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Leadership in changing doctoral education

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Abstract

As a consequence of reforms in doctoral education, notably since the 2005 publication of the Salzburg Principles, doctoral schools represent the state of the art in contemporary doctoral education in Europe. They aim at supporting the collective vision and endeavour to ensure the personal and professional growth of doctoral candidates, the socialisation of doctoral candidates in the scientific community and their preparation for future careers in a knowledge society. But how is it possible that this new structure is not only perceived as an additional, perhaps dispensable bureaucratic layer that disrupts the traditionally very private relationship between supervisor and doctoral student, but is recognised by the latter as support and added value. We argue that this is directly related to the way the doctoral schools themselves are set up and governed. In this article, we use the example of the University of Vienna to illustrate how different leadership styles were used by the university management to ensure faculty buy-in. In particular, we point out that the mix of transactional leadership, which incentivises and rewards certain behaviours, and transformational leadership, which also encourages initiative and self-responsibility, has contributed to the fact that the doctoral schools at the University of Vienna, after only a short time in existence, are recognised as adding value; which has had an immediate positive impact on the situation of the students in particular, but also on the awareness of doctoral education in general.

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1 | INTRODUCTION

Good leadership and university management are essential to pave the way for reforms, implement them and create a common understanding, maybe even a common vision of good doctoral education and its institutional framework, including a governance structure that supports this vision. It is perhaps one of the biggest challenges university leaders face, to engage their peers in a reform that sometimes does not necessarily lead to immediate personal benefits for individual actors. Though an incentive-driven approach may lead to quick results in the short term, to establish a sustainable cultural change, and this is undoubtedly the case for doctoral programmes at present, central actors must become involved in the process and ideally to an extent that makes them ambassadors of this vision. Moreover, it is about convincing university management and faculty to a point where it becomes their own vision. This, in our view, is most likely to be achieved when a culture of co-creation is practiced.

This article discusses different concepts of leadership, focusing in particular on the concept of Full Range Leadership by Bass and Avolio and how it can be applied to university management. Using the University of Vienna as an example, we illustrate how the change from individual supervision to the development of doctoral schools has taken place, what approaches the university's leadership has taken to implement this change, and to what extent it contributes to a sustainable cultural change in doctoral education. Over a period of more than 10 years, a gradual reform process took place, including five major steps, which recently resulted in the establishment of 16 doctoral schools, covering almost all disciplinary fields at the university.

For the last 20 years, there has been a declared will on the part of politicians, policymakers and universities to enable doctoral candidates and graduates not only to pursue academic careers but also to contribute to the further development of the knowledge society as well-trained researchers. It became part of the universities' mission to train and empower knowledge workers and innovators to make positive contributions to the challenges facing our future societies. In his opening speech at the High Level Conference on Marie Curie Actions (2010), President Barroso linked prosperity and growth to investment in research and development. In conclusion, he stressed the need for at least one million new research jobs in the EU to achieve this goal. When he stressed the importance of *nurturing talents* for future growth and referred to the Europe 2020 Strategy (Barroso, 2010), he sent a clear signal to policy makers and universities alike.

Policy makers are more interested than ever in universities, in their role in society and in the way universities organise the education of young researchers (Kottmann, 2011, p. 29). Another notable development was the creation of the European Higher Education Area (EHEA) in order to continuously adapt EU higher education systems as part of a process involving countries, institutions and stakeholders in Europe to improve the employability of students. This is evident, for example, in the Bucharest Communiqué statement that *"Today's graduates need to combine cross-cutting, multidisciplinary and innovative skills and competences with up-to-date subject-specific knowledge in order to contribute to the wider needs of society and the labour market"* (Bucharest Communiqué, 2012, p. 2). Doctoral education is the interface between research and teaching and is therefore rightly regarded as a core mission of every university.

Until the early 2000s, however, doctoral training was determined by the close relationship between supervisor and supervisee, the master and his apprentice in the classical Humboldtian sense. Influencing this *private relationship* was not on the agenda of universities. For example, for a long time the duration of studies was not really considered, not to mention that universities did not react to it. An apt summary of this is provided by Stan Taylor and colleagues.

> Supervision was seen as a private relationship between consenting adults; candidates had to complete a research project, write it down in the form of a dissertation, and defend it in an oral examination; and since the aim was to create new knowledge, completion took as long as necessary.
>
> (Taylor et al., 2018, p. 8)

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One could almost say that the role of the university was limited to providing the formal framework for doctoral training and organising the academic graduation ceremony. Moreover, the careers of the graduates were not followed, nor was there any institutional interest in being informed about them.

It is therefore not surprising that the changed context in which universities now have to operate and the changed framework conditions for universities have not left doctoral education untouched. We would even go so far as to say that we have witnessed a paradigm shift in doctoral education. The cultural change is reflected, for example, in the change of terminology from student to early-stage researcher, in efforts to provide team supervision and in the preparation of doctoral students for a wide range of career paths.

Indeed, reforms are not only about creating structures that make doctoral education more efficient, in terms of the funds invested or time spent in the programme. The reforms also concern effectiveness, i.e., the extent to which the organisation and content of old-style doctoral education still meets modern demands placed on it from within and outside the scientific community.

