

Schlesier, Juliane; Parade, Ralf; Rank, Astrid

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Kontakt / Contact:

peDOCS
DIPF | Leibniz-Institut für Bildungsforschung und Bildungsinformation
Informationszentrum (IZ) Bildung
E-Mail: pedocs@dipf.de
Internet: www.pedocs.de

Mitglied der:


Leibniz-Gemeinschaft

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Juliane Schlesier, Ralf Parade and Astrid Rank

The Roots of Learning: Exploring Germany's Primary Education System

Abstract

Primary education plays a vital role in shaping both the academic and personal development of children. In Germany, *Grundschule* represents a shared starting point for nearly all pupils, designed to promote equal access to fundamental skills such as reading, mathematics, and social-emotional learning. The structure and practice of primary education in Germany, however, are influenced by a complex interplay of historical legacies, socio-economic conditions, education policy, and the federal organisation of the school system. While this decentralised model allows for locally adapted solutions, it also brings challenges regarding educational consistency and fairness across regions. Against this background, a closer examination of the German primary education system is essential to understand both its internal dynamics and its broader societal role. This paper provides a detailed overview of the primary education system by exploring the primary education landscape and analysing its institutional structure, curriculum, and assessment methods. It also addresses pedagogical approaches used to foster inclusion and digital literacy. Additionally, the analysis covers transition phases into and out of *Grundschule* as well as the preparation and professionalisation of teachers. By connecting these aspects, the paper identifies current tensions as well as potential for innovation.

Keywords: German primary education (*Grundschule*), federalism and regional variation, curriculum and assessment standards, inclusion and educational equity, school transitions

1 Introduction

Primary education can be considered as the root of a child's academic journey, serving them as the stage where foundational skills, knowledge, and values are first cultivated. In Germany, primary schools (known as *Grundschule*), represent a shared educational experience for (nearly) all children. They are designed to provide an equitable acquisition of essential knowledge, skills, and key competencies such as literacy, numeracy, and socio-emotional skills that enable students to participate meaningfully in society and pursue life-long learning – a process that is encapsulated by the concept of *Grundbildung*, which is central to the German primary school system (Klafki, 1983). However, learning and teaching in Germany's primary education system are deeply entwined with the organisation and structure of the broader education system, historical roots of the primary education system, the curriculum, approaches to teaching and learning, as well as socio-economic factors and policy frameworks. Balancing the demands of tradition and innovation, the German primary school operates within a unique federal framework that reflects the country's cultural and historical diversity. The decentralised federal structure of the German primary education system provides opportunities for tailored educational approaches, but it also raises questions about the consistency and equity of learning experiences across the nation.

Understanding these aforementioned elements is essential for a comprehensive analysis of the effectiveness and equity of primary education in Germany, as well as for informing future educational reforms aimed at fostering inclusive and high-quality learning environments for all children. Therefore, this contribution explores key aspects of the German primary education system, beginning with an analysis of its organisational structure, followed by a detailed overview of subjects, curricula, and assessment methods. The pedagogical approaches employed in German primary schools, including strategies to address diversity and integrate digital learning, are also outlined. Additionally, the transition phases into and out of primary school besides teacher training are addressed. These core areas demonstrate the complexities and challenges facing German primary schools, while at the same time highlighting opportunities for reform and innovation in response to evolving societal needs.

2 Organisation and Structure of Primary Education in Germany

2.1 The German Primary School – A School for all Children?

The foundation of the primary school in Germany, often traced back to the adoption of the Weimar Constitution in 1919, has its origins in the extensive

modernisation processes of the German school system in the 19th century (or even earlier) (Sandfuchs & Dühlmeier, 2019). With the introduction of compulsory education and the expansion of public primary schools (first to eighth grades), school education became accessible to a broader section of the population during the 19th century, but school facilities and class sizes varied greatly depending on the region, and the rural or urban location. Further, the content of education was initially limited to patriotic and religious indoctrination which was included in subject education. Although the schooling situation in the German Empire improved significantly from the 1870s onwards (Geißler, 2011), the expansion of reformist educational criticism of regular schools from the end of the 19th century (Oelkers, 2005) shows that the primary school system was far from the goal of creating a common school for all. Privileged population groups were able to avoid public schooling during this period by means of private tuition, and private as well as public grammar schools paved the way to early education for those who could afford the school fees. Segregated schooling by denomination and gender was also the norm (Sandfuchs & Dühlmeier, 2019).

Following the end of the First World War, the November Revolution of 1918 and the establishment of the Weimar National Assembly in 1919, democratising tendencies became prominent in Germany, which included renegotiation of educational issues in schools. In April 1920, the Social Democratic Party of Germany (SPD) in particular – whose plan to establish a unified school instead of a three-tier school system had failed in a dispute with the German Centre Party and other conservative forces – was able to push through the adoption of the Reich Primary School Act (German: *Reichsgrundschulgesetz*). After a long transitional period, this put an end to the elite-promoting pre-school and private education systems (Konrad, 2019).

The founding text of the primary school in Article 146 in the Weimar Constitution (1919) refers to it as a “common primary school for all”. However, there was no common or uniform implementation of the Reich Primary School Act, which was enacted as a provisional measure for a comprehensive Reich School Act (German: *Reichsschulgesetz*), in the 18 different German states at the time (Oelkers, 2022). The dichotomous political situation in the Weimar Republic also ensured that dissenting voices quickly emerged, calling for the abolition or modification of primary schools. Nonetheless, the primary school established itself permanently – and was supported by teaching staff who were open to change and integrated reformed pedagogical motives into everyday teaching (Sandfuchs & Dühlmeier, 2019). However, primary schools did not solve the problem of ongoing social inequality. Transitions to secondary schools in the Weimar Republic were still reserved mostly for children from privileged social classes, and the heterogeneous facilities and educational quality of primary

schools (due to their socio-spatial locations) also contributed to the perpetuation of inequalities (Götz, 2023).

The progressive educational ideals of the Weimar Republic – which emphasised equal opportunities through the establishment of a unified primary school system – were fundamentally challenged and ultimately dismantled under the National Socialist regime, which prioritised centralisation, ideological indoctrination, and conformity, over educational diversity and equity. As can already be surmised, although National Socialism led to the centralisation, monopolisation and more or less successful standardisation of all educational institutions, the idea of a 'school for all' receded into the distance. Instead, schools, which were held in low esteem by anti-intellectual National Socialism, were degraded to a place of ideological indoctrination. The propagated racial doctrine declared non-Germans to be inferior, and the so-called '*Volkskörper*' (body of the German people) was to be 'cleansed' of carriers of social, physical or psychological 'defects'. This practice led to stronger selection processes in primary schools, as well as the segregation of children with ascribed disabilities into auxiliary and special schools, where they were again differentiated according to their degree of 'national usefulness'. Jewish children were increasingly excluded and, from 1938, completely banned from public schools. The so-called 'minority schools' for specified population groups – then declared to be 'foreign races' – were dissolved around 1940 (Geißler, 2011; Götz, 1998, 2023; Konrad, 2019).

After the end of National Socialist barbarism in 1945, Germany was divided into zones of occupation by the victorious Allies, with the result that the history of primary education can be traced along two different lines from that point onwards.

