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(Eds.)

LabSchoolsEurope

Participatory Research for Democratic Education

Laborschule Bielefeld

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LabSchoolsEurope

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In dieser Reihe sind erschienen

Bosse, Ulrich: Armin – Ein Junge mit Autismus in der Schule ... von dem ich so viel gelernt habe. Bad Heilbrunn 2020.
Biermann, Christine / Geist, Sabine / Kullmann, Harry / Textor, Annette (Hrsg.): Inklusion im schulischen Alltag. Praxiskonzepte und Forschungsergebnisse aus der Laborschule Bielefeld. Bad Heilbrunn 2019.
Biermann, Christine / Bosse, Ulrich (Hrsg.): Natur erleben, erfahren und erforschen mit Kindern im Grundschulalter. Bad Heilbrunn 2013.
Biermann, Christine / Schütte, Marlene (Hrsg.): Geschlechterbewusste Pädagogik an der Laborschule Bielefeld. Bad Heilbrunn 2014.
Bosse, Ulrich / Banik , Martin / Freke, Nicole / Kampmeier, Daniela / Quartier, Ulrike / Sahlberg, Katriina / Walter, Jutta: Qualitätsdimensionen im verbundenen Ganztag. Schulentwicklung am Beispiel der Eingangsstufe der Laborschule Bielefeld. Bad Heilbrunn 2016.
Döpp, Wiltrud / Groeben, Annemarie von der / Husemann, Gudrun / Schütte, Marlene / Völker, Hella (Hrsg.): Literalität und Leistung. Bausteine einer pädagogischen Sprachdidaktik. Bad Heilbrunn 2009.
Hollenbach, Nicole / Tillmann, Klaus-Jürgen (Hrsg.): Die Schule forschend verändern. Praxisforschung aus nationaler und internationaler Perspektive. Bad Heilbrunn 2009.
Hollenbach, Nicole / Tillmann, Klaus-Jürgen (Hrsg.): Teacher Research and School Development. German approaches and international perspectives. Bad Heilbrunn 2011.
Quartier, Ulrike / Kampmeier, Marcus / Bardi, Cornelia: Weltsprache Natur. Die Naturwerkstatt der Laborschule Bielefeld. Bad Heilbrunn 2013.
Terhart, Ewald / Tillmann, Klaus-Jürgen (Hrsg.): Schulentwicklung und Lehrerforschung. Das Lehrer-Forscher-Modell der Laborschule auf dem Prüfstand. Bad Heilbrunn 2007.
Thurn, Susanne (Hrsg.): Individualisierung ernst genommen. Englisch lernen in jahrgangsübergreifenden Gruppen (3/4/5). Bad Heilbrunn 2011.
Thurn, Susanne / Tillmann, Klaus-Jürgen (Hrsg.): Laborschule – Schule der Zukunft. Bad Heilbrunn 2011.

weitere Bände in Vorbereitung

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Table of Contents

Elizabeth Morley

Foreword

Welcome to *LabSchoolsEurope: Participatory Research for Democratic Education*, a much-anticipated book that ably captures the experiences and findings of a new network of schools that heralds the unique contexts of lab schools across Europe. In its relatively short years as a gathering of university-affiliated schools, LabSchoolsEurope has accomplished a remarkable feat of collaboration. This book tells in warmly drawn, detailed and immensely readable accounts, the story of each founding school and its purpose, pedagogies, and focused research findings. The messages are hopeful – not only because the schools involved are strong exemplars of commitment to educational excellence for their own students – but also because, with a compelling mix of humility and urgency, they take up the possibility and mission of improving schools for all students by exploring how lab schools can contribute to societal good.

It is an honour for the International Association of Laboratory Schools (IALS) to recognize the work of LabSchoolsEurope and the benchmark that this volume represents for all lab schools. First, it is an example of shared work among university-based researchers and school-based educators to explore education's best practices. Second, this book delves deeply into foundational principles of democratic education in ways that will have impact on other schools. And third, this content and these authentic voices create possibilities for meaningful conversations among educators now and in the future.

The verve and focus of the LabSchoolsEurope project, which was funded by the European Commission, have already been unusually invigorating and inviting to other university-based schools across the globe. This volume, representing a multi-year exploration of democratic education in lab schools, is the capstone of a shared project but also a gateway into the next steps for LabSchoolsEurope through its expanding connections with schools, teachers, administrators, researchers, and professors. In *LabSchoolsEurope: Participatory Research for Democratic Education* we are offered a glimpse of what it means to be a learning lab and how making research outcomes visible in classrooms within one school can influence others well beyond its walls. As a new network, LabSchoolsEurope has created a needed opportunity to listen to and learn from each other, making the job of lab schools less lonely and more collegial, less uncertain in the hard times

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and more celebratory and surer in the best of times. We know from experience that connections matter.

As the International Association of Laboratory Schools has found across its 65-year history, we are stronger and more likely to have impact when we gather, build friendships, hear each other's stories, and share experiences. This book welcomes readers from newer schools, celebrates the originals, and brings voice to the realities, obstacles, and joys of the complex schools that lab school educators come from. Each chapter includes an origin story so that we can better understand the foundations and beliefs that gave each school its life and purpose. As one reads these, it is reassuring to hear where and how others are meeting expectations of their universities. Knowing that we are not alone has value.

When we consider the origins of lab schools, we are entering under an expansive umbrella, and it makes sense that no two schools within that circle are alike. Current contexts are different, just as origins are, and there is meaning to be found in noting both similarities and differences. How we begin can make a critical difference in how we prioritize what we do. For example, in North America as in Europe, some lab schools began as what we then called Normal Schools, which had the explicit mission of providing teacher training. Teacher education may remain the primary focus for the universities that now support these schools. On the other hand, some lab schools grew in the lab model of science departments in universities, reasoning that if the sciences like medicine, chemistry and physics need labs, then surely education would benefit from having learning labs also.

Beginning in the late 19th century and the first half of the 20th, many lab schools sprouted from the emerging fields of psychology and sociology. Taking advantage of new knowledge about both child development and the impact of social realities like poverty or malnutrition on a child's capacity to learn, several universities started lab schools to explore what schools could look like if they were to effectively meet the needs of each child as an individual instead of a one-size fits all approach familiar in the earliest schooling models.

