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Supporting Excellence in Higher Education: The German Situation*

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In the mid of the 80s politicians and the public opinion discussed the question, if it would be necessary to establish private elite systems in higher education like the systems in USA, Great Britain, France or Japan, because they saw the international competitiveness at risk. They believe that due to the continuing expansion of students at the public higher education system the identifying and supporting of excellent students will no longer be possible. This survey reveals that both teachers and students are convinced that in spite of some problems the existing higher education system is able to support excellence and to guarantee quality and efficiency. One of the important charcteristics of highly gifted students is their joint responsibility for their fellow-students.

OUTLINE OF THE PROBLEM

THE GERMAN education system, particularly the higher education system, has grown continuously since the mid-1960s—though this expansion has been rather erratic at times. In the Federal Republic of Germany the 'civil right to education', as Ralf Dahrendorf [1] defined it in a publication in 1965, resulted in a wider access for large sections of the population to higher levels of education. Whereas in the late 1950s and the 1960s approximately 6–7% of same-year pupils attended a Gymnasium (German type of upper secondary school) and subsequently a higher education institution, this proportion has now risen to more than 35% at Gymnasium and more than 25% at higher education institutions. An end of this expansion is not in sight. This process demonstrates a generational change of attitude towards education.

In the early 1980s the Federal Republic of Germany was characterized by an economic slowdown, the causes of which politicians and the public ascribed to the country's education system. The ability to compete on an international level and the progress in technology in Germany seemed to be at stake. A way out of this calamity was sought via a better quality of education through the establishment of private élite universities. Foreign higher education systems served as a model for this concept. But would it be reasonable, would it be necessary, and would it be possible to establish a private system of higher education alongside the public one? These questions resulted in a research project designed to investigate the problems and prospects of supporting excellence in higher education.

LITERATURE

In the wake of the debate on democratizing the education system and increasing fair opportunities, even scientific research and discussion on the problem of 'élite' and/or 'supporting excellence' was not politically acceptable for a long time. Hence scientific results in the field of education with reference to 'excellence' and/or 'elite' were rather meagre in German-speaking countries in the 1970s as was shown by B. Feger [2] in her report about the literature on 'excellence' published in 1988.

The problem of supporting excellence was dismissed and almost forgotten because it was often identified with the sociological phenomenon of élites and élite education and was therefore closely connected with the notion of granting privileges to a certain social class or section [3–5].

The term élite had become an emotive word, as G. Wölke [6] stated in her retrospective about élite schools published in 1978. In her endeavour to champion the élite and the necessity of élite schools, she noted that this term was 'loaded with the burden of the German past'. 'Perhaps', she continued, 'it is a German peculiarity to conceive élite and democracy rather as being contradictory than as complementary.'

After the problem of equal opportunites in education for all sections of the population had been intensively discussed in the 1970s, the general public debate at the end of the 1970s and the beginning of the 1980s was characterized by rediscovering the question of what happens to outstanding pupils and students. The prevailing opinion was that the highly gifted did not need special

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attention or promotion as these young people would encourage themselves and would take what they needed to develop and foster their special abilities.

Demands for more top-quality personnel in all fields of life, but most of all in science and research—for reasons of international competitiveness—were launched with reference to respective institutions in foreign education systems—especially in France, Great Britain and the USA. Therefore, 'the return for a term' was accompanied by entreaties and partly relieved reactions at the beginning of the 1980s, as was shown, for example, in the subtitle of G. Wölke's 1980 publication about the élite in the Federal Republic of Germany [7]. Others picked up this slogan and thus advanced the public debate about this topic [8].

Numerous scientists and politicians contributed to this discussion and set forth their opinions and proposals on the problem of mass-university versus élite-education. Whereas some people recommended reducing and containing student numbers radically—to return to the former idyllic state of higher education with low student numbers as it were—others declared their absolute conviction for large student numbers as a basis for an 'élite-education'. Contrary to the latter, who followed the principle of integrating mass- and élite-education, the other group could only imagine higher education as a distinction and a privilege for a minority. On one side the notion of élite was restricted to young scientists and their outstanding scientific results qualified to meet international standards, on the other side a democratically legitimated élite was regarded to consist of the very best of a discipline or a profession, of scientists or artists, craftsmen or teachers, athletes or writers, managers or politicians, capable and prepared to take over executive functions and responsibility in their profession and in life in general.

