

## **LEARNING STYLES:**

### **An Administrative Strategy to the Problems in Learning**

By Seppo PJ Komulainen

HR-consultant, Psychology Teacher, Lahti Vocational Institute, 2004

#### **Introduction**

The Finnish education system is considered world wide to be an example of successful actions. Excellent results are achieved through various investments. The basic education (nine years) with pre-school education (one year) is guaranteed for everybody. Children are summoned to school in the year that they become seven years of age. Compulsory education ends when the pupil reaches age 17 or when he or she has completed the comprehensive school syllabus, whichever occurs first. Compulsory education does not entail an obligation to attend school, and pupils may also acquire the equivalent knowledge and skills in some other way. In practice, however, almost all Finns go to nine-year comprehensive school. After this comprehensive school the student continues in secondary education either in vocational education (36%) or in upper secondary education (54%). From these both avenues of education students can then continue their studies at a polytechnic, at university or at other institutions of higher education. 3% of the students choose the so-called tenth class after the comprehensive school. 7% choose the workshop-type of education, the oriented vocational education or the rehabilitative education model.

Salpaus Further Education organizes secondary education in the region of Päijät-Häme, one of the most industrialized areas in Finland. There are about 5000 students from all fields of vocational and upper secondary education here.

#### **The project “The Power of Diversity” to improve the quality of instruction**

When I worked at Lahti College of Social Welfare and Health Care the teachers complained about “bottlenecks” in vocational education in the field of social welfare and health care for two years.

They defined the problems in five main areas:

1. The increase of the amount of students.
2. The younger age of the students (before above 18 and now 16 years old).
3. The teachers feel themselves powerless in front of their changes.
4. The quality of education is developed with the European Foundation for Quality Management (EFQM) System as a tool for administration of the work.
5. The educational boards according to the professions make the curricula.

The primary aim is to guarantee the students’ qualifications for their working life and the ability for further studies. As a solution for those growing problems, I was sent to the University of Jyväskylä to familiarize myself with a learning evaluation system from Creative Learning in New Zealand as I was responsible for quality work at our school. Afterwards Lahti College of Social Welfare and Health Care with about 60 employees and 650 students decided to develop the personnel within the “in-service” programme to a new way of working. The project started in 1998.

#### **The renewed mind never returns as it was**

During the first day of the training we recognized our own learning style and during the second day we concentrated to improve our teaching methods. We worked according to Barbara Prashnig’s programme and after two days training the subject crystallized into the following questions.

- How do I really learn?
- How should I diversify teaching?
- How should I develop my working?
- How is the teacher’s role changing?
  - Should I become a coach – should I become a tutor or both?
- Can learning-by-heart change into curiosity and joy of discovering?
- Is it true that the inner motivation can be bigger than the outer one?
- What kind of administrative strategy is required to introduce the method of learning styles, when the students are building their own paths of learning?

#### **The creative space both feeds and strengthens**

The teachers studied very hard during those days. They focused their experiences of the in-service days into the following words;

- Everyone wants to be noticed sometimes, and when you are, you feel alive. “It’s great that we notice these different learners and we are able to change the learning models. We are trying to give something to everyone.”

- The way you act shows what you dream of. “Everyone learns how to analyse himself. It’s possible to learn that not everybody is at his best at eight o’clock in the morning. You should understand different learners and take that into consideration.”
- The curiosity is awoken and shown in endless questions. “I’m amazed, how far you can get! What am I like? What ingredients are the feelings made of? How do the surroundings support them? Where could those different learners get help?”
- Eureka! Oh, really! The glorious moments keep the mind fresh and alive. “Now I realize that the lessons don’t have to be dull. We all are different and we need a lot of self-studying. Also the colleagues are different. We need different teaching styles.”
- Could it really happen, that the nearer the school gets, the more we want to get there. “They were really excellent, fine and wonderful Fridays. Time just flew away.”
- Even I can have an influence on my job – ideas help you get along. “I got many hints of how to develop my work.”
- Like Abraham Maslow spoke about how to fulfil ones psychological needs. “Use all your hidden powers. It’s worth it.”

### **Conclusions of those two in-service training days**

The creator of the diversity concept, Barbara Prashnig in her book titled “The power of diversity” (1998:205-6) has established the six conditions of quality schoolwork. The teachers confirmed and described them in their own words.

The diversity way of teaching ...

- Brings up security, and helps students and teachers cope with diversity.
- Establishes friendship, love and togetherness.
- Shares empowerment and responsibility.
- Liberates thinking and skills of will.
- Makes learning fun and enjoyable.
- Encourages life-long learning in other words a continuous learning.
- Enables the quality work at school.

These two training days gave us hope to survive future teaching and learning puzzles. So we decided to use Learning Style Analyses (LSA) for students to manage their schoolwork. We analysed their learning styles and organized the orientation as an administrative strategy for students to work out their own Personal Educational Plans For The Student (PEPFTS) like teachers to do their curricula. These plans should be done simultaneously together.

### **Implementation of Learning Style Analyse into the Practise at Lahti College of Social Welfare and Health Care Curricula of 3 years**

The LSA is required as a part of the administrative strategy. That’s what we call making the Personal Educational Plans for the Student (PEPS). The students were obligated this way to take responsibility for their studies independently. The question remained how to organize this in practice?