Meanwhile on the other side of the globe, university-affiliated schools abound in Asia, where many higher education faculties have at least one, and sometimes five or six, fully affiliated schools from pre-school to high school bearing the university's name. In China, Korea, Taiwan, Japan, Viet Nam, India and more, one can see large, often very modern school buildings on university campuses, engaged in meeting their institutional mandates. This might be research or teacher education, among the most traditional lab school missions, or they might serve other purposes including recruitment and retention of faculty, large scale community daycare, or the initiation and piloting of new public policy in education or health care. Origin stories help us to see why a school exists and whose needs and what missions it must meet to stay viable.

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LabSchoolsEurope: Participatory Research for Democratic Education honours the multiple origins of its schools and provides clarity that there are many ways to be a lab school by acknowledging in its introduction the five long-standing tenets of lab school practice – teacher education, curriculum development, research, professional development, and educational experimentation. Lab school leaders all know their institution's fundamental raison d'être – what makes them a lab school and not just another good school – but sometimes the daily business of running of a school can blur or obscure how we can and must add value for our universities and communities. Contributions to all five missions are not necessary to be a lab school, of course, but together, our networks work across all of them. Thanks are due to the authors of each chapter for elucidating a range of ways to contribute, ideally becoming an indispensable asset to educational betterment for all in the process.

It is rare to have such a candid and helpful look at the founding years of new lab schools as is offered in several places in this book, and there are lessons to learn from each. Detailing how a new school comes to life highlights complexities that are unique to university-affiliated schools. It is appropriate to acknowledge here that most lab schools have natural friends and natural enemies and that we are fewer not more in number than we once were. At times, there can be uncomfortably close enemies. Professors who prefer their student teachers to be in schools that seem to be more regular; researchers who don't have time to grow research relationships with lab school teachers before arriving in classrooms to collect data; a suspicion that the lab schools are passé or elite, or old school or new school, or inaccessible. These can build walls. But there are many friends: hundreds of global visitors; researchers who acknowledge lab schools' unique research capability; the university president who proudly cuts the ribbon on a new lab school building; parents who want their family to be part of growing a better public school system; teachers who find "their people" in lab schools; and students who grow up to say, "The lab school gave me everything". These are natural friends. Hearing of closures or failure to launch hurts us all. But reports of new lab schools in the recent past in, for example, Britain, France, Czech Republic, Iraq, Canada, Uganda, Japan, and the United States affirm that the movement is alive and well. LabSchoolsEurope brings us true stories of successes and obstacles, in a compelling, genuine voice.

In September 2022, the LabSchoolsEurope project partners invited lab educators to Bielefeld, Germany for a highly successful conference that set the stage for next steps together. Titled "Researching Schools: Bridging Research and Practice at Laboratory and University Schools", this meeting affirmed both the tremendous promise LabSchoolsEurope holds and its robust effectiveness in communicating, connecting, and advancing lab school research. Research in lab schools, a long-standing and vital heartbeat of what many university schools do, makes a unique

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and almost immeasurable difference to the landscape of education for all. Some years ago, the International Association of Laboratory Schools surveyed a group of lab school people, asking them to answer the question: "What would you like to discuss with lab schools around the world?" The resounding answer was "Research". This makes sense as educational research holds such tremendous potential for contribution, yet it also requires tremendous commitment within schools to capacity-building, relationship-making, and developing understanding between teachers and researchers. The conference in Bielefeld afforded a grounded, face-to-face opportunity to consider research and practice and the ways to close the not infrequent gap between them.

Looking back into historical roots of lab school research, we almost immediately find the University of Chicago Laboratory School, noted in the introduction to this book, where John Dewey, an American philosopher and educational pioneer, founded in 1896, what many credit with paving the path for research for those who followed. The school Dewey founded championed progressive principles and a clear pedagogy – it was also founded on frustration. It makes me wonder, how much of the lab school movement and its research owes its existence to various frustrations with the way things were or are. John Dewey was deeply disenchanted with the way schools seemed to overlook what was known already in the late 19th century about child development. Dewey's beliefs were progressive and included the broad principle that schools are the foundation of society, that educators are charged with preparing their students for responsible citizenship, and that the curriculum should be hands-on, minds-on, hearts-on. For Dewey, schools absolutely had to move away from the teacher transmitting knowledge by figuratively opening the top of a student's head and pouring in facts. His school created meaningful reasons for deeper thinking and encouraged questions. The school aimed to graduate students who could build community, listen, and contribute. Importantly, Dewey saw the lab school as one large-scale research artifact. Would it work? What were the features that made a difference? Were parents on board? And the children – how did they respond? The school stood as an example of inquiry-based and student-centred learning, something we have seen become widely better understood by educators and parents, and firmly grounded in evidence.

The reach of Dewey's ideas into policy, practice, and research continues to shape education today, but his gift to lab schools is a treasured inheritance. Many lab schools have inherited permission and encouragement to see the whole school experience through a research lens. As an origin story, frustration on behalf of children is something that many educators can relate to right now through the everyday realities of life in today's schools. While the thinking of Dewey or any of the founders of lab schools has influenced our way of doing school, the job is not yet done. We are frustrated when things are not the best they can be for students and their learning. When we know that research findings sometimes take too long

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to influence practice, or we feel that researchers are not asking the right questions to find the answers we need, we are deeply connected to our origins.
This book reminds us that those in lab schools are often in the privileged position to take action, to dig deeper, to encourage new ideas, and to disseminate knowledge. LabSchoolsEurope is hard at work doing exactly that. By pushing the boundaries regarding participatory school research and democratic education, they shine a light for the lab school community around the world.

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Christian Timo Zenke and Benedict Kurz

Laboratory schools: A new approach towards participatory research and democratic education in Europe

1 Introduction

Systematic cooperations between universities and schools have seen a veritable boom all over Europe in the last ten years. Newly founded schools in Brno, Cambridge, and Paris as well as in Cologne and Dresden have contributed to this new policy trend in education (see Heinrich & Klewin, 2020; Zenke, 2020). However, these continuous cooperations between universities and schools can by no means be considered a new phenomenon. On the contrary, since John Dewey founded the Laboratory School at the University of Chicago in 1896, the idea of a "university-run or affiliated school" (Cucchiara, 2010, p. 96) has become an essential part of, in particular, the North American school and university landscape.

