



## COMPARATIVE PEDAGOGY ПОРІВНЯЛЬНА ПЕДАГОГІКА.

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### TEACHER EDUCATION IN CHALLENGING TIMES. A COMPARATIVE AND TRANSFORMATIVE APPROACH TO THE AUSTRIAN AND UKRAINIAN TEACHER EDUCATION REFORMS

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*The article provides a comprehensive analysis of the challenges and reforms in teacher education in Ukraine, drawing comparisons with the Austrian experience, contextualizing the need for reforms in Ukraine's education system within the country's pursuit of European Union membership. Emphasizing the pivotal role of teacher education in driving these reforms, the article analyzes the challenges of teacher education in Ukraine such as inadequate teacher remuneration, outdated pedagogical methods used, and a lack of financial support. Thus, the authors state the urgency of modernizing the teacher education system.*

*To summarize of teacher education in Austria, corresponding solutions are proposed, including individualized approaches and rigorous selection processes with the reference to Austria's experience with aptitude tests.*

*Furthermore, the article outlines education reforms in Ukraine, including the passage of laws aimed at aligning higher education with European standards. It analyzes measures such as interdisciplinary programs, distance learning, and increased university autonomy, designed to enhance student autonomy and the quality of education. By comparing these efforts with Austria's initiatives, such as the implementation of the Bologna Process and attempts to make teacher education more attractive, the researchers offer insights into common challenges faced by education systems globally.*

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*In conclusion, the article stresses the importance of viewing teacher education as an investment in the future, requiring sustainable transformation and international collaboration. It advocates for learning from each other's experiences and fostering global networks in teacher education to address the complex challenges confronting education systems worldwide.*

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**Keywords:** teacher education, reforms, education system, Ukraine, Austrian, European standards, international collaboration.

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## ПЕДАГОГІЧНА ОСВІТА У СКЛАДНІ ЧАСИ. ПОРІВНЯЛЬНИЙ І ТРАНСФОРМАЦІЙНИЙ ПІДХІД ДО РЕФОРМ ПЕДАГОГІЧНОЇ ОСВІТИ В АВСТРІЇ ТА УКРАЇНІ

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*У статті представлено комплексний аналіз викликів і реформ у сфері педагогічної освіти в Україні, а також порівняння з австрійським досвідом. Наголошується на необхідності реформ в українській системі освіти в контексті прагнення країни до членства в Європейському Союзі. Підкреслюється ключова роль педагогічної освіти в просуванні цих реформ. У статті розглядаються проблеми педагогічної освіти в Україні, такі як неадекватна оплата праці вчителів, застарілі педагогічні методи та брак фінансової підтримки, а також підкреслюється нагальна потреба модернізації системи педагогічної освіти.*

*Підводячи підсумки педагогічної освіти в Австрії, розглядаються запропоновані рішення, включаючи індивідуальні підходи та суворі процеси відбору, з посиланням на австрійський досвід проведення тестів на професійну придатність.*

*Крім того, у статті окреслюються зусилля з реформування освіти в Україні, включаючи прийняття Законів, спрямованих на приведення вищої освіти у відповідність до європейських стандартів. Обговорюються такі заходи, як міждисциплінарні програми, дистанційне навчання та збільшення університетської автономії, покликані посилити студентську автономію та підвищити якість освіти. Порівнюючи ці зусилля з ініціативами Австрії, такими як впровадження Болонського процесу та спроби зробити педагогічну освіту більш привабливою, у статті пропонується розуміння спільних викликів, з якими стикаються освітні системи в усьому світі.*

*Насамкінець у статті підкреслюється важливість розглядати педагогічну освіту як інвестицію в майбутнє, що вимагає стійкої трансформації та міжнародної співпраці. Вона закликає вчитися на досвіді один одного і сприяти розвитку глобальних мереж у сфері педагогічної освіти для вирішення складних проблем, з якими стикаються освітні системи в усьому світі.*

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**Ключові слова:** реформа педагогічної освіти, система освіти, Україна, Австрія, європейські стандарти, автономія вищої освіти, міжнародна співпраця

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**Introduction.** Nowadays, in our economically determined world, we tend to understand the term "comparison" in the sense of "better-or-worse" or "more-or-less". Comparative education has a different goal. It rather sees comparison as a tool to gain a deeper understanding. Comparative analysis supports the categorization of different aspects of a complex research field [5] due to teacher education being a complex field [20]. To be more precise, teacher education is part of formal education [19; 8], which interacts and has deep connections with the society.

