



EFOS

European Federation of Older Students at the Universities
Europäische Vereinigung älterer Studierender an den Universitäten
Fédération Européenne des Etudiants Âgés aux Universités



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From the editor:

The present edition of the EFOS News is dedicated to three more general themes without a direct connection to the work of our federation but covering important aspects of the education for seniors. We sincerely thank all three authors for letting us use their texts.

Prof. Andreeff from Dresden wrote a contemplation about the importance of a comprehensive education of the citizens for a well functioning democracy. The education for elderly can play an important part in this.

Prof. Stanzel from Graz pleads for a better usage of the potentials of emeriti, overcoming the hindrance introduced by the Bologna process and by changes in the organisational structures of the universities. We are extremely thankful to Prof. Stanzel that he was willing to put his remarks during the EFOS meeting in Graz in April 2009 on paper.

Eveline Bieshaar describes in her article an interesting project of the Senioren Academie Groningen in which senior students try to awaken the interest of primary school pupils for the natural sciences. This is an exemplary attempt for an intergenerational transfer of knowledge..

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Peter Hug

EFOS News

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„Education and Democracy“

Ceremonial lecture

given on 28-09-2009

on the occasion of the celebration of the 15th anniversary of the
Dresdner Seniorenakademie Wissenschaft und Kunst

Prof. Dr. rer.nat.habil. (em) Alexander Andreeff, Dresden (Germany)



Ladies and Gentlemen!

Education and democracy are interdependent values. „*Democracy implies reason of the people, which it has to create in the first*“ philosopher Karl Jaspers wrote in the middle of the 20th century.

Democracy is doomed to fail without a relatively high level of education. Hereafter I like to contemplate this thesis more closely.

First we have to agree on what we understand by democracy. We use this word quite a lot, without questioning it anymore. It is very often easier to tell, what democracy is not. In his essay „The future of democracy“ the German sociologist - Niklas Luhmann – took this path. He questions e.g. whether democracy is about reason and freedom or about emancipation from socially caused immaturity. He says, what democracy is **not**:

- Democracy is not governance of the people over the people
- 1. Democracy does not mean, that people must participate in all decisions

He then tries to define democracy with the help of the system theory.

He sees democracy as the split of the leading group of a political system into government and opposition. In the system theory we speak of codification. This means, that the system is orientated on the differences of positive and negative values. Democracy starts, when people are asked to decide, whether the present government may continue or the opposition should run the country. These are democratic

decisions as a basis for a democratic government.

Democratic decisions require the following:

- All decision makers are equal
- Nobody can be forced into a decision
- There must be alternatives to choose of
- The opinion of others must be tolerated and respected
- Every participant of the decision process must know and understand, what he has to decide – in my view this is the most important part

So democracy implies informed citizens with decision competence. They are informed by various media. Democracy asks for free and independent media – freedom of the press. They inform the citizens without being influenced by others. Is that true? Are the media completely independent? Most media are financed by advertising. As prices for advertisements and commercials are proportional to the number of readers or viewers, media try to reach the highest possible quota. Results are, that media simplify, polemize or present lurid head-lines possibly resulting in destructive political debates or distortion of contents and of the course of discussions. How can citizens decide what's true or untrue, right or wrong, important or unimportant? The anticipated level of quota defines which event will become information and which one not. The last example is the murder of a courageous citizen in Munich. The media describe the young murderers' brutality almost enthusiastic. People think, that moral courage could be too dangerous. Why do media not write more often about moral courage with a positive ending! I am convinced, that it exists, but obviously it does not bring enough quota.

Linking media with the opportunities of modern information technology pretends a virtual reality. Media are everywhere at all times. So citizens are engulfed by information.

Neil Postman (an American critic of media) sighed: „*what started as a stream of useful information, changed by now into a torrent.*“. In order not to drown within this flood citizens need a certain media competence. They must be able to distinguish between important and unimportant, between true and falsified. Without this competence a democratic decision can easily be manipulated and is therefore not democratic anymore.

