow only one style of learning.

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An English overview article on learning styles in general: [http://www.acdowd-designs.com/sfsu\\_860\\_11/LS\\_OverView.pdf](http://www.acdowd-designs.com/sfsu_860_11/LS_OverView.pdf)

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## Appendix I

### Learning styles test (<http://lerenleren.majestic-communications.com/test/testvermunt.htm>)

Assignment: fill in the test by saying if you agree with the statement or disagree, or agree sometimes.

Question	Learning style
1. A teacher has to check my homework, otherwise I see no reason to actually do the work.	undirected
2. I sometimes wonder if I've chosen the right professional course.	undirected
3. I don't feel my own opinion is very important, as long as I understand the material.	reproduction
4. I'm not just in school to get a degree, many of the things I learn I find really very interesting.	meaning
5. I like to work together with others, especially when we have to do a project, I enjoy that.	application
6. Many of the things I learn are useless; I wouldn't know where I will ever use this information.	application
7. I like making graphs with arrows on them.	application
8. I never know when I've studied the material enough, and when I can stop.	undirected
9. I'm afraid I won't make it this year.	undirected
10. If I read a question and I understand it, I don't have to write down the answer any more.	reproduction
11. A good teacher doesn't only tell you what's in the book, he/she will add extra information.	meaning
12. When I have to study a text, I underline all the things I need to know.	reproduction
13. Sometimes I have a different opinion to what my teacher says, but I feel that in those cases the teacher should listen to me.	meaning
14. Sometimes I see things on TV that I've learnt in school.	application
15. Before I will study a chapter I flip through the pages to see what the layout is.	meaning
16. I find studying very difficult this year.	undirected
17. I'm annoyed when a teacher gets sidetracked from the material during class.	reproduction
18. A good teacher? I prefer one that shows you what he/she's talking about.	application
19. I hate the kind of test where you can score points by memorising facts.	meaning
20. I try to memorise the definition of a concept as much as possible.	reproduction
21. I don't memorise a lot, as long as I understand the concept.	meaning
22. Why I study? To be able to apply the material later.	application
23. It's just not fair! During tests we often get completely different questions than they give in the book.	undirected
24. What makes a good teacher? Someone who explains everything. Not the kind of teacher that lets you find it out for yourself.	undirected
25. Some things I can memorise very easily. Those are the things I can picture in my head.	application
26. I'm often not sure which material I have to study for a test. They should be clearer about that.	undirected
27. What do I like a lot when I study? When I finally figure out how to solve a difficult problem.	meaning
28. I like doing assignments and answering questions, because it gives me a chance to see how the material is used in real life.	application
29. I really study very hard. I don't have enough time.	reproduction
30. I split up the material when I study. Then I memorise each little bit..	reproduction
31. I can remember things better when they are linked to daily life.	application
32. I'd rather do something active in class than sit down for forty five minutes.	application
33. Studying for a test sometimes makes my head spin from the number of facts I need to memorise.	reproduction
34. My way of studying? Read the material, and then read it again, and if I still don't remember it after that, then I will read it one more time.	undirected
35. I like to do research and find things out myself.	meaning
36. When I have to study a lot I usually create a diagram or mindmap of the most important parts first.	meaning
37. Before a test I'm often afraid that I will forget things.	reproduction
38. My way of studying? Just memorising everything!	reproduction
39. Some questions I tend to skip, because I think I won't learn anything from them.	meaning
40. I'm not happy about the way I do tests.	undirected



**Appendix II**  
Results by score

<b>Results by score</b>						
			undirected	reproduction	meaning	application
all (120)			8,19	6,64	15,53	12,89
			undirected	reproduction	meaning	application
all men (49)			7,98	5,63	15,53	12,24
all women (71)			8,34	7,34	15,52	13,34
IQ-test yes/no			undirected	reproduction	meaning	application
male (38)		yes	7,84	5,82	15,5	12,34
male (11)		no	8,45	5	15,64	11,91
female (59)		yes	8,42	7,17	15,32	13,22
female (12)		no	7,92	8,17	16,5	13,92
Age groups			undirected	reproduction	meaning	application
male (6)	21-30		6,17	5,17	15,67	10,67
male (12)	31-40		8,58	5,92	15,33	12,92
male (18)	41-50		7,39	5	15,61	11,56
male (12)	51-60		8,83	5,67	15,58	13,17
male (1)	61-70		12	16	15	15
			undirected	reproduction	meaning	application
female (10)	21-30		8,7	6,6	15,9	14,2
female (22)	31-40		9,27	8,05	15,91	13,73
female (30)	41-50		7,9	6,97	14,93	12,83
female (7)	51-60		7,14	8,14	16,14	12,86
female (2)	61-70		7	6	16	14
Age groups IQ-test yes/no			undirected	reproduction	meaning	application
male (4)	21-30	yes	6,25	6,5	16,5	12,75
male (9)	31-40	yes	8,44	5,67	14,78	12,89
male (15)	41-50	yes	7,6	5,27	15,53	11
male (9)	51-60	yes	7,89	5,44	15,78	13,56
male (1)	61-70	yes	12	16	15	15
			undirected	reproduction	meaning	application
male (2)	21-30	no	6	2,5	14	6,5
male (3)	31-40	no	9	6,67	17	13
male (3)	41-50	no	6,33	3,67	16	14,3
male (3)	51-60	no	11,67	6,33	15	12
male (0)	61-70	no				
			undirected	reproduction	meaning	application
female (5)	21-30	yes	7,6	6,4	14,8	14,4
female (20)	31-40	yes	9,45	7,7	15,75	13,7
female (26)	41-50	yes	8,12	6,92	15	12,85
female (6)	51-60	yes	7,5	7,5	15,5	12
female (2)	61-70	yes	7	6	16	14
			undirected	reproduction	meaning	application
female (5)	21-30	no	9,8	6,8	17	14
female (2)	31-40	no	7,5	11,5	17,5	14
female (4)	41-50	no	6,5	7,25	14,5	12,75
female (1)	51-60	no	5	12	20	18
female (0)	61-70	no				

**Appendix III**  
**Results by placement**

undirected	total	%	male	%	female	%
1	10	8,33	3	6,12	7	9,86
2	17	14,17	10	20,41	7	9,86
3	56	46,67	23	46,94	33	46,48
4	37	30,83	13	26,53	24	33,8
	120		49	100	71	

reproduction	total	%	male	%	female	%
1	4	3,33	1	2,04	3	4,23
2	7	5,83	4	8,16	3	4,23
3	39	32,5	12	24,49	27	38,03
4	70	58,33	32	65,31	38	53,52
	120		49		71	

meaning	total	%	male	%	female	%
1	90	75	38	77,55	52	73,24
2	22	18,33	10	20,41	12	16,9
3	5	4,17	1	2,04	4	5,63
4	3	2,5	0		3	4,23
	120		49		71	

application	total	%	male	%	female	%
1	27	22,5	10	20,41	17	23,94
2	80	66,67	32	65,31	48	67,61
3	12	10	7	14,29	5	7,04
4	1	0,83	0		1	1,41
	120		49		71	