An exemplary statement is that of the former president of the Federal Association of German industries, Ralf Rodenstock [9], who emphasized the possibility of integrating equal opportunities and élite-education. According to Rodenstock, equal opportunities are an aim of education and sociopolitics in a democratic society. There can be no doubt that it is absolutely necessary for the development of the individual to compensate disadvantages due to disposition or environment. In addition to that, measures should be taken to support those with special abilities. An education system which refuses to take notice of the fact that talents and inclinations are different by nature would indeed radically question equal opportunities. In a similar way Hermann Lübbe [10] questioned the supposed contradiction by asking whether programmes in the field of science and education politics which aim to realize equal opportunities on the one hand and promote an élite on the other are contradictory. According to Lübbe, it holds true for the culture of science that, based on the broad social range of these programmes, the probability of top performance does not decrease, on the contary, it increases—and this also holds true for education.

H. D. Genscher's demand to establish private élite-universities effectively drew public attention to the topic of élite-education. At the end of 1983, when participating in a meeting of the Federal Union of Employers, the former Minister of Foreign Affairs of the Federal Republic of Germany launched his demand for private 'élite-universities' corresponding to American, Japanese, English and French examples as this would be the only way to achieve top scientific results in Germany again [11].

The scepticism and rejection that Genscher's demands were confronted with are expressed, for example, by H. Lübbe [10], who claimed that there was no objection in principle against higher education institutions on a private basis. However, as an instrument to promote an élite this would certainly neither be sufficient nor effective by itself.

It goes without saying that in this debate about élite, supporting élite and private élite institutions, numerous claims and proposals to improve the situation at higher education institutions were launched which are still topical.

In the discussion about élite-universities and mass-universities, the promotion of élite and large student numbers, one term recurs over again—that of scholastic aptitude. Questions concerning the transition from Gymnasium to higher education, and school leavers' performance, basic knowledge or skills are just as important topics as the problem of how far the marks of the Abiturzeugnis (upper secondary school leaving certificate) can serve as a prognosis for a successful graduation. W. Heldmann [12] described this topic in detail in his publication about scholastic aptitude, which was followed by a second analysis in co-operation with Th. Finkenstaedt [13].

RESEARCH APPROACH

The investigation presented here was intended to monitor the everyday routine in higher education institutions. The aim was to observe and describe what professors in higher education could do to fulfil one of their genuine tasks, i.e. to support highly gifted students. The study was purposely not based on one of the well-known theories of aptitude, as it was not planned to assess how far such a theory or single aspects and criteria of it—applied on the higher education sector—were correct.

We proceeded on the assumption that everybody has a concept of his or her own about what is meant by an extraordinary, special aptitude or a highly gifted person. This concept is the basis for people to take action, to distinguish the highly talented from the less highly talented and to assess the chances and possibilities to attend to and support highly gifted students. Personal needs,

scientific requirements and the overall potential of students of a department or institute will have a decisive influence on the assessment of this topic. These preliminary considerations induced us not to gather statistical, quantitative data and thus not to present results which meet mathematical and statistical requirements.

After establishing an appropriate design and the content of questions, we developed and checked a guideline for free interviews. Our original intention was to interview only professors in higher education institutions as the protagonists in the process of supporting excellence. But soon the wish arose to get to know also the other side in this mutual process: the supporting students. This procedure would on one side offer the opportunity of getting first-hand information on the direct experience of attention and support, and on the other provide a certain control of the teaching staff's statements. Therefore an analogous guideline for interviews with excellent students and/or those whose abilities were considered as above average was developed.

We were surprised that the professors of higher education institutions readily agreed to take part in such an interview. Only two of the 68 professors we contacted refused an interview right away. We had three to four interviewees from every department, among them only four women, corresponding to the low female proportion of the total number of professors with unlimited or limited tenure. We did not only address professors, but also medium-level scientific staff.