Thus, the traditional interpretation of the historical aspect of the development of formal education as a function of society (societal-social, technological and economic) and circumstances is not sufficient. Formal education is a part of society, societal structures, and its history. It evolved with and within it, thus, without going into details and also with respect to individual pace of development in different areas and countries, at some point formal education had gained enough critical mass that it started not only to respond to societal developments but also become an

actor within society [11]. One current example might be the environmental movement at schools all over the world. So, society and formal education can nowadays rather be seen as communicating vessels that resonate with each other with respect to the fact that the latter is part of the first in the sense of a subsystem. Teacher education as a part of formal education lives in this intertwined ecosystem. Therefore, a scientific analysis of teacher education should take its societal embeddedness into account.

**Aim of the research** is to examine comparative and transformational approaches to teacher education reforms in Austria and Ukraine.

**Research methods.** Hartmut Rosa gives a sociological analysis of major societal challenges for our world [28; 29]. He identifies environmental, social-political, economic and technological challenges that have been accelerated over the past 20 years, driven by the simultaneous development of globalization and particularization (political, social, income-wise, ...). As an effect, the perception of uncontrollability is steadily increasing. – The visible effects of climate change, Russia's aggressive invasion in the Ukraine, growing tensions between China and Taiwan, the ongoing problems between Israel and Palestine, technological considerations about the power of AI, the widening gap between rich and poor, to name just some of them.

There is an agreement that high-quality education is one decisive factor in tackling these current challenges (SDG4). And teachers are the hub in this process. They enable, guide, support and accompany the learning process of the next generation by passing on cultural knowledge and thus providing the basis for innovative approaches to challenges. Different contexts require different solutions, even if the basic problems and challenges are similar.

This applies equally to teacher education. The basic pattern of formal education is shaped by the didactic triangle almost worldwide [1]. It can be seen as interactive and communicative, consisting of interactions between the

three axes of the subject/content, the teacher, and a group of students. Within formal education, the content is usually defined by the governmental authority. Teachers must pass some kind of formal training to be certified to teach, and in the classroom, we usually have the configuration of one teaching person vs. a group of learners/students/pupils. But apart from this, specific subjects, pathways to becoming a teacher, types of school etc. are heavily influenced by national considerations and its specific history [31]. Thus, formal education unfolds locally – at the level of individual countries – in a heterogeneous, diverse manner with respect to a common fundamental global structure (didactic triangle). This must not be seen as a problem but rather a natural development in a diverse educational ecosystem. The approach of comparative educational studies tries to take this into account:

"Comparative studies seek to explore and understand how education approaches and policies spread globally and impact local systems. The belief that education can vastly improve the human condition is at the center of comparative education" [32: 1113].

One established comparative approach is to investigate a well-defined field in a different context, especially time or place. In our case, it is the field of teacher education in two different countries: Austria and Ukraine.

### **Results and discussion.**

**Austria and Ukraine.** At the first glance Austria and Ukraine are very different. Ukraine is about 7,2 times the size of Austria and has about 4,2 times as many inhabitants. Population density in Ukraine is 60.9/km<sup>2</sup>, in Austria 107.6/km<sup>2</sup>, GDP (nominal, 2024 estimate) per capita is \$5,663 (111st) in Ukraine and \$59,225 (17th) in Austria. The Human Development Index in Ukraine (2022) is defined as high, 0.734, in Austria as very high 0.926 (UN 2024).