2.1.1 Primary Schools in the German Democratic Republic (GDR)

In the Soviet occupied zone, from which the GDR emerged in 1949, primary school was integrated into an eight-year compulsory school. With the exception of auxiliary and special schools, all children were required to go through this 'unified school'. This meant that there was no early selection for further education after the fourth grade. At the same time, a politically demanded increase in pupil performance was countered by the low level of qualified teachers and the difficult domestic conditions of the post-war period, so that 'grade repetition' (German: *Sitzenbleiben*) was not uncommon at that time.

In 1959, a reform began in the GDR, during which the eight-year primary school and the ten-year secondary school were integrated into a ten-year comprehensive school for all pupils. Those who proved themselves through their performance in the ten-year Polytechnic Secondary School (PoS) (and whose parents did not belong to the political opposition) were able to transfer

to the Extended Secondary School (EOS) (Geißler, 2019). Although the primary school (or its equivalent) in the GDR came relatively close to the idea of a 'school for all', it should be noted that its rigid implementation and the structure of the curriculum followed a socialist doctrine and were subject to the extensive socio-political guidelines of state leadership at the time (Zabel, 2019).

2.1.2 Primary Schools in the Federal Republic of Germany (BRD)

In the BRD, which was founded in 1949 on the territory of the Western Allied occupation zones, the design of primary education initially followed the guidelines of the 1920s (Sandfuchs & Dühlmeier, 2019). However, from the mid-1960s onwards, there was a growing context of social modernisation processes and criticism of confessional fragmentation, early selection, the persistent link between social background and educational success, the curriculum, and the lack of school resources (Götz, 2023). Thus, the early focus on children was gradually supplemented with a stronger orientation towards practice based on scientific findings. By 1970, recommendations and structural plans by the German Educational Council (German: *Deutscher Bildungsrat*) and the Standing Conference of Ministers of Education and Cultural Affairs (KMK) proposed a reorientation of primary education. Among other things, they called for stronger democratisation, a change in teaching and learning methods, more individualisation and differentiation, compensatory support for disadvantaged children, and increased cooperation with parents (Einsiedler, 2015). Although the reform activism of the 1960s and 1970s and the demand for equal opportunities could not be sustained in the long term, a number of improvements are evident. The primary school is now a fully developed, independent type of school, with specifically university-trained teachers. The gap between urban and rural schools has been largely narrowed, and the confessional separation of children has been mostly abolished (Sandfuchs & Dühlmeier, 2019; Götz & Sandfuchs, 2024).

During the 1980s and 1990s, significant changes in education addressed growing critiques of traditional approaches. These critiques included dissatisfaction with rigid, closed curricula and the overloading of teaching plans. Schools faced the need to address increasing educational and social responsibilities, which led to the introduction of open teaching methods, such as project-based learning and independent study formats. The 'PISA shock' of the early 2000s – which refers to the widespread public and political alarm triggered by Germany's unexpectedly poor performance in the first *Programme for International Student Assessment* (PISA) study in 2001, particularly regarding educational equity and student achievement (Oelkers, 2003) – further intensified debates about the effectiveness of the German school system, including primary education. Germany's poor performance in international

comparisons underscored the need for reforms, focusing on competency-based learning, improving educational equity, and enhancing basic skills in literacy and numeracy (see Section 3.3). These developments continue to influence pedagogical practices in German primary schools today.

For the period after German reunification in 1990 up to the present day, the scientific consensus is that the founding promise of primary education – to be a unified school for all pupils – has still not been fully realised (Parade & Heinzl, 2020). Despite the ratification of the UN Convention on the Rights of Persons with Disabilities in 2009 and the commitment to an inclusive education system, a separate special education system continues to exist, and the number of students in this system has even risen in four of the sixteen federal states between 2009 and 2021 (Klemm, 2022). In terms of national, linguistic, and ethnic differences, historical improvements can be observed, but even today, primary schools are still not sufficiently equipped materially (in terms of personnel numbers), or professionally in order to adequately address the needs of heterogeneous students, such as those with a migration background (Krüger-Potratz, 2019). Primary schools continue to reproduce educational inequalities, with a clear connection persisting between social background and school competence acquisition, as well as transitions to higher education institutions. Furthermore, the early selection barrier after the fourth grade (or after the sixth grade in Berlin and Brandenburg) significantly determines children's future opportunities (van Ackeren & Klemm, 2019). Finally, the influence of socio-spatial segregation and school choice on educational inequalities in primary education remains an unresolved issue in the German school system today (Parade & Heinzl, 2020).

The historical development of the German primary school system – shaped by key milestones such as the educational reforms of the 19th century, the Weimar Republic, and the challenges under National Socialism, post-war period and reunification – laid the foundation for its modern structure. However, the practical implementation of this system in the federal states today reflects a unique interplay between historical ideals and regional autonomy, leading to diverse approaches in educational policy and practice across Germany.

2.2 School Types and Federal Variations

Germany has 16 federal states (German: *Bundesländer* or *Länder*). And it has a federal education system, which means that education policy in Germany is the responsibility of each federal state. Thus, the specific organisation of schooling structures and practices varies from one federal state to another. Nevertheless, there is fundamental agreement on some aspects:

The task of primary schools is to provide basic education. Basic educational content is taught (such as basic skills in language, mathematics, social and

natural sciences), and subject-related knowledge, skills, abilities, and talents are developed. Basic education builds knowledge and understanding, learning techniques and attitudes, as well as basic skills that are crucial for future life and learning experiences. Primary school prepares pupils for the future of which they are not yet aware. Of course, the question as to which skills a person will need in the world of tomorrow is almost impossible to answer. As a result, there is much debate in academic and policy communities about what content and skills should be included in the basic education curriculum. Early exposure to foreign languages has been introduced in recent decades, and digital education is currently under discussion.

Primary schools prepare pupils for secondary school, which builds on elementary education (see Table 1). Even before school, the first stages of literacy and numeracy take place in the home and family environment. Various studies have identified important skills that children should ideally acquire – in kindergarten or in the domestic environment – before they start school, that will enable and facilitate learning at school (see, for example, Niklas, 2011).

Typical characteristics and particularities of primary school education in Germany are:

- The primary school is the standard school for all children and is known as a *Sprengelschule* (district school). This means that a particular school is assigned to a particular district and there is no free choice for parents of which school children may attend. All children who are six years old on the so-called ‘cut-off date’ are obliged to attend primary school. Since 1997, the federal states have been able to decide independently whether to postpone the national deadline (30 June) and to allow additional school enrolment dates each year. In addition, early enrolment has been made easier, and postponement more difficult (see Section 2.3).
- Primary education lasts four years in most federal states, and six years in Berlin and Brandenburg. This duration is very short in comparison with other European countries (e. g. Finland, Italy, Spain, Czech Republic, Sweden, Norway, etc.); only Austria also ends the common school period after four years.
- Primary school in Germany follows the class teacher principle. As a rule, one teacher teaches almost all subjects. The class teacher is therefore available to the pupils as a close and familiar reference person who accompanies their development processes.
- In many federal states, no grades are given in the first two years of school. Some federal states give grades for the first time in the annual report of the second school year. In some states, such as Schleswig-Holstein and Lower Saxony, teachers have the option of dispensing with grades altogether in

primary school. In such cases, pupils then receive report cards instead of grades. In Bavaria, it is possible to replace the interim report in years 1 to 3 with a documented discussion of learning development.