Within this historically broad field of university schools, Dewey's idea for a laboratory school holds a unique position. Based on the conceptualisation of his Chicago school as an "experimental station" (Dewey, 1896/1972, p. 244) for the Faculty of Education, laboratory schools include a focus on "research, innovation and bridging theory and practice" (Cucchiara, 2010, p. 97). In doing so, lab schools (being the common abbreviation) differ from other forms of university schools which centre their work almost exclusively around teacher training (Zenke & Kurz, 2021). Despite oftentimes being declared the "unique function" of lab schools, the focus on "research and experimentation" (van Til, 1969, p. 10) can neither be considered the only nor – as history highlights – the most important function of lab schools (see also Blazer, 2008; Jozwiak & Vera, 2016). This becomes apparent in the five core characteristics of laboratory schools outlined by the International Association of Laboratory Schools (IALS)*: Research, Educational Experimentation, Curriculum Development, Professional Development and Teacher Training* (Dillon & Pinedo-Burns 2017, p. 15).

doi.org/10.35468/6040-02

Curriculum Development	The school designs and publishes its own curriculum for teaching and learning.
Educational Experimentation	The school has a solid background allowing teachers to carry out innovative projects.
Professional Development	The school has a solid institutional plan regarding professional development for teachers and staff.
Research	The school conducts or collaborates in research that upholds a lab school's important role in education.
Teacher Training	The school solidly provides mentorship and assists student teachers during their field experience.

Fig. 1: Core characteristics of laboratory schools as listed by the International Association of Laboratory Schools (IALS) (Dillon & Pinedo-Burns, 2017, p. 15)

Despite these varied fields of activity, we argue that there are certain key research principles in the "applied legacy of […] John Dewey" (Carnahan & Doyle 2012, p. 2) which have shaped the work of present-day lab schools – and continue to do so.

2 Key research principles of laboratory schools

In light of the diverse lab school landscape around the world, it is hardly possible to formulate criteria which are able to grasp all of these schools and their work. Nevertheless, based on recent literature on the research activities of laboratory schools and drawing on the experience from the *LabSchoolsEurope* project, we have outlined four research principles, which seem to guide the work of a large portion of today's lab schools (Zenke & Kurz 2021). These research principles are *transdisciplinarity, collaboration, experimentation*, and *transformativity* (see figure 2). This means that lab schools share the aspiration to further the systematic *transformation* of their national school environments by means of *transdisciplinary* research that is based on the *collaboration* between educators and researchers and that, at the same time, operates in an *experimenting* way.

(1) Transdisciplinarity: Laboratory schools "can be a powerful place for the uniting of disciplines" (Carnahan & Doyle, 2012, p. 10). They connect students, teachers, parents, researchers, community partners, and local alumni in a "grand collaborative partnership" (Carnahan & Doyle, 2012, p. 10). In doing so, lab schools encourage a fruitful exchange between a variety of professions (see Blazer, 2008; Jozwiak & Vera, 2016; Carver et al., 2017). This transcending of boundaries, in particular between school practice and academia, constitutes the first key research principle. Therefore, the everyday research and development work of lab schools can be understood as a type of *transdisciplinary* research. This means it

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is oriented toward synthesis, thus including not only researchers from different scientific disciplines but also additionally practice actors and agents (see Defila & Di Giulio, 2018, p. 10).

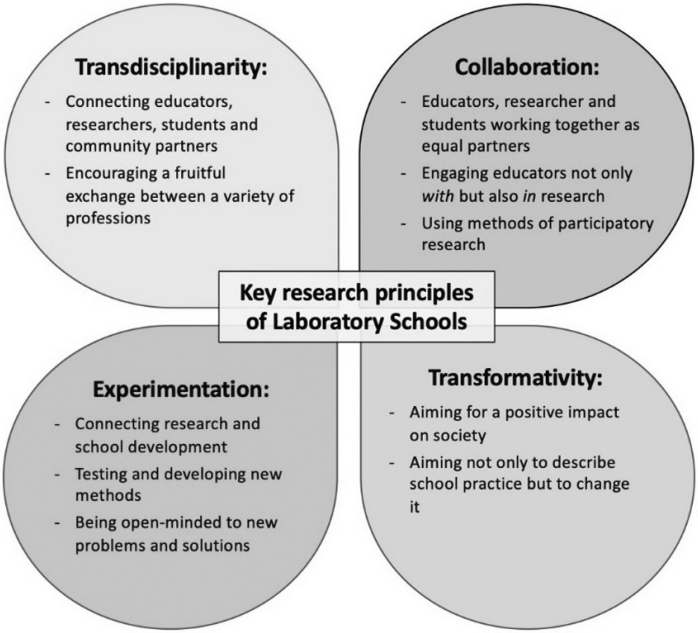

Fig. 2: Key research principles of laboratory schools

(2) Collaboration: Just as it is the case for other forms of transdisciplinary research outside the educational realm, it is crucial that stakeholders like teachers, teaching assistants and social pedagogues are substantially involved in research and development endeavours (Defila & Di Giulio, 2018, p. 10). As "true partners in the investigation" (Carver et al., 2017, p. 294), educators not only engage *with* but also *in* research (see Cordingley, 2015). According to Sharon M. Carver et al. (2017), lab schools "that take Dewey's mission seriously" (p. 280) therefore cultivate "the dispositions necessary for effective research collaborations among all of the learners in the school and are proactive in seeking partnership opportunities" (pp. 280-281). These research collaborations, in particular between teachers and researchers, can take diverse forms (see figure 3). What Elizabeth Schlesinger-Devlin, James Elicker and Treshawn Anderson (2017) refer to as "true collaborative research" (p. 40), however, usually plays a central role. They describe it as a form of research "in which faculty and lab school teachers work together as equal partners to develop the goals, objectives, and approach of a research project that

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is mutually beneficial for all members of the research group" (Schlesinger-Devlin et al., 2017, p. 40).

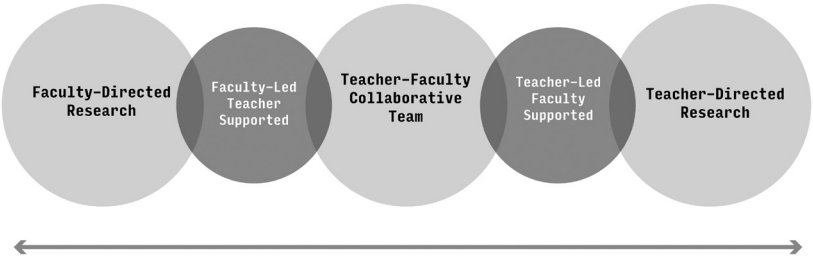

Fig. 3: Continuum of collaborative relationships between lab school teachers and faculty researchers (Schlesinger-Devlin et al., 2017, p. 40)