All things considered, a broad and interesting spectrum of statements and opinions could be expected, though exact selective criteria had not been applied on purpose. As mentioned before, stress was laid on analysing the practice of everyday life in higher education, with special reference to the identification, selection and support of excellent students.

At the end of an interview or inquiry by letter, we asked our interviewees to give us the names of 3–5 male and female students whom they considered as being above average or excellent for corresponding interviews. According to the only condition—apart from the subjective assessment—these prospective interviewees should not all be scholarship holders. The latter are regarded as excellent as a matter of course because of their scholarships. Our reflections were based on the assumption that not all excellent students, by far, or students with special abilities were granted scholarships.

In view of the unexpectedly high number of proposals we did not initiate additional enquiries. The result of this procedure was a random choice of student interviewees. The preconditions outlined here excluded that in all departments the number of the interviewed students equalled the number of the interviewed scientific staff. In this way a total number of 100 highly talented students were recommended to us as potential interviewees, of whom 88 finally agreed to take part in the interview about supporting excellence. In these interviews spontaneity and freedom from prejudice were required. Therefore the student interviewees were acquainted with the general topic but not with the questions in detail.

The range and the choice of our interviewees—of the teaching staff as well as of the students—do not permit us to generalize the results. It is true that the procedure of selecting the student interviewees could lead to the impression that the student group was a control group, so to speak, to check the statements of the teaching staff. The randomness and arbitrariness of the interviews, however, refute this impression.

In establishing the aims, in planning and carrying out this investigation, we worked on the principle that the boundaries between average and excellent students are fluid. This means that the difference between these two groups is not a matter of principle but only of degree. What is true for all students is true—to a qualitatively larger extent—for those with special talents, for excellent students. This is also the reason why our interview partners often made statements which are first of all relevant for all students and then gain special importance with reference to the highly gifted. Therefore one cannot but mention at first the normal basis as the starting point before the qualitative plus, the comparison to what is considered as normal, can be depicted.

Furthermore, these basic considerations imply that the differences in degree between 'normal' and 'special' attitudes towards certain study conditions, cognitive and non-cognitive abilities, and behaviour are relatively small judged by themselves. It is the sum of these differences which constitute a talent which is extraordinary, i.e. above average.

RESULTS OF THE INTERVIEWS WITH TEACHING STAFF AND STUDENTS

The most important result of the more than 150 interviews we conducted with teaching staff and students consisted in the unanimous and clear rejection of separate élite institutions in higher education—a reaction we had not expected. An overwhelming majority of both groups agreed that the existing public higher education system in Germany is well placed to fulfil its function in spite of difficulties and strains.

Apart from some differences in details, our interviewees showed a surprising conformity in their ideas of aptitude, excellence and/or special talents. Both groups had considerable doubts that the marks of the upper secondary school leaving certificate could be taken as a reliable indicator, as these marks can also be achieved by diligence. It is true that diligence is one of the main characteristics of aptitude or excellence, but it is not the most important or the decisive criterion.

Due to different study and exam regulations and to the different stages of study of our interviewees it

was not possible to compare the marks of the upper school leaving certificate with the qualifications the students had achieved in the course of their studies. But it is by no means unique that a female student passed her Abitur (upper secondary school leaving exam) with an average mark of 2.5, then after choosing 'her' major subject achieved 1.8 in the Vordiplom (intermediate exam), passed her Diplom (final exam) with 1.0 and is now heading for her doctorate. Another example shows an average mark of 3.1 for the upper school leaving certificate and of 1.5 for the final exam. There are more than a few examples of this kind in our sample. Even if a significant statistical proof cannot be presented, the relative frequency of such cases among our interviewees indicates that such developments of special talents are obviously not so rare; otherwise they would not have occurred in our sample so frequently (Table 1).

An overwhelming congruence became apparent when compiling the manifold cognitive and non-cognitive intellectual abilities and skills which are characteristic for aptitude, for special gifts. Of course, we could not expect our interviewees as individuals to represent a fixed degree of aptitude. The mosaic consists of a variety of components which appear in some interview or the other. It may be that some people put special emphasis on the aspects, indicators and characteristics which they stressed in their interviews. In spite of the large number of interviews, the same attributes and features which characterize excellence were to be found throughout the sample.