Majority decisions, however, are not always true and democratic. If the majority is uncritical to information and unconfident about its own values, decisions endanger the democratic development of a nation. Fredrik the Great, in whose time education was not widely spread, gave the following characterization of democratic decisions: „*in a democracy the decision is always made by the majority, thus with nonsense, in a monarchy a decision can at least sometimes be made by a sensible person.*“.

Lacking competence of judgement and media can do damage to reason and frustrate the important values of society.

“*Majority decisions will only remain human and rational, if they assume a basis of humanity.*“ says Ratzinger in his book about European values.

Very often our decisions are not caused by reason but by emotion. This is not always bad. Emotions are built on moralistic convictions. These convictions are a result of mutual reactions over a longer period between the individual and the surrounding society. It becomes dangerous, however, when one wants to impose its own value system on another society. This normally leads to militant conflicts, justified by one's own moralistic ideas.

The right-wing scene uses these emotions deliberately to reach its undemocratic and misanthropic goals. We are emotionally shocked when we hear of the rape or murder of children. Death penalty is then easily called for. Unemployment depresses and humiliates the concerned. The NPD claim „jobs only for Germans“ finds open ears. Only an adequate education will help to control these emotions.

Education – the other key word of my lecture - is very often seen as a product and result of learning processes only. You get it by means

of standardized success controls. Often we call it human capital and put people and their education on the same level with machines. This is a very one-sided and static education.

Knowledge shows on television and radio suggest, that education is an accumulation of lexical knowledge, of oddities. The television show „Who will become a millionaire?“ is outstanding in this case.

Television uses the entertainment value of knowledge to suggest education. This is not a new phenomenon. The flourishing sciences were already in the 17th century subservient to convivial entertainment. Adam Weber's book „100 sources for the art of conversation of different matters“ from 1676 was a bestseller. The enlightenment ideas about education tried to free knowledge from the shadow of oddity. Struck by the media offensive for a knowledge society, I think, that a **second** enlightenment is imperative today. Education must become again **a part of reason**.

Education is a process. It is complex, implies active participation of the individual and is never finished. An independent and self-acting personality, coping successfully with life will be the result. **I see education as the ability to understand the world and the society and play an active role in it.** So education gives decision guidance and helps to monitor emotional decisions.

Education, however, implies a constant interaction with society. Education without further education is fading. „*Learning is like rowing against the tide. If you stop, you will drift back.*“ Lao-tse says.

Education also offers you a look beyond present moral perceptions. Our moral convictions are ultimately based on the fear, that it can happen to ourselves. Our contemporary moral is based on egocentrism. The Ten Commandments make this especially clear. Nearly every commandment starts with: „*You shall ...*“ and is related to a concrete person or group. Immanuel Kant formulated this in his “Groundwork of the Metaphysic of Morals” clearly and explicitly: „*Act only according to that maxim whereby you can at the same time will that it should become a universal law.*” This formulation of the moral imperative is known by nearly everyone. The following formulation is less familiar: “*Act in such a way that you treat humanity, whether in your own person or in the person of any other, always at the same time as an end and never*

merely as a means to an end.“ This formulation asks more of people than the decalogue. In philosophy it is called the Golden Rule, the formulation of humanity. Especially for this rule education is mandatory.

The well-known 20th century philosopher Hans Jonas defines it in his book “Principle Responsibility”: *“Ethical standards are created by fear and not primarily by the wanted.”* Since Kant the technological opportunities of man-kind are immensely increased. Men changed from beneficiary to designer and transformer of nature. Now we have the situation, that „predicting knowledge“ stays behind technical knowledge, which defines our action. Due to his technical possibilities man-kind is able to make life on earth impossible. Therefore we need a new ethic, incorporating responsibility for future and afar. That’s why Hans Jonas asks for a new categorical imperative: *“No action should destroy the future possibility of living.”*

Hans Jonas formulated three principles:

1. Humanity has no right to commit suicide
2. Humanity has an obligation to the future
3. It is a crime to make life impossible for future generations

Especially the elderly, that are not forced to earn a living anymore, are predisposed to make this new categorical imperative common knowledge and accepted moral guiding theme for society. For this purpose we need, however, further education of the education.