(3) Experimentation: Various forms of research and development have traditionally found their place at laboratory schools, including quantitative longitudinal studies (see Gold & Zentarra, 2020), intrinsic case studies (see Jamison & Kirowa, 2016), and ethnographic field research (see Freke, 2020), as well as more teacher-directed research focussing "on developing innovative experiences and activities or lessons for the children in the classroom" (Schlesinger-Devlin et al., 2017, p. 51). In this context, another key research principle of lab schools emerges: the focus on experimental research and development (van Til, 1969; Blazer, 2008; Cucchiara, 2010). This is based on John Dewey's (1896/1972) vision of his Chicago laboratory school as an "experimental station for the testing and developing of methods which, when elaborated, may be safely and strongly recommended to other schools" (p. 244). This implies a focus on processes rather than on measuring outcomes, which is why lab schools tend to favour searching, trying, and being open-minded to new problems and solutions (Hentig, 1988, p. 3). Therefore, the practice of experimentation anticipates the "'disorderly', 'messy' features of the research process" (Fine & Deegan, 1996, p. 5) in order to learn how to better deal with the unpredictability and complexity of everyday school practice.

(4) Transformativity: Laboratory schools aim to positively impact society. Not only do they want to describe, analyse and understand their own school practice, they also intend to contribute to the *transformation* of school practice at large as "vehicles for education reform initiatives" (Cucchiara, 2010, p. 100), as "essential voices in affecting the future of education" (Jozwiak & Vera 2016, p. 19) or as "incubators for applied research that fosters new ideas, new knowledge, and new professional practices" (Schlesinger-Devlin et al., 2017, p. 41). In line with their ambition to be a driving force for change, lab schools aim to inspire other schools by sharing their practices. One example for this is the dissemination of

doi.org/10.35468/6040-02

specific approaches regarding the democratic education of students – similarly to what the authors of this book are doing via their project website[1]. Therefore, the research and development work of lab schools can be considered a form of *transformative* research. This means, on the one hand, analysing societal developments and offering knowledge accordingly, while on the other hand, aiming at societal transformation (Defila & Di Giulio, 2018, p. 11). It is by no means accidental that this aspiration towards fostering social change coincides with the key research principles of *transdisciplinarity* and *collaboration.*

3 Laboratory schools in Europe

While laboratory schools have a long tradition in North America (see Cucchiara, 2010; Jozwiak & Vera 2016), a different situation emerges when looking at Europe. Many European countries display distinct national traditions with regard to university schools. There are the *normaalikoulu* (Teacher Training Schools) in Finland (see Hofman & Niemi, 2016), the *Praxisschulen* (Practical Schools) in Austria (see Krainz-Dürr, 2019) and the *University Training Schools* in the UK (see DfE, 2015). All of these types of university schools may vary according to their national context as well as the task given to them by their national authorities. Traditionally, however, and despite national variations, they all tended to focus on teacher training rather than on school research. This situation has begun to change in recent years. Not only are numerous new university schools being founded, but there are also diverse initiatives throughout Europe aiming to establish a lab school which follows the principles outlined above (see Zenke & Kurz, 2021).
Within this expanding field of European lab schools, several schools and universities have decided to foster a collaboration across borders. Therefore, they initiated the Erasmus+ project *LabSchoolsEurope: Participatory Research for Democratic Education* in 2019 . The project partners include schools and universities from five European cities:

Bielefeld (Germany): *Laborschule Bielefeld* is probably the oldest lab school in Europe. Laborschule, which literally translates as Laboratory School, and Oberstufen-Kolleg, an upper secondary school, were founded as university schools in 1974 next to Bielefeld University. Laborschule Bielefeld is a progressive state school currently teaching 710 students from year 0 (the pre-school year) to year 10 (end of lower secondary school). The school is accompanied by the Laboratory School Research Unit, which is part of Bielefeld University's Faculty of Education. Educators from Laborschule and researchers from the Research Unit closely cooperate in research and development projects on various topics (such as inclusion or democratic education).

1 https://www.labschoolseurope.eu/democratic-practices/

doi.org/10.35468/6040-02

Brno (Czech Republic): *Labyrinth Laboratory School Brno* is the first laboratory primary (ages 6 to 11) and lower-secondary (ages 11 to 15) school in the Czech Republic. The school operates on a private basis and was accredited by the Czech Ministry of Education before being established in 2016. Currently, there are 220 students cared for by a team of 49 people, including teachers, teaching assistants, school assistants, psychologists, and project managers. The total capacity of the school will be 360 students as well as 160 students for the 4-year grammar school. Since its founding, the Labyrinth laboratory school has cooperated with the Faculty of Education of Masaryk University in Brno. It offers short- and long-term teaching practice to university students and to Erasmus students. Labyrinth is also involved in lifelong education offering workshops, lectures, and art exhibitions to encourage learning among all age groups.

Cambridge (United Kingdom): The *University of Cambridge Primary School* (UCPS) opened in September 2015 and is a three-forms of entry primary school educating over 600 children. As a University Training School it has three key features: the first is to be a primary school, inclusive, ambitious for all and innovative in practice. The second is to work with the Faculty of Education of the University of Cambridge and others, in Initial Teacher Education. It supports new teachers into the profession through placements. The third, is to be research-informed and research-generating. Even in its early stages, the UCPS has developed high quality professional development courses, rooted in academic research, inspired by bringing theory, research and practice together.

Paris (France): *Lab School Paris* is part of a wider network founded in 2015. This community, the French "Lab School Network", is made up of social actors from different backgrounds (teachers, researchers, parents, association members, etc.). Its main goal is to promote the use of research for educational success by strengthening the links between research and teaching practices. Managed by a non-profit association, the Lab School Network seeks to contribute to the educational transition in various ways: collaborative research, training and school creation. Lab School Paris – as the first school of this network – was established at the beginning of the 2017-2018 school year with a team of two teachers and a multi-grade class from grades 3 to 5 (called CE2 to CM2 in French, 8 to 11 years old). Its mission is to be an innovative, multi-level, bilingual (French-English), solidary, secular and eco-responsible school. With these values, its aim is to support children both in the acquisition process of the French common core of knowledge, skills and culture (*socle commun de connaissances, de compétences et de culture*), and in their overall social and emotional development, enabling them to become responsible, enlightened, autonomous, supportive and blooming citizens. Its goal also is to welcome children from diverse backgrounds in order to build a real social mix, by proposing a system of scholarships according to a fee scale indexed to family

doi.org/10.35468/6040-02

income. Another goal is to create an inclusive school, integrating some children with special educational needs.