In one aspect, however, the statements of the teaching staff differ substantially from those of the students. More than half of the highly gifted students we interviewed also pointed out social and humane abilities and qualities as constituting excellence, apart from intellectual ones. Female interviewees in particular gave priority to these non-cognitive abilities and qualities as opposed to the cognitive ones. For the teaching staff these features appeared rarely and were of minor importance.

Table 1. Distribution of interviewed students according to the marks of the upper secondary school leaving certificate and to gender

Upper secondary school leaving certificate mark	Number		
	Total	Male	Female
1.0–1.4			
abs.	32	21	11
% line	100.0	66.0	34.0
% column	37.0	37.0	37.0
1.5–1.9			
abs.	27	18	9
% line	100.0	67.0	33.0
% column	31.0	32.0	30.0
abs.			
2.0–3.3	28	18	10
% line	100.0	64.0	36.0
% column	32.0	32.0	33.0
sum			
abs.	87	57	30
% line	100.0	66.0	34.0

Numerous measures and opportunities to support excellence which we presented to our interviewees were met with unanimous approval on both sides. The first steps towards studying and organizing the first and intermediate stage of study present severe difficulties for many student beginners, and also for the highly gifted. The atmosphere of anonymity in crowded lecture halls is an additional burden.

The impression of a candidate for a doctorate in physics, which implies many of those problems and difficulties with which student beginners are confronted nowadays, may stand as a typical example for many others:

> Yes, we all were enthusiastic when we came to university and we thought: well, now we can do what we like, what we enjoy doing and we will then find a certain recognition. Then you sit in a lecture hall together with 300 others. You can get used to that and you sit in the front rows not to see the others ... Then everything is very anonymous willy-nilly. And this anonymity was the real shock.
>
> At school we were coddled so that no point would be missed. Then, at university, it was quite the other way round. Nobody cared whether we were present or not, whether we came to the seminars or not, whether we did the exams or not. Also in seminars with 60–70 people it is hard to get personal contact with the lecturers.

The majority of the teaching staff we interviewed assessed the scholastic aptitude of the present student generation as not worse than that of former generations. However, they complained about a decreasing command of general cultural techniques, insufficient general knowledge and a lack of basic knowledge of the chosen discipline. Our interview partners put the blame for this development on the Gymnasium 'of course', especially on the Kollegstufe (the last two years of upper secondary school) which prepares students insufficiently for their degree courses. In return, our excellent students mentioned that they had only little or no knowledge at all about the higher education system, the chosen university, the department and the possible choice of degree courses when they left upper secondary school. The anonymity of a mass institution and the required independence gave them trouble. They felt helpless and had no orientation when they began studying. It was hard for them to accept that they have to see to everything for themselves at university. High expectations are disappointed, frustration gains ground, the major field of study and subsidiary subjects are changed, valuable time is lost. Those students who experience a well-regulated, school-like first stage of study are however content, even if the highly talented often wish that this stage could be shortened.

Professors can and should be more involved in

the initial stages of studying in order to find out and assist specially talented students. This does not require any special steps to organize studying: existing instruments should be used sensibly. The professors' commitment in the first stage of study, and especially in the initial stage, should be encouraged by appropriate measures.

To get to know one another, to get contact is no doubt one of the most crucial problems in mass institutions of higher education nowadays. The majority of our interviewees agreed that they did not get to know one another until late, not seldom too late, in the course of studying, i.e. in the latter stage of study or even at the end of the degree courses. A qualified minority of both sides also agreed that, given goodwill, commitment and interest towards students on the part of the professors, it is possible to get to know one another and establish contacts, irrespective of the size of a department or an institute. However, there is a certain distance between the 'little' student and the 'great' professor, especially with economists. The cause of this distance and/or the presumed non-interest on both sides is seen in structural and organizational problems of studying.

A few members of departments or degree courses—by no means only those with low student numbers—expressed their efforts to get to know their students at an early stage or at least to get an impression of them by taking over teaching tasks in the first stage of study.

