



Report

Results of the doctoral students' survey 2008

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Doctoral Students'

Survey 2008

Results of the Doctoral Students' Survey 2008

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Imprint

Methodological profile

Survey sent to: all ETH Zurich doctoral students

Method: survey carried out electronically

External partner: Kunz & Huber and LINK

Requested by: ETH Executive Board

Task force: Cuno Künzler (POE), Adrian Huber (POE), Christoph Niedermann (Rector's staff), Anders Hagström (Marketing), Björn Koch (Doctoral Administration), Anke Neumann (AVETH), Daniel Huber (Kunz & Huber)

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Editorial

Dear doctoral students,

During Summer 2008, ETH Zurich conducted a survey for both ETH employees and doctoral students. The questions were compiled in close collaboration with ~~AVETH~~, Association of Scientific Staff at ETH Zurich, and were monitored by my predecessor. Hence, AVETH has been given the opportunity to express their perspective on the results and to identify the fields of action which need to be addressed.

Amongst others, ETH Zurich would like to thank the doctoral students for their excellent performance. They work meticulously in research and contribute considerably to tutoring the students. In this respect, their opinion is valuable to maintain current standards and to shape the future development of our university. I thus express my thanks to everyone who participated in the survey and voiced constructive criticism.

Overall, feedback from the doctoral students at ETH Zurich has been positive: They are satisfied with the conditions for doctoral studies at ETH and their reasons for carrying out a doctorate here are understandable. Yet, standards can be raised, and, in this regard, the following three fields of action have been identified:

Mentoring during doctoral studies: Many doctoral students indicate that the professors, i.e., their supervisors, act as their mentors. Other important mentors are senior scientists, scientific adjuncts ("Oberassistenten"), and post-docs. The quality and quantity of mentoring are, however, rated very differently.

Teaching assignments: Even if unevenly distributed, the demands posed by teaching are kept within reasonable limits. Teaching is mostly depicted as being an enriching experience, but also results in time loss and can prove demanding.

Integrating doctoral students: Doctoral students identify primarily with their own research group, but less with the institute/laboratory, department, and the ETH, particularly in the case of doctoral students who did not study here.

Changes are seldom brought about by one group alone. Usually, the problems are many-faceted and only a united effort of all parties involved can result in attaining these objectives. In this respect, may I encourage you to continue giving feedback and input, as has always been the case at ETH.

Yours faithfully,

Prof. Thomas Vogel, Prorector for Doctoral Studies

Doctoral students' survey

Considering the approach adopted and when compared with other surveys, the return rate can be regarded as satisfactory.

Purpose and procedure

During Summer 2008, a survey for doctoral students at ETH was carried out for the first time¹. Doctoral students were asked to make a statement about their doctoral studies and their work-life situations. The survey was sent to doctoral students employed at ETH Zurich and to those not employed by ETH, implementing an external dissertation.

The questionnaire used was structured on the life-cycle of a doctorate and contained questions about commencing the doctorate, the dissertation, the doctoral students' lives, and completing the doctorate. The survey was only carried out electronically.

The returned surveys were summarised and evaluated mainly at ETH level.

Participation

Of the 3066 doctoral students at ETH Zurich who received the questionnaire, 1180 doctoral students took part in the survey, which corresponds to a survey return rate of 38%.

Considering the percentage of doctoral students who are not employed, the response rate overall can be regarded as satisfactory.

	no. of questionnaires distributed	no. of questionnaires filled out	return rate
Total	3066	1180	38%
employed doctoral students	2336	973	42%
external doctoral students	730	207	28%

Table 1: Doctoral students' survey return rate according to status

When comparing the individual departments, there are considerable differences in the survey return rate.

¹ The same survey also examined the work situation of ETH employees. The results were published in a separate report.