Students learn the meaning of self-esteem and develop self-orientation in their own life situation during the three-years vocational qualification for the final examination. It is a question of the pillars in the professional growth and also of the choices of the study programmes.

The first two years practical nurses study how

- To support and guide the growing
- To nurse and take care
- To help in rehabilitation

During the third year they specialize into

- The First Aid Nursing (FAN) or
- The Education of Children and Youngsters (ECY) or
- The Nursing (N) or
- The Mental Health or Drug Abuse Work (MHDAW) or
- The Work with the Elderly of Handicapped People (WEHP)

The barber-hairdressers can specialize to barbers or hairdressers but for beauticians this is not possible.

### **Triangle method in 1998 - 1999**

In practice we organized LSA testing and reporting with the starting courses in 1998. We called this a triangle method. When students had read their own LSA Report, they brought it back for discussion. There they discussed the results together with the psychologist and the class tutor - three persons as a triangle. The purpose of the discussion was to look for strengths and weaknesses. The awareness of his or her strengths helps the student writes down his or her own developmental plan into the PEPS. The written developmental plans together with the curricula guide the student to

succeed on the way of becoming a professional. The tutor made notes about the students' plans and notified the group of teachers, who taught the class.

### **The method of pairs 2000 - 2001**

After two years of practise we changed this approach in 2000 - 2001. Due to the rapid changes in the Finnish Vocational Education System we were forced to lighten the proceeding method. At the same time students were obligated to take more responsibility for their learning and graduation. That's why tutors didn't participate in the discussions any more. But tutors still got the responsibility to inform the other teachers. The LSA tests were carried out with students, but the teachers were not forced to follow the results.

### **The grouping method 2002 - 2003**

We still had problems with the implementation. How could we make the learning diversity in the classrooms more effective? Could there be some solution to become aware of one's learning style in practice? Yes, there is.

Barbara Prashnig gave us an exercise dealing with geometrical figures (circles, triangles, squares, rectangles and a curved line). We used them as a solution for the situation. During the initial student guidance lessons the psychologist used those figures with the students.

1. Students picked one of those five figures they liked most
2. They drew it on a piece of paper like they wanted
3. They drew a picture using the original figure as a starting point
4. They named their picture and wrote a story about it
5. The students were then divided into groups according to the original figures (e.g. circles to circles and so on)
6. They created a groups' story through dialoguing and writing it down - e.g. they completed their stories by adding something new to each other's stories - so they synthesized their thinking and values of behaviour and strengthen their identity.
7. They were asked to find out how they would learn easily and effectively even difficult new subjects and what prevents them from successfully learning something new.
8. After force fitting synectically their story to the picture of their best way of learning new things and skills they communicate it to other groups.
9. When the whole class becomes aware of their personal styles they are able to document it and communicate it to the teachers.
10. LSA test were done at the beginning of the second season to sharpen and deepen their learning and tutors' teaching styles to match them to their students' learning styles.

### **Teachers' experiences working with the LSA**

After the first excitement teachers were stressed by heated adjustment as mentioned earlier. That explains teachers' frustration to start with a totally new concept of doing familiar subject differently. Fortunately in the College there were some pioneers who implemented the new ideas in practise. Some of them expressed their experiences. One of the practical nurse teachers told a story how she confronted her students. At the beginning they looked as if they wore facades on their faces. But after two years practicing with the LSA information, her students became more aware of themselves. They became individuals as they found their identity.

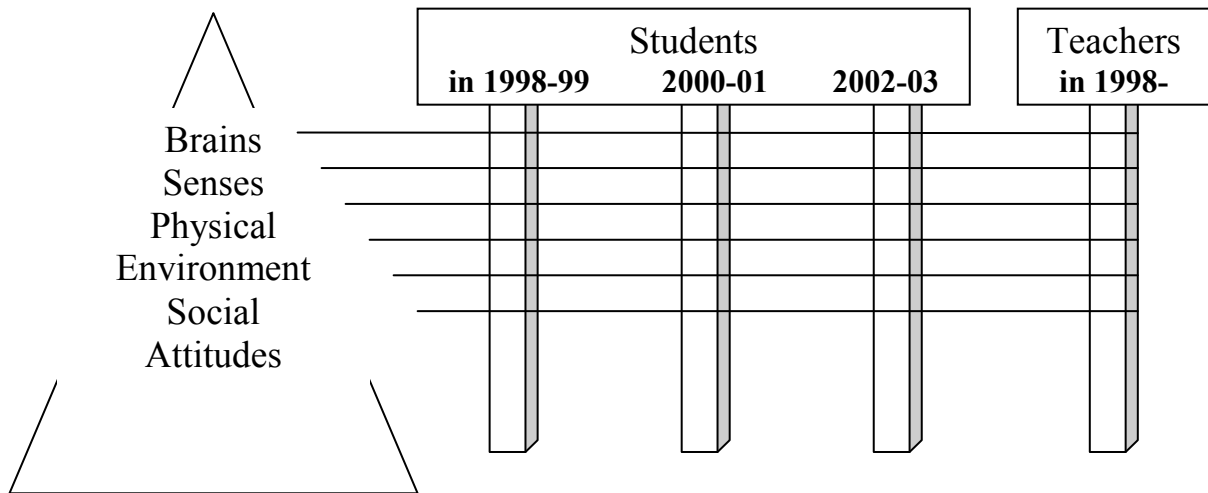
I also had some courses with practical nurse students. I found that grouping processes started more clearly and became more visible than earlier. Group norms were built up with LSA information and made the learning easier for the students. Group norms, based on diversity, opened more space and opportunities to the diverse learners. The same processes were repeated in both adult and youngster groups.