The territory of today's Ukraine was contested, divided, and ruled by a variety of external powers at least from the late 13<sup>th</sup> century on. Following the Russian Revolution in 1917, the short-lived

Ukrainian People's Republic the Bolsheviks consolidated control and established the Ukrainian Soviet Socialist Republic, which became a constituent republic of the Soviet Union in 1922. Ukraine gained independence in 1991. In 2014 Russia unilaterally annexed Ukraine's Crimean Peninsula and in 2022 Russia launched a full-scale invasion of Ukraine. Due to the often-changing external powers it would be difficult to summarize the history of education and teacher education until the 20<sup>th</sup> century.

In contrast to Ukraine, from 1278 until World War I, Austria's history was largely that of its ruling dynasty, the Habsburgs. The empire was a multi-ethnic state and since the 19<sup>th</sup> century emerging nationalist movements led, for example, to the "Reichsgesetzblatt", publishing the laws and ordinances in eight languages. Furthermore, all national groups were entitled to schools in their own language and to the use of their mother tongue at state offices since the introduction of compulsory schooling in 1774. After World War I, the German-speaking parts of Austria which had been part of Austria-Hungary were reduced to a rump state, with the borders of the current state. After the Nazi regime and some years of occupation, Austria regained full independence in 1955 and declared its permanent neutrality by an act of parliament.

These different historical developments suggest that a direct comparison between the education systems and teacher education in Austria and Ukraine would be problematic. We, therefore, take a primarily ahistorical approach in the

following, concentrating on the latest developments with a strong focus on requirements in the near future.

Potential and necessary developments and transformations in teacher education are nowadays usually derived from evaluations of the education system. Since the late 1990ies, heavily supported by technological developments, international student assessments like TIMSS, PIRLS, and PISA have been established and gained growing acceptance. Ukraine participated for the first time in PISA in 2018. Due to the Russian invasion in 2022, results refer only to 18 out of 27 regions. Austria has participated in PISA since 2000.

PISA in particular was the driving force behind education reforms in many European countries since 2010. In contrast to other forms of evaluation, the econometric approach of PISA translated weaknesses and problematic fields in national education systems to evidence-based numbers and thus made them comparable, for instance, to countries with similar social, economic or historical backgrounds. One consequence of this was that many countries also began to fundamentally reform their teacher education systems. Austria started the reform process in 2013 and introduced a new program in 2015.

Before discussing the current challenges for teacher education in Austria and Ukraine, we will first provide a very brief overview of the latest PISA results for both countries in order to set the stage for further analysis (cf. OECD 2019 OECD 2023) [24; 25].

Table 1

**PISA results for Austria and Ukraine 2018 and 2020**

Mean score in PISA 2018					
	Mathematics	Reading	Science	Top-performing	Low-performing
	Mean	Mean	Mean	%	%
OECD Average	487	489	489	15.7	13.4
Austria	484	499	490	15.7	13.5
Ukrainian regions (18 of 27)	466	453	469	7.5	17.5
<i>Difference AUT-UA</i>	18	46	21	<i>Mean: 28.3</i>	

Mean score in PISA 2022					
	Mathematics	Reading	Science	Top-performing	Low-performing
	Mean	Mean	Mean	%	%
OECD Average	472	476	485	13.7	16.4
Austria	487	480	491	14.6	15.5
Ukrainian regions (18 of 27)	441	428	450	4.6	25.3
<i>Difference AUT-UA</i>	46	52	41	<i>Mean: 46.3</i>	

Without going too much into detail these results show a couple of things. First, Austria and Ukraine obviously try to improve their education systems based on evidence, because both take part in the PISA study. Secondly, Austria's results (considering the variance) are around the OECD average, while Ukraine's are below it. If one considers the recent political developments in Ukraine since the 1990s, this only seems obvious. After the fall of communism, Ukraine had to start gradually building up a new education system. Experience shows that a fundamental change in the education system takes at least two generations. The 2022 results illustrate that Ukraine has fallen significantly behind Austria in each of the areas tested, as well as on average. The reason for that is also evident. Beside the COVID-19 pandemic foremost Russia's war of aggression has obviously taken a heavy toll on the Ukrainian education system.