These measures are no doubt preliminary to the support of excellence. But before support can be given, discovering and selecting special talents among a variety of others is a necessary prerequisite. This is the reason why professors should show their interest in and commitment to students at an early stage.

While students criticized a certain standoffishness among the teaching staff, they also mentioned very positive experiences when they initially came into contact with professors in lectures or seminars in the first phase of study. Those professors, however, who are committed to teaching, and whose commitment is felt by students, claim that junior staff are often much too preoccupied with themselves so that they cannot cope with these problems on their own. According to interviewees from both groups, gifted students are in a position to talk with 'their' professors any time they want to. They are not confined to regular office hours. In some cases this is true in principle, but in reality things are somewhat different. The real addressees are the junior staff who assist students with their exams, etc. Whereas even excellent students do not have the courage to address professors occupied by manifold tasks and duties, The professors expect their students to take the initiative to contact them because they do not wish to give their colleagues the impression that they want to lure qualified exam candidates away from them.

As congruent and at the same time contradictory as the statements of these two groups may be in this essential field of communicative interplay of students and teachers in the process of learning, they disclose not only personal or related problems but also structural and organizational problems of higher education institutions, departments, institutes and/or teaching. Eventually this led to impulses and proposals of the highly talented to ameliorate their situation regarding support and tutoring. In view of the stated criticism, do we not have to ask whether the teaching staff always set the right priorities in carrying out their functions?

Another phenomenon in the context of supporting specially talented students was the proposal of the German Science Council [14] to establish Steilkurse (so-called intensive courses) for this group of students which offer the curriculum in a condensed form and thus in a shorter period.

Both groups agreed that social and communicative contacts among students would disappear if one group participated in intensive courses and that the highly gifted could not serve as an example for their less-able fellow students. As a result, the standard of education in general would decrease. Occasionally it was emphasized that the things learned and heard must be digested and understood. Furthermore, many interviewees on both sides were deeply concerned with the problems of selecting the participants and of who would be entitled to offer such courses. They should be open for everybody, the level of qualification alone should separate the wheat from the chaff. Among students as well as among the prospective teaching staff a two-class system would arise, i.e. privileges for one group and discrimination for the other. And how can the teaching staff come up to the didactical and methodical expectations of Steilkurse if they are not even in a position to present the curriculum in normal courses in an appropriate and reasonable way?

Excellent students should be more encouraged by approporiate measures to change university at least once during their degree course and to carry out part of their studies abroad.

Changing the university and studying abroad for a certain time have always proved efficient instruments of promotion. Such a change should offer the opportunity to get to know other research approaches, other forms of organizing research and, last but not least, outstanding personalities from the respective discipline. Surprisingly few excellent students among our interviewees have realized or even considered such a change once they have started their course of studying. Internal and external difficulties of the university and financial considerations probably play an important role. Therefore specially talented students should be encouraged to such a step by appropriate measures, e.g. the provision of suitable workplaces, laboratory facilities, seminar places, accommodation and financial help. In the interest of supporting special talents, professors should be prepared to lose qualified potential junior staff by this way.

Stays abroad are very popular with the highly

gifted. Many of our interviewees spent two or three semesters of their degree courses abroad and even acquired degrees there in half of the scheduled period. A greater proportion, however, planned studying abroad only after their first degree for reasons of effective study periods.

In order to support special talents, a closer involvement of excellent students in the research process at higher education institutions seems to be desirable and necessary. Renowned centers with special research fields should give highly gifted students the opportunity to perfect their extraordinary abilities and skills in a special discipline in close co-operation with outstanding professors.

Supporting excellent students is not only of tremendous importance in the field of teaching. These young people should be introduced to research and research tasks as soon as possible in their degree courses. It was in this respect that our interviewees complained about deficits. Some professors emphasized that involving excellent students in their own research field motivates them in quite a different way to enter a commitment for their clientele.

Tackling problems of research approaches, and of possible solutions, almost automatically leads to an intensive development of a candidate's abilities. Conversely the imminent challenge may induce the candidate to give his or her best. This process encourages the student's sense of both responsibility and independence.