The focus of the doctorate is no longer just on writing the doctoral thesis, but rather on the development of the individual; the young academic who is trained through research, conducting research, tackling societal challenges and embedded in international teams and equipped with a range of skills to embark on a career whether inside or outside academia. Walker et al. (2009, p. 9) describe doctoral education as a "*complex process of formation*" that goes beyond purely technical education in terms of knowledge and skills, which is admittedly also relevant. *Formation*, they write, *"points not only to the development of intellectual expertise, but to the growth of personality, character, habits of heart and mind and the role that the given discipline is capable of and meant to play in academe and society at large*" (Elkana, 2006, pp. 66, 80, in Walker, Walker et al., 2009, p. 9). This high aspiration for doctoral education, of course, goes beyond the task and sole responsibility of individual supervisors, transforming doctoral education into a collective responsibility of the university. Walker et al. go even further and state—provokingly—that "[…] *many students in many fields would greatly benefit from an alternative model of doctoral education in which apprenticeship is a shared function, and a reciprocal one, that fosters learning for both professor and student* [and refer to a number of] *wonderful examples of how it might look on the ground in programs* [they have studied]" (Walker et al., 2009, p. 14). In this way, they ultimately open the door to reforms that go far beyond purely structural adjustments, but also give an indication of what these changes could be used for.

With respect to doctoral education the establishment of so-called Doctoral Schools, sometimes also called Graduate Schools or Doctoral Centres, was seen as a suitable concept to professionally facilitate this change in doctoral education (Zinner & Kovačević, 2021). This has contributed to organisational structures that secure an ecosystem in which young researchers can prepare themselves for a career in and outside the university through research, while at the same time contributing to their own scientific output and that of their university. In the past decade, this development can be observed in many European countries and reflects the institutional responsibility for doctoral education. Doctoral schools and centres convey the central strategy of the universities for doctoral education and their views on what doctoral education should be about, how it should evolve, and what practical steps within the university are necessary to achieve these goals. However, in the reform processes, too little attention has been paid to another essential facet, namely that the doctoral schools should be a home for doctoral candidates, a place where scholarly integration takes place. From the scholars' perspective, the aim of doctoral education is also to turn students into *stewards of the discipline*, as Walker et al. (2009) explicitly emphasise. In their definition, a steward is someone who can generate new knowledge, critically preserve valuable and useful ideas, and responsibly implement these insights through writing, teaching and application. Moreover, stewardship also has an ethical and moral dimension and thus is a role that goes beyond an accumulation of achievements and skills. In the discourse on doctoral reform, much has been said about structured programmes, but at least as important is the culture of the intellectual community in which these programme contents are anchored (Walker et al., 2009, p. 10).

Doctoral schools should promote the multiple purposes of doctoral education, and the purpose needs to be continuously scrutinised and negotiated within the academic community and with external stakeholders.

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Obviously, good leadership in this regard is the key to success and involves at least two levels: (1) top university leadership to ensure appropriate framework conditions, and (2) leadership at doctoral schools to ensure that doctoral candidates can develop as young scientists in a range of different facets, as discussed above.

In this article, the University of Vienna is used as an example to illustrate the changes in doctoral education in the last 10 years. Before describing particular reform efforts in more detail, we contextualise the developments by describing new governance structures and the legal framework at the universities in Austria—characterised by efforts towards more autonomy in line with the New Public Management (NPM) rhetoric. Moreover, we show approaches that the university's leadership has pursued in order to encourage the academic community and supervisors to engage in the doctoral schools. Using Bass and Avolio's concept of a Full Range of Leadership (1990) as a theoretical framework, we illustrate how a mixture of transactional and transformational leadership styles has gradually changed the practice of doctoral education, although the process is not yet fully complete.

We consider the reform efforts in the doctorate as a change process which is leading to a paradigm shift in doctoral education. Indeed, the change involves different dimensions: first, a change of the institutional mission or goals; second, a change of the organisational culture; and finally, a change of the organisational structure and processes. To achieve a sustainable transformation, however, anchoring change in an organisation's culture is a key ingredient (Kotter, 1995, p. 67) and underlines the central role of, and major challenge for, leadership to effectively and convincingly engage university staff. Kotter (1995) points to two important factors for institutionalising change, which in the context of this paper can be translated for top university leadership as follows. The first factor is a conscious attempt to communicate to supervisors and candidates how the new approach, behaviours, and requirements contribute to improvement and add value. The second factor is to ensure that heads of schools and programmes personify the new approach and that their commitment is rewarded.

2 | THE CHANGING CONTEXT IN HIGHER EDUCATION GOVERNANCE AND LEADERSHIP

All changes related to doctoral education need to be seen in the context of the development of higher education systems as a whole (Zinner, 2019). Considering changes in the organisational and governance structures of universities in recent decades, Bleiklie and Kogan (2007) describe this as a shift in two broad conceptions of university governance: on the one hand, a republic of academics, and on the other, the university as a stakeholder organisation. Today, governance structures and legal frameworks give universities more autonomy. At the same time, they also increase their accountability. While in the past, decision-making was based on collegial decisions by independent academics, now "*institutional autonomy is seen as the basis for strategic decision-making by leaders who see their primary role as satisfying the interests of key stakeholders*" (Bleiklie & Kogan, 2007, p. 477).