In 2004, the Standing Conference of the Ministers of Education and Cultural Affairs of the federal states in the Federal Republic of Germany (KMK) defined *educational standards* for primary schools (KMK, 2004a). These standards describe the skills that primary school children should have in German and mathematics, by the end of Grade 4. The curricula in the federal states are based on these educational standards. Every year, all Year 3 pupils in Germany take part in the VERA-3 (*VERgleichsArbeiten in der Grundschule*) test, which is based on the KMK educational standards for primary schools and is developed by the *Institut für Qualitätsentwicklung im Bildungswesen* (IQB) (Institute for Quality Development in Education) on a cross-state basis. The test measures key competences in German and mathematics. The results provide schools with feedback on the performance level of their third-grade classes in the competence areas tested in the respective subjects. Ideally, teachers should have enough time after receiving the feedback to work towards the educational goals to be achieved by the end of Grade 4. Schools are provided with information on how to interpret the results and how to continue teaching the required content.

At the end of primary school, there is a *transition* to secondary level 1 (see Table 1), where the main possible school types are Hauptschule, Mittelschule, Oberschule, Realschule, Gesamtschule and Gymnasium. Ten federal states no longer have a Hauptschule or Mittelschule (Berlin, Brandenburg, Bremen, Hamburg, Mecklenburg-Western Pomerania, Rhineland-Palatinate, Saarland, Saxony-Anhalt, Schleswig-Holstein, and Thuringia). The rules for the transition to the secondary level vary from state to state. In most cases, parents decide which type of school their child will attend. Only in Bavaria, Brandenburg, and Thuringia are grades and teachers' recommendations decisive (for further information on the transition from primary to secondary school, see Section 5). After introducing the key characteristics of the German primary school, we now shift the focus to those at the heart of this institution: the pupils themselves.

Table 1: Education and Teacher Education System in Germany

Age	Level	School System		Grade	Related teacher qualification
18	Upper Secondary Level (Secondary Level 2)	Higher Educational Track (Gymnasium)	Medium Educational Track (Gesamtschule)	13	Secondary School Teacher: 210 - 300 cp Bachelor & Master or State Examination ²
17			Vocational Schools (Berufsbildende Schulen)	12	
16				11	
15	Lower Secondary Level (Secondary Level 1)		Lower Educational Track ¹ (Realschule, Mittelschule, Sekundarschule, Oberschule, Hauptschule)	10	
14				9	
13				8	Primary School Teacher: 210 - 300 cp Bachelor & Master or State Examination ²
12				7	
11				6	
10				5	
9	Primary Level	Primary School ³ (Grundschule)		4	
8				3	Primary School Teacher: 210 - 300 cp Bachelor & Master or State Examination ²
7				2	
6				1	
5	Pre-School Level	Kindergarten (Kindergarten or Kindertagesstätte)			
4					
3					

Note. Several school system variations between federal states are not included in the table. ¹Schools are or can be completed by pupils as early as in grade 9. ²The structure of the teacher training programme (Bachelor and Master vs. State Examination) varies between federal states, and in some cases even within individual federal states. ³In two federal states (Brandenburg and Berlin), primary school lasts until grade 6.

2.3 Enrolment, Age Range, and Grouping

In all federal states, primary school usually starts at the age of six. The KMK's recommendations (1997) on starting school state the following for the Federal Republic of Germany:

1. Compulsory schooling begins for all children who have reached the age of six by the cut-off date stipulated by the respective state school law, 1 August of the same year, and usually by the start of lessons after the summer holidays. The cut-off date should be between 30 June and 30 September. In addition, the federal states may provide additional enrolment options during the school year.
2. Children who reach the age of six after the respective cut-off date for school enrolment may be admitted to school early at the request of their legal guardians. In justified exceptional cases, children born after 31 December may also be admitted to school early. The federal states are responsible for regulating the details.
3. Deferral from school attendance is possible in exceptional cases.

(KMK 1997, translated by Astrid Rank via DEEPL)

Since the federal states offer different possibilities, the recommended cut-off dates vary from 30 June to 30 September. In addition, some federal states recognise 'Kann-Kinder', i.e. children born after the cut-off date, who may start school early under certain conditions. The exact structure (e.g. school enrolment tests) and options for flexible decision making vary between the federal states.

The concept of 'school readiness' or 'school ability' has been discussed in Germany for decades, and reflects different perspectives from the fields of educational policy, developmental psychology, and pedagogy (Kammermeyer, 2024). The notion of 'school readiness' basically describes a child's ability to fulfil the requirements of school, particularly in Year 1. It includes not only the cognitive level, but also the extent of the child's social, emotional and motor development. The view is now moving away from an individual-centred approach – according to which a child must be ready for school at a certain point in time, towards a systemic approach that emphasises the dynamic interaction and co-construction of all those involved (parents, educators, teachers, child) (Fthenakis, 2003). Accordingly, great emphasis is placed on pre-school education. However, the governance of kindergarten and primary schools is assigned to different ministries in Germany, and thus they do not form a legal unit. Pre-school care is subsidised nationwide through financial incentives such as free nursery years, in order to increase attendance. Unlike school attendance (which is compulsory), kindergarten attendance is optional in most

federal states (Fölling-Albers, 2024). Compulsory attendance in the last year of kindergarten applies primarily to children with language support needs, who are identified during the school entry examination, or by kindergarten teachers.

In all federal states, a medical school-entry examination is required by law for all children who are due to start school in the coming school years (Handbook Germany, 2022). As a rule, these medical examinations are organised and carried out by the health authorities in the respective federal states, sometimes by school doctors. The focus of these assessments is on physical, motor, cognitive, and social-emotional skills; for example, vision and hearing, weight and height, as well as general physical condition are examined.

In addition, the so-called 'school game' is often carried out at the receiving schools in the spring before enrolment starts (e.g., SchulteBraucks-Burgkart, 2013). These are playful tasks aimed at assessing the child's level of development in various areas. The focus is less on the performance aspect, and more on observing how the child deals with tasks, and what skills they demonstrate. Thus, it is not a 'test' in the traditional sense (in which children are categorised), but rather an orientation to assess whether the child is ready for school, or still requires support prior to starting school, such as language support or additional developmental stimuli.

The typical class size and teacher-student ratio in German primary schools vary depending on the federal state, type of school, and local conditions. On average, classes comprise around 20 to 25 pupils, although there are also (mainly rural) regions where there may be 12 to 15 pupils in the class. The maximum class size envisaged across Germany is around 30 children, although most federal states try to limit it to between 20 and 25 pupils, especially in inclusive schools (educational institutions that provide equal learning opportunities for all children, regardless of their abilities, disabilities, or socio-cultural backgrounds, promoting diversity and integration; Rank, 2024). The children have a class teacher who teaches most of the lessons, but there are also occasionally specialist teachers for sport, music, handicrafts or religion. In inclusive classes (or classes with language support needs), additional teachers (e.g., special needs teachers or language support teachers) may be employed, according to the need.