Unfortunately these concepts of educational contents are not present in our politicians’ heads. The strategic paper of the Bund - Länder - Kommission (commission of the federal government and federal states) looks at further education nearly exclusively from the angle of knowledge, qualification and competence, needed for jobs. So the usefulness of education is quantified in money. The European Commission formulated it a bit softer but it is clear, that with further education we talk about establishing a consciousness for „the claim and usefulness of education“.

It has nothing to do with education that enables citizens to lead a free and wilful life. If money

and usefulness are the conception of education, it is better to talk about training and schooling. Very often our politicians try to tell us what to think, how to act, what to go for. That’s all fruitless, as long as the soil of good intentions – that is reason – is not prepared. Johann Wolfgang von Goethe – also a politician – already saw this. He writes in his „Maxims and Reflections” : *“Everybody only hears what he understands.”* This is well established knowledge, it does not need to be invented again. In his „Speeches to the German Nation“ in 1870 at the University of Berlin Johann Gottlieb Fichte referred to the importance of education. He did this quite clearly with an example: *“It is in vain to tell someone, who has no wings to fly and even with all your prompting he will never make two steps above the floor; but develop if possible his mental drive and let him strengthen and practise and he will even without any admonition never can and do anything but fly.”*

In the beginning of the 19th century there was consensus: ***Education is a normative concept not in the interest of calculated usefulness but of human freedom.*** We have to try to get back to this consensus and not to see education under the aspect of „how useful is it?” The goal of education must be a process where we explore the natural, social and historical world. We will gain freedom, freedom that allows a conscious way of life. In his booklet „Theory of Lack of Education“ Viennese philosopher Paul Ließmann allocates the problem: *“Don’t use your own head for thinking– that seems to be today’s secret programme of training. If you are not prepared to act in teams and networks, and flexibly meet all challenges - never by the way from people, but by the market, globalization or even the future- there is no chance to fulfil the demands of knowledge-based society.”*

We should not put education on the same level with training!

Education at older age is more than merely processing presented information. Education for seniors must be based on requirements and needs of the elderly. Elements as self-monitoring activities and shaping oneself play an important part. As the original motivation for life-long-learning was a personal ambition for self-fulfilment, it now becomes more and more the demand for further learning, not necessarily linked to formal structures.

When we founded the Dresden Senioracademy in 1994 our clientele were redundant and overnight laid-off highly intellectual senior citizens. Their questioning of the meaning of life had a new dimension: 40 lost years or nonetheless something accomplished? Their self-esteem got hit. They had doubts about themselves and society. And by shutting down big companies, communication centres disappeared. Therefore the Senioracademy was focused on:

1. Offer education as a meaningful free-time activity
2. Create communication centres for people with similar interests

Both goals are reached thanks to the Technical University, the Art Academy and the German Hygiene Museum. Our special thanks go to the Hygiene Museum and the TU Dresden.

The mental and social condition of seniors has changed. Now retiring seniors had to cope with unrelated and under-qualified work. Retirement does not feel as undeserved dismissal anymore but as liberation of labour's yoke.

In our rapidly developing information and knowledge based society people quickly loose the ability to come to well-founded and independent decisions. On the job people keep and enlarge their competence automatically, but after retirement we have to pay attention to it. In the interest of decision competence a permanent scientific and cultural further education is needed as well as communication with each other, in this case seniors.

Democracy as the main form of government in the developed countries does only function with citizens' good decision competences. Society has to extend this ability. Nowadays information mostly comes by electronic media. Technical means to spread, receive and process information have increased so much and so quickly, that it is difficult to distinguish true from false. Editors and press agents functioned as filters in the past, but lost their dominance. Everything that helps increasing circulation or viewing rates is seen as valuable information, a consequence of income by advertisements. Very often there is no difference between important and unimportant. Verified and unverified information stand next to each other. Internet is everywhere and always available and deliberately uncontrolled. We twitter and blog for all it's worth. This

demands enough abilities to discern between these categories.

All these competences can be combined in one social competence. This key skill is the ability of a person to cope in different social areas.

Media and judgement competence should enable us to deal with people of different cultural circles in an interconnected world. They enable people to take responsibility for their own life, see their life in a greater context and act independently. Especially the skill to act in heterogeneous groups becomes more relevant, as the traditional family ties break up more and more.