Main results of the survey

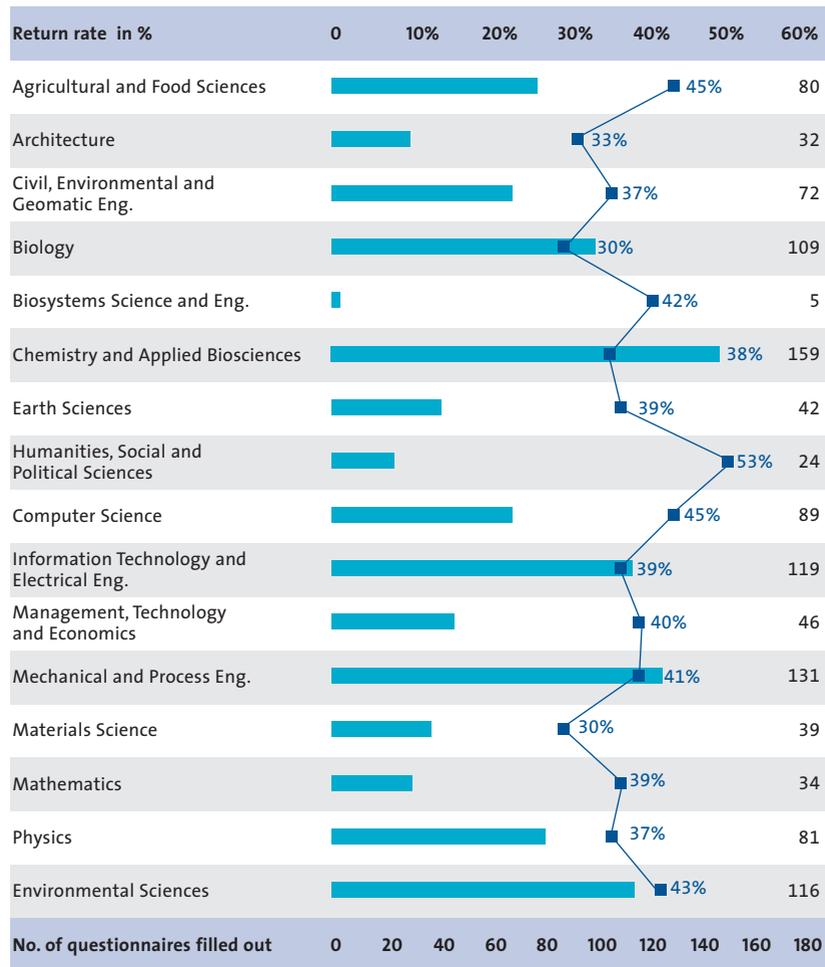


Fig. 1: Spot checks and survey return rate according to department

■ No. ■ return rate

Doctoral students come to ETH Zurich because of its excellent reputation and the high level of research carried out by its professors.

Selecting ETH Zurich

While one third of the doctoral students decided to carry out their doctoral studies at ETH Zurich, the other two thirds considered going to at least one other university, among which are the ETH's biggest competitors: École Polytechnique Fédérale de Lausanne (EPFL), Massachusetts Institute of Technology (MIT), the Technical University of Munich (TUM), and, more locally, University of Zurich.

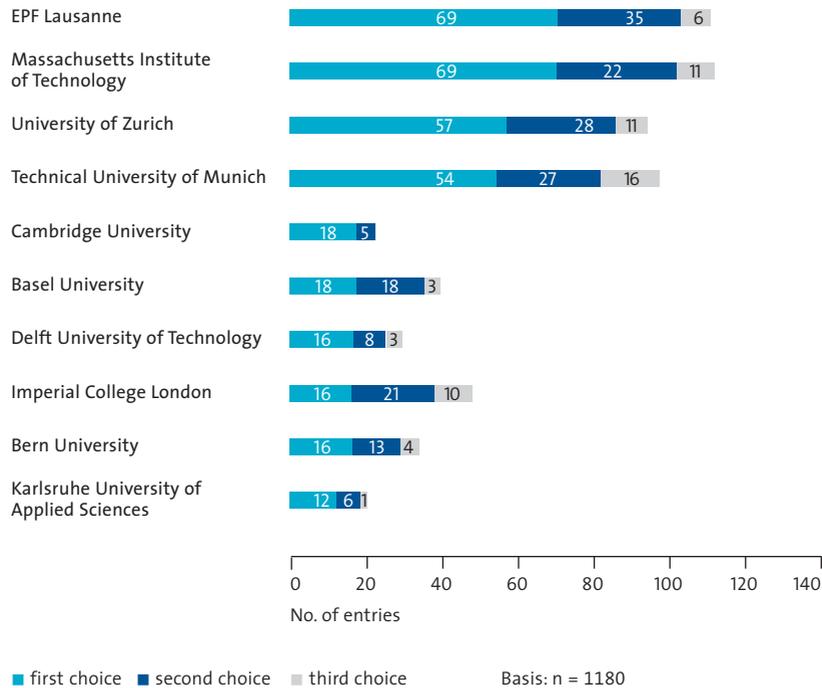
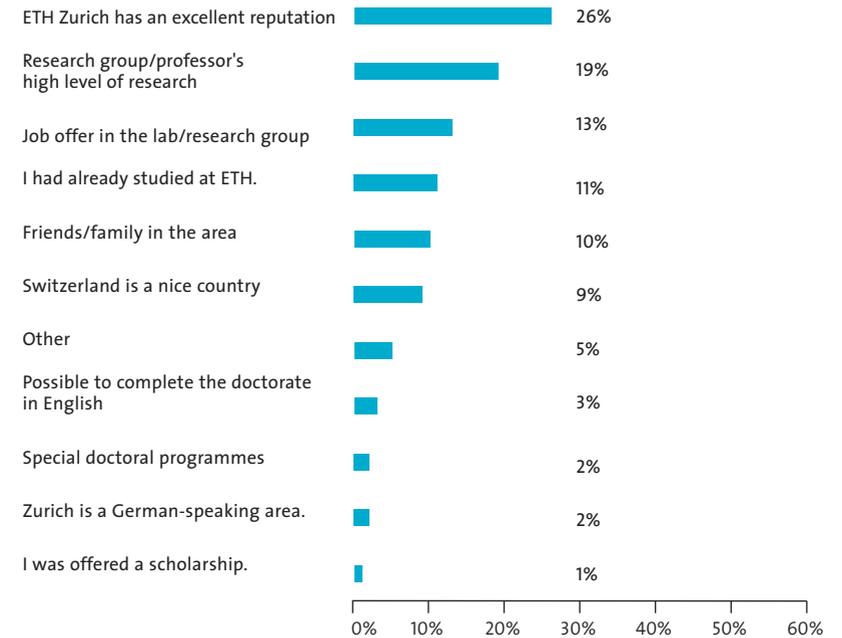


Fig. 2: Other universities considered apart from ETH (Question: What other universities did you consider (first/second/third choice?))