Traditionally, schools in Germany are organised by year group, meaning that all children of the same age are placed in the same class. However, mixed-year groups are also organised for pedagogical reasons, and have become increasingly common in German primary schools, both for pragmatic organisational reasons (such as maintaining small rural schools) and for pedagogical purposes. Several federal states have implemented programmes promoting multi-age classes, particularly in the early years of primary education, where

the proportion of mixed-age groups has risen significantly and now varies between 8 % and 65 % across the states (Sonnleitner, 2021, 56). All federal states offer mixed-grade enrolment classes as an alternative to single-grade classes. Particularly in small rural schools, this is convenient in maintaining the school as a whole, e.g., if there are only 16 children in the first and second classes, they are taught together. It is hoped that mixed-grade enrolment classes provide better support for individual learning processes, as the children can learn at their own pace and regardless of their age. Higher-achieving children can work on more challenging tasks, while other learners may need additional time and support. As in kindergarten, older children learn to support younger ones (e.g. by explaining things, or helping them). Younger children benefit from the older ones as role models and can learn from them more quickly (Götz, 2024; Götz & Krening, 2024; Sonnleitner, 2021).

2.4 A School Day, Week, and Year in German Primary Schools

A *school day* at a German primary school usually begins between 7:30 a.m. and 8:00 a.m. The children are introduced to the day with a morning circle or a greeting before the actual lessons start. In many federal states, a lesson typically lasts 45 minutes, often followed by short breaks (around 5 minutes), or longer breaks (about 20 minutes), during which children can play, exercise, or have breakfast. However, the exact structure of lessons and breaks may vary depending on regional regulations and school practices.

The first lessons often focus on core subjects such as German and Mathematics, followed by subjects such as science, music, art or sports. Some schools also offer remedial lessons, class councils, or project work to supplement the day. Classes typically end between 11:30 a.m. and 1:00 p.m., depending on the grade level, and the availability of all-day programmes. With the upcoming legal entitlement for all-day care in primary schools (set to take effect in 2026), the number of schools offering all-day programmes is steadily increasing (KMK, 2018). The number of all-day primary schools in Germany increased from 11,020 in the 2021/2022 school year to 11,196 in 2022/2023; as a result, 73 percent of all primary schools are now organized as all-day schools (Anders, 2023). In all-day schools, children stay until the afternoon (usually 3:30 a.m.), and participate in lunch and leisure or learning activities, such as ball sports, knitting, or playing outdoors. A distinction is made between 'open' all-day schools (in which participation in afternoon activities is voluntary), and 'bound' all-day schools (in which attendance in the full-day programme is mandatory and integrated into the school schedule).

A *school week* usually lasts five days, from Monday to Friday. Each week follows a fixed timetable, which ensures that core and other subjects are taught regularly. Mondays are often used to plan the week or discuss current topics,

while Fridays are usually used for weekly recaps, creative projects, or excursions. Pupils receive between 20 and 29 hours of instruction per week. In most regions, the weekly instructional hours range from 20 to 22 in the first year, and increase to as much as 29 hours by the fourth and final year of primary school (KMK, 2018). Festivals, sports days, or special events such as theatre visits or author readings, may be added to the weekly schedule. There are also many cross-curricular activities, such as Education for Sustainable Development, or Digital Education, which are integrated into lessons throughout the school week. How the teachers organise their lessons over the course of a week is up to them. Thus, some pupils work with weekly plans, which outline specific tasks and learning goals for a particular subject to be completed over the course of the week. These plans often include a mix of mandatory and optional assignments, allowing students to work at their own pace and prioritise tasks independently. Weekly plans encourage self-organisation, time management, and responsibility, as pupils decide how to structure their work, while teachers provide guidance and support as needed. Such a pattern allows students to work independently on their assignments without the teacher giving instructions (the role of the teacher is then more in terms of instructional and emotional support). However, in each case, the teacher decides which part of the curriculum needs to be covered during a particular week.

A *school year* at a German primary school lasts about ten months and usually begins in August or September, changing every year, depending on the particular state. The year is divided into two semesters, which are structured by winter vacations and other short vacation periods (ranging from two days to two weeks), such as autumn, Christmas, Easter and Pentecost. The summer holidays, which last six weeks in total, separate the school years. The school year begins with a settling-in period, during which first-graders, in particular, are introduced to the school community. Throughout the year, learning phases, projects, and tests alternate with each other. Highlights can include class parties, hiking days, and the enrolment and graduation celebrations. At the end of each semester, children receive reports documenting their performance and behaviour (see section 3.4 below). The transition to the next grade level is usually automatic, unless there are serious learning problems that make it necessary for a child to repeat the grade.

2.5 School Choice in German Primary Schools

In Germany, the school choice system is fundamentally shaped by the federal structure, with each federal state having considerable autonomy in its educational policy (Saur & Nikolai, 2024). While school choice comes into focus as a governance instrument for increasing competition in a marketised school system (Weiß, 2001; Bellmann, 2008) – particularly with regard to the transition

from primary school to secondary education – only limited attention is paid to the increase in choices and parental ‘customer decisions’ that may be made at the transition from kindergarten to primary school.

Although some federal states have abandoned this principle, children in Germany are usually assigned to primary schools based on their residential address in a school district (the *Sprengelprinzip*, see Section 2.3), which restricts parents’ freedom of choice. At the same time, the practice translates socio-spatial segregation into educational inequalities and vice versa (Parade & Heinzel, 2020). Nevertheless, research indicates that educationally aware parents, particularly those from higher socio-economic backgrounds, are more likely to have the resources, knowledge and social capital to effectively navigate the primary school choice process. For example, they apply to change schools, engage in legal disputes, move to a different school district, feign removals, or register their children using relatives’ home addresses (Krüger et al., 2020). Another alternative is for financially able parents to resort to the expanding private school sector (Nikolai & Koinzer, 2017) and deliberately choose denominational schools, free alternative schools, or international schools that are state-approved as substitute schools (German: *Ersatzschulen*) or supplementary schools (German: *Ergänzungsschulen*). The growing proportion of pupils in private primary schools in Germany (nearly 10 % of all primary school students in Germany; Stirner et al., 2019; Whittle, 2023) therefore reflects the increasing distinction tendencies and educational aspirations of parents to select suitable school profiles, schools with an anticipated good school climate, performance rates and transition rates to the Gymnasium for their children. At the same time, private schools can be understood “as change agents of school choice and of institutional change in school systems” (Nikolai & Koinzer, 2017, p. 93), because they played a key role in the introduction of school choice as a governance instrument in the aftermath of the ‘PISA shock’ in 2001.

The choice of secondary school after the fourth grade (after the sixth grade in Berlin and Brandenburg) is of decisive importance for the child’s further educational trajectory (Bellenberg, 2012). School choices and transition rates are related to social and ethnic composition, often tied to neighborhoods (Bellenberg, 2012). Teachers’ recommendations and transitions vary with class composition (Dumont et al., 2014). The primary school environment strongly affects Gymnasium transitions (Schräpler & Weishaupt, 2019; see section 5). School choice, it can be argued, is of growing importance for educational pathways in an increasingly marketised school system, but tends to exacerbate social disparities. Questions have therefore been raised about greater state influence, for example, by allocating resources to schools based on a social index (Helbig & Nikolai, 2019).