Some members of the teaching staff and excellent students agreed in our interviews that the curriculum for the first stage of study must be streamlined and freed from superfluous ballast. More basic knowledge should be taught instead. The curriculum could—as is occasionally already the case today—be offered in condensed courses *en bloc*, which would enable the highly talented to proceed more rapidly with their studies. Condensing the curriculum in the first stage of study is aimed at eventually shortening the study period, which is considered as reasonable and possible, instead of Steilkurse, by many interview partners.

By no means do all our interview partners regard Steilkurse as an isolated measure in the course of studying but in the context of the total study period. Steilkurse for students with special abilities were rejected by the majority of our interviewees for various reasons—social, organizational, technical and psychological. Some members of the teaching staff were obviously not familiar with the study and exam regulations for an early intermediate exam or diploma, otherwise their proposals to reduce the first phase to two and/or three semesters by corresponding measures would not be understandable.

Only a minority of our students saw a real chance to reduce their period of study to the scheduled time and to prove their special abilities by attending Steilkurse. Very few regard those measures as suitable to promote and challenge their special abilities. From their point of view a reasonable limitation of the study period is possible by better organizing the schedule and the period of study, which on one side limits professional knowledge to what is essential, and on the other side leaves room for a broad and solid general and specialized knowledge for everybody in an undivided system.

Most of our interviewees thought that students with special abilities are characterized by a broad general knowledge which far exceeds special technical knowledge. The increasing splitting up of disciplines into ever new specialized fields counteracts this interest. That is why students think that higher education institutions lack interdisciplinary options which convey the correlation and interdependence of various single disciplines. It is, however, decisive that interdisciplinary correlations become transparent early in the degree courses.

Professors are required to show more commitment for teaching and to attain essential progress in the way of teaching. Even students with special abilities often feel discouraged by the way the curriculum and the lectures are presented and by the didactical abilities of some professors. Therefore they do not dare to ask questions during the lectures or demand more detailed explanations in order not to disturb the lecturer and not to make a bad impression or to bore their fellow students with their questions and interruptions. They find it far easier to contact members of the medium hierarchical level of the scientific staff. Excellent students presumably notice a downright lack of interest in students on part of the professors. In their opinion the professors regard them as 'a nuisance', do not properly fulfil their task as teachers and are rather confined to their research interests. In spite of this, some students showed understanding for the situation of the professors who could not sufficiently attend to teaching because of other duties and a full appointment book. Though this is not the place to start a debate about the present public discussion about the quality and evaluation of teaching at higher education institutions, the opinion about its importance and about the tasks of a professor as they were expressed here by some interviewees must be noted with surprise. Is it really so unimaginable that by structural and organizational changes professors can be relieved to a greater extent to concentrate on their proper tasks, i.e. to train students by teaching and research, and to take the burden of certain administrative tasks from them?

CONCLUSIONS

The results of the interviews with the teaching staff and excellent students permit one to draw some conclusions pertinent to the organization of degree courses and the commitment of the teaching staff on the one side, and information, counselling and orientation for students on the other side.

In order to avoid friction at the transition from the secondary to the tertiary education system,

continuous information and counselling as early as in the last years at the Gymnasium seems necessary. Information or counselling offered only from time to time is not sufficient. Continuing education and career counselling, which helps to recognize special abilities at an early stage, parallel to the secondary and tertiary education sector, seems an indispensable instrument to prepare for the 'right' choice of the major subject thoroughly. It must be mentioned that about one-third of our interviewees would by no means have been assessed as highly gifted if only criteria of performance had been applied. Such education career counselling is only imaginable if it is obligatory for everybody. It could contribute to solving or at least diminishing obvious problems at the transition between the secondary and tertiary education. The highly talented, too, have problems in choosing the right major subject—as was clearly shown in our interviews—just as many other student beginners. Such education career counselling accompanying the secondary and tertiary education sector would not only comprise advice on the manifold potential patterns of education, but would also simultaneously be vocational counselling. Questions of individual aptitude and inclination coincide with the requirements and real opportunities of the labour market.