We can observe that in many places, the executive management has been strengthened, while the power of advisory bodies and collegial governance has been weakened. Thus, the new governance structures not only altered the balance of power in universities, but also changed leadership roles and demands for a different understanding of leadership. The concept of NPM has been the starting point for many reforms and has found its way into universities (Bleiklie et al., 2011; Ferlie et al., 2008). The NPM approach places the leader, as CEO, at the university's top and places the achievement of agreed-upon goals vis-à-vis policy at the center of the effort. Target agreements are concluded between university managements and ministries and the binding nature of university goals has increased. At the same time, these goals can only be achieved through the performance of academics, professors and teachers, which puts university leaders in a challenging position. Though formally strengthened, leaders are confronted with the task of steering and transforming the behaviour of academics in line with these goals. This can only be achieved successfully, if the people involved either see a personal advantage or are convinced of the benefits, which shows the limitations of the NPM approach at universities. Of course, people who hold a position in a hierarchical organisational structure have ex-officio influence due to their legal management

power assigned to the position. This can sometimes be used to push through structural change processes or adjustments in rules and regulations. However, a paradigm shift, as we see it in doctoral education, requires a leadership that can influence or rather convince others through trust and conviction. It certainly is one of the major challenges of university management—to effectively and convincingly engage university staff in change and transformation processes. Leadership influence is not based on a specific legal authority, but on the professional and moral authority attributed to leaders by their peers, the faculty members.

In the scholarly literature, therefore, in addition to the NPM approach, the Network Governance narrative is also discussed (Bleiklie et al., 2011). It builds upon the cooperation and participation of many actors and promotes inclusion also in the sense of nurturing a peer culture in order to achieve change. Evidence of both narratives can easily be identified in the higher education system in Austria and has a direct impact; first, on how university leadership is perceived, and second, on how university leadership can be practiced.

To our knowledge, specific studies on academic leadership, especially beyond the US and other English-speaking countries, are still rare, although research is increasing (Scherm & Jackenkroll, 2017, p. 58). This applies in particular to change management processes such as the establishment of new structures, such as doctoral schools. In order to put the observed leadership approaches into an academic framework, we use a general leadership concept that is widely used and well established; namely, the Full Range of Leadership concept by Bass and Avolio (1990).

3 | TRANSACTIONAL AND TRAMSFORMATIONAL LEADERSHIP

The core of the Full Range of Leadership concept is formed by transactional and transformational leadership (Bass & Avolio, 1990). Transactional leadership is a leadership style characterised by clear rules, structures and goals. It is characterised by a clearly regulated exchange relationship between the leader and the person being led. One example is the performance agreement, which regulates what expectations are placed on the employee and derived from this, what financial or immaterial advantages or disadvantages are to be expected depending on the achievement of the goals. Furthermore, it is based on the idea of exchange. This leadership style is incentive-based and establishes an input–output relationship according to the principle of give and take, whereby motivation is extrinsic. Thus, it fits well with the NPM narrative. Goals to which the university has committed itself, for example, to a ministry, are broken down to lower hierarchical levels, sometimes to the level of the individual, through performance agreements.

Transformational leadership is a concept of a leadership style in which, by transforming the values and attitudes of those being led, a change in behaviour towards the long-term, overarching goals of an organisation is to take place. In contrast to the transactional leadership style, transformational leadership does not pursue a reward or punishment logic, but tries to intrinsically motivate employees by communicating a shared vision and engaging employees in this vision.

We mentioned earlier that we see the doctoral education reform as a transformational process that ultimately aims to shift the paradigm, from changing the mission to changing the culture and processes. Leaders can promote this process through a variety of means, with carrots and sticks, through new sets of rules or directives, or by persuading the scientific community to pursue and proactively shape change itself.

In the following, we illustrate reform steps in doctoral education by using the example of the University of Vienna. We relate the individual measures in the reform process to different leadership approaches. In general, we observe a mixed approach to leadership. With the long-term goal being a paradigm shift in doctoral education, a transformative approach is required, although initiatives have been incentivised by direct transactions that suggest a transactional approach.

The University of Vienna is the largest German-speaking university, and home to more than 3,500 doctoral candidates. It is a comprehensive university with a long tradition of more than 100 years of doctoral education.

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As a research university, doctoral education is a high priority at the University of Vienna. This is reflected in the development plan, which sets out the strategic orientation of the University of Vienna and "[...] *is also expressed by the considerable increase in the funds allocated to it in the course of the new university financing and the fundamental reform of the structure of education*" (University of Vienna, 2020, p. 39, translated from German by the authors). This strategy document also articulates the reform claim in concrete terms. "*As part of this reform, the University of Vienna has created flexible structures with doctoral schools that meet international standards and satisfy the highest quality demands.*" (University of Vienna, 2020, p. 39).

4 | DOCTORAL REFORMS AT THE UNIVERSITY OF VIENNA

In the past 15 years, the university management continuously developed governance structures and leadership roles that supported a cultural change in doctoral education. In retrospect, the reform was gradual and affected various dimensions but in essence, this reform took place in four identifiable steps. Taken as a whole, all four steps have made a lasting difference in doctoral education. We as the authors were involved in all steps in an advisory and supportive role, but as professionals rather than in academic leadership roles. Five members of the rectorate in their role as vice rectors shaped doctoral education and introduced measures related to the ongoing international debate. Each has set priorities driven by their own vision of doctoral education, which has of course also been shaped by their respective disciplinary backgrounds, academic careers and international experience.