3 Subjects, Curriculum and Assessment

3.1 Core Subjects and Learning Goals

As in many countries in the world, Germany has guidelines for teaching and learning in primary schools. But different from other countries (for example, the U. S.), these guidelines are less (or not only) traditionally associated with Herbert Spencer's well-known question: "What knowledge is of most worth?" in terms of applicability, practicality, or utility – indeed, this comprises the concept of a *curriculum* (Horlacher, 2018). Germany embraces the idea of emphasizing the internal structure of school subjects and aims for a holistic development of individuality through personal engagement with the surrounding world, which is labelled as a *Lehrplan* (Horlacher, 2018). The *Lehrplan* is defined as encompassing "that which matters in teaching and instruction" (Weniger, 1990, p. 216), and is understood as the "specifications set by educational authorities concerning both lesson content and learning objectives" (Künzli, 2009, p. 134). There is not only one universal *Lehrplan* for primary education in Germany, since all federal states formulate their own concrete and mandatory subject-specific competence expectations for primary education. The *Lehrplan* of each federal state is based on nationwide educational standards (*Bildungsstandards*), formulated by the Standing Conference of the Ministers of Education and Cultural Affairs of the federal states in the Federal Republic of Germany. However, at the primary school level, these standards currently exist only for the subjects German and mathematics, providing a broad framework for teaching and learning in these key areas (KMK, 2022a, 2022b).

The canon of subjects at primary school comprises the nine subjects German, mathematics, science, foreign language (English), art, handicrafts, music, sport and religion/ethics (KMK, 2018). Of these, German, mathematics as well as science education and social sciences are the core subjects taught at primary school. The main purpose of the subject German in primary education is to foster foundational knowledge and skills in the language, thus serving as the basis for lifelong learning and the capacity for independent cultural engagement (KMK, 2022a). A central focus of this educational mandate is the development of linguistic competencies (KMK, 2022a). Primary school students enhance their language skills across multiple areas: Process-oriented competencies (speaking, listening, reading and writing), and domain-specific competencies (engaging with texts and media, and analysing language and its use) (KMK, 2022a). This includes learning to participate in conversations, address others effectively, and develop writing proficiency.

Mathematics in German primary schools builds on children's early everyday experiences, developing foundational competencies that support future learn-

ing and lifelong engagement with mathematical challenges (KMK, 2022b). Rather than focusing explicitly on traditional areas like arithmetic or geometry, the emphasis is on interconnected general and content-specific competencies essential to mathematics as a whole (KMK, 2022b). The aim is for primary school students to learn how to reason, communicate, model, solve and present problems mathematically by using mathematical objects and tools (KMK, 2022b). This may include, for example, questioning mathematical statements and checking them for correctness.

3.2 Elective and Extra-Curricular Programmes in the German Primary School System

In the German primary school system, elective and extra-curricular programmes are playing an increasingly important role, partly against the backdrop of the expansion of all-day schooling that has been taking place since the start of the new millennium. These opportunities go beyond regular lessons and include both voluntary courses and additional school programmes, most of which vary greatly depending on the federal state, individual school, and available resources. The purpose of such programmes is to strengthen individual support for pupils and promote their personal development. The hopes associated with these initiatives include raising the educational participation of disadvantaged children, compensating for educational inequalities, and generally making better use of children's educational potential and improving their competencies – although these claims have not been fully confirmed empirically (Fischer, 2020; Holtappels, 2024; Rollett et al., 2011; StEG, 2016, 2019; Tillmann et al., 2018).

Elective courses or activities in primary school are usually optional ones that give children the opportunity to pursue individual interests and develop new skills. These often include:

- Musical offerings: Choir, instrumental lessons, or orchestra groups. Such programmes not only promote musical education, but also social skills and teamwork.
- Art courses: Drawing or craft classes, theatre groups, or dance classes provide creative expression opportunities for students and strengthen their self-awareness.
- Sports activities: Clubs or in-school sports opportunities enable children to develop motor skills, improve their fitness levels, and work in teams. New sports and exercises are often offered, such as badminton or yoga.
- Foreign language programmes: In some federal states, children of primary school age can gain their first experience of foreign languages such as French or Spanish, which broadens their linguistic and intercultural horizons.

In addition to elective courses, many schools offer extra-curricular programmes that include both supervision and specific support (for an overview of extra-curricular offerings, see Lilla & Schüpbach, 2021):

- All-day care: Extra-curricular programmes play a central role at all-day schools in particular. They include supervised homework times, individual support measures, leisure activities, subject-specific programmes, and sporting or creative activities. Such programmes take caring pressure off parents and offer children a structured daily routine.
- Projects and working groups: Projects such as environmental working groups, school gardens, or school newspapers enable children to learn in a practical way and take on certain responsibilities. These programmes strengthen both problem-solving skills and a sense of community.
- Holiday programmes: Some schools organise special programmes during holiday periods to provide children with meaningful leisure activities. These range from sports activities to workshops in art or science.

The elective and extra-curricular activities described aim to support pupils holistically and to recognise their individual strengths. Depending on their quality and suitability, such activities can contribute to the development of competencies, the enhancement of creativity and personal responsibility, and may have a positive impact on the school community and the learning environment as a whole. However, these programmes face various challenges, including limited financial and human resources, which can make it difficult to implement them more broadly, particularly for schools in socially disadvantaged regions. Another aspect that must be considered is the coordination and dovetailing of regular lessons and extra-curricular programmes, in order to avoid overburdening pupils. In addition, the professional qualifications of educators who offer extra-curricular programmes vary greatly – only a few have university degrees. Finally, it should be noted that only a small proportion of pupils at German schools make use of extra-curricular support programmes (Fischer, 2020; Pothmann & Thole, 2020; StEG, 2016,2019).

In summary, it can be stated that the potential of elective and extra-curricular programmes has not yet been fully exploited in German primary schools – this is also because such programmes require sustainable funding and staffing, which is not guaranteed across the sector. The findings on the impact of such programmes have so far been rather inconsistent due to their heterogeneous design and quality. It can therefore be concluded that results have fallen short of expectations up to now, which is why further qualitative studies and mixed-methods approaches are required in order to capture impact mechanisms in a more differentiated way (e.g., Fischer, 2020; Radisch et al., 2014).

3.3 Assessing Students

In the context of educational systems, assessment practices play a crucial role in shaping the learning experiences of students (McElvany & Stang, 2020). This is particularly evident in Germany's primary education system, where various assessment methods are employed to evaluate pupils' performance and to inform instructional practices (McElvany & Stang, 2020). The assessment landscape in German primary schools is characterised by a blend of traditional and innovative approaches, reflecting the ongoing evolution of educational standards and pedagogical strategies. One significant aspect of assessment in German primary schools is the emphasis on formative assessment, which aims to monitor pupil learning and to provide ongoing feedback to improve teaching and learning processes. Such formative assessment is conducted through different methods, usually as written tests or oral tests. The ability of teachers to interpret students' learning is often called 'diagnostic competence' (Edelenbos & Kubanek-German, 2004; Hoth et al., 2016). Furthermore, the integration of qualitative assessment methods has gained traction, as educators recognise the limitations of traditional quantitative assessments in capturing the full spectrum of pupil abilities and learning styles (Schumacher & Denner, 2017).

In the first two grades, performance levels are communicated mainly in a qualitative way, i.e., as a continuous text describing the child's level of competence. In grades 3 and 4, formative assessments are usually converted into actual grades from 1 to 6 for each subject, on the German reverse scale, with 6 indicating poor performance and 1 indicating the best performance. All formal assessments are usually added together at the end of each school semester by the teacher, which although summative in nature, does not correspond to a state summative assessment (the latter occurs typically at the end of an instructional period, to evaluate overall student achievement in a formal manner; see Wang et al., 2021). The average grade, which is calculated from all assessments in the preceding semester or year, is noted on the report. Pupils receive a report twice a year: a mid-year report and an end-of-year report.