In this sense social skills play the same part as education. It is education. **A democratic society can only live if the individual gets involved in this society.**

After retirement the individual is more than ever responsible for his social participation and processes of developing an identity. The social environment changes, there is a social vacuum for a certain period. Filling up this vacuum is not dictated by the need to earn a living any more, but primarily dependent on the initiative of the individual.

Due to the democratic change, the relative increase of older elective citizens, social competence – that is education – of older citizens is now more important than in the past. Lack of competence to play a part in heterogeneous societies lead to right-wing voting. Lack of capacity to act autonomously leads to the call for a strong man. These are dangers for the development of a democratic society. Therefore education of seniors is a social task of high political importance. As in our parliamentary democracy democratic code termination is concentrated in the short period of elections, aberrations can only be revised after long intervals. A German proverb says: *„it is easier to nod an empty head“.*

Education is thus more than processing information on offer. It is an active way of self-determination based on experience and activities. Not only the extended stage of „old age“ but even more the quick change of society asks for continuous learning. So educational work based on individual wishes and focused on life-design is more than necessary. Such an education provides development and consoli-

dition of a human society for all ages. **The vision is the cooperation of young and old, formed by mutual understanding and provision of all present resources.**

A Chinese proverb says: *"Are you planning for a year, grow rice; for a decade, plant trees, for a century, educate people."*

(Translation from German: Sigrid Hug – Tode)

Retiring professors and active academic retirees. On their position at Universities and within the Anglicist community after Bologna

Prof. Dr. Franz Karl Stanzel, Graz (Österreich)

Abstract. The main concern of this paper is to encourage retired professors, many of whom continue to do research in their former fields of interest, also to return to the lecture hall and to offer their services to the university as teachers, even without demanding a fee. From such efforts not only their students would profit but they themselves as well. Discussing topical problems of literature or linguistics from the vantage point of their long experience in the field could help them in reactivating and exercising their minds, thus counteracting the effects of ageing.



The word ‘nachlassen’ in the original German title of this contribution, which for the sake of simplicity has been rendered above as ‘retiring’, should actually have been placed in two sets of quotation marks. Two sets, the first to make it clear that we are dealing with a quotation which I have taken from the guidance given by Emeritus Professor of English Thomas Finkenstaedt¹ on the administration of the work left behind by academics after their deaths; but also in single quotation marks to make it clear to some readers – Anglicists are perhaps especially receptive to such ambiguities as a result of their study of authors such as Shakespeare and Joyce – that ‘nachlassen’ is to be understood here simultaneously in two different ways: firstly in the sense of bequeathing writings, manuscripts etc., to a library for example, and secondly in the sense of relenting or becoming weaker. The annual conference of German anglicists recently held in Klagenfurt, where among other things constitutional changes were agreed upon, gives one cause to take issue with the current ‘Nachlassen’ of

professors particularly in this latter sense of the word.

On the topic of academics leaving their manuscripts and publications to libraries or archives, either before their deaths or afterwards in their wills, I have nothing to add to Thomas Finkenstaedt’s well-considered advice. But perhaps one should spare a thought for the libraries and archives, which understandably must go to great lengths to acquire the work left behind after the deaths of successful literati (or nowadays sometimes even handed over while they are still alive) and therefore tend to show little interest in the work left behind by us philologists. If only all authors’ works could be dealt with in such exemplary fashion as they are at august institutes such as the Literature Museum – formerly a literary archive – and Schiller museum in Marbach. There, manuscripts from the English-German author W. G. Sebald – including those donated before as well as after his death – are displayed in a manner previously reserved only for rare documents such as the Dead Sea scrolls, and presented alongside the corresponding passages from the author’s published works. Peter Handke, who has recently donated his work to the literary archive of the Austrian National Library, probably cannot expect such generous treatment. The necessary resources are currently lacking in Austria.