Vienna (Austria): The *Praxisschulen* (Practical Schools) of the *University College of Teacher Education Vienna* enable the linking of theory and practice possible. *Praxisvolksschule Vienna* is a primary school for pre-service classroom teaching. It is a school for 6 to 10-year-old students with around 200 students and 24 teachers. *Praxismittelschule Vienna* is a lower secondary school for pre-service classroom teaching. At Praxismittelschule, 35 teachers work with 200 students between the ages of 10 and 14. A central concern of both schools is their work in the area of school development, such as the development of new as well as the advancement of existing pedagogical and didactic models and their evaluation. In addition, both Praxisschulen offer university students and university lecturers of the University College of Teacher Education Vienna an ideal field for participatory research projects. The University College of Teacher Education Vienna is Austria's largest institution for educating teachers and for the professional development of future and current pedagogues. At present, it offers Bachelor of Education programs for compulsory education and vocational education, as well as university courses for other pedagogical professions, such as recreational education and elementary education.

4 Democratic Education

The laboratory schools participating in the Erasmus+ project *LabsSchoolsEurope: Participatory Research for Democratic Education* not only strive to be laboratory schools that embody the principles pointed out above, they also focus on issues of *democratic education.* In this context, they share a view of *democratic education* as being oriented towards "compassionate citizenship" (Higham & Biddulph, 2018, p. 388). Drawing on Edda Sant's (2019) conceptualisation of democratic education as learning for, within and through democracy, the schools of the LabSchoolsEurope project focus primarily on the latter. This implies, that decision-making processes are based on "a democratic ethos involving the members of the community" (Sant, 2019, p. 682). Therefore, "students have the opportunity to learn as part of a community in which they have a voice and can participate in making decisions with one another, leading to an authentic understanding of multiple perspectives" (Allen, 2011, p. 3).

At the moment, the democratic education of students is faced with a multitude of challenges. For one, there is a need to react to the rise of anti-democratic movements all over Europe. In addition, pedagogical developments towards more individualised learning in the classroom as well as digitalisation pose a challenge to the self-conception of many schools as places of togetherness – especially in times

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of lockdowns and distance learning during the COVID-19 pandemic. Hence, the question arises as to how schools can avoid losing sight of the difficult balance between individual and collaborative learning while at the same time being spaces for togetherness, where different generations, cultures, and backgrounds form a starting point for learning and living democracy.

5 LabSchoolsEurope: collaborating across borders

Considering the commonalities in both research and pedagogics, the project partners from Bielefeld, Brno, Cambridge, Paris, and Vienna initiated the project *LabSchoolsEurope: Participatory Research for Democratic Education* in 2019. This project, funded by the European Union (under the Erasmus+ grant scheme), comprises six main objectives:

a) to document and transnationally compare different research approaches and local conditions as well as to identify principles of participatory research at the project partners' institutions;
b) to develop and disseminate practice guides, teaching materials and good-practice examples for dealing with heterogeneity at primary level through the lens of democratic education;
c) to further professionalise educators and researchers involved in the project in regards to research methodology, schooling and teaching;
d) to foster the long-term improvement of the schooling and teaching practices at the project members' institutions with regard to democratic education;
e) to further strengthen and consolidate the cooperation between schools and universities at each project location;
f) to initiate a European Lab School Network which facilitates the exchange among laboratory schools but also serves as a starting point for supporting the founding of future lab schools.

While the practice guides, teaching materials and good-practice examples that were developed in the context of the project can be downloaded via the project website[2], the aim of this book is manifold. While in this chapter, we outlined the work of the LabSchoolsEurope project and, more specifically, presented the key research principles of laboratory schools, the following chapters will paint a vivid picture of the European lab school landscape. The authors, educators and researchers from Austria, the Czech Republic, England, France, and Germany, will present their laboratory schools in detail and grant insights into how they bring the lab school framework to life according to local contexts, needs, and preferences. By elaborating on their different approaches to engaging in/with research and allowing students to learn for, with, and through democracy they illuminate both themes of

2 https://www.labschoolseurope.eu

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the *LabSchoolsEurope* project. Due to their specific school concepts and missions, each chapter also highlights an important aspect of laboratory schools.

At first, Kirsten Beadle, Jan Wilhelm Dieckmann, Christine Drah, Nicole Freke, Cornelia Hofmann, Benedict Kurz, Annette Textor, and Christian Timo Zenke introduce the reader to *Laborschule Bielefeld*. They present Laborschule's unique teacher-researcher approach, which allows for truly participatory research projects that are based on actual classroom issues, but also helps to gain insights that are relevant for other schools and policy-makers. In line with Laborschule's tradition of not only constantly reforming itself, but attempting to reform the German education landscape as well, the authors also present the school's pedagogical concept and share how democratic education is lived and practised in everyday school life.

Next, Pascale Haag and Marlène Martin show how *Lab School Paris* thoughtfully includes a research perspective to further develop their expanding school. Their chapter also highlights how contextual factors, such as norms and traditions of national education systems, shape the local enactment of the lab school framework. After a general presentation of the university school context in France, they present the history of the foundation of Lab School Paris, the main theoretical principles upon which their pedagogical approach is grounded, and the wider network of research that aims at contributing to strengthen the links between educational research and classroom practices.

In their chapter, Jana Chocholatá, Monika Mandelíčková, Gabriela Oaklandová, and Břetislav Svozil outline the work of *Labyrinth Laboratory School Brno*. They show how they adapted the lab school framework in order to bring new ideas into the Czech education system. Focussing on social responsibility, they carefully relate Labyrinth's pedagogical concept to popular educational theories and share how they attempt to foster democratic experiences and skills in Labyrinth's students. By bringing together authors from the school as well as from Masaryk University, this chapter is also a testimony of how beneficial the collaboration between educators and researchers can be.

The *University of Cambridge Primary School* (UCPS) was designed to become the heart of a new city quarter in Cambridge, Eddington. In their chapter, James Biddulph, Luke Rolls, Aimee Durning, Elena Natale, and Ellen Millar share the remarkable story of their school's foundation. Their sound theoretical approach illustrates how educational research can inform curriculum design and school practice. Together with a pedagogy that, first and foremost has the child in mind, UCPS aims to educate children for a world that cannot be imagined yet. By sharing their imagination of a new democratic education in and outside of the classroom, they grant fascinating insights. On a side note, this chapter also allows the reader to gain a better understanding of the UK's fragmented school system.