In addition to teacher assessments, standardised testing through non-school organisations has become a prominent feature of the German educational landscape, particularly in response to international benchmarks such as the VERA-3 (see above), Trends in International Mathematics and Science Study (TIMSS), or the Progress in International Reading Literacy Study (PIRLS) (see <https://timss.bc.edu> for international information on both studies). These assessments are designed to evaluate pupils' competencies in key areas such as mathematics, reading and science, providing valuable data for policy makers and educators alike (Mullis & Martin, 2017). However, reliance on standardised testing has sparked debates regarding its impact on teaching practices

and student well-being, with some studies suggesting that high-stakes testing may contribute to increased anxiety and overstress among pupils (Lichtenfeld et al., 2012; Schlesier, Raufelder et al., 2023; Schlesier & Raufelder, 2024). Furthermore, the results have repeatedly led to broad debates in recent decades, which in turn have led to various reforms that have not always benefited the promotion of primary pupils' skills (Funke, 2014). Nevertheless, the results of the aforementioned studies, and the insights produced regarding trends in skills development are highly relevant and offer starting points for support.

In conclusion, assessment practices in German primary schools reflect a complex interplay of formative and summative approaches, standardised testing, and teacher involvement. In this context, the role of teachers in the assessment process cannot be overstated. Educators are tasked with developing and implementing assessment tools that align with curricular goals and pupil needs – thus, enhancing their assessment literacy should form part of their continuing professional development (Forsberg & Wermke, 2012). This responsibility necessitates ongoing professional development and collaboration among teachers. As the educational landscape continues to evolve, it is essential to critically examine assessment practices to ensure that they meet the diverse needs of pupils and contribute to their overall development.

4 Teaching and Learning Approaches

4.1 Principles and Tensions of Teaching in Primary Education

Teaching and learning in German primary schools are shaped by specific organisational and structural conditions, as well as by the academic and social demands placed on educators and students (see sections 2 and 3). It is imperative for teaching practices to ensure that students systematically develop fundamental competencies in various subjects, experience self-efficacy, and are pedagogically assessed and supported in an appropriate manner (KMK, 2004b, 2024). Additionally, cross-cutting themes such as digital education, language sensitivity, education for sustainable development, participation, and democracy education have become increasingly relevant in primary education in Germany. Addressing these areas effectively requires interdisciplinary collaboration and an adaptive approach to meet the diverse needs of learners. To guide primary education practice, the KMK (2024) has articulated core principles, which include: the school as a place for learning and living, a space for experiences and action, comprehensive and foundational education topics, high-quality educational and pedagogical work, equal access to education, continuity in educational biographies, and a future-oriented outlook. Similarly, the German Primary School Association (German: *Grundschulverband*)

outlined pedagogical principles for teaching and learning in German primary schools: Children should experience school as a welcoming, inclusive space where they feel valued, can express themselves, and participate actively in shaping their learning environment (Schumacher & Denner, 2017). This includes supporting their individuality within shared rules, allowing for choice and reflection, differentiating learning pace, and encouraging a positive view of mistakes as part of learning (Schumacher & Denner, 2017).

4.2 Teaching Approaches Concerning Diversity

The diversity of pupils may be addressed by the use of various didactic approaches. In Germany, the four response types outlined by Weinert (1997) are commonly distinguished:

1. *Passive response form*: Ignoring differences in learning and performance
2. *Substitutive response form*: Adapting students to meet the demands of instruction
3. *Active response form*: Adapting instruction to the learning-relevant differences among students
4. *Proactive response form*: Targeted support for individual students through adaptive instructional design.

This section focuses particularly on the active and proactive response forms, each of which is discussed in turn, with a specific emphasis on their relevance to the German primary school context. The *active response form* encompasses the notion of *differentiation*. According to Saalfrank (2012), differentiation refers to all school- and instruction-related measures aimed at fostering students or groups of learners, based on their varying inclinations, talents, interests, weaknesses, and strengths, while considering their individual developmental stages. This approach contributes to the individualisation of instruction, which is a field all on its own (see below).

Differentiation can be categorised into external and internal forms. External differentiation typically involves school organisational measures, such as dividing students into different school types or courses. Internal differentiation, on the other hand, concerns instruction within a classroom (Labudde, 2019). A closely related concept that is implemented in German primary schools is *individualisation*. Individualisation involves tailoring the learning process to individual learners. According to Hess and Lipowsky (2017), the key difference between these two concepts lies in the fact that differentiation involves providing fewer varied learning opportunities, since tasks, aids, support measures, etc., are prepared specifically for groups of learners (e.g. particularly low-achieving, high-achieving children, and those with average performance

levels). This thought is guided by Vygotsky's (1978) concept of the Zone of Proximal Development, which emphasizes targeting the next achievable learning step for a particular child.

The *proactive response form* is associated primarily with adaptive teaching. This approach focuses on aligning the learning environment with the diagnosed learning prerequisites of students (Hardy et al., 2011), which clearly requires prior diagnostic measures to have been obtained. Two levels of response can be distinguished: macro-adaptation at the class level, and micro-adaptation at the individual student level. Micro-adaptations, such as feedback, high-order questions, and scaffolding, are particularly effective and support the learning processes of individual students (Martschinke, 2015). These approaches can also be effectively implemented using digital tools.

The concept of self-directed learning (open instruction) is also very popular in Germany, although the actual degree of openness is often overestimated by teachers (Brügelmann, 2000). Open instruction may include – depending on the degree of openness – organisational, methodological, content-related, and politically participatory dimensions, which are placed increasingly under the responsibility of the students. Examples of such concepts include free work or weekly plans (Bohl & Kucharz, 2010). However, open instruction is not inherently effective; to achieve learning goals, the activities must be clearly structured and designed with challenging, cognitively activating content.

In recent years, various methods and approaches have been established in Germany to support both differentiation and openness. For example, the Churer model (Lutz & Thöny, 2024; Thöny, 2017) has gained significant traction in German primary schools. The Churer model is an educational concept developed in Switzerland that emphasizes a child-centred, holistic approach to learning, integrating emotional, social, and cognitive development. It focuses on creating learning environments that foster autonomy, cooperation, and active participation, promoting the intrinsic motivation of students. Additionally, planning tools such as learning ladders, differentiation matrices, or inclusive didactic networks are frequently used (for an overview see also Rank, 2024).

4.3 Digital Learning

As in other countries around the world, digitalisation has also made its way into German primary schools. Building on this recognition, the increased use of digital media in primary schools aligns with the decision made by the Standing Conference of the Ministers of Education and Cultural Affairs (KMK) in 2016, which emphasised the importance of equipping children from an early age with fundamental competencies for navigating the digital world. This development had already begun prior to the COVID-19 pandemic (e.g. Irion, 2021), and gained considerable momentum during the pandemic. It was

significantly accelerated by the experiences and challenges of remote learning during that time, as many primary schools in Germany had to quickly adapt to new challenges, including implementing remote and digital learning due to restrictions on in-person teaching (Helm et al., 2021). Although primary education in Germany resumed in-person teaching in 2022, the use of digital media has gained even greater relevance compared to pre-pandemic levels. Digital competencies span six areas, including searching for, and processing information, communication skills, and problem-solving using digital media and tools (KMK, 2016). The Standing Scientific Commission on Education Policy (SWK) has recommended integrating digital education systematically into the general education system, including in primary schools, in order to prepare students for the demands of a digitalised world and to leverage its opportunities as quickly as possible (SWK2022). To support this goal, Germany is currently implementing the *DigitalPakt Schule* (BMBF, n.d.), which aims to establish a comprehensive digital education infrastructure that includes primary schools.