The reform was guided by the national and international debate and goes back to the publication of the Salzburg Principles in 2005. The recommendations provided by the newly established Council for Doctoral Education within the European University Association (EUA) as well as other policy papers, such as the EU Commission's publication of the Principles for Innovative Doctoral Training to certain extent influenced the leadership in its decisions. Yet, they were limited by the national framework, given by the Austrian University Act.

With the implementation of the University Act 2002 and its entry into force in 2004, the University of Vienna became autonomous enough to significantly shape its doctoral programmes. Austrian universities, though, were still not able to implement qualitative access regulations for doctoral studies, a challenge that was only remedied with the amendment to the Universities Act in 2018. This situation resulted in the need to creatively test new forms of doctoral education. A first pilot in the reform was the establishment of so-called initiative colleges, doctoral programmes which were thematically relatively tightly knit and limited for a certain period of time. In these programmes doctoral candidates were recruited in cohorts, employed by the university, and supervised by teams while pursuing their doctoral projects within the thematic framework of the college. It was the first measure of structuring doctoral education with the assignment to address the issue of supervision and peer culture among the doctoral candidates. What sounds self-evident from a current point of view was quite radical at that time. At the University of Vienna, which in the tradition and self-perception of German-speaking universities was a professorial university (*Lehrstuhluniversität*), it was usual for professors to be given funds for doctoral candidates within the framework of their endowment, and to completely autonomously decide on the filling of these positions. In addition, contrary to some other countries, doctoral candidates in Austria are enrolled as *students* and are not employed at the University as early-stage researchers. In this respect, the joint advertisement and awarding of positions was a thoroughly radical step that established a discourse on quality and requirements for doctoral candidates. At the same time, the concept of individual supervision was also questioned, and team supervision was promoted.

The general idea was that the rectorate, as the highest governing body, would define the strategy and set the institutional framework, while the detailed structuring of respective programmes was left to the researchers. Thus, a mixed bottom-up and top-down process was initiated, which led to an open call for proposals for time-limited doctoral programmes, which were submitted by a consortium of supervisors and headed by a spokesperson. The initiative colleges, 12 in number, were selected by the rectorate based on an external review. In this

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single-blind review, independent scholars from outside Austria who were close to the respective disciplines were asked to evaluate both the quality of the participating scholars and the international competitiveness of the programme. The process increased both the acceptance of the decision and ensured that the programmes met the quality standards of the international scientific community. The latter also required the applicants to engage with the international discourse in doctoral education. On the part of the university leadership the commitment was incentivised through the financing of scholarships for the doctoral candidates as well as through increased visibility of the successful colleges. The initiative colleges were based on the models of doctoral funding of the Research Training Groups of the German Research Foundation and the doctoral colleges of the Austrian Science Fund. These are temporary doctoral programmes for the promotion of young researcher, which focus on the qualification of doctoral candidates within the framework of a thematically focused research programme and a structured qualification concept. Prerequisites are high scientific quality and originality of the research programme at an international level and the quality of the faculty. The study programme relates directly to the research programme, with innovative teaching and supervision elements that should go beyond the courses usually offered in doctoral studies.

In addition to this, there was a wish to anchor these programmes more firmly at the University of Vienna in terms of content and sending a clear internal signal that good quality in doctoral education is an institutional responsibility. From a contractual perspective, the rectorate concluded internal funding agreements with the individual spokespersons of the colleges, in which they in turn were granted extensive autonomy. The task of the spokespersons, in turn, was to ensure the commitment of the other supervisors, i.e., their peers. In a sense, doctoral supervision in particular was thus made more transparent, and good doctoral experience became a collective responsibility of the community, so that it is no longer just a matter of luck that supervisors and doctoral candidates manage to establish a professional supervisory relationship.

From a leadership style perspective, the transaction was that increased commitment on the part of supervisors as proponents of a college was rewarded with additional funds for scholarships and visibility within the university. On the other hand, innovations were stimulated, and grassroots initiatives promoted in a manner that was consciously tailored to local needs and circumstances by the proponents. For example, the Vienna Doctoral School of Philosophy started personalised induction sessions and started doctoral work in a progress seminar to foster exchange, and set up an internal information-sharing platform for its members. The Vienna Doctoral School in Chemistry set up a *New Ideas* funding scheme for PhD candidates which inspires and supports new collaborations between different groups within the doctoral school. The Vienna Doctoral School of Social Sciences, in turn, has established coaching for *writing your doctoral thesis*, as well as organised writing retreats and workshops on *publication strategies*. This way, cultural changes were not imposed top-down, but rather brought about through a discourse within the scientific community. This first step in the reform of doctoral education at the University of Vienna thus, is a clear example of a transformational leadership approach.