When we transformed the administrative strategy to use geometric figures, we found out amazing reactions. Students with high and low grades that confronted each other unexpectedly in the same group according to the circles, triangles and so on, were confused at first. The high graders put up with low graders and after a while the low graders were proud and eager to learn more with the high graders.

When e.g. students chose a curve line and gathered into the same group, they were confronting effectively their own weaknesses. How would they learn constructively? They were usually underachievers at College. They were aware of their low grades and felt unacknowledged and trouble-makers. Was it possible that they could learn at College at all? In the past, teachers had been helpless.

### **A study of matches between teaching and learning styles**

I tried to figure out some proofs about matches between teaching and learning styles calculating their preferences in LSA results. What kind of holistic pictures is it possible to figure out? Are the students' preferences changing from one year to another? The following graphics show us, how I planned to manage this situation.



**Figure 1.** This is the framework to analyse measurements in teaching and learning styles according to the mean values of classes in percentages and different groups of the staff.

When we are talking about the dominant styles of learning such as analytic and holistic I found that there are 12% analytic and 0% holistic teachers in the staff. There are 5% analytic and 2% holistic Practical Nurse Students. Further there are 4% analytic and 1% holistic Beautician Students. Finally there are 2% analytic and 4% holistic Barber-Hairdresser Students. Adult students are 3% analytic and 1% holistic learners. Therefore there are a lot more analytic teachers than students.

Below there are four tables, which include information gathered from class groups counting mean values in each quality of learning style. Numbers in each column come from percentages per classes. They were picked up from group reports between years 1998 – 2003 in Lahti College of Social Welfare and Health Care where I worked earlier for eight years responsible for quality work and personnel training as a teacher.

A reader may focus on which 49 elements of learning young and adult students and their teachers prefer or not prefer and how do they differ from each other. Further you may find out where their styles between groups are matching or not. Especially one may observe polarities, how they respond – positively or negatively, e.g. preferring routine or being change-oriented.

**Table 1. The preferences of all Students and the whole Staff**

(SP=Student’s prefer, SNP=Student’s no prefer, STP=Teacher’s prefer, STNP= Teacher’s no prefer, Blue means the highest percentage of preferred ones and red of no preferred ones, P-NP=Total difference between preferences if there is more difference than 10% between polarities at cross inspection, there may be some difficulties and confusions recognize one’s own style of learning e.g. analytic – holistic.)

ALL STUDENTS & STAFF IN 1998-2003 36+9+1=45 groups	YOUNG SP 1998-03	N 1057 SNP 1998-03	ADULT SP 2001-03	N 154 SNP 2001-03	STAFF STP 1998-	N 52 STNP 1998-	P – NP = V
<b>Sequential</b>	12	15	7	14	9	11	-12
Reflective	20	17	20	12	30	11	30
Analytic	8	15	11	7	30	5	22
Holistic	4	13	3	18	0	28	-52
Simultaneous	24	5	36	1	32	1	85
Impulsive	11	25	11	38	3	44	-82
<b>Auditory</b>	23	15	27	11	31	19	36
Visual	25	15	26	10	36	15	47
Tactile	25	15	0	3	40	5	42
Kinaesthetic	38	11	6	41	45	6	31
<b>Stationary</b>	13	34	16	23	34	13	-7
Needs to move	7	26	9	40	11	51	-90
No intake	15	38	12	24	30	17	-22
Some intake	18	27	4	34	3	53	-89
Early morning	15	37	27	34	4	28	-53
Late morning	16	18	14	25	19	25	-19
Afternoon	3	40	8	42	7	51	-115
Evening	9	43	14	56	11	57	-122

<b>Quiet</b>	28	19	29	21	36	9	44
Sounds	5	39	5	39	3	57	-122
Bright lights	7	22	11	26	15	32	-47
Low lights	8	38	13	31	17	17	-48
Cool	14	25	5	53	9	46	-96
Warm	20	13	41	8	53	1	92
Formal work area	5	35	22	28	36	30	-30
Informal work area	15	9	6	21	1	19	-27
<b>Working alone</b>	1	42	7	38	7	38	-103
In a pair	28	9	6	32	32	0	25
With peers	9	24	42	7	63	1	82
In a team	12	36	29	19	44	13	17
Teacher supervised	13	18	45	4	15	9	42
Unsupervised	0	71	1	80	21	21	-150
Parent supervised	25	10	-	-	-	-	15
<b>Self-starting</b>	56	0	72	0	90	0	218
Externally motivated	2	76	0	96	0	84	-254
High persistence	37	10	48	3	78	3	147
Spontaneous	6	4	6	33	0	32	-57
Low persistence	1	63	0	66	1	88	-215
Conforming	35	5	24	6	9	30	27
Non-conforming	7	32	9	1	42	1	24
High responsibility	61	1	73	0	90	1	222
Low responsibility	0	42	0	60	0	38	-140
Other-directed	43	7	33	3	3	28	41
Self-directed	2	31	13	1	57	1	39
Routine	6	41	9	26	5	42	-89
Change-oriented	15	16	30	6	53	1	75