In this essay, however, we shall concern ourselves with the topic of ‘Nachlassen’ primarily with regard to those professors who continue to teach and carry out research after they have retired or have been granted emeritus status. The question which will be discussed here in detail does not relate to

¹ Thomas Finkenstaedt, „Nachlassende Professoren“, *Bio-Bibliographische Mitteilungen des Univ.Archivs*, Augsburg 1987

concerns about the bequeathment of academic work, but rather to whether and under what conditions retired or emeritus professors should also - to a limited extent - continue to teach alongside their research, based on the needs of their university at the time. Two factors should be at the forefront of our concerns here: the increasing demand placed on universities, caused among other things by a recent increase in the number of mature students, and the chances of promoting an inter-generational dialogue at our universities. In this respect one must acknowledge the findings [results](#) of recent research into the process of ageing, which clearly shows that ageing is a highly individual process that affects different people in different ways; for some, therefore, retirement or elevation to emeritus status can prove to be a largely random caesura in one's career. [In European universities professors retire at a fixed date/age. At many American universities there is no statutory retirement age, American university presidents retain the power of decision to regulate problematic cases.](#) At universities in the German-speaking world the term 'emeritus' does not automatically exclude the possibility of continuing one's academic research. The [Firnberg-UOG](#) (Austrian University-Organisation Law), which was later revised due to its radical co-determination structure, contained an explicit statement that emeriti should as far as possible be supported by their institutes in their research. This statement has since disappeared without a trace from subsequent versions of the UOG. In spite of this, however, many emeriti often continue their research in- or outside of university with considerable success. Indeed, their contribution sometimes makes up a not insubstantial part of the performance records recently introduced by university institutes. [Nevertheless for some directors of institutes emeriti who continue to offer classes are not always a welcome sight.](#)

Occasionally, it can [indeed](#) justifiably be argued that [emeriti thus](#) are restricting the opportunities of up-and-coming talents looking to break through the ranks. However, the Bachelor-Master system recently introduced as a result of the Bologna process and the increasing number of senior citizens electing to study again after their retirement has created a demand for additional staff which, especially in times of economic difficulty, merits at the very least a reconsideration of the issue.

At the EFOS (European Federation of Older Students at Universities) conference in Graz in 2009, it was discussed in great detail how universities might cope with the increased demand created by the rising number of senior citizens returning to the lecture halls, as well as the implementation of the Bologna process. Newly-created programmes which purport to deal with this issue are fraught with contradiction. While higher education institutes, strengthened by the Bologna process, now have to provide a significantly expanded job-oriented curriculum, senior citizens would welcome a programme of study which is not just a means to an end (according to Daniel Meynen² in his submission to the EFOS conference in 2009). In this context, my suggestion to encourage retired and emeritus professors to offer their services again was met with interest and approval. As a result of my personal experience, I was able to report that it is in their own interest for emeriti or retired professors, not only physically but above all mentally, to take up the challenge that continuing to teach provides. An independently-taught cause, or even simply participating in a seminar or lecture as a guest professor, can – as recent research in gerontology has taught us – act as a very intensive form of self-therapy which helps to counteract the natural loss of mental agility caused by the onset of old age. Thus is it not so much an altruistic undertaking [if retired professors offer their services to a university perhaps even](#) without the promise of financial reward.

A further aspect, which must be considered in relation to the process of (partial) reintegration undergone by an erstwhile teacher who has retired from active duty, is his or her potential contribution to the dialogue between the generations, whose social and political importance at universities is widely acknowledged. I do not want to take sides here in the increasingly vociferous debate over the 'betrayal' of Humboltean ideals through the recent 'Bolognisation' of universities. Nevertheless, it cannot be dismissed entirely out of hand that the presence of those who

² Daniel Meynen, "Zur Zukunft des Seniorenstudiums", table submission for EFOS/VECU Meeting 2009 in Graz.

represent older methods, theories and ways of thinking could exert a positive influence on the conflict between old and new, between the traditional philological and the Post-/Inter-/Meta-theoretical approaches which now pervade teaching, particularly in the field of literary analysis but also in the humanities in

general. It would also have a positive effect on the choice of available university courses. Some topics which have been pushed out of the limelight as a result of fashionable or modular considerations could be reintroduced into the curriculum by the emeriti, thus increasing the diversity of the courses on offer.

Youngsters, make scientists of them ...