In the following, we will first primarily concentrate on developments in Ukraine and then enrich the considerations with findings from Austrian reforms to conclude this article.

### **Teacher Education in Ukraine and responses from Austrian experience.**

Ukraine's pursuit of European Union membership necessitates reforms within its education system. These reforms, currently underway across all educational sectors, prioritize the restructuring of teacher education. Given the high social and cultural significance of teachers and the sheer size of the

teaching profession, teacher education serves as the foundation for all planned reforms [16].

Continuing the large-scale "New Ukrainian School" reform (established by the 2017 Law of Ukraine "On Education" [19] and the 2017 Concept of the National School of Education) [5] presents a unique challenge in the context of the ongoing war. However, this reform's successful implementation is critical, as today's students will be responsible for rebuilding the country in the post-war era. The realization of such a comprehensive educational transformation demands a radical modernization of the teacher education system. Ukraine's growing alignment with European standards and values necessitates a corresponding systemic transformation of its education system. This transformation prioritizes enhancing the quality of the educational process within schools, which can be achieved by improving the quality of teacher education [9].

The teaching profession remains one of the most prevalent in contemporary society and is under the special attention of the state. In pre-war Ukraine (2022), a robust teacher workforce of 440,000 individuals educated over 4 million students (State Statistics Service, 2022). Teacher training in the country is delivered across 71 higher education institutions and 41 specialized pre-higher education institutions (State Statistics Service, 2022). Notably, pedagogical universities comprise 29 national universities and 13 state

universities. Additionally, in Ukraine, 27 other higher education institutions incorporate the word "pedagogical" within their titles, and 42 technical and economic institutions hold licenses for teacher training (State Statistics Service, 2022; Unified State Examination Center, 2022).

There are a total of 5,921 schools in Austria, 764 of which are private (2022). In 2022, there were 1,158,576 pupils, which corresponds to a growth of 1.7% compared to 2021. They were educated by 124,447 teachers in 2022/23 (+1,1% to 2021/22). In Austria, teachers are trained at 12 public and private universities and 14 public and private teacher training colleges (2024).

While quantitative teacher preparation appears sufficient, concerns remain regarding the quality of education and graduates' willingness to pursue careers in educational institutions [18: 2].

A critical issue plaguing the Ukrainian education system is the widening disparity between societal demands for highly qualified teachers and the current state of pedagogical education [26]. This imbalance manifests in the outcomes of higher education institutions, the preparedness of teachers to implement educational reforms, and the overall effectiveness of the educational system [27]. This complex issue arises from a continuous impact of the following factors:

- outdated content, structure, standards, and teaching methods employed in pedagogical education. This fails to equip future teachers with the competency-based approach and modern pedagogical tools necessary for success in contemporary classrooms.

- inadequate financial support for teachers' professional activities hinders their growth. The near absence of experimental laboratories and equipment for training science, technical, and vocational education teachers further exacerbate this issue.

- outdated models and methods of professional development of teaching staff, which are focused on formal compliance with established

requirements rather than on personal and professional growth

- substandard conditions for pedagogical activities, which hinders adequate teacher training to meet the demands of a rapidly modernizing educational landscape;

- ineffective vocational guidance for identifying and selecting students with the aptitude and motivation for a successful teaching career.

- lack of effective coordination between pedagogical institutions, local authorities, and employers regarding educational content and practical training of students [3].

Addressing issues of teacher education quality is a complex undertaking, as they have been accumulating over a significant period (cf. section 2). Ukraine is working hard to transform itself from a former constituent republic of the Soviet Union into a free, democratic and modern country. Even without the ongoing political and social transformations, Russia's aggressive war and the pandemic, this would be a complex task. Nevertheless, the current investments and reform efforts in the education system and teacher training represent a fundamental and promising investment in the future.

Ukrainian scholars and practicing educators already propose solutions for enhancing the quality of teacher education programs. Ivan Zyazyun suggests that teacher education should adopt a more individualized approach, similar to actor training. Additionally, he advocates for a rigorous selection process to identify candidates best suited for the teaching profession [13].