**Table 2. The preferences of Beautician Students and their Teachers**

(SP=Student's prefer, SNP=Student's no prefer, TP=Teacher's prefer, TNP= Teacher's no prefer, Blue means the highest percentage of preferred ones and red of no preferred ones, P-NP=Total difference between preferences +/-, +/-, if there is more difference than 10% between polarities at cross inspection, there may be some difficulties and confusions recognize one's own style of learning e.g. analytic – holistic.)

BEAUTICIANS IN 1998-2003 2+2+1 Class groups	98-99 SP N 55	98-99 SNP N 55	00-01 SP N 52	00-01 SNP N 52	02-03 SP N 18	02-03 SNP N 18	98-03 SP N125	98-03 SNP N125	1998- TP N 5	1998- TNP N 5	P-NP = V
<b>Sequential</b>	7	18	9	7	16	11	11	12	0	20	-21
Reflective	15	32	22	11	22	22	20	22	20	0	18
Analytic	18	3	9	18	11	22	13	14	60	0	59
Holistic	0	15	0	11	11	0	4	9	0	20	-25
Simultaneous	12	9	23	7	33	5	23	7	40	0	56
Impulsive	1	19	13	31	11	22	8	24	0	80	-96
<b>Auditory</b>	16	22	19	15	37	9	24	15	40	13	36
Visual	22	22	23	22	29	7	25	17	53	13	48
Tactile	26	11	26	17	44	5	32	11	40	0	61
Kinaesthetic	27	10	36	11	36	14	33	12	40	0	61
<b>Stationary</b>	8	59	14	26	22	22	15	36	40	40	-21
Needs to move	1	28	8	29	0	22	3	26	40	40	-23
No intake	28	27	14	40	11	38	18	35	20	20	-17
Some intake	12	39	15	18	11	16	13	22	0	60	-69
Early morning	25	38	14	23	16	38	18	33	80	20	45
Late morning	16	22	12	25	22	11	17	19	20	20	-2
Afternoon	0	29	3	49	5	38	3	39	0	80	-116
Evening	3	64	14	34	11	38	9	45	20	80	-96
<b>Quiet</b>	26	16	21	10	50	33	27	25	60	0	62
Sounds	1	36	0	55	5	44	2	45	0	80	-123
Bright lights	3	52	9	15	0	27	5	31	0	0	-26
Low lights	4	45	3	45	16	38	23	43	20	0	0
Cool	9	33	8	30	16	33	14	32	0	60	-78
Warm	20	12	25	15	27	16	24	14	80	0	90
Formal work area	9	12	8	49	5	33	7	31	60	0	36
Informal work area	0	12	14	14	33	0	16	9	0	20	-13
<b>Working alone</b>	0	56	4	33	0	38	1	42	0	40	-81
In a pair	24	19	34	12	22	12	27	11	100	0	116
With peers	19	8	16	20	27	5	21	11	100	0	110
In a team	31	8	32	16	44	11	36	12	80	0	104
Teacher supervised	15	20	14	12	0	16	10	16	20	0	14
Unsupervised	0	90	0	69	0	27	0	62	0	40	-102
Parent supervised	23	9	2	15	22	0	16	8	0	0	8
<b>Self-starting</b>	45	0	63	0	83	0	64	0	100	0	164
Externally motivated	4	86	0	78	0	83	1	82	0	100	-181
High persistence	39	11	36	10	55	5	43	9	80	0	114
Spontaneous	12	0	0	10	11	0	8	0	0	40	-32
Low persistence	0	71	0	63	0	61	0	65	0	100	-165
Conforming	17	5	35	11	50	0	34	5	20	20	29
Non-conforming	0	49	14	31	11	27	8	36	20	0	-8
High responsibility	49	0	37	2	73	0	40	1	100	0	139
Low responsibility	0	42	0	50	0	38	0	43	0	40	-83
Other-directed	34	8	54	13	38	5	42	9	20	20	33
Self-directed	0	35	4	31	5	16	3	27	60	0	36
Routine	0	49	7	49	11	38	6	45	0	60	-99
Change-oriented	1	19	21	21	11	27	11	22	60	0	49

**Table 3. The preferences of Barber-Hairdresser Students and their Teachers**

(SP=Student's prefer, SNP=Student's no prefer, TP=Teacher's prefer, TNP= Teacher's no prefer, Blue means the highest percentage of preferred ones and red of no preferred ones, P-NP=Total difference between preferences +/-, if there is more difference than 10% between polarities at cross inspection, there may be some difficulties and confusions recognize one's own style of learning e.g. analytic – holistic.)