This increasing digitalisation in German primary schools, as highlighted by the German Educational Research Association (GERA; in German: *DGfE*), offers the potential to tailor and individualise learning environments in primary schools to better address the diverse needs of students (DGfE, 2022). This could help to reduce social inequalities and promote inclusion, particularly for students requiring special education or language support (Seifert, 2019). However, digital education also presents pedagogical challenges and risks, such as the potential exclusion of children with special needs or developmental delays (Quante, 2022; Spitzer, 2022). Consequently, despite the SWK's recommendations and the KMK's resolution, a debate has emerged in Germany about whether, and to what extent digitalisation is necessary in primary education (Irion, 2021). And regarding recent developments in artificial intelligence (AI), the SWK (2022, 2023) indicates that AI does not yet play a significant role in the lower grades of primary education, at least for now.

Currently, schools in Germany are largely well equipped with basic digital infrastructure, but the extent and quality of this equipment and internet access vary widely from school to school. Similarly, the degree to which digital tools are integrated into teaching depends on individual classrooms and the digital literacy of teachers. In particular, not all primary school teachers feel equipped to use digital tools confidently. As Germany, like other nations, continues the ongoing process of digital transformation, significant developments in the digitalisation of primary school education are expected in the coming years (Gräsel et al., 2020).

5 Transition Phases to and from Primary School

The primary school years encompass two critical transitional phases in a child's life: the transition from their private or kindergarten environment to primary school, and then the transition from primary to secondary school. School entry typically occurs around the age of six in Germany, while the transition to secondary education takes place at approximately ten years of age. Both transitions are critical life events for children (Knoppick et al., 2016; Mays et al., 2023; van Ophuysen, 2009). However, the transition into primary school has attracted more research interest, both internationally and in Germany – for Germany, probably because of its role as the child's initial encounter with the institutional school system (Mays et al., 2023).

Kindergarten – primarily a space for play, social interaction, and peer friendships under the care of educators – differs fundamentally from the context of primary school (Mays et al., 2023). In Germany, there is no standardised pre-school system and preschool educational offerings vary significantly among kindergartens, ranging from minimal weekly activities to comprehensive preparatory programmes. Kindergarten is not mandatory, meaning that not all children have prior exposure to institutional learning content before starting school. As a result, children enter primary school with varying socio-emotional and cognitive learning prerequisites (Mays et al., 2023).

Moreover, the primary school classroom has become more heterogeneous compared to two decades ago, due to inclusive education policies that enable children to learn together across a broader spectrum of learning needs in primary school classrooms (Then & Pohlmann-Rother, 2024; Weiß et al., 2024). Upon entering primary school, children face new normative expectations, social dynamics and performance demands, which can present emotional challenges as they learn to navigate these new requirements (Schlesier et al., 2024; Then & Pohlmann-Rother, 2024). The German primary school system remains focused predominantly on requiring children to adapt to the school environment, with limited emphasis on understanding and supporting children's own perspectives and needs. A shift toward this latter approach would not only align with children's rights but also strengthen their level of autonomy (Rank & Schlesier, 2026). Such an understanding of transition views children as active agents, emphasizing system adaptation to the child, rather than the other way around (Rank & Schlesier).

Unlike in many other countries, the German primary school system includes an early selection process at the end of the fourth grade. Mainly based on academic performance, decisions are made regarding the type of secondary school a child will attend. In some federal states, parents make this decision (e.g. Lower Saxony), while in others, schools decide this (based on teachers'

recommendations) (e.g. Bavaria). Following this process, students are placed in either higher educational track schools (e.g. Gymnasium or comprehensive schools), or middle- or lower-track schools (e.g. *Oberschule*, *Hauptschule*, or *Realschule*). Transitions between school types are challenging, particularly because educational and career trajectories are determined largely during primary school. It is therefore unsurprising that children may feel pressured around the transition, which can contribute to negative feelings such as being overwhelmed (Carle & Herding, 2022; Schlesier et al., 2024).

6 Teacher Qualifications and Teacher Training

The professional requirements of primary school teachers differ from those of teachers in other types of school. For example, they are the ones who need to moderate the transition from the diffuse emotional relationships of closeness within the family (or kindergarten, which largely simulates those relationships) to regular, role-based behaviour and the universal performance logic of a meritocratic society into which school socialises a child (Parsons, 1959; Helsper, 2022). However, the emergence of school-form-specific academic training for primary school teachers emerged quite late in Germany (in the second half of the 20th century), and is closely linked to the historical paths of the foundation of primary schools and their development as described above (see Section 2.1).

Until well into the 19th century, there was no nationwide training programme for teachers in the 'lower school system' – unlike for teachers in 'higher schools'. Although the expansion of state training programmes for teachers in the 'lower school system' began around 1820, a degree was still not a prerequisite for employment (Vogt & Scholz, 2020; Vogt, 2019). Against the backdrop of restorative endeavours and concerns that the population's level of education was too high, teacher training did not progress past a certain level for some time. Requests to upgrade the status of teachers in the so-called 'folk schools' (German: *Volksschule*) were initially rejected, and knowledge was regulated and limited as part of the interests of the ruling class. State-provided teacher training was only gradually expanded, standardised and normed; the quality of training and pay improved, alongside the social prestige and living conditions of primary school teachers (Vogt, 2024).

Further reforms followed during the Weimar Republic, which pushed for the academisation and standardisation of training for primary school teachers (primary schools were still part of the *Volksschule* at that time). Nevertheless, the implementation of such training was organised very differently in the various federal states – in some, it took place at universities and technical colleges, in others it remained at the state-run teacher training colleges and preparatory

schools (Sandfuchs, 2023). Under National Socialism, many of the achievements of teacher training programmes were retarded, the quality declined, and they became ideologised. In the post-war period, training models from the Weimar Republic continued in the Federal Republic of Germany (FRG), but further innovation did not initially take place, and inconsistent implementation remained (Vogt 2019, 2024; Vogt & Scholz, 2020).

Lasting reform initiatives, which continue to have an impact to this day, began only in the second half of the 1960s (Sandfuchs, 2023). These included, in particular, the gradual academisation and scientification of primary school teacher training in the FRG. Further important impetus for a stronger evidence-based approach to teaching and competence-oriented teacher training has been provided with the increasing relevance of international comparative large-scale studies since the turn of the millennium, and the associated expansion of psychologically inspired empirical educational research in Germany (see Terhart, 2000; KMK, 2004b). It can therefore be stated that there has been a concomitant expansion of research-based teaching, and steady progress in the requirement for nationwide qualifications for primary school teachers (Einsiedler, 2015; Fölling-Albers, 2023; Vogt, 2019). Nevertheless, these developments do not necessarily correlate with a steady improvement in expected school outcomes.