The decision to pursue doctoral studies at ETH Zurich is mostly linked to the university's excellent reputation or the research group/professor's high level of research.



Basis: n = 2901 entries

Fig. 3: Reasons for carrying out a doctorate at ETH Zurich (Question: What were your main reasons for deciding to take up doctoral studies at ETH Zurich?) (max. 3 answers)

Commencing the doctorate

When doctoral students come to Zurich, the majority of them do not encounter any or only minor problems in being promptly issued with a student card, a work permit, and, if required, a visa. Finding an apartment is certainly more difficult for almost half of the doctoral students, since Zurich has too few apartments and doctoral students from abroad find flat-hunting here very challenging.

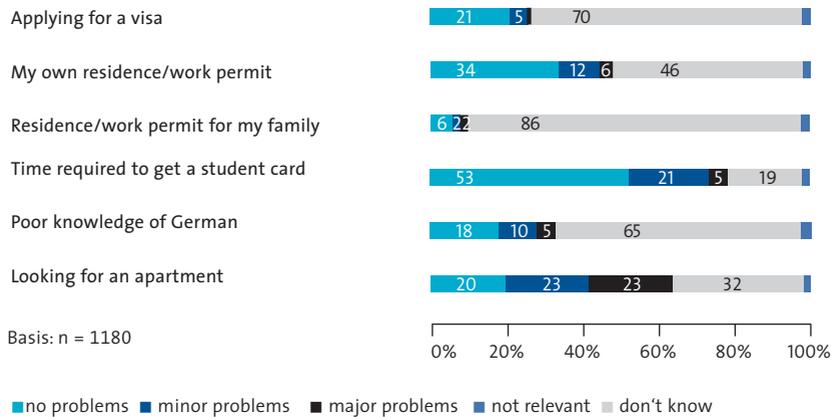


Fig. 4: Difficulties and problems (Question: Did you encounter difficulties with the following aspects?)

Incoming doctoral students feel a warmer welcome is extended to them by their research group/laboratory than the general welcome extended by ETH Zurich.

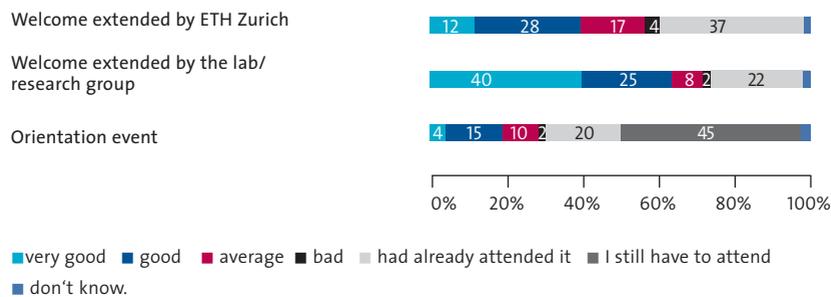


Fig. 5: Rating of the first days spent at ETH (Question: How were your first days at ETH Zurich?)

Satisfaction with doctoral study conditions

Generally speaking, doctoral students are very satisfied with the conditions for carrying out doctoral studies at ETH Zurich: 86% of the doctoral students are very satisfied or satisfied.

The majority of doctoral students are satisfied with the conditions for doctoral studies. There are, however, notable differences between the departments.

Basis: n = 1180

■ I fully disagree
 ■ I partially disagree
 ■ I partially agree
 ■ I fully agree
 ■ don't know

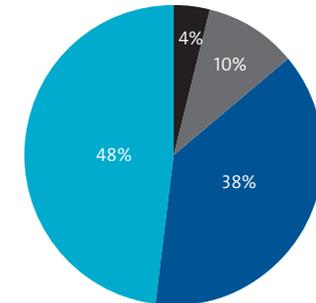


Fig. 6: Satisfaction with doctoral study conditions (Question: How would you rate the following statement? Overall I am satisfied with the conditions for carrying out my research and doctoral studies.)

Doctoral students consider the infrastructure at ETH (research infrastructure, access to scientific literature, IT/computer facilities and support) as being good. On the other hand, the conditions influencing mentoring have been rated less positively: Only 67% of the doctoral students rate the guidance from and interaction with other scientists as being very good or good.