The second major reform step took place following a minor amendment to the University Act in 2009, which stipulated that doctoral programmes must have a duration of three years instead of two. This was actually only a response to the existing reality. However, the University of Vienna took this as an opportunity to adapt the statutes and thus make fundamental structural specifications for all doctoral programmes, and to change the governance of doctoral studies. In accordance with the autonomy the universities we have in Austria, the statutes define the internal rules and are the most important regulation after the University Act. The reform included several measures to ensure the quality of both research and supervision of doctoral candidates and the fostering of shared and institutional responsibility. It included e.g., the mandatory submission of a research proposal within the first year, and its public presentation, a compulsory dissertation agreement—signed by the doctoral candidates, their supervisors and the directors of the doctoral study programme—as well as mandatory annual progress reports. This meant that, for the first time, faculty members were also informed in a structured way about the research carried out by doctoral students in the respective doctoral programmes, in whose supervision they were not personally involved. This led to greater visibility of doctoral students in the community and increased

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mutual engagement in the promotion of young researchers. In addition, the statutes stipulated that supervision was not part of the assessment of the dissertation. What was already an obvious rule for non-German-speaking countries was a considerable step for the University of Vienna and required a lot of persuasion, especially among the academic community. The change in the statutes required consensus between the Senate, as the democratically legitimised body of the University of Vienna that is primarily in charge of study affairs, and the Rectorate. During the whole reform process and the negotiation with the senate, references to international practices and to the Salzburg Principles proved to be quite helpful. For example, in the introduction of supervision agreements, the distinction between peer review and supervision, or the establishment of the transferable skills programme.

Another change concerned the governance structure. Dedicated programme directors were appointed for the doctorate, separating the management responsibility for the doctorate from the bachelor's and master's degrees. In addition, the administrative responsibility for the doctorate was moved from the Vice Rectorate for teaching and study affairs to the vice rectorate for research, in order to emphasise the research character of the doctorate. With the establishment of the study programme management, the topic of quality assurance in the doctorate was shared among several people and brought into the disciplines without creating silos. Moreover, it created a culture that allowed to regularly exchange ideas on the topic of doctoral education and to discuss relevant structures and measures for continuous improvement across disciplinary boundaries. In addition, doctoral advisory boards have been established for each programme. They play an important role, especially in the context of research proposal defences, not only by contributing to quality assurance, but also by providing feedback to individual doctoral candidates. This initial public discussion and engagement with the research field is also the first step in the socialisation process in the discipline. It also affirms institutional responsibility for nurturing the next generation of researchers and enhances belonging to an intellectual community, as described by Walker et al. (2009) as a pillar of doctoral education.

As part of these structural reforms, the Center for Doctoral Studies was established at the university level as an umbrella organisation that takes care of doctoral affairs, accompanies structural development, and develops a comprehensive range of soft skill offerings for doctoral candidates. What was remarkable about this step was that, for the first time at the University of Vienna, the Center for Doctoral Studies as an administrative unit dedicated exclusively to doctoral education was created. This made it possible to build and establish a group of professionals who could serve as experts for the university in the long term and at the same time actively participate in the development of international policy in the field. However, the role of professionals as experts in doctoral education was primarily to enhance the quality of the doctoral experience at the University of Vienna through additional services, community-building activities, and mentoring; to provide transferable skills; and to support the personal and intellectual development of doctoral students to ensure successful academic or non-academic careers. The Centre's success in contributing to the change in doctoral education was confirmed in an evaluation by international experts commissioned by the rectorate some years after its establishment.

The establishment of this group, unsurprisingly, coincided with the development of numerous doctoral schools in Europe, all of which established professional support staff in addition to academic leadership, who were fundamental in promoting the development of the doctorate in their respective universities. Indeed, the group of professionals, often with academic credentials, but non-academic contracts, is still growing and receives more and more tasks and roles (Zinner & Kovačević, 2021).

The next reform step happened upon the observation that there was room for improvement especially in the application and recruitment of doctoral candidates. So far, the admission to a doctoral programme tended to be rather laissez-faire, also due to the legal situation which stipulated that a master's degree was sufficient as a prerequisite for the admission to a doctoral programme. If a position was available, in the past it was up to the responsible supervisors to select the candidates. The *initiative colleges*, addressed earlier, were a first attempt to improve the selection of students for the doctorate in terms of a collective decision within the colleges. With the *uni:docs* fellowship programme, launched in 2013, a structured selection process was established that also involved researchers who were not even directly involved in the subsequent supervision of doctoral candidates.

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Selection took place in several steps, including faculty members, international reviews of the submitted proposals as well as interviews with the candidates. The latter were conducted without the supervisors involved, to make the selection process more transparent. Moreover, the involved supervisors had to submit a clear statement of support to ensure sufficient commitment to supervision. Thematic panels chaired by programme directors were formed to which applications were assigned. In these committees, the respective applications were evaluated as previously described and the shortlisted applications were ranked by consensus in an overall selection meeting with all committee representatives. The formal final decision was then made by the Rectorate as the employer's representative, which awarded the successful applicants paid doctoral positions for three years. However, this decision followed the recommendations of the committees. This again widened the discourse on the quality of doctoral candidates and made the selection process more transparent. Here, too, a mixed approach of transactional and transformational leadership is evident: it has been possible to expand the circle of actors involved in the selection of doctoral candidates. At the same time, the programme directors, as chairs of the panels, were given an important leadership role among their peers. From a transactional point of view, this reform addressed commitment on the one hand and resources on the other. Perhaps more important, however, was the transparent involvement of the scientific community in each step of the decision-making process—and the signal that university management is guided by, and values, the recommendations of the community. Trust is an important prerequisite for transformational leadership to achieve sustainable change.