BARBER- - HAIR DRESSERS IN 1998-2003 2+2+2 Class groups	98-99 SP N 68	98-99 SNP N 68	00-01 SP N 74	00-01 SNP N 74	02-03 SP N 54	02-03 SNP N 54	98-03 SP = 196	98-03 SNP = 196	1998- TP N 8	1998- TNP N 8	P-NP = V
<b>Sequential</b>	13	18	9	23	13	5	12	21	0	25	-34
Reflective	26	16	27	12	16	13	23	14	25	12	22
Analytic	4	15	4	21	10	19	6	18	50	0	38
Holistic	4	12	4	11	3	10	4	11	0	37	-44
Simultaneous	22	3	38	0	22	5	27	3	25	0	49
Impulsive	10	39	9	26	21	21	13	29	0	50	-66
<b>Auditory</b>	24	19	20	16	22	10	22	15	33	8	32
Visual	23	15	27	11	23	15	24	14	25	8	27
Tactile	31	6	42	8	34	12	36	9	62	0	89
Kinaesthetic	25	7	34	11	32	11	30	10	56	0	76
<b>Stationary</b>	18	32	16	35	12	24	15	30	37	0	22
Needs to move	7	31	8	21	8	30	8	38	0	75	-105
No intake	13	38	12	39	16	50	14	42	37	25	-16
Some intake	14	40	18	23	33	20	22	28	0	62	-68
Early morning	21	38	5	43	10	48	12	43	50	12	7
Late morning	19	18	14	19	15	11	16	16	25	50	-25
Afternoon	4	56	4	41	5	34	4	45	12	37	-66
Evening	10	42	7	39	11	34	9	38	0	62	-91
<b>Quiet</b>	25	16	23	32	24	22	24	23	50	12	39
Sounds	7	38	9	22	5	26	7	29	0	50	-72
Bright lights	7	20	5	16	12	15	8	17	12	25	-22
Low lights	6	28	17	36	0	40	8	35	37	12	-2
Cool	14	30	13	16	22	18	16	21	12	50	-43
Warm	14	7	20	12	19	11	29	10	62	0	81
Formal work area	4	33	5	41	2	12	4	29	75	25	25
Informal work area	10	9	18	10	17	9	15	9	0	37	-31
<b>Working alone</b>	0	47	1	54	2	32	1	44	12	62	-93
In a pair	24	7	24	3	35	9	28	6	37	0	59
With peers	28	7	27	8	20	13	25	9	75	0	91
In a team	31	10	38	5	35	21	35	12	50	25	48
Teacher supervised	17	9	16	10	22	18	18	12	37	12	31
Unsupervised	0	73	0	70	0	57	0	67	12	12	-67
Parent supervised	20	12	32	9	30	7	27	9	-	-	18
<b>Self-starting</b>	42	0	59	0	48	0	50	0	100	0	150
Externally motivated	2	82	1	67	2	64	2	71	0	87	-156
High persistence	35	12	44	8	22	9	34	10	87	0	111
Spontaneous	3	4	5	1	4	7	4	4	0	62	-62
Low persistence	0	60	0	67	2	46	1	58	0	87	-144
Conforming	41	4	44	4	38	2	41	3	37	0	75
Non-conforming	1	47	8	28	4	19	4	31	37	0	10
High responsibility	59	1	62	2	64	2	62	2	100	0	160
Low responsibility	0	40	0	37	0	29	0	35	0	25	-60
Other-directed	28	14	45	2	55	2	43	6	12	0	49
Self-directed	0	28	0	38	2	35	1	34	25	12	-20
Routine	6	52	4	41	11	27	7	40	0	37	-70
Change-oriented	19	6	19	10	12	18	17	11	37	0	43

**Table 4. The preferences of Practical Nurse Students and their Teachers**

(SP=Student's prefer, SNP=Student's no prefer, TP=Teacher's prefer, TNP= Teacher's no prefer, Blue means the highest percentage of preferred ones and red of no preferred ones, P-NP=Total difference between preferences +/-, if there is more difference than 10% between polarities at cross inspection, there may be some difficulties and confusions recognize one's own style of learning e.g. analytic – holistic.)