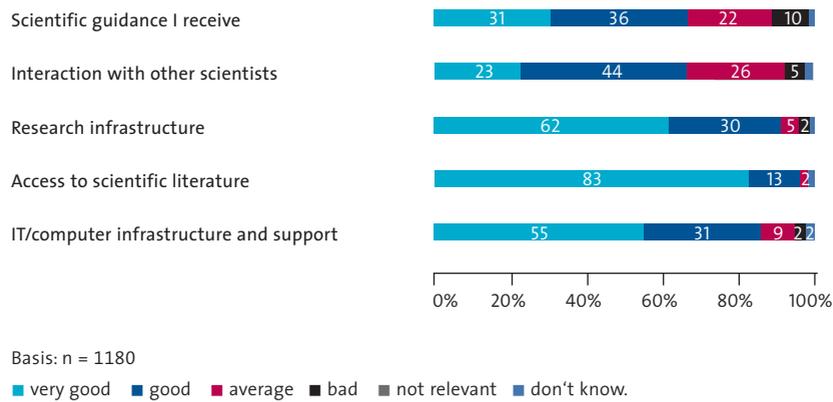


Fig. 7: Quality-specific conditions of the doctorate (Question: Please rate the quality of the following aspects.)

The conditions influencing mentoring are evaluated less positively than the infrastructure at ETH.

Comparing the status of doctoral students shows that those who are employed at ETH are slightly more satisfied with their situation than external doctoral students. The same tendency is evident when regarding the specific research conditions. There are only some marginal differences between internal and external doctoral students. Generally speaking, not working directly at ETH is not regarded negatively. Of the 12% of the doctoral students working externally on their dissertation, half of them rate their situation as positive and the other as negative. Both of these groups either praise or criticise the contact/interaction they have had.

The good working conditions, high level of research, and its excellent reputation are the main advantages in pursuing doctoral studies in pursuing doctoral studies at ETH Zurich.

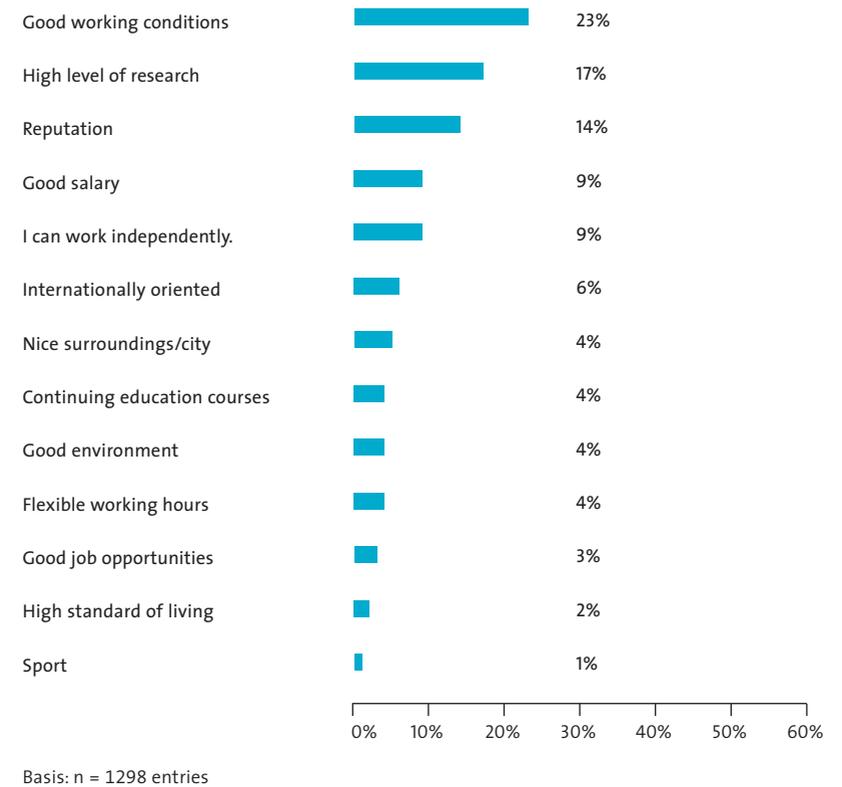


Fig. 8: Main advantages in pursuing doctoral studies at ETH Zurich (Question: In your opinion, what are the main advantages/positive aspects in pursuing doctoral studies at ETH Zurich?) (multiple answers)

Mentoring and teaching

Half of the doctoral students are mentored by their thesis supervisor; only a good one third is mentored by another person. In 60% of the cases, the mentor is a professor. 13% of the doctoral students, however, have indicated that they do not get any adequate scientific guidance.

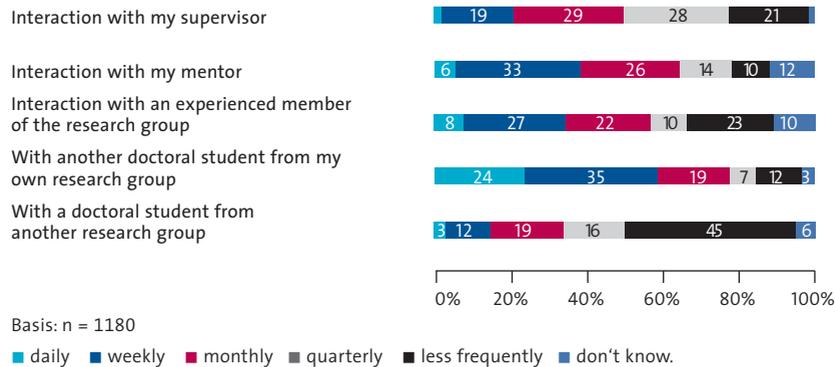


Fig. 9: Frequency of interaction/scientific discussion (Question: How often do you discuss your doctoral project with ...?)