Text and Photographs: drs. Eveline Bieshaar, Groningen (Netherlands)

In 2007 a senior student drew the attention of the Senioren Academie Groningen en Drenthe to an article in the journal Trouw about the charitable foundation Sluyterman van Loo and its financing of projects under its programme 'Strenght of the elderly'. Her idea for a project was further worked out, submitted and accepted by the foundation:

Senior students of the Senioren Academie in cooperation with the University (Rijksuniversiteit Groningen, RUG) developed experiments that should inspire primary school pupils for natural sciences.

The experiments were installed in a truck that, in the beginning of 2009, rode from school to school. The senior students accompanied the truck and assisted the pupils with the experiments. The project still continues in 2010, but without the truck.

The project is seen as a pilot for similar projects of other universities of the third age.

Below you find an account written by Eveline Bieshaar, one of the senior students involved in the project:



The training course

During three afternoons, with the guidance of Theo Jurriens, a scientist at the university, we are going to develop lectures and experiments that should inspire pupils of grade 5 and 6 (11 and 12 year olds) for natural sciences. The experiments are to be installed in the RUG-Discoverytruck of Theo Jurriens. With his truck he visits schools and other educational institutes in the North of the Netherlands to let younger and older people experience how beautiful and exciting natural sciences can be.

First meeting:

End of October 2008 we start with a group of 19 enthusiastic participants with a lot of knowledge and experience in natural sciences. We will surely need all of it.

Based on our specific knowledge we form 7 study groups around the following themes: energy, biology, science of everyday life, senses, electricity, building and chemistry.

We also receive the addresses of some websites where we can find examples of

experiments, and then we go to do our homework till the next meeting in a week's time.

Second meeting in the university museum Groningen:

This museum has exhibits of all disciplines of the sciences that are represented at the university. The aim of the museum is to make the heritage of the university accessible to a broad public. The use of the exhibits should inspire students and adults for sciences.

The 7 study groups have produced some ideas



but find it difficult to transform them into lectures and experiments. Some good advice of Theo Jurriens should however enable them to work out the theory and try out experiments at home.

Third meeting, the results

Obviously there has been a lot of thinking going on during the last two weeks. A number of participants have resigned, some because of lack of time, others because the course is different from what they had envisaged.

The study groups Energy and Building have come up with a great number of ideas but haven't put anything on paper yet.

But the study groups Electricity, Chemistry, Biology, Science of everyday life and Senses have already prepared presentations of experiments, some already accompanied by the appropriate theory. The study group Biology is chosen to start with its theme „Head and brain“ in the RUG-Discoverytruck at the primary school in Uffelte (province of Drenthe).

Now the real work starts. Is the theory comprehensible for 11 and 12 year old pupils? Are the didactics of the lecture all right? Can the four experiments be carried out easily? What sort of facilities does the RUG-Discoverytruck offer and how does it look like? We have a look at the truck and are duly impressed by its facilities.

Jaap Korf is made responsible for the introduction and the evaluation of the results. To start with we carry out all the experiments ourselves and write down what we need for them. Hans Muller makes a chart with an outline of the brain that the pupils can use to write down their results. We are keen on how it will work out with the pupils.

The First lecture in the RUG-Discoverytruck

Thursday 8 January 2009 we have to get up early. It's still dark and cold. The streets are icy. The RUG-Discoverytruck stands ready at the Oosterveld school. We decide which experiment is carried out at which table and lay out all the necessary equipment. We are ready for the first group to come. The pupils are our guinea pigs. The lecture will show us where we will have to apply changes.

Jaap Korf starts with his introduction. The pupils listen but are easily distracted by all the interesting things on their table. So let's shorten the introduction and start with the experiments.

Experiment 1: „Isolating DNA“ is a great success because each pupil can take his own DNA with him in a small tube. But the experiment takes too much time. We adapt it immediately. The salty cleaning water must be set ready in advance. This will save us two steps.

Experiment 2: „Chewing, saliva, enzyme: starch -> sugar“ is easy for the pupils.

Computer experiment 3: „How fast do you react?“ the pupils find it exciting and it doesn't take much time. See the website

www.bbc.co.uk/science/humanbody/sleep/sheep. How fast are you?