PRACTICAL NURSES IN 1998-2003 10+16+8 Class groups	98-99 SP N 228	98-99 SNP N 228	00-01 SP N 337	00-01 SNP N 337	02-03 SP N 171	02-03 SNP N 171	98-03 SP =736	98-03 SNP =736	1998-TP N 36	1998-TNP N 36	P-NP = V
<b>Sequential</b>	17	11	13	14	9	20	13	15	13	8	3
Reflective	16	8	23	16	15	17	18	14	36	13	27
Analytic	15	10	10	10	6	21	10	14	22	8	10
Holistic	3	27	2	19	6	10	4	19	0	30	-45
Simultaneous	18	6	25	5	25	6	23	6	30	2	45
Impulsive	8	30	29	11	17	24	18	22	5	36	-35
<b>Auditory</b>	24	10	23	15	21	17	23	14	30	22	17
Visual	22	11	22	18	21	18	22	16	34	18	22
Tactile	20	21	21	27	16	26	19	25	33	8	19
Kinaesthetic	36	6	37	8	25	17	33	10	44	8	59
<b>Stationary</b>	16	23	11	29	6	40	11	24	36	13	10
Needs to move	7	31	10	28	14	18	10	26	8	47	-55
No intake	15	30	18	29	10	49	14	36	30	16	-8
Some intake	14	34	15	32	25	20	18	29	5	52	-58
Early morning	16	33	16	29	12	39	15	34	36	33	-16
Late morning	14	19	22	23	15	16	17	19	19	22	-5
Afternoon	4	36	2	38	4	40	3	38	8	52	-79
Evening	6	52	10	48	15	38	10	43	13	52	-72
<b>Quiet</b>	31	11	36	12	20	20	29	14	33	11	37
Sounds	3	44	3	46	8	41	5	44	5	55	-89
Bright lights	10	18	7	18	9	22	9	19	16	38	-32
Low lights	9	41	5	38	13	33	9	37	13	19	-34
Cool	14	24	15	22	17	23	15	23	11	41	-38
Warm	19	9	17	10	16	23	17	14	50	2	51
Formal work area	4	25	6	32	3	49	4	35	25	33	-39
Informal work area	10	15	8	18	22	9	13	14	2	16	-15
<b>Working alone</b>	2	40	1	38	3	45	2	41	8	33	-64
In a pair	23	12	27	8	38	6	29	9	25	0	45
With peers	29	8	32	6	21	9	27	8	50	2	67
In a team	35	11	42	0	37	16	38	9	38	13	54
Teacher supervised	10	16	15	23	10	23	12	21	8	11	-12
Unsupervised	2	68	0	75	2	60	1	68	27	16	-56
Parent supervised	16	21	32	9	24	8	24	13	-	-	11
<b>Self-starting</b>	56	1	58	1	15	2	53	1	86	0	138
Externally motivated	1	78	2	77	2	71	2	75	0	80	-153
High persistence	40	7	38	12	26	12	35	10	75	5	95
Spontaneous	2	2	6	6	8	6	5	5	0	25	-25
Low persistence	1	66	2	68	4	61	2	65	2	86	-147
Conforming	36	5	31	3	27	9	31	6	2	41	-14
Non-conforming	5	34	11	26	10	23	9	28	50	2	29
High responsibility	58	0	68	2	48	2	58	1	86	2	141
Low responsibility	1	37	0	40	2	68	1	48	0	36	-83
Other-directed	46	6	48	5	40	8	45	6	0	36	3
Self-directed	4	26	2	41	3	32	3	33	66	0	36
Routine	4	39	8	43	6	34	6	39	8	38	-63
Change-oriented	17	10	16	15	16	19	16	15	52	2	51

### **Matches between all students and the whole staff as a big picture**

What kind of holistic picture is it possible to figure out? You can find a representation about the students, young (in 45 class groups), and adult (in 9 class groups), and also about the staff in table 1. There are more young and adult students than teachers, who prefer to simultaneous and reflective information processing. There are more teachers than students, who prefer analytic, but do not prefer holistic and impulsive styles.

Senses are an important gateway between humans and environment. The preferences seem to have an ordinal meaning. The more you prefer it the more you use it at first. You may find out that there are more young students, who start sensing with tactile-kinaesthetic, but more adult students, who use audio-visual approaches. The styles match between young ones and teachers, but not with adult students.

Physical needs for energetic learning differ quite a lot. There are more teachers than students, who prefer to be stationary. There are more young students than others, who need some intake. Late morning is the best time to learn at their best. There are more adults than young ones, who like to learn in the evening.

The learning environments should be at least quiet and warm. The importance of light might be hazy. There are more teachers and adult students than young students, who prefer to formal work area.

Most of the students and teachers don't like to learn alone. They need each other's support. This means also that they need badly to work under supervision. Teachers favour being unsupervised but young students trust more their parents' than their teachers' supervision. How should it be in practice?

Everyone seems to be self-started with high persistence and responsibility. Teachers like students, prefer more non-conforming and self-directed than conforming and other-directed learning. You may find a developmental picture of three different professional areas, Beauticians, Barber-Hairdressers and Practical Nurses, on the tables 2. - 4. Are the students' preferences changing from one year to another? Do the styles match between students and teachers?

### **Beauticians – matches between students and teachers**

There are mismatches between the Beauticians on the table 2 in 5 class groups. Every year there are more students who prefer right hemispheric and reflective thinking from 1998 to 2003. There are more teachers than students, who prefer analytic thinking. All dislike impulsiveness. More students prefer auditory and tactile way of learning year after year. Teachers prefer mostly visual sensing. 30% of the students prefer a tactile-kinaesthetic approach, but most of the teachers start processing with visual sensing.

The students don't prefer intake, but favour quiet surroundings and at first in 1998-1999 they liked to work early but nowadays in 2002-2003 they prefer late mornings. Teachers prefer early mornings. Everyone dislikes working in the evenings. The environment should be quiet and warm. Students didn't like earlier informal working areas but later they do. Teachers are fond of formal working areas. Students' preferences become more obvious year after year.

It becomes more obvious that students like to work in a team and in a pair. Teachers like more peers. All are keen on working under supervision, when they confront something new and strange. Students' preference to teacher-supervision decreases during their years of schooling.