Consequently, reforms in teacher education need a modernized approach to admissions criteria for higher education institutions. A revised selection process for pedagogical programs might incorporate additional testing that evaluates essential personal qualities, namely ability to care for children, effective communication skills across diverse populations, mental well-being and resilience, a strong motivation

to professional and personal development within the field of education etc.

Austria implemented specific procedures as entry points to a teacher education program. After proving the general higher education entrance qualification, applicants for teacher training programmes at universities and university colleges of teacher education need to pass an aptitude and admission procedure in several stages (proof of general personal suitability for the teacher training programme and for later professional practice, proof of specific suitability for certain subjects or certain study programmes). Details can be found at the Eurydice webpage [12].

Almost ten years of experience with this system show its possibilities and limitations. What seems to work is some kind of aptitude and inclination test, ideally in the form of a guided self-assessment [22]. The problem with all psychometric career aptitude procedures is that they can primarily be used to predict the probability of academic success. However, due to the multifactorial dynamics and plasticity of individual professional and personal development, it is still not possible to make a reliable prediction of later professional success [23]. Therefore, Ukraine could build on the experience gained in other countries, especially in the last 10 years, when introducing specific instruments.

To enhance the quality of teacher training in Ukraine, Vasyl Kremin, President of the National Academy of Pedagogical Sciences, proposes the wider implementation of a sequential model alongside the traditional parallel model. In the sequential model, students are trained for a teaching career from their first year at university. For instance, a student with a bachelor's degree in physics from a traditional university could subsequently pursue a master's degree in pedagogy to obtain teacher qualifications (Kremin, ed., 2021b).

This suggestion discusses the issue of concurrent vs. consecutive models of teacher education. Depending on the

circumstances and research approaches, one or the other model may be more appropriate [23; 35]. Austria has decided to follow the path of concurrent models after World War II. One advantage of this approach was that it allowed the profession to develop a specific professional awareness. On the other hand, lateral entrants play an important role in phases of teacher shortages. They usually professionalize via consecutive models.

Volodymyr Bakhrushina, head of the National Expert Team on Higher Education Reform of the EU Erasmus+ Program, suggests that long-term policies aiming to increase higher education funding per student to levels comparable to EU countries could improve education quality. However, such policies need to increase the GDP of Ukraine. Thus, as a first step, maximizing the effectiveness of existing resources through targeted measures, even potentially unpopular ones, could achieve some funding improvements [13].

One possibility in this context would be to make targeted use of cooperation with the EU in student exchange programs in the context of teacher education. In Austria, the problem situation is somewhat different, but with a similar effect. Traditionally, education is anchored in the nation state. Austria can also look back on 250 years of systematic state development of its own education system. It was only after the PISA shock (poor results) that Austria was open to ideas from outside and due to specific EU programs. Student exchange programs have become an important factor in teacher education programs. Long-term partner universities also foster temporary staff exchange, which goes along with valuable knowledge transfer in curriculum design, higher education didactics, and teacher education programs, to name some aspects.

**Current developments.** The COVID-19 pandemic and the war in Ukraine have served as a crucible, testing the resilience of the Ukrainian people and

prompting a critical evaluation of various social spheres, including teacher education. It is commendable that the Ukrainian education system has demonstrably functioned effectively despite these challenges, due to the work of educators at all levels from kindergarten to the ministry, creating opportunity for children and students to learn. While acknowledging the positive trajectory of Ukrainian teacher education, further modernization remains necessary. After all, the quality of teacher training directly impacts the entire education system, fostering a child's development, personality formation, and future professional success.

Therefore, on April 23, 2024, the Verkhovna Rada of Ukraine adopted Draft Law (state project № 10177), "On Amendments to Certain Laws of Ukraine Regarding the Development of Individual Educational Trajectories and Improvement of the Educational Process in Higher Education" [10]. This law represents a significant step towards the comprehensive transformation and European integration of the Ukrainian higher education system, according to the Ministry of Education and Science of Ukraine [14].