The most recent step in the reform of the doctorate at the University of Vienna was the almost comprehensive establishment of doctoral schools in 2020 and 2021. This was preceded and triggered by a new amendment to the law in which the universities were (finally) granted the right to provide qualitative criteria for admission, a major step in the quality of doctoral education in Austria. Once again, the university management decided for a mixed top-down and bottom-up process for the establishment of doctoral schools. It was important to combine the common quality standards that have to apply to all schools with the disciplinary needs and requirements. In a comprehensive participatory process, a Code of Good Practice for Doctoral Schools was discussed and approved in preparation for the doctoral schools. For the first time, this code of good practice articulated the rights and duties of doctoral candidates, supervisors and school directors. Primarily, a transactional leadership approach was chosen for the establishment of the doctoral schools. Once again, substantial additional financial resources were the immediate incentive to become involved as supervisors in such a school, with which relatively autonomous measures for the promotion of young researchers could be taken. An indicator-based budgeting method was chosen that rewards both input in the form of funded doctoral positions, provided that a certain level of study progress can be demonstrated, and output measured in terms of successful graduates. First, because internal studies clearly showed that the financing of doctoral students, i.e., their financial security during the dissertation, roughly triples the probability of completion. Second, because the successful completion of a doctorate must of course also be specifically promoted by the supervisors. The number of successful doctoral degrees is also a university performance indicator for the ministry, which was passed on to the schools as a goal through the logic of target agreements.

The funding approach may therefore have promoted commitment in a first step. More important and sustainable, however, is the transformative aspect that was also associated with the non-monetary incentive. This manifested above all in the autonomy gained by the doctoral schools, which allowed them to determine their own specific designs and emphases within the framework of external stipulations, i.e., those resulting from the law, the statutes, the curricula and the code of good practice. It is this autonomy that has led schools to reflect on their visions and goals, and to develop measures for themselves to drive a culture of change that focuses on the very essential pillars of successful doctoral education: the scholarly integration and socialisation of young researchers in the discipline, the building of an intellectual community and the preparation of young researchers for their role in society. Equipped in this way, the schools have also been given the task of defining a transparent governance structure, which ensures that: (1) doctoral candidates contribute to decisions within doctoral schools, (2) supervisors actively participate in shaping decisions, and (3) communication with faculty is ensured. All schools are led by

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a team of academics, who are also significantly supported by an administrative coordinator. Together, they form the management team of the doctoral school. Despite the autonomy of each school, the rectorate—supported by the Center for Doctoral Studies—makes sure that the exchange between the schools takes place regularly. This happens on two levels. First, in regular workshops, led by the Vice Rector for Research, and the participation of all academic heads of the schools. Second, under the direction of the Centre for Doctoral Studies with all administrative coordinators. Both lines pursue the goal of exchanging information and learning from each other.

5 | OBSERVATIONS ON THE CURRENT CONTEXT

It is still too early to draw final conclusions on the extent to which expectations associated with the establishment of doctoral schools have been fulfilled. However, first observations can already be made, based on centrally available data as well as on feedback we received from school leaders, deans and professional coordinators. To obtain this feedback, we asked them to briefly reflect in writing on the changes they noticed after this initial short establishment of the schools, as well as the positive and negative reactions they received from their peer group. In addition, all schools addressed successes and challenges as part of their annual reporting requirements.

As a first example, we will look at one specific performance indicator. Namely, the time it takes to reach the first milestone—the public presentation of the research proposal by doctoral candidates. Here, the incentives set by university management in the sense of carrots and sticks seem to have an immediate effect, because doctoral students actually reach their first milestone, quicker than they did before the establishment of the schools. As described above, this milestone should be reached at the end of the first year, but since this has so far remained without consequences, it was handled rather inconsistently with a *laissez faire* approach. Now, the indicator for doctoral funding is also linked to study progress, specifically to the achievement of this particular milestone. Consequently, the leadership teams at doctoral schools are actively working to accelerate this first step. In line with the autonomy of the schools, the practices aimed at accelerating this step vary among the schools. Some offer special preparatory workshops while others have introduced so-called *PhD days*, where they call candidates and their supervisors into the spotlight. A head of a doctoral school reported that supervisors are now paying more attention to the doctoral programme. Other improvements include earlier feedback to students on their progress in terms of content and time, or the introduction of comprehensive Thesis Advisory Committees, which provide more transparency in supervision. Thus, the various support measures undertaken by the schools seem to have a positive effect on the PhD candidates' progress. Enforcing deadlines is a challenge. The external authority or the monitoring by the central office, to what extent the goals are achieved, is perceived as supportive for leadership in doctoral schools. A predefined goal was achieved through a targeted incentive measure, which Ehrenberg et al. (Ehrenberg et al., 2009, p. 88) refer to as *supportive enforcement*. A dean also underlines the importance of the increased resources that have enabled a better systematisation of processes. Better systematise processes.