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Finally, Gabriele Kulhanek-Wehlend, Stephanie Wagner, Harald Knecht, Oliver Wagner, and Adrian Schnitzler present the *Praxisschulen of the University College of Teacher Education Vienna*. They focus on an important area of activity for many lab schools around the world, namely teacher education. In addition, they provide vivid insights into how they intend to teach and learn democracy with their students who come from diverse backgrounds. Like all of Austria's Praxisschulen, Praxisvolksschule Vienna and Praxismittelschule Vienna were once created to improve teacher education. Recently, however, the Austrian Government has shifted their goal to develop a stronger research profile – which, fortunately, Vienna's Praxisschulen are perfectly qualified for. Therefore, this chapter also provides helpful insights into the challenges schools face in the context of changing policy paradigms.

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Kirsten Beadle, Jan Wilhelm Dieckmann, Christine Drah, Nicole Freke, Cornelia Hofmann, Benedict Kurz, Annette Textor and Christian Timo Zenke

Laborschule Bielefeld: Doing teacher research in an embryonic society

1 Introduction

What first stands out to most visitors of Laborschule Bielefeld, is the iconic open-plan school building, designed to end the closed-door classes of the past (see figure 1). As the laboratory school with the longest tradition throughout Europe, Laborschule (which literally means *Laboratory School*) is well known across Germany. Founded in 1974 as a state-run progressive school, Laborschule has been assigned the task of developing new forms of teaching and learning as well as living together at school (MSB, 1992). Its pedagogical approach, which has informed reforms and school development processes across the state of North Rhine-Westphalia throughout the years, significantly differs from what one might call a typical German school. There are, for example, no grades but individual feedback reports; no subjects, but overarching areas of experience-based learning. Within the school community, all members – be it children or grown-ups – are supposed to have a voice. Therefore, Laborschule's admission policy aims at mirroring society at large, while its pedagogies aim at creating a democratic society in small.

Laborschule is one of two university schools in the city of Bielefeld – Oberstufen-Kolleg Bielefeld, an upper secondary school, being the other. The close ties to Bielefeld University emphasise the aspiration to bridge the gap between school practice and educational research, perfectly embodied by Laborschule's unique *teacher-researcher model*. This model enables every Laborschule educator to engage in research in collaboration with academics from Laborschule's Research Unit, which is based at Bielefeld University's Faculty of Educational Science. Together, educators and researchers collaborate in so-called research and development projects.

In this chapter, educators from Laborschule Bielefeld as well as researchers from its Research Unit present the school. For context, we begin with an introduction to the fairly complex German school system before tracing Laborschule's origins. Regarding Laborschule's manifold research activities, we first outline the structures

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and processes that have been developed over the last decades. In a second step, we draw on the research principles of laboratory schools outlined in the introduction to illustrate the school's research approach. To paint a vivid picture of the school, we will outline its pedagogical concept, introduce several elements of democratic education, and illustrate how this comes to life at the different key stages of Laborschule. We end by reflecting on current developments and challenges as well as by taking a look at the school's future.

Fig. 1: The open-plan school building of Laborschule Bielefeld. (Photo: D. Harder)

2 Germany's education system(s)

Today, the German education system is primarily shaped by its pluralistic institutions, particularly on the level of secondary education. It is generally the sixteen German federal states (the *Länder*) that individually are responsible for dealing with questions regarding the school system. This means that each federal state passes legislation and deals with the administration of its education system. As a result, all federal states differ, more or less considerably, in terms of their specific types of schools, the age at which children start primary school as well as the number of years children spend there, etc. Therefore, the majority of features introduced in this section refer to the education system of North-Rhine Westphalia, which is a federal state in the west part of Germany.

To introduce this fairly complex school system, we give an overview of its structural aspects while also outlining the different paths a child can follow through the

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German education system. Many children's paths start with them spending a part of their day at a day-care centre or, later on, at kindergarten. In most federal states, compulsory schooling starts when children turn six. They then follow a specific trajectory, beginning with primary school (covering years 1 to 4, in some states 1 to 6) before transitioning to a school at lower secondary level. At primary level, children first receive written feedback regarding their learning progress, before numerical marks for assessing performance are subsequently introduced in years 3 or 4. What is crucial to note is that, while at primary level the idea of children of all abilities and needs learning together is widely accepted and practised, learner groups from secondary level onwards oftentimes are differentiated based on their performance level.

In contrast to the comprehensive school systems of many European countries, Germany has a tiered school system (Wiborg, 2010, p. 539). Broadly speaking, one can differentiate between those secondary schools that offer one specific track to their students and those that include several different tracks. The former ones, including *Gymnasium*, *Realschule*, and *Hauptschule*, focus on admitting students with rather homogenous performance levels, "whereby track assignment is conditional on students' prior achievement" (Kruse, 2019, p. 120). In contrast to this, school types such as *Gesamtschule*, *Gemeinschaftsschule* or *Sekundarschule* welcome students with varying educational performances and needs, thus incorporating various tracks. Apart from this type of outer differentiation outlined above, many schools also use inner differentiation that groups students of similar performance levels and with different interests (e.g. "basic" and "advanced" courses). Generally, student performance is assessed via numerical marks (e.g. from 1, "very good", to 6, "insufficient", at lower secondary level). Based on the final report at the end of each year, a student who has failed one or several classes may need to repeat a year. Compulsory schooling ends after nine or ten years, depending on the legislation of each federal state. Upon graduating, students move into upper secondary education. It is necessary to differentiate between full-time general education schools, such as *Gymnasium* or *Gesamtschule*, and vocational schools, such as *Berufsschule*. This latter one is part of Germany's traditional dual job training scheme in which trainees work while also spending a certain amount of time at a vocational school to learn job-related skills.

Students graduating from full-time general education schools receive a particular school leaving certificate, the Abitur (roughly comparable to the A-levels), which enables them to enrol at a university. Finally, the tertiary education sector includes institutions of higher education (KMK, 2019, pp. 24-27).

Those who intend to become teachers must enrol at university. The Bachelor of Education is designed in such a way that students are trained in their two subjects (e.g. Biology and English) while also acquiring fundamental knowledge necessary for their role as future teachers. The consecutive Master of Education programme

doi.org/10.35468/6040-03

in North-Rhine Westphalia includes a semester that students spend at a specific school to make first experiences teaching their subjects. After graduating from university, future teachers undergo an approximately eighteen-months-long traineeship at a school that is accompanied by weekly seminars.