The reforms aim to align Ukrainian higher education more closely with European standards, addressing a long-standing call from Ukrainian society – including students, educators, heads of higher education institutions, and employers. The prevalence of graduates not working in their field of study exemplifies this need. In Ukraine, only 20% of pedagogical university graduates become teachers, which is a significant issue [3].

The new law introduces a number of important changes for students. They will have the opportunity to tailor their studies through interdisciplinary programs. This model allows students to delay choosing a specific specialization until after one or one and a half years of foundational coursework. The law enables the model of “entering the field” through an interdisciplinary educational

program, which grants the opportunity to choose a specific specialty not immediately, but after one or one and a half years of studies at the university. Additionally, universities will offer interdisciplinary programs at the bachelor's level, catering to both specific fields and cross-disciplinary interests, to meet the respective needs of regional communities and employers [14].

The new law introduces increased flexibility for students with no reduction in program duration. Contract students now can individually set duration of studies in the university: to complete a four-year bachelor's program in three years through accelerated study or combine studies with work and extend the program to six to eight years, earning the required 240 ECTS credits at a slower pace. According to the proposed changes, they will have the opportunity to adjust the terms of their studies, they will be able to independently manage their annual workload within a range of 30-80 ECTS credits per year, complete the bachelor's program in three, four, five, or six years, fostering greater choice and student autonomy. Furthermore, universities gain the ability to create interdisciplinary programs at the undergraduate level. These programs allow students to explore several specialties within a single field before selecting a specific major after completing two semesters (or 60-120 ECTS credits) [14].

The teaching profession is interdisciplinary by design. Due to its cultural significance and interweaving with state administration, there is a tendency to regulate it very strongly, not only legally but also in terms of content. In Austria, for instance, the teacher education program was shortened by law in 2024 from 4 years BA + 2 years MA (6 years in total) to 3 years BA + 2 years MA for reasons that are incomprehensible regarding content. In terms of education policy, this was a reaction to the current shortage of teachers. From an academic point of view, this is an ineffective measure. It would only have an effect in 5-7 years at the earliest. By this time,

there is likely to be an oversupply of teachers for demographic reasons. The Ukrainian approach of making teacher education programs more flexible could increase its attractiveness. The necessary flexibility of teachers should be accompanied by more flexible routes into the teaching profession.

Ukraine's new law also proposes replacing traditional part-time and evening forms of education with distance learning. This aligns with European practices and eliminates the need for separate regulations for these formats [14].

Distance learning and other innovative technologies are currently posing key challenges for teacher education in Austria and Europe. On the one hand, technologies enable the virtualization of teaching, which can ultimately contribute to the democratization of knowledge and education. For example, it can potentially give children in rural areas easier access to higher education. On the other hand, a direct relationship between teachers and learners (see didactic triangle) is of central importance for the learning process. The consequences of the lack of direct contact were clearly visible during the COVID pandemic [2].

The new law facilitates recognition of learning outcomes achieved through formal, non-formal, and informal education for participants in academic mobility programs. This provision is particularly beneficial for students pursuing combined studies at Ukrainian universities and institutions abroad. That goes along with the above-mentioned options of European mobility programs. A separate Order will be issued to outline the specific procedures for such recognition [14].

The new law also grants greater autonomy to universities. They can now independently determine methods for achieving competencies outlined in standards for non-regulated specializations. This aligns the Ukrainian system with European standards and allows for a wider range of elective courses.

In Austria, freedom in research and teaching is a constitutional law. The Universities Act 2002 also gave universities full autonomy. This has significantly increased their scope for decision-making with regard to content, personnel decisions and flexibility. On the other hand, the legislator, as the largest funder, has again restricted this autonomy by means of performance agreements to be concluded every three years.

Standards for higher education in Ukraine will undergo further revisions in the near future, with a focus on increased selectivity to promote competition among universities. From now on, teachers of innovative courses will get more opportunities, and students will be granted an enhanced quality of education [14; 15].