While the majority of federal states have taken the step towards full academisation of the primary school teaching degree with the switch to a six-semester Bachelor's degree (undergraduate) and consecutive four-semester Master's degree and have placed it on an equal footing with other teacher training courses, six federal states continue to retain what is called the 'First State Examination' qualification (German: *Erstes Staatsexamen*). The standard duration of study in that programme varies between seven (Bavaria, Hesse), eight (Saxony, Saxony-Anhalt, Saarland) and ten (Mecklenburg-Western Pomerania) semesters.

Although KMK (2024a) defines a country-wide competence profile for primary educators and sets certain course content as a minimum standard, the federal structure of the German education system continues to be reflected in the implementation of teacher training. This also applies, for example, to the implementation of practical phases in the degree programme, for which the proportion, duration and timing are not regulated uniformly. In particular, teacher training strategies need to respond to student calls for more practical experience (Schlesier, Lisek et al., 2023). However, empirical findings provide little information as to whether long-term internships and practical semesters have an effect (for example, with regard to the sustainable development of student teachers' competencies) beyond subjective self-perception, or may even cause negative effects (Gröschner & Hascher, 2019; Ulrich et al., 2020).

Similar to the practical components, the implementation of inclusive pedagogy in primary school teacher training programmes also varies between federal states and universities, which has become a constitutive part of teacher training at the latest since the ratification of the UN Convention on the Rights of Persons with Disabilities in 2009. This also generally concerns the relationship between educational science, subject-specific, and subject-didactic elements in teacher training programmes (Vogt, 2024).

Following the university degree programme, which is completed with the First State Examination or the Master's degree, a second training phase begins in Germany, which is known as 'preparatory service' (in some federal states it is called the *Referendariat*). The duration of preparatory service is between 12 and 24 months, depending on the particular state. During this time, the trainee teachers teach in a school, and practical experience is supported by didactic and pedagogical seminars at the university that focus on the planning, implementation and reflection of lessons, including other topics such as school development and counselling. In the schools, trainee teachers are assigned trainers or mentors who provide them with feedback and advice. Due to the increasing demand for primary school teachers, various federal states are now implementing lateral entry models that enable interested people from outside the profession to enter school practice quickly (Anderson-Park & Abs, 2020). Considering the question of what characterises teacher professionalism and how teachers can be professionalised, a whole range of different professionalisation approaches can be found in the German educational science discourse (for an overview, see Cramer et al., 2020; Helsper, 2021). The most prominent of these approaches are: 1) the personality approach; 2) the competence-theoretical approach; 3) the structural-theoretical approach; and 4) the (professional) biographical approach, each of which is discussed below:

1. *The personality approach*: Current psychologically inspired empirical research defines a teacher personality as relatively stable patterns of dispositions that are associated with the professional success or failure of teachers, which are based on personality theories (e.g. the 'Big Five' personality traits; Goldberg, 1990). This approach seeks to develop suitable advice and information services for career choices, self-reflection tools, and personalised learning arrangements for (prospective) teachers (Mayr et al., 2020).
2. *The competence-theoretical approach*: This approach emphasizes that (student) teachers' professional skills, including pedagogical, content, and didactic knowledge, can be learned and developed over time (Baumert & Kunter, 2006; König, 2020). This approach plays a key role in the German primary school system, driven by policy efforts to standardise and regulate education. The competence-based model is used not only in teacher training

ning but also in primary schools, where it is assumed that pupils gradually develop their skills over time.

3. *The structural-theoretical approach*: The structural theory of professions defines professions as those that address crises on behalf of laypersons, aiming to (re-)establish autonomous agency through case-sensitive, non-standardisable action (Oevermann, 2002). Central to teacher professionalism is the interpretive reconstruction of individual case structures, practised from early teacher education through casuistic, research-oriented engagement with professional situations. This approach focuses according to Helsper (2021) on the constant balancing of conflicting demands in teaching – like creating closeness with pupils while maintaining professional distance – a dynamic particularly relevant in primary education.
4. *The (professional) biographical approach*: The biographical approach emphasises the formative role of individual life histories, particularly early experiences and meaning-making processes shaped by family and social background, in the development of a professional habitus (Fabel-Lamla, 2018). These biographical layers generate specific resources as well as risks and dispositions for vulnerability that shape how teachers respond to the demands of professional practice. From this perspective, teacher education aims to prepare prospective teachers for phase-specific developmental tasks and to initiate biographical reflection on their own becoming (Fabel-Lamla, 2018; Hericks, 2006).

Overall, there are many training variants and professionalisation approaches for primary school teachers in Germany, and thus the diversified training landscape is a long way from presenting a uniform concept for teacher training. Nevertheless, this diversity enables a polyphonic and controversial academic discourse that is constantly being dynamised anew.

7 Conclusion: Challenges and Future Directions for the German *Grundschule*

German primary schools occupy a pivotal role in the nation's education system, acting as both unifying institutions and sites of considerable regional and cultural diversity. The design and implementation of primary education reflects an enduring commitment to providing foundational education for all children; yet challenges remain in achieving equity, particularly in the context of regional variations between federal states, and socio-economic disparities. The exploration of teaching approaches, curriculum reforms, and digital learning underscores the continuous adaptability present in the German school system, but also its unsteadiness. Moreover, issues such as teacher shortages

and problematic transitions between educational stages reveal areas requiring sustained focus and investment. As Germany continues to navigate global trends – such as increasing technological advancements, immigration, sustainability, and inclusion – the *Grundschule* must evolve to meet the needs of an increasingly diverse student population. Addressing these challenges will require a combination of policy reforms, professional development for educators, and active collaboration among stakeholders. But in the end, German primary schools are assigned the responsibility of ensuring that every child receives an education that equips them for success in a rapidly changing world – thus laying the foundation for ongoing learning and the acquisition of life skills.

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Author Information

Schlesier, Juliane, Prof. Dr.

University of Wuppertal

Research on Primary Education, Institute of Educational Research

Areas of Expertise: Primary and Early Secondary School Students' Socio-Emotional School Experiences, Transition Phases to and from Primary School, Practical Experiences in Teacher Education

Address: University of Wuppertal, Research on Primary Education, Institute of Educational Research

Gaußstr. 20, 42119 Wuppertal, Germany

E-Mail: schlesier@wuppertal.de

ORCID: 0000-0002-1873-2520

Parade, Ralf, Dr. phil.

University of Erfurt

Faculty of Education, Department of Primary School Education

Areas of Expertise: Research on Educational Inequality, Professionalisation and Teacher Education Research, Phenomena of Exhaustion and Suffering in the Teaching Profession, Subjectivation and Alienation, Methods and Methodologies of Qualitative Social Research, Heterogeneity and Inclusion in the Context of Schooling, International Primary School Research

Address: University of Erfurt

Faculty of Education

Department of Primary School Education

Hieranaplatz 4, 99089 Erfurt, Germany

E-Mail: ralf.parade@uni-erfurt.de

ORCID: 0000-0001-5188-0827

Rank, Astrid, Prof. Dr.

University of Regensburg

Chair of General Primary Education and Didactics of Primary School

Areas of Expertise: Professional Development, Heterogeneity and Inclusion, Language Education in Subject-Specific Contexts

Address: Universität Regensburg

Universitätsstraße 31

93053 Regensburg, Germany

E-Mail: astrid.rank@ur.de

ORCID: 0000-0002-2468-6129