A further goal of the doctoral schools articulated by the university top management was to increase the visibility and attractiveness of the University of Vienna for potential doctoral candidates. The mixed approach, i.e., the central quality standards and procedural guidelines on the one hand and autonomy in the implementation on the other, has already produced innovations that would not have been possible under central control. Because of their short history, the schools have placed an emphasis on external presentation and promotion. The goal of marketing measures was to increase the talent pool by making the doctoral schools internationally visible and bundling calls for dissertation positions. This enabled the schools to significantly increase the number of applications and subsequently test different and partly innovative new approaches in the selection process. This could only succeed through the involvement of local peers, taking disciplinary conventions into account. Moreover, we now also observe an open discussion among the schools regarding efforts to receive more competitive applications. For example, the head of a doctoral school explicitly asked us for support to create greater visibility for the University of Vienna at international education fairs and in promotion through world university rankings lists such

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as the Quacquarelli Symonds (QS), Times Higher Education (THE) and the Academic Ranking of World Universities (ARWU).

Another goal was to intensify the exchange between supervisors and doctoral candidates with and within the schools, i.e., in the sense of building and promoting an intellectual community and enhancing social integration. Especially in this regard a lot has been achieved in a short time. One dean made the observation that new doctoral schools were as institutions within the faculties, which gave this group of doctoral candidates a new visibility and charisma and brought them out of the *dark corners of the individual working groups*. The head of a doctoral school was impressed that students had developed a perception of themselves more as a group and less as *individual fighters*, even when away from the actual work on the dissertation and despite the Covid epidemic.

There are also initial reports from the various doctoral schools that communication between both doctoral candidates and supervisors has improved and intensified, beyond discussing their individual dissertation projects. The head of a doctoral school reported, with a bit of a twinkle in his eye, that PhD students had started occasionally conspiring against supervisors by comparing supervision practices. That this was really the first time he had noted students paying attention to different practices in their subject or even across subjects. To join a retreat and openly discuss the topic of promoting young researchers for the first time can be seen as a success and the first step for a desired cultural change. Another dean reported how the governance structure in the doctoral schools contributed to a *common understanding of doctoral education* in the faculty and how the broad-based steering committee fostered good exchange. Another dean emphasised that the supervisors have internalised their tasks better and that their behaviour and commitment is more contemporary. A better integration of doctoral candidates' interests through participation in the governing body was also mentioned positively.

As a last example, the head of a doctoral school noted that the doctoral programme was bringing about a redefinition of student and supervisor responsibilities. Each of the above examples demonstrate that a cultural change has begun, even if it will not be completed in many areas for a long time. Admittedly, there is also resistance, especially from older supervisors who mourn the *good old doctorate*, who do not perceive the new structures as valuable, and feel that their academic autonomy is restricted as a result. Becoming a supervisor at a doctoral school is a voluntary act and we see that a vast majority of supervisors have taken this step. Of course, this was preceded by many discussions among the faculty. What has been achieved through the participatory approach, however, is that many more people are involved and engaged with the topic of doctoral studies, even those who are critical towards these changes.

This reflects the repeatedly reported new openness with which even difficult phases of the candidates' doctoral journey are now being discussed, such as issues of well-being and mental health. The doctoral schools have created forums for exchange. The head of a doctoral school confirms this and emphasises the importance of more transparency, which has been achieved with the schools and which also helps to give supervisors a clear picture of their responsibilities. Moreover, candidates successfully use this new openness to discuss with supervisors their expectations openly and what they consider as *healthy or toxic* in their working relationship.

We attribute the *new* openness to transformational leadership, which is intended to, and does, bring about change in individuals and social systems. This approach has been applied in the context of the establishment of the doctoral schools by top management as well as by the heads of doctoral schools. These are all signs that the climate is slowly changing. As in the other areas, the path has been taken, but the goal is far from being reached. There can certainly be improvement in the professionalisation of the supervision of doctoral candidates, also with regard to the integration of postdocs. While e.g., in other countries workshops for supervisors are offered, sometimes even obligatory, to date only the first beginnings of a reflection on different supervision practices and pedagogies can be observed in Austria. The existing instruments for measuring work progress are not always used efficiently, to give a second example.

The last topic to be addressed is leadership. In keeping with the transformational leadership approach adopted by the rectorate, heads of doctoral schools have been granted a high degree of trust and autonomy. It allowed them to become ambassadors of change in their peer group, advocating for faculty concerns. This has brought

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them closer together, fostering a perception of a faculty leadership team, as noted by one dean. While their role is clear, as is their relationship to the faculty, the role profiles of the coordinator are less clearly defined. One coordinator reported that increased cooperation and good communication between the head of the school, the dean, the faculty director, the administration and the coordinator was driven by the conviction that the doctoral school is important and *creates added value* for faculty and candidates. At the same time, she also reported on her role as a mediator. The important contribution of the coordinators, who are also considered in the governance structure, is unquestioned. A head of a doctoral school noted that thanks mainly to the coordinator, there were a host of additional offers for the career development of the students, and that this contributed to making the doctoral school more professional. Also, the function as a first point of contact for many students was emphasised as a valuable part of how students perceived the doctoral school. What we do not observe yet is the perception of coordinators as equal members of the school's leadership team, albeit with specific tasks and responsibilities. Thus, despite evidence that coordinators, as professionals, build valued local relationships with deans and heads of schools, this value is not necessarily reflected when they are viewed as a collective—as observed also by Whitchurch (2007) when she described the changing roles and identities of professional managers in UK higher education. It may be because of the short history of doctoral schools and the important role of leaders in implementing and justifying changes to peers that coordinators still play a subordinate role in external perceptions. Thus, there seems to be a "*dissonance between the implicit (local and personal appreciation) and the explicit (public expression of values) understanding*" (Whitchurch, 2007, p. 58). It will be an interesting topic for future research to study, how the role of coordinators will evolve in the future and whether a shared understanding will develop between heads of doctoral schools and professional coordinators about what a valued local relationship might look like; but also, how the acceptance and role profile within the faculty will evolve. Coordinators provide a lot of stability—a backbone—in higher education, while academic leaders change at regular intervals.