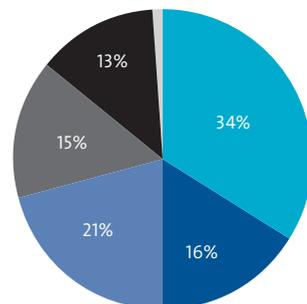
There is considerable difference in how mentoring during the doctorate is perceived.

Question: Who acts as your mentor during your doctoral studies? (single answer)

Basis: n = 1180

I am mentored:

- ... mostly by my thesis supervisor
- ... partly by my thesis supervisor, partly by other scientific co-workers
- ...occasionally by my thesis supervisor; mostly by other scientific co-workers
- ...almost always by other scientific co-workers
- inadequate scientific guidance
- don't know



Question: What is the function of your main mentor? (single answer)

Basis: n = 1180

Mentor's function

- Professor
- Head of laboratory, scientific co-worker, senior scientist
- Scientific adjuncts ("Oberassistent"), post-doc
- Other doctoral students
- ETH external experts
- don't know

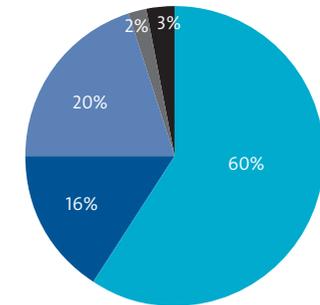


Fig. 10: Mentoring of the doctoral thesis

Concerning the workload for the doctorate, 13% of the doctoral students work more than 39 hours a week, while more than half work regularly every evening. The workload of employed doctoral students is slightly higher than that of those working externally.

The working time can be divided up as follows: two thirds are spent on research and 14% on teaching. 85% of the doctoral students have indicated that the different duties are divided up fairly within the team. In general, teaching is evaluated positively. However, almost one half of the doctoral students, who rated the time spent on teaching positively, regard it as being time-consuming and a disruption to their work. 46% feel that they are insufficiently prepared due to lack of time or inadequate pedagogic guidance.

Question: During the last semester, how much time did you spend in a normal working week on the duties listed below? (single answer)

Basis: n = 973

- Working on your doctorate
- Attending courses
- Teaching activities
- Other
- Don't know.

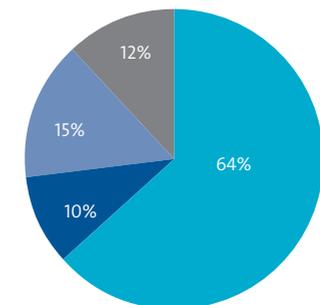


Fig. 11: Duties of employed doctoral students during the doctorate

Question: Is the time spent on research, teaching and administrative duties divided up fairly in your group? (single answer)

Basis: n = 973

- yes
- mostly yes
- no
- don't know.

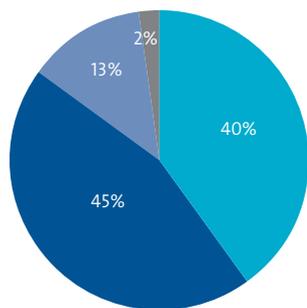


Fig. 11: Duties of employed doctoral students during the doctorate

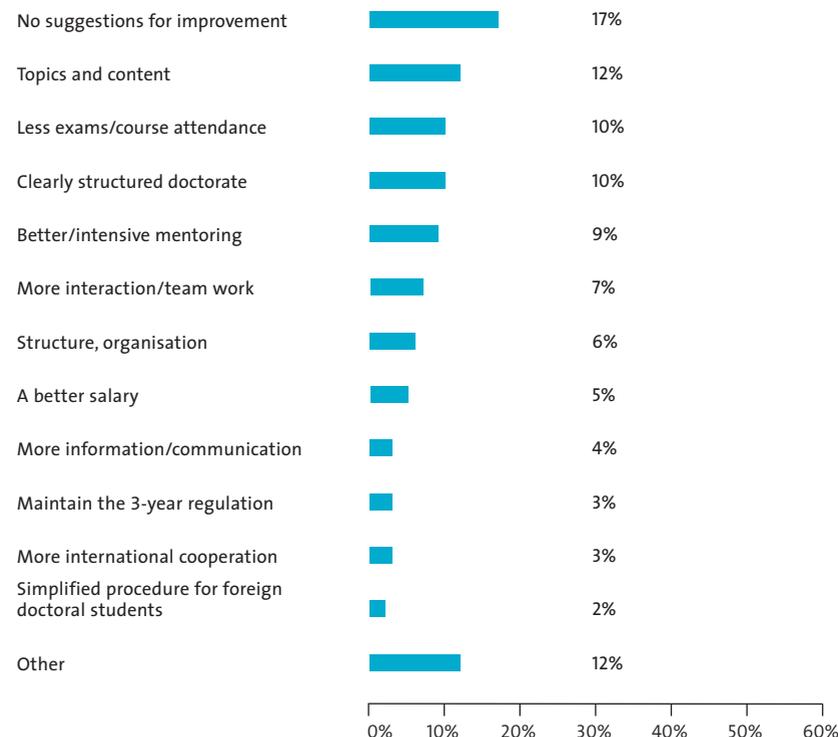


Basis: n = 519 entries

Fig. 12: Suggestions for improving research and teaching (Question: What could be done to improve or facilitate your research and teaching duties within the framework of your doctorate at ETH Zurich?) (multiple answers)

