



TUM Doctoral Candidates' Vision on the future development of the Technical University of Munich

Statement on the "Exzellenzinitiative" 2024



TUM Graduate Council

Abstract

The German federal and state governments utilize the Excellence Strategy to promote outstanding universities. Since 2006, TUM has continuously been honored with the title "University of Excellence", which constitutes the TUM as one of the best universities in Europe. With the Agenda 2030, TUM has set itself a comprehensive strategy for the sustainable and future-proof development of the university. From lifelong learning, through human-centered engineering to new and personalized forms of teaching. The list of achievements is extensive, but so are the challenges. The success of the "TUM Excellence Strategy" depends on the people who turn these ideas into reality. Doctoral candidates play a significant role in carrying out these responsibilities. Especially, teaching and scientific research is impossible without the enormous contribution of doctoral candidates. It is therefore necessary to incorporate the needs of doctoral candidates into the Excellence Initiative. In the following section, the TUM Graduate Council proposes the three most important improvements necessary to achieve these shared goals. Excellent supervision, good working conditions, and inter- and transdisciplinary colloquiums are indispensable prerequisites for a successful doctorate.

1. Excellent Supervision

Current State

Currently, the perceived quality of supervision differs substantially among doctoral candidates. There are several examples of great supervision as certified each year with the supervisory award. However, across the academic landscape, there are doctoral candidates that are dissatisfied with their supervision. To the best of our knowledge, there is no streamlined, mandatory training for professors in leadership and management skills in Germany. These are of great importance when working with and supervising doctoral candidates. Furthermore, the mandated feedback meeting is often not taken seriously. The TUM Graduate Council wants to tackle this problem with concrete actions, making TUM a pioneer in this regard.

Concrete Actions

There are various skills that are of high importance in the communication between a supervisor, and a team of doctoral candidates, post-docs and other scientific employees. These include general leadership skills, such as conflict management, clear communication, interpersonal skills, and empathy. In addition, more specific skills related to supervision are equally important, such as an understanding of the required guidance, the way of criticizing and celebrating successes, as well as managing expectations and work time including flexible time for family responsibilities, holidays or sick leave. To equip all supervisors with these skills and ensure comparable requirements for different doctoral candidates at TUM, the Graduate Council suggests the following:

- In order to define a “good” interaction between supervisors and doctoral candidates, a **Code of Conduct** clearly points out how these two parties should treat each other.
- To equip the supervisors with the required skills, the already existing **mandatory training** once they start their career at TUM should be expanded. This training includes various leadership and supervision skills and should convey the principles of TUM that are required for a successful supervision. Supervisors can complete this training in a predefined time, e.g., 2 years, after their start at TUM. They are then awarded with a “leadership and supervision” certificate. Additionally, this training should be recurring to update supervisors about changes in the code of conduct, for instance.
- To continuously ensure quality, **supervisors should be evaluated on a regular basis**, e.g., annually, by the doctoral candidates (and post-docs) under supervision. Based on the requirements for good supervision, the doctoral candidates should fill out an anonymized form according to a Likert scale that indicates their satisfaction with their supervisor. Examples of such statements are “*My supervisor is able to solve conflicts within the team*” or “*My weekly working hours regularly exceed the required*”. We propose to conduct the evaluation over an independent platform (e.g. evasys) to ensure that there cannot be drawn any connection back to the doctoral candidate and evaluate the data on a school-wide basis. These results are made available to the Graduate Council on a per-supervisor basis only in an aggregated manner and only if there are more than five participants per supervisor. Further actions only follow for professors that strongly deviate from the norm. If professors consistently score high on the related skills, they get feedback and are awarded for their outstanding supervisory skills as certified by the yearly supervisory award. If professors consistently score low, the Graduate Council gets in touch with the doctoral candidates and discusses potential next steps for intervention.

2. TUM General Guidelines – Funding and Working Conditions

Current State

The current state of compensation for doctoral students is complicated, particularly in Germany, where employment is not coupled to the degree itself. This opens up pathways for abuse by supervisors, where work not related to the dissertation project takes up a large majority of the time of doctoral candidates. The TUM supervision agreement merely suggests a discussion between supervisor and doctoral candidate about the topic. An additional major problem is the pay gap between scholarship holders and contract holders. The scholarship compensation lacks behind the compensation for contract holders and comes with additional drawbacks. This includes not paying into pension, and self-paying for social and health insurance and not getting Tagegeld for their business trips. A large variety of administrative tasks are significantly more complicated and often take more time for scholarship holders (i.e. travel compensation). Scholarship holders are also not directly represented by the unions and therefore have no way of negotiating compensation. All of this is despite the fact that scholarship recipients are often treated the same as employed doctoral candidates by their supervisors.