6 | CONCLUSIONS

With the establishment of doctoral schools, institutional and a cultural change has been initiated—a change that is not yet fully accomplished. The University of Vienna's management has opted for a mixed approach, a combination of transactional and transformational leadership to support a paradigm shift in doctoral education which will fundamentally change organisational structures as well as organisational culture. Behaviour change, compliance, improved performance and target achievement are rewarded. Top-down regulations specify the framework. In addition, *local* autonomy is given to design an environment and establish a governance structure for the doctoral schools that fits and satisfies different needs in different fields of research, e.g., lab-based research vs. more individualised research, funding situations, and an international composition of the PhD student population.

The ability to foster the intrinsic motivation of academics to participate in this reform finally was a key to success. This participatory approach, combined with funding incentives in the form of additional budget allocations for doctoral schools, facilitated the process and ensured commitment among faculty members. Skilfully set incentives have made it encouraging to participate. From this point of view, the transactional leadership approach was beneficial for the first step. Considerable extra resources granted to the schools also enhanced their internal reputation and at the same time underlined the appreciation of university leadership. However, sustainable cultural change is not achieved with carrots and sticks, but with the conviction that the community will join in. Therefore, the transformational leadership style was rightly chosen, which builds on change from within—admittedly under certain generally applicable guidelines. By assigning responsibility and granting autonomy while ensuring the involvement of the local scientific community, including the PhDs, ownership has been created. It is too early to speak of ultimate success, but it seems that the right path has been taken. We therefore would like to highlight how the establishment of a shared vision, which each individual could and still can contribute to, was key to success in this case. We are convinced that with a mere top-down approach, e.g., by setting up new structures

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and regulations without involving the community, the results described above and the acceptance of the teachers could never have been achieved. Nevertheless, it should also be noted that without the leadership with its executive power and decision-making competencies, which is to some extent owed to New Public Management practices, the reform would probably not have succeeded as it did.

Also, important for the success was the role of heads of doctoral schools—who, as recognised scholars identified with the new vision of the doctorate. With additional resources, they were able to create added value for their scientific community, even short-term. Meanwhile, with their commitment to continuing to practice a transformational leadership style in doctoral schools, they fostered the engagement of both supervisors and doctoral candidates. Leadership roles in the schools still remain reserved for members of the academic staff and this seems to be necessary, especially in the start-up phase, to ensure exchange and acceptance among peers. However, many tasks and roles in the leadership teams do not require an academic reputation, but rather management skills and, above all, a thorough understanding of doctoral education. Thus, while the role of academic leaders is well established and recognised as such, that of professionals is still diffuse in terms of their self-image and how they are perceived by others. This is probably true for some of the coordinators, who would like their role to be understood as professional managers of the schools. This reflects what Whitchurch (2007) emphasises by highlighting that people

> [...] are beginning to recognise that the delivery of extended academic agendas in complex environments can only be achieved through equally valued, but different, contributions from a range of staff [and that] to this end, partnership between academic and professional staff is beginning to be acknowledged, as well as a crossing between fields of activity.
>
> (Whitchurch, 2007, p. 57)

In some areas of doctoral education, this is already a common practice and is not even conceivable without the involvement of administrative professionals. Examples include transferable skills training opportunities and career development support. In general, the schools at the University of Vienna would not perform as they do now without administrative professionals. As outlined in Zinner and Kovačević (2021), professionals have taken on important tasks in doctoral education already. As Rhoades states "[i]*ncreasingly*, [managerial professionals] *participate in institutions' basic academic work, and, like faculty, they have important expertise about the academy to contribute in shared governance*" (Rhoades, 2005, p. 42). If doctoral education is to be truly perceived as a collective responsibility, openness and increased collaborative teamwork between the various groups of staff (administration, professionals, academics) is indicative of a contemporary style of leadership, as is also required for the external networking that universities depend on to play a useful and sustainable role in networked knowledge societies. It remains to be seen to what extent roles such as the role of managing directors will emerge in the medium term. Also, the extent to which doctoral schools can be led in partnerships involving differentiated roles that include academic and administrative staff. As noted by Rhodes, we need a more inclusive, democratic academic republic (Rhoades, 2005). With new challenges, roles are increasingly blurring between academic work and contributing functions. This can be observed in different areas of universities that contribute to a new *third space* identity as Witchurch (Whitchurch, 2012) points out. This also changes the character of the university as a professional community. Perhaps doctoral schools are good examples of how such a future professional community is also reflected in leadership. It will be the task of future research to examine whether professional managers will become members of these governing bodies as equal partners, albeit entrusted with different tasks, or whether it is more likely that the heads of doctoral schools as academics will consolidate their role and identity in the third space.

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