Doctoral studies

25% of the doctoral students follow a doctoral programme. The other doctoral students can combine their own study programme. The majority rate the opportunities to attend courses and the credits to be acquired as being appropriate. They are also satisfied with the range of courses and the freedom of choice. Credits are mostly acquired by attending courses in one's own research area. Doctoral students would like to have more courses on specific scientific topics.



Basis: n = 246 entries

Fig. 13: Suggestions for improving doctoral studies (Question: Do you have any other suggestions for improving doctoral studies at ETH Zurich?) (multiple answers)

Origin and integration of doctoral students

Despite ETH Zurich's international character, almost one half of the doctoral students who took part in the survey are Swiss, while one third comes from Germany. Accordingly, 82% of the doctoral students speak German as their native language or at least speak it at an advanced level. Doctoral students whose knowledge of German was poor attended a German course when they began working. The level of English spoken by 93% of the doctoral students is at least advanced.

Nine out of ten doctoral students feel well or very well integrated into their research group, and feel respected and supported by their team members. Integration is noticeably better into the immediate group than within ETH Zurich and the scientific community. At least every fifth doctoral student feels badly or very badly integrated at university level. When comparing the origins of doctoral students, Swiss and German doctoral students feel slightly better integrated into ETH Zurich than those from other countries.

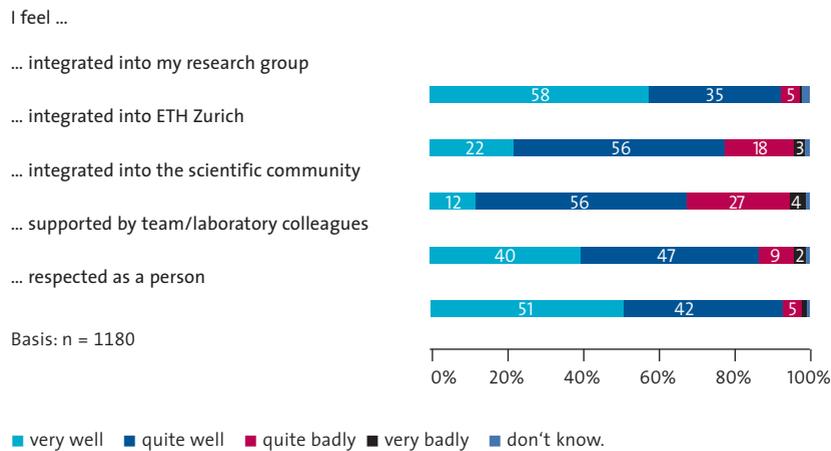


Fig. 14: Integration, support and respect (Question: Do you feel...?)

The majority of doctoral students feel well integrated into their working environment.

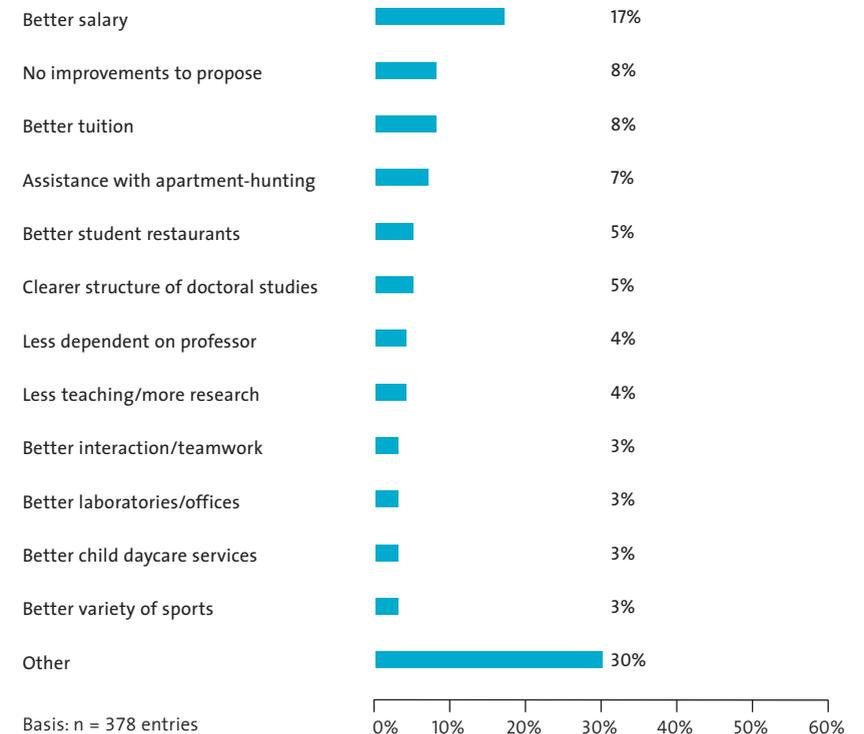


Fig. 15: Suggestions for improving the lives of doctoral students (Questions: How could ETH Zurich help to improve your life as a doctoral student?) (multiple answers)