Computer experiment 4 „How fast do you think?“ is intriguing and takes much more time. See the website

www.technopolis.be/nl/index.php?n=4&e=48, click through to 'Lichaam en hersenen', 'Lees kleuren in kleur' (the syrup test). Do you also need more time for this test?

In total the lecture takes more than an hour. Despite the fact that we didn't carry out all the experiments we still have to summarise and evaluate them, especially for experiments 3 and 4 to discuss which part of the brain was activated.

The pupils are happy to take their own DNA and their chart back to their class room. Now let the second group come.

At noon we have had all the groups and sit down for an evaluation.

The astonished, inquisitive gazes, the many questions and the newly won insights in natural science: that is our reward.

The second and last lecture in the RUG-Discoverytruck

On 2 April 2009 the RUG-Discoverytruck is placed on the 'Grote Markt' in Groningen for the pupils of the St. Michael school.

Today we present our lecture „Head and brain“ to the pupils of grade 4. Very soon it becomes clear that the theory is too difficult for them, even with the brain model that we have



acquired recently. They are too young. But the DNA experiment goes well. The chewing experiment is a bit less successful and the computer experiment takes more time than anticipated. Even for grade 5 and 6, our envisaged target group, we have to scratch in the theory and the experiments and we should work with smaller groups, each with its own tutor. The next planned experiment about water must also be shortened and brought to a lower level. Well, practice makes perfect.

How further?

We cannot make use of the RUG-Discoverytruck anymore. The co-operation with Theo Jurriens has ended too.

In the meantime we have finished another lecture, this time about „Sounds and hearing”. We are lucky to find Margo Spee of the university museum willing to support us didactically. So, Age and Bill can present their lecture to a critical audience. The other three members of the study group assist the museum on busy days with guiding groups of people of all ages through the Darwin exhibition.

In addition we carry out the DNA experiment with old and young visitors during the 2009 autumn vacation.

Experimenting on our own

The primary school „De Driespan“ in Harkstede has invited us. In September we visit the school to have a look at the class rooms and to meet the director and the teachers of grade 5 and 6. The class rooms are big which gives us more room for manoeuvring than the long, narrow RUG-Discoverytruck. The inventory is very modern which enables us to give Power Point presentations without any problems. There are computers in the classroom but not enough for our experiments. So we have to come up with another solution.

Beginning of November we visit the school again to discuss the theory and the conduct of the experiment „Head and brain“ with the teachers and to fix the agenda with them.

Monday 30 November 2009 is the day. The theory has been shortened, experiment 3 („How fast do you react?”) has been scratched and for experiment 4 („How fast do I think?”) we have decided to replace the computer by an instruction chart and a stopwatch. This way all the experiments can be conducted in the class

room. All necessary equipment has been purchased and is ready for use.

The class is split up in four groups, each with its own tutor. The lectures are tightly structured, starting with an introductory round and an overview, followed by the theory in the form of a Power Point presentation and before we start with the experiments we explain the use of the chart in detail. Then we start with



the experiments with rotating groups. At the end we discuss with the pupils what they have learned today.

The day starts at nine o'clock with 25 pupils of a combined 5th and 6th grade. At 10.30 we get 20 pupils of grade 5, among them a blind child. After lunch, at 13.00 we lecture 29 pupils of grade 6. Every time the lecture takes 70 minutes.

In fact this is too long. But one of the reasons might be the media spectacle that has evolved around our first lecture on our own. Simultaneously with our lectures we have to answer questions of a reporter of a live programme on the regional radio station Radio Noord, talk to a correspondent and photographer of a newspaper and the last lecture is being recorded for the regional station TV Noord.

Luckily the pupils who are our main target are very interested and ask many questions. They leave for home with a pipette, a chart with their measuring results and a small tightly sealed tube containing their own DNA. We hope that their interest for natural sciences is permanently stimulated.

In 2010 we are invited to conduct our lecture „Head and brain“ at another school and then it's the turn of our lecture „Sounds and hearing”. We are also in contact with further schools that have expressed interest in our experiments.

(Translation from Dutch: Peter Hug)