In terms of recent reform developments, Austria is in a similar situation to Ukraine. In 2014/15 Austria implemented the Bologna Process [17]. The teacher education programs were transferred into a BA/MA system. The original idea was to create more flexibility and exchange in the European Higher Education Area. All study programs (eight-semester BA with 240 ECTS and two to four semester MA with 60 or 120 ECTS) contained a "pedagogical core" (60 ECTS) of general educational fundamentals. In practice, however, the idea of the BA/MA program has had exactly the opposite effect due to a lack of common understanding on all levels (international, national and between universities). Switching between different universities, for instance, has been made considerably more difficult, even at the national level. In 2024, the Austrian government submitted a law to make the teaching profession more attractive. The core of the reform is the shortening of the bachelor's degree program for teaching from eight semesters (240 ECTS) to six semesters (180 ECTS).

The Eurydice website summarizes the goals of this initiative:

➤ increase national and international comparability and permeability,

➤ enhance the attractiveness of the degree program,

➤ lead to curricula revised accordingly as part of the further development (student-centered, practice-oriented and relevant/accompanying the teaching profession; with better consideration of the principles of constructive alignment, etc.),

➤ generate as many teachers as possible who are already equipped with all necessary basic skills and available to the school system after completing the bachelor's degree course (180 ECTS/3 study years). The consecutive master's degree course (120 ECTS/2 study years) parallel to the teaching profession provides the necessary academic specialization [12].

Experts doubt whether this initiative will really lead to a qualitative improvement and increase the attractiveness of teacher training. The real problems of the Austrian education system lie rather in a high level of educational inheritance accompanied by educational inequality. Children from educationally disadvantaged backgrounds, for example, are significantly less likely to achieve a higher school-leaving qualification. The administrative burden on teachers is increasing. There is a lack of a defined network of support in the classroom. The system is still based on the outdated architecture of a teacher in the classroom. Teamwork between teachers and joint teaching as well as closer networking with school psychology, school social work and other educational specialists are not supported enough structurally. It is also becoming increasingly difficult to fill headmaster positions due to a lack of attractiveness.

**Conclusions and research perspectives.** An attempt to summarize the observations and analyses from the two countries reveals some consistent structural aspects. First, the historicity of teacher education, which, in general, can be perceived historiographically or systematically (ahistorically). Both approaches have their justification (e.g. physics-ahistorically, literary studies-historical). In the context of teacher

education, its history has to be taken into account. Every generation is heavily influenced by its own education which relates to the past. The nowadays necessary transformation of a teacher education system has to take that into account if it wants to be sustainable. The proverb "teachers teach as they were taught, not as they were taught to teach" is true as every generation grew up with a specific pedagogical tradition. A sustainable transformation therefore requires one to two generations (15-30 years). It takes around 15 years for a new generation of teachers to reach a specific critical mass for the sustainable anchoring of innovations. Teacher education needs to take that into account.

Secondly, social context conditions interact fundamentally with formal education and, thus, also with teacher education. Liberal countries have rather "liberal" curricula in teacher education, democratic countries foster ideas of democracy in teacher education, imperialistic nations spread imperialistic ideas and so on. However, this is not a one-way street. Many countries in the former East, for example, have shown how modern teacher training programs can contribute to the sustainable anchoring of democratic values.

Therefore, endeavoring to provide high-quality teacher training is always an investment in the future. Open, enthusiastic and innovative teachers enable pupils to develop themselves to the best of their ability in an expansive learning environment.

Fourthly, in a globalized world with multiple challenges, we must act locally and think globally [30]. International collaboration is generally necessary. Teacher education should, therefore, create international networks at all levels in addition to national quality development efforts: exchange programs for individual teacher education students and teacher educators, international partnerships between teacher education institutions and collaboration between countries and international organizations could foster this goal.

The core of teacher education is teaching learning. If teacher education systems learn from each other on all levels, that might create more mutual understanding and collaboration to deal with the global challenges we all face.

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