Completing the doctorate

Concerning career planning upon graduation, the doctoral supervisor clearly plays a more important role than other career advisory services. However, his/her contribution has been evaluated ambivalently: The percentage of positive and negative ratings is equal, each being 40%. Upon graduation, working in the industry (47%) and pursuing an academic career (31%) have first priority. It would seem, however, that the future career of doctoral students is not very clear. In addition, almost half of the doctoral students still do not know if they will stay in Switzerland.

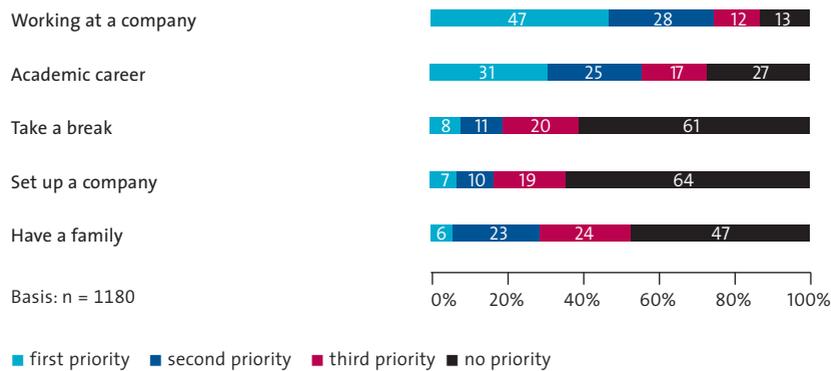


Fig. 16: Career prospects after the doctorate (Question: How do you envisage your career after your doctoral studies?)

The future career of doctoral students is rather broad. In their career planning, doctoral students are mostly supported by their supervisor.

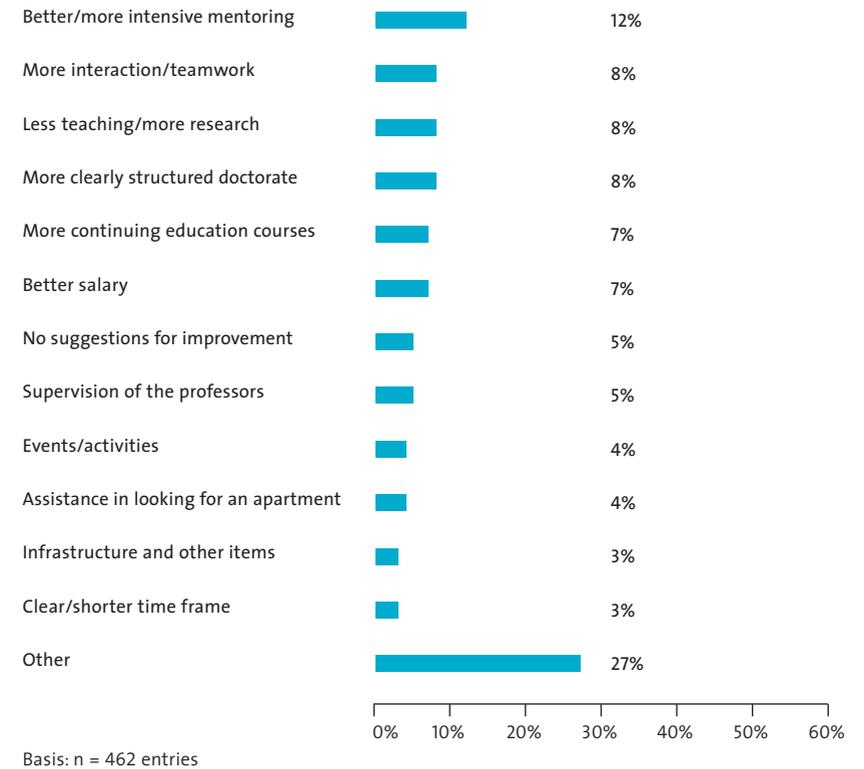


Fig. 17: Suggestions for improving the doctorate overall (Question: How do you think ETH Zurich can improve the doctorate overall?) (multiple answers)

Fields of action for ETH Zurich to address

Satisfaction with work-life balance is high at ETH Zurich. Doctoral students with children need a more flexible daycare service to accommodate very young children.

The main parties involved in a dissertation are and remain the doctoral students and their mentor. They form the backbone of the doctorate.

In this respect, ETH Zurich provides favourable conditions within an institutional framework and defines, when appropriate, uniform administrative processes. The departments, however, are responsible for quality control and the detailed regulations.

A detailed analysis of the survey reinforces the need to address the three fields of action mentioned at the outset. The proposed measures are to be implemented by the Prorector for Doctoral Studies and the Doctoral Administration in collaboration with the departments.