In the last twenty years, German policymaking was shaped by its infamous PISA shock of 2001. Similar to previous large-scale assessments, PISA 2000 highlighted two challenging features within German education. Not only did German students' results in all three areas measured rank below international averages, but these results also revealed the structural inequalities within the German school system. What became apparent is the link between students' performance levels and their socioeconomic status as well as their social background (e.g. as a child of migrant parents). In other words, PISA had once again rendered visible the segregating effects of the three-track system (Davoli & Entorf, 2018, pp. 2f). This lead to several governance reforms, such as the implementation of education standards, thus prompting a paradigm shift from input to output orientation (Helm & Keusch, 2019), as well as the re-development of specific institutes that monitor the quality of education in each federal state (Rürup, 2014).

Like for many other education systems around the world, the COVID-19 pandemic has been another shock, deeply affecting the German school system, its educators and, in particular, its students. What has become apparent are old and new challenges: How to overcome the reproduction of inequalities in German education? How can schools become and stay places of togetherness and for community-building in times of individualisation and polarization? How can students learn to become citizens that not only participate in but also are able to shape the democratic societies they live in?

3 Laborschule's founding history

The founding history of Laborschule Bielefeld is closely linked to the structure of the German education system as well as its evolution throughout history. While *Gymnasium* as the highest track enabled and still enables students to attend higher education afterwards, *Hauptschule* as the basic track traditionally prepared students for Germany's dual vocational training system. *Realschule* as the middle track allowed its students to pursue various future careers, including the job market as well as routes towards higher education.

Having been unable to abolish the three-tiered system comprising of *Gymnasium, Mittelschule/Realschule* and *Hauptschule* by the end of the 1940s, progressive forces made a second attempt at reforming the system in the second half of the 1960s. One central motif for the reform aspiration – apart from increasing the numbers of university graduates – was to enable students to have more equal opportunities

doi.org/10.35468/6040-03

within the German school system. As it became apparent that the track system contributed considerably to the reproduction of inequalities, reformers focused on introducing a new type of school: the comprehensive school (*Gesamtschule*). The goal was to create a school for all students attending until the end of year 10, hoping to eventually overcome the triad of Germany's tracked system.

Part of such progressive reform aspirations was also the foundation of new universities, e.g. the founding of Bielefeld University in North Rhine-Westphalia in the second half of the 1960s. Considering itself a *reform university*, Bielefeld University was part of a trend towards expanding higher education and thereby allowing new social classes of the German population to attend higher education. Bielefeld University dedicated itself to consciously dismantling the boundaries both between the different disciplines as well as between university and society. This focus also influenced the appointment of Hartmut von Hentig, a young professor for pedagogy at the University of Göttingen, as member of the founding committee of Bielefeld University. Born in 1925, Hentig had completed his doctorate in Chicago (USA). Since the early 1960s, he had publicly become known for his progressive views on pedagogy as well as advocating for a radical reform to establish a comprehensive school model in Germany. Hentig eventually convinced policymakers in the state of North Rhine-Westphalia to fund two long-term school projects, which were assigned to Bielefeld University: Laborschule Bielefeld and Oberstufen-Kolleg Bielefeld, an upper secondary school. Both schools were given the task to develop new pedagogical methods and curricula and, with regard to educational research, to function as a field for observing, experiencing and experimenting. By generating evidence-based knowledge about compulsory schooling, Laborschule and Oberstufen-Kolleg were intended to contribute to the body of research, thus helping to further promote and legitimise *Gesamtschule* as a new type of school, where all children can learn together.

Even though there had been several attempts at establishing a closer link between university and school in Germany during the 1920s, Hentig's design for Bielefeld University's experimental schools constituted a new approach in German education. Following an initial phase of four years of development, Laborschule's teachers and researchers would be given the time and space to not only develop new models for teaching but to also research these innovations, mainly through action research. In his works, Hentig repeatedly referred to John Dewey and his Laboratory School, which was founded in 1894 in Chicago, as a conceptual point of reference and key argument for education policymaking. This way, not only did Hentig adopt Dewey's term "Laboratory School" for his own experimental school (*Laborschule* literally means laboratory school in German), he also incorporated numerous pedagogical and research principles that had been devised by Dewey. This included the focus on the idea of experience, the concept of school as an

doi.org/10.35468/6040-03

embryonic society as well as the close collaboration between academic research and school practice (Zenke, 2020).
To this day, Laborschule holds a singular position within the German education system. In recent years, however, the idea of the "university-run or affiliated school" (Cucchiara, 2010, p. 96) has been gaining traction in Germany. Today, we see a diverse and growing university school landscape in Germany (e.g. in Dresden, Essen, Cologne or Koblenz/Landau). Even though they usually do not operate under the term *laboratory school*, they all vigorously endeavour to establish a closer link between university and school practice (see also Reich, Asselhoven & Kargl, 2015; Reich, 2019; Heinrich & van Ackeren, 2019; Kauertz et al., 2019). What makes Laborschule stand out from these recently founded schools – apart from its age – is its elaborate teacher-researcher model which was optimised over many years.

4 Research with and by educators – Laborschule's unique research approach

Since its beginnings, the basic idea of Laborschule's research activities was to bridge the gap between disciplines, including school practice and educational research, as well as professions, such as teachers and researchers. Having been modified various times over the years, Laborschule's research approach still functions as the basis for its everyday work at the intersection of academia and school practice. Laborschule's *teacher-researcher model* ensures that educators are a central part of the research process. To guide the research and development work at Laborschule, certain structures and processes have been developed, tested, implemented, and adjusted over the last 50 years (Textor et al., 2020). After presenting these structures and processes in the following section, we draw on the key research principles, which have already been outlined in the introduction to this volume, to dive deeper into Laborschule's research approach.

4.1 Structuring Laborschule's research and development work

The close cooperation and interdependence of Laborschule and its Research Unit, which is based at Bielefeld University's Faculty of Educational Science, is illustrated by the joint management board. All important decisions regarding both institutions are made here. The members of this board include the school's leadership team, the Research Unit's head, and a parent representative. A second structural link between Laborschule and Bielefeld University is that all educators who participate in one of Laborschule's research and development projects are formally also members of the Research Unit and, thus, of Bielefeld University.
Laborschule's Research Unit is managed by a board of directors, mainly composed of professors from the university's Faculty of Educational Science, including the

doi.org/10.35468/6040-03

head of the Research Unit. This board of directors makes decisions – on the basis of proposals from the joint management board of the school and from the Research Unit – with regard to every research and development plan, which usually comprises a time span of two years. The board of directors also discusses and decides on the long-term secondment (usually 4 to 6 years) of a teacher who then becomes a research fellow at the Research Unit. After having gained valuable insights into the research processes, these teachers are well-equipped to lead Laborschule's research and development projects and also qualify for future leadership positions at Laborschule or the wider school system.

Apart from this, Laborschule is advised by a Scientific Advisory Board, which is composed of established scholars of education and members from institutions like the Ministry of Education. The Scientific Advisory Board meets once a year to discuss the short- and long-term research and development strategy of Laborschule.

In addition, there are many other collaborations within Bielefeld University. For instance, networking meetings between the Faculty of Educational Science, Laborschule, and Laborschule's Research Unit take place regularly, sometimes together with Oberstufen-Kolleg Bielefeld. As a result of these activities, researchers from the Faculty of Educational Science and researchers from other faculties who focus on subject-specific didactics are involved in some of the research and development projects.

The cornerstone of Laborschule's research strategy is its research and development plan (see also section 4.2). For example, the research and development plan from 2021 to 2023 addresses the following research fields:

Learning from experience: This research strand includes a project in which students overcome a self-imposed challenge, such as going on a week-long bike trip or living without plastic packaging for some time. Two projects also deal with pupils' social learning based on experiences. Another project focuses on the effects of providing students with a free-of-charge ticket for Bielefeld public transport.

Teaching development: This includes the LabSchoolsEurope project as well as two projects that explore how to implement the tools of the digital age at primary and secondary level. Another project focuses on the development of a coherent mathematics curriculum from pre-school to grade 10. Another project aims to train all teachers in project-based learning.

Laborschule in the context of the education system: This research strand includes projects that deal with broader themes. One of these projects deals with the founding period and early years of Laborschule, while another project does participatory action research with students. As the longest-standing project, the so-called *Absolvent*innenstudie* is a longitudinal survey in which Laborschule's graduates since 1985 are asked about their experiences at Laborschule and their way through upper secondary school, vocational training, etc. In a spin-off project, research is

doi.org/10.35468/6040-03

done on questions emerging from these surveys, mainly using qualitative research methods.

4.2 Planning and conducting Laborschule's research and development projects

The close collaboration between Laborschule and its Research Unit also becomes evident in the various decision-making processes regarding, for instance, the research and development work or the hiring of new educators and researchers.

The above-mentioned research and development plan is the core element of Laborschule's research and development activities. The research and development plan is created in a multi-stage application process, which involves the head of Laborschule's Research Unit, Laborschule's educators, and the school council, the Scientific Advisory Board, the joint management board as well as the board of directors of the Research Unit. Applications for new research projects can be prepared and submitted by all educators. To this end, they usually form research groups and, if possible, closely collaborate with a member of the Research Unit.

All research and development processes are embedded into a specific cycle that focuses on developing, testing and improving an innovation and, in case it proves successful, on its implementation and evaluation. This cycle is typical for action research (Sheikhattari et al., 2022): locating the issue at hand within practice and theory, defining the question the project wants to address, looking for insights using scientific approaches and methods, discussing these findings with other educators at Laborschule as well as at conferences, and maybe even finding new aspects that seem to be worth looking at. If it turns out that there is indeed a need for further research, this first exploration cycle can be followed by a second innovation cycle. In our experience the orientation phase is of particular importance. It is already at this early stage of the cycle that some initial research can be undertaken to explore the practical issue which forms the starting point of every research and development project at Laborschule.

The application process for new research and development projects is similar to other research grant schemes. First, during the consultation process, which is accompanied by the head of Laborschule's Research Unit, particular emphasis is placed on the relevance of the issue at hand for Laborschule, the scientific community as well as for policy-making discourses. Once a research and development project has successfully undergone the application process, the participating educators are granted a reduction of their teaching workload for two years. For this purpose, Laborschule has a pool of 90 hours to distribute to individual teachers. After two years, every project group has to either submit a final report and/or their publications, or they have to apply for an extension. In this latter case they present, among other things, their work to date and preliminary results.

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4.3 Key research principles of Laborschule

After outlining the structures and processes that shape the research activities at Laborschule, we provide a more in-depth portrayel by drawing on the key research principles, which have already been outlined in the introduction to this volume.[1]

Transdisciplinarity: It is not only the idea of crossing the boundaries between different disciplines, but also between school and research practices that has shaped Laborschule's work from the start. The school has always worked towards dissolving the boundaries that separate researchers and educators. Initially, teachers were able to also do research just as much as researchers were also able to teach. For this reason, at first there was no distinction between different professions. Rather, teachers, psychologists, researchers, together with many others, were responsible for developing, testing and evaluating new forms of teaching and learning directly within the everyday school setting. To put this concept into practice, Laborschule introduced a general reduction of the weekly teaching hours for all teachers. Since all teachers at Laborschule were engaged in research at that time, they were referred to as „teacher-researchers". This meant that they did not have to teach as many hours as teachers at other schools, thus being able to dedicate more time to preparing, reflecting on, and evaluating their work from a scientific perspective. While this strict practice of not distinguishing between different professions has been revoked over the years, the systematic cooperation remains a central component of Laborschule's work. Unlike in Laborschule's early years, there is now a clearer distinction between Laborschule as a school (with approximately seventy educators) and its Research Unit (currently comprising four researchers). Members of both institutions, educators and researchers, closely collaborate on various research and development projects (*Forschungs- und Entwicklungsprojekte*). Even though teachers who participate in these projects still receive a reduction of their teaching workload, it is no longer a general part of every educator's job description. Instead, teachers can apply for these reductions for a period of usually two years within the framework of the school's research and development plan. Fortunately, this results in almost all teachers at Laborschule participating in a research and development project at some point during their teaching career.

Collaboration: When attempting to locate the research and development work of Laborschule on the continuum of collaborative relationships between educators and researchers developed by Schlesinger-Devlin et al. (2017, p. 40), which was presented in the introduction, what becomes apparent is an emphasis on the middle part of this continuum: the teacher-faculty collaborative team. Educators of Laborschule and researchers of the Research Unit collaborate – oftentimes with the support of a number of other colleagues from Bielefeld University – in teams of

1 For more information about Laborschule's teacher-researcher model see Gold et al., 2022; Hollenbach & Tillmann, 2011; Zenke, 2018.

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four to six persons on diverse research projects that are carried out within a specific period of time (usually between 2 and 4 years). These projects can be described as focusing on a specific topic and are particularly dedicated to developing and disseminating innovative pedagogical practices. All project members involved take on a double role. Project members from the school act both as practitioners and as researchers, while the