The amount of students who prefer self-starting, increases. Since 1998, students have shown high persistence more and more. There are students, who prefer more non-conforming. High responsibility and other-directedness is matching between the beauticians (students and teachers). Availability of change-oriented is growing and matching between them.

### **Barber-Hairdressers – matches between students and teachers**

On table 3 in six class groups you may find that the preferences vary during the years. Since 1998-1999 there are more students that prefer impulsive and sequential in their information processing, have started their first season in the College. Reflective thinking is matching between teachers and students. Teachers think analytically and students both reflectively and simultaneously. Tactile-kinesthetic sensing is matching between teachers and students. They prefer sensing in the same order, which seems to be ideal.

How do they energize themselves? Barber-Hairdresser students prefer to be stationary. The number of students, who like some intake, is growing. No teacher prefers it. Some preferences vary during the years. The teachers work easily early but students like to work later in the morning. The afternoon might be a difficult time to learn something new and problematic.

The learning environment forces students to learn. There should be quiet and warm, but not low light. Teachers prefer formal work areas, but more and more students prefer informal work areas every pair of years. Working alone is matching with teachers and students, although they don't prefer it. A team way of working seems to be the most preferred one and the preference is growing during the years. Teachers like to work in peers. Supervision matches between students and teachers.

Where do they meet each other's attitudes? They hate to be motivated externally. They have high persistence and responsibility. They also love conforming. Other-directedness is a popular attitude. Their high preference on change-orientation means more availability to new ways of working and learning. Attitudes match between students and teachers quite well.

### **Practical Nurses – matches between students and teachers**

You may, on table 4, in 34 class groups, find, that Practical Nurses mostly dislike impulsiveness. Students' sequential and simultaneous thinking becomes more popular. Teachers prefer analytic more than holistic. They like simultaneous and reflective information processing. Students might be looking for their style more than teachers.

Auditory and visual sensing is growing in students' style of learning. Tactile-Kinesthetic way of sensing is the most popular for them both. The order of the use in sensing is matching between teachers and students.

Stationary is growing but no-intake is not, when we look at students, who start their college work. The best time for learning is changing from early morning to late morning. Afternoons and evenings are very avoidable times to learn something new and difficult subjects. Teachers are early birds.

Practical Nurses prefer quiet and warm environments. Informal work areas are becoming more popular for students' learning. Teachers prefer formal work areas. They work either in teams or with peers. Teachers are not longing for supervision, but students need it from their teachers and family.

Self-motivation is quite high and spontaneity low. Teachers prefer nonconforming but novices the opposite. They have high responsibility. Teachers are self-directed but Practical Nurse Novices are other-directed. Change-oriented attitude matches between students and teachers.

### **Discussion**

In the vision of the College students should become continuous life span learners as Beauticians, Barber-Hairdressers and Practical Nurses. The primary aim is to guarantee the students the qualifications for the working life and the ability for further studies. How could we make good use of the LSA Reports to organize more successful learning experiences in practice?

#### **1. In order to improve the quality of instruction**

We had to create new habits of working at school when more and more younger students came, and the vision of instruction changed. At the same time the problems were increasing and the roles of teachers changed. We decided to improve the quality of instruction on surveying new options to work differently.

#### **2. The Power of Diversity way of doing and a new strategy**

The answer was to establish the own administrative style to improve the quality of instruction. After choosing the method, we started with staff training as Barbara Prashniq suggested.

#### **3. The evaluation of the applied method**

In order to improve the instruction we have used the European Foundation for Quality Management (EFQM) – system in the College. On this basis we have changed the administrative style to implement the strategy three times (triangle method, pair method and grouping method). After using the method for six years, it was appropriate to take actions. It was time to make a proper retrospective evaluation to follow up customers' expectations and to satisfy each other's needs respectively.

#### **4. Updating the vision and the strategy of instruction**

First we examine the results of the retrospective study. Then we benchmark these results to life span studies. Finally we make some suggestions to be implemented in the second step to improve quality of instruction.

### **What has to be done in the future?**

The average age of the staff is increasing and students' age has decreased. Student applicants take part in aptitude tests. Teachers take part in it as interviewers. There is no studied information on the influence of the working styles during the aptitude tests. The accepted students, aged 15 –24, are in transition from youth to adulthood and becoming independent. They are starting to take responsibility of their own lives.

#### **1. Summary of the retrospective study**

There seems to be slight changes in students' learning preferences in every year. The staffs have also changed. How students are sensing and processing information is important. The stage of attention depends on physical and environmental factors. These factors are not so changeable than psychological factors like social factors and attitudes. Man becomes a human being while socializing with other human beings. That's why the diversity types of learners need to be identified. I call this process socioreflexion, during which a person becomes identified and diversified.

There were more analytic Teachers, Practical Nurses, Beauticians and Adult students than holistic ones. It was the opposite among Barber-Hairdresser students. In spite of these dominants 25-40% of them prefer simultaneous thinking. Young students and their teachers start learning mostly with tactile-kinaesthetic and adult students prefer audio-visual learning but not so much tactile-kinaesthetic sensing.

Attention depends on physical and environmental preferences. In this study students and teachers preferred mostly to be stationary, late mornings, quiet and warm factors. From the tables we may find out that there is some crossed mismatching. Students try to find their style using a negative way of answering.