Such education and career counselling, as mentioned here, naturally requires qualified personnel in sufficient numbers. It would be necessary to integrate information about higher education institutions or departments best suited for a certain aim, and this could be taken into account when a student applies for a degree course. Therefore, the existing educational and vocational counselling facilities should be considerably exended and intensive co-operation and co-ordination is required.

Another measure to sooth the transition problems from the secondary to the tertiary education sector would certainly be the opportunity for students to test some degree courses, as has been the case for years in the field of vocational training for pupils of elementary and secondary schools in order to ease the choice of job and the transition to active life of these young people.

It is true that international exchange has been stimulated for some time by programs, e.g. ERASMUS, LINGUA, COMETT, or bilateral agreements between higher education institutions, but the existing facilities could be better used and supported by more competent information and counselling, by tearing down unnecessary bureaucratic obstacles, by guarantees about the recognition of study periods abroad, by greater motivation and stimulation of interested students. With a view to a united Europe and international competitiveness, it is an important and useful task to support flexibility and mobility, especially of excellent students.

To integrate many students in the present research process and to let them participate in the scientific debate, disciplines with large student numbers and correspondingly a high number of exam candidates could offer a sort of 'snowball system' in which the junior scientific staff and candidates for a doctorate gather students who are looking for or have already started their final diploma theses around them as 'satellites', so to speak, in order to let them work on parts of their own research work. The motivation to tutor those 'satellites' arises from a personal interest in the successful and punctual completion of such projects.

However, there is no denying that this system implies the danger of 'exploitation', i.e. that exam candidates are downgraded by their tutors to 'slaves' to collect material or to produce graphs. This danger can only be counteracted by a permanent feedback between the tutorial staff—members of the medium level of the hierarchy in higher education, candidates for a doctorate, etc.—and the professors. It is the latters' responsibility to put an end to such undesirable developments. A continuous feedback is proof of a professor's personal commitment.

The curriculum, especially in the first half of the degree courses, should be freed from superfluous ballast to enable excellent students to progress more rapidly. Different admission standards on the part of the student beginners often require curricula which are well known to others from school. If motivated students with special abilities can prove that they possess the pertinent knowledge, no matter where it was acquired, they should be enabled to pass their intermediate exam after two semesters. Proceeding on the unanimous opinion in our interviews that students with special abilities are characterized by a very quick intellectual grasp and capacity to combine, such an offer could be a real challenge for their level of performance.

In the study of languages, humanities and the social sciences a more effective structuring of the broad curriculum in compulsory and optional subjects and/or courses seems to be a reasonable precondition for a better orientation and personal specialization by which excellent students in particular could distinguish themselves at an early stage.

In order to stimulate the mobility and flexibility of specially talented students it seems an essential precondition to remove administrative barriers. Better tutoring and supporting of excellent students also requires an improvement of the financial resources of professional chairs and institutes.

Administrative barriers should be removed where these make it difficult for specially talented students to make use of legal possibilities which do exist in principle, e.g. to enrol in two degree courses and/or at two neighbouring universities at the same time. Our student interviewees complained that they were denied this possibility and/or that this was considerably complicated by administrative measures. Modern science and economics require more interdisciplinary knowledge which cannot be acquired in traditional degree courses. For many reasons it may be better to attain the desired qualification at two neighbour universities. For somebody who is willing and able to accept such a double

burden, this possibility should be facilitated by handling administrative regulations correspondingly. This provides an opportunity for the applicant to reach his or her desired aim with a minimum of delay and not to lose unnecessary time by attending degree courses consecutively. In this context it should also be possible by respective counselling to arrange 'one's own' individual degree course according to the principle of a module system.

An improvement in personal contacts with the teaching staff which our interviewees have always mentioned as a precondition for intensive and individual tutoring and promotion can only be attained by increasing the number of personnel, especially that of the medium hierarchy in higher education. Such demands have been launched for years by associations from the higher education sector and they are certainly justified with respect to the support of excellence.

Measures of this kind are suited to streamline the study of the highly gifted and to enable rapid progress according to their aptitude and abilities. Most of all, these measures may serve to improve the quality of degree courses and thus the quality of graduates.

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