Mentoring during doctoral studies

Doctoral students want to have more extensive and intensive mentoring. Here there is potential for improvement on both sides (supervisor and doctoral student) by allocating and taking on responsibilities.

Institutional framework

The research plan is a good means of clarifying the research, applied methods, and mentoring at the outset of the doctorate.

Mentoring can also be improved by involving the co-examiners at an early stage and allowing them, for example, to assess the research plan.

In addition, the ordinance on doctoral studies enables doctoral students not only to document how their work is progressing, but every year they can also ask their supervisor for an annual written report on the progress of their research project.

Measures

The Doctoral Administration, in collaboration with the departments, strongly encourages the timely submission and approval of the research plan. It establishes clear-cut relations by listing the designated co-examiners.

Teaching is mostly experienced as being positive. Depending on the department, its scope is, nevertheless, very different. Many doctoral students are dissatisfied with the lack of didactical support and how teaching is poorly esteemed by their supervisor.

Institutional framework

Doctoral studies provide the opportunity of following courses in the area of didactics.

Measures

Enhancing the training of doctoral students in the area of teaching is a defined goal at ETH Zurich and is supported by relevant professorship appointments.

Doctoral students feel well integrated into their research group. Their bond to ETH Zurich could, however, be strengthened. Integrating into a scientific community should become easier as the doctorate progresses. In this regard, supervisors and doctoral students are equally challenged.

Institutional framework

The departments have the possibility of enlarging the circle of contacts with other scientists by elaborating the individual doctoral studies and structured doctoral programmes.

Despite the distinct differences between the disciplines represented at ETH, the regulations for doctoral studies are mainly standard. Furthermore, awarding the same title, Dr. sc. ETH Zurich, to all doctoral students promotes identity with ETH Zurich.

Measures

The Orientation Event, held regularly in collaboration with Human Resources, can be further optimised to accommodate the doctoral students' needs. The Prorector for Doctoral Studies is committed to encouraging a unified culture for doctoral studies at ETH Zurich.

AVETH's report on the survey (Association of Scientific Staff at ETH Zurich)

The doctoral students' survey provides a positive image of how doctoral students rate the conditions for doctoral studies at ETH. Internationally, ETH enjoys an excellent reputation, particularly regarding the good performance of its doctoral students. Young researchers find ideal conditions at ETH both in terms of its infrastructure and the scientific know-how of its faculty members. This is clearly reflected in the survey and can be valued as being one of ETH's greatest strengths. By and large, doctoral students are satisfied with the conditions for doctoral studies and esteem ETH as an employer and an institute of learning.

There are, however, three fields of action which AVETH considers to require attention. In this respect, AVETH would like to present its ideas and seek to achieve sustainable improvements.

a) Mentoring doctoral students

The survey demonstrates the considerable differences at ETH regarding the mentoring of doctoral students which AVETH also regularly experiences. While a percentage of doctoral students are well mentored and interact with their supervisor on a weekly or even a daily basis, one quarter indicate that they interact with their supervisor less than four times a year. It is more alarming, however, that 13% of the doctoral students do not have any scientific instruction.

Mentoring during the doctorate is mostly guaranteed by a professor or senior scientist. However, the number of permanently employed senior scientists has declined over the years, increasing the hours of mentoring undertaken by professors. This results in supervisors often having to delegate mentoring to their post-docs, which is not an ideal situation, since a post-doc's duties at ETH are basically not geared towards mentoring. Furthermore, the duration of a post-doc is considerably shorter than a doctorate at ETH and post-docs, who are just embarking on their career, should concentrate primarily on their own research.

The request for better mentoring should not be misunderstood as an attempt to try and shirk responsibility. It is essential that every doctoral student can solve scientific problems and be a good organiser, only contacting his/her mentor, when necessary, for scientific advice. This requires that the mentor can be easily reached, which may prove difficult in view of the many duties professors have at ETH: teaching, applying for funding, writing reviews, handling consultations, attending committee meetings, and managing their group.

b) Preparing to teach

Almost one half of the doctoral students indicate that they are not adequately prepared for teaching. Although it is possible to attend didactic courses at ETH, performance in teaching has no influence on successfully concluding the doctorate. Yet leading an exercise hour is an excellent platform to practise the transfer of knowledge, and communicate solutions and concepts. One of AVETH's goals is to reinforce this idea amongst the doctoral students. Moreover, the school, lecturers, and mentors must allow time and space for improvement, and also provide incentives to promote the quality of teaching.

c) Integrating doctoral students

The last field of action concerns the poor integration of doctoral students into ETH and their lack of identity with the whole university. This is all the more surprising, in view of the fact that most doctoral students decide to do their doctorate here because of the university's excellent reputation. Most doctoral students are well integrated into their research groups, but have little contact outside that immediate group. To improve this situation, AVETH has begun organising events for doctoral students from all ETH departments, and would welcome any initiatives taken by either the students or the Executive Board.

To conclude, the survey has shown that overall most doctoral students are satisfied with the conditions for doctoral studies at ETH. There is, of course, always room for improvement.

Roman Kappeler and Nadine Schüssler