Psychological factors are tools for developing diversity accepting biological facts as mentioned above. Most of the students prefer self-starting, conforming, high persistence and high responsibility. These factors drive the schoolwork forward and match between students and teachers. Students like to learn together in different settings. Only few of them like to learn alone. They need supervision more under parents than teachers. Since students prefer other-directed, teachers have to give them learning tasks and control them. Students are dependent on adults but long for their independence. They are young Novices and not yet ready for self-education. Teachers differ in self-directed and in unsupervised from students. Teachers behave as a model of an independent adult. The preference of change-oriented way of behaving matches between students and teachers. This enables positive encounter to grow up as professionals. On the other hand students and teachers with strong preferences or/and non-preferences need each other.

## **2. Life span point of view**

As I say in the article of “Cultural comparisons of creative experiential styles of learning and thinking (CESOLAT)” (in “The Creative Child and Adult Quarterly, Vol. XVI, No. 1, 1991, pp. 38-46) there are two main approaches: Individual and Environmental. The individual approach as ego-reflection is about human experiences, developmental phases and cycles. The environmental approach as socio-reflection is about cultural and task hemisphericity. In that survey I found these six main points of view.

1. Brains and senses as both physical and neurological determinants and bases for creative information processing.
2. The prevailing psychological factors, which focus on how a person can become self-actualised, concerning especially productive, talented and creative persons.
3. The life span as developmental tasks.
4. The self-regulatory processes and plans.
5. The operational role charts and functional chains.
6. The interaction and encounter of the learning situations, where teachers and students reflect each other through their own styles of learning

This approach, as professor Rita Dunn commented while visiting Helsinki in 2000, deals more with gifted and talented than ordinary students' way of behaving as learners. We must take care of the children and try to give them multiple opportunities to grow, as they are becoming themselves. We may ask, what happens to their creativity as a mode of perceiving, thinking and acting over the life span?

There are at least four main creativity life span pattern types in literature as J.H. Dohr discusses in “Mature creativeness: A Differentiating factor in adult development (in “The Creative Child and Adult Quarterly, Vol. XVI, No. 1, 1991, pp. 220-229). One of them is, the double peaked pattern, which dates back to my article “Creative abilities as a life span phenomenon, a crosscut survey in Finland (in “The Creative Child and Adult Quarterly, Vol. X, No. 3, 1985, pp. 170-181). Two cycles of creative productivity emerged – the first in a person's 30s, and the second in their 50s. The principle of spiralling, creative integration of a supranalization – as intuition, imagination - and a rationalization – as reading, writing and arithmetic - are described as needed for the emergence of creative abilities.

As you may see, in the College there is a polarity between students and teachers in their way of thinking. The staff stresses more analytic thinking but at least barber-hairdressers prefer more holistic thinking. Adult students use different style of sensory information intake than the teachers do. In the College students live in the biophysical stage of their life span and their teachers either in some psychological or in spiritual stage of their life span. The stronger the preferences or non-preferences are, the more important it is how do they match, when students and teachers encounter each other in learning environments.

Jennifer R. Sasser-Coen writes in “Qualitative changes in creativity in the second half of life: A life span developmental perspective” (in Journal of Creative Behavior, Vol. 27, No. 1, 1993, pp. 18-27) about creativity as a process of thinking, perceiving and acting. Creativity can change in underlying structure or continue to evolve in structure, throughout the life course. Creative thinking and acting may be fundamentally different at various life stages. Across the life span there is a transformation of creativity from being focused on culture-bound conformity and productivity, to emphasizing an integration of experience and knowledge into new and unique ways of thinking and acting. Creativity itself doesn't decline, rather the underlying qualities of the creative process, as well as individual styles of thinking, evolve and change into new forms of creativity.

## **3. Some suggestions to be implemented in the second step to improve quality of instruction**

Socio-reflection should be developing according to cultural bound factors and learning tasks. These should match ego-reflection of both young and adult students' preferences. In order to produce encouraging results heading towards the primary aim we have to guarantee the students the qualifications for the working life and the ability for further studies.

Environmental factors like light, sound, temperature and working area are often culturally conditioned and stable, but underneath are also biologically determined. Personal factors like intake, needs to move and bio rhythm are biophysical factors and they are hard to change. All these have to be taken into consideration in learning processes. However, these style needs have a little flexibility. Teachers' and students' expectations on those differ which requires a change of attitude. They have to be considered functionally. Teachers' change-oriented attitude, high responsibility and persistence should make it easier to find new and matching didactical methods. Since 20% of the teachers prefer unsupervised and 60% are self-directed, they will find their own way alone, but 40-80% of them need some support to do it.

Teachers should consider their learning tasks carefully. Students have different expectations than teachers regarding their learning style. How much do teachers tend to teach audio-visually like they have been taught? Both teachers and young students prefer more tactile-kinaesthetic. This is a crucial point of learning. In the College students resign and are absent and their attendance is low which might be a symptom of mismatching learning and teaching. Role charts and functional chains should be found within class groups. The grouping of administrative systems tries to help teachers to start these charting and chaining functions in their class groups. This may work for both young and adult students groups in their learning.