In addition to the discrepancies between employed doctoral candidates and ones with scholarships there are also large differences amongst employed doctoral students. Even though in general TUM offers comparatively high contract percentages (this is not at all sufficient considering the immensely high cost of living in Munich), the percentage amount differs significantly in between disciplines. Particularly in the social sciences it is often common practice to have no contract at all (scholarships are also hard to attain in these disciplines). In biology, chemistry and social sciences 30-50% contracts – or no compensation at all – are still commonplace, resulting in wages below the poverty line for Munich. This is in contrast to other disciplines, such as engineering, where 100% contracts are the norm. Some supervisors also require the thesis to be written once the contract has ended, forcing doctoral candidates into a time of unemployment, while still working on their thesis. This significantly decreases the quality of thesis work, as candidates have to find other means of income to afford living.

Concrete Actions

The general guidelines at TUM should be adjusted to more fairly represent doctoral candidates independent of their funding source. The departmental duties required by each of the schools from their candidates should be transparent from the start of the dissertation project. Special care should be taken to make sure that the time required for such duties is similar in between schools and not burdensome for the candidates. A school and TUM wide collection of additional funding sources would alleviate a large amount of work for candidates. The allocation of funding by measure of publication count is widely accepted to be harmful to the quality of scientific research. TUM should strive to provide funding according to the quality of research, not the quantity, while also supporting people with disadvantageous socio-economic backgrounds. In general, TUM should also make sure that funding for the entire dissertation project can be secured, i.e. at least 3 years ideally 4, both for scholarships and contracts. With very few exceptions (e.g., special doctoral programs such as Medicine) **dissertation projects without any funding source should not be a regular part of TUM.**

To resolve the differences between scholarship holders and employed candidates, TUM can provide 25% contracts for students with scholarships. This also alleviates the issue of having to



cover insurance. A TUM representative “union” of scholarship holders may be able to negotiate with scholarship providers to adjust the payments to the E-13 standard more regularly. Advanced payments should be re-introduced to scholarships and an effort should be undertaken by TUM and supervisors to enable equal access to travel funds, infrastructure and other resources regardless of the funding source.

In general, the preferred way to do a doctoral project should be an employment contract. Again, with very few exceptions, a **minimum contract percentage of 75% E-13 across TUM** should be the mandated, 80-100% contracts should be the norm especially considering the fact that many doctoral candidates work more than the contract stipulates in the first place. It should be more common practice to supplement contracts from third party funding sources to increase the percentage to 75% or ideally 100%. The inexplicable percentage guidelines that differ in between disciplines from DFG should generally be disregarded when giving out contracts at TUM. The time spent for work performed for the supervisor vs. time spent on the dissertation project should ideally be mandated by the employment contract and ideally be less than 50% for the supervisor. It should be possible to get 100% of the travel cost for expensive trips (i.e. above 500€) in advance, also for the PhD Internationalisierungsmassnahme. This is especially important for doctoral students as paying thousands of euros in advance even with 75% contracts is often impossible. For late reimbursements a compensation fee (i.e. 10%) should be awarded, especially as travel reimbursements often take longer than the 6-month deadline for applying for the reimbursements.

3. Colloquium for Doctoral Candidates

Current State

Currently, the research of doctoral students and the feedback they receive is restricted to their fields. In extreme cases, the discussions even stay just within their respective chair. The disciplines are quite separated, even though they often share and translate methodologies and research from other areas.

Concrete Actions

To accelerate future research, interdisciplinary research and collaborative work shall be catalysts. Facilitating collaboration spanning different research areas during the dissertation will prepare doctoral students for later stages in their careers to continue interdisciplinary work. Further, it will enable growth and connections already during the dissertation project by giving and receiving feedback from peers. Thus, we propose to provide a joint platform among all doctoral candidates of the TUM for presentations of the dissertation project, in a colloquial format. This platform aims to benefit the doctoral candidates both in the short- and long-term through diverse feedback from peers of different fields, facilitate interdisciplinary research and collaborations among them, and shape a global mindset for future work and employment.

We envision the format of this colloquium to be handled as an official course, including SWS. The doctoral candidates need to apply with an abstract and short description of work-to-date, next steps and possible questions. These will be released to the other applicants to rate them amongst themselves, as the places will be limited per session (max. 10 participants). The number of parallel sessions is chosen to accommodate as many applicants as possible. The sessions would take place twice per semester: the first set for doctoral candidates after the first year and the other for doctoral candidates who have passed the second-year mark. After the participants have voted amongst themselves, the committee (possibly Doctoral Candidate Representatives) will sort the contributions by similar topics or methodologies to facilitate a fruitful feedback session. Thus, also professors can be contacted to support the session for input of different experience and quality, as well as appropriate Doctoral Candidate Representatives to chair the respective session.

In order to create an actionable plan for providing this colloquium platform, a committee must be chosen, as well as two project leads. The infrastructure must be provided by an official department of the TUM - the TUM Graduate School would be the obvious choice. All Graduate Centers need to be informed to officially announce the colloquium to their respective doctoral students. Finally, the set up with application, review and selection (for participants, hosts and professors), scheduling and room booking will take one semester for the first sessions to be offered. After one year (2 semesters) a retrospective evaluation for continuing this colloquium should be held by participants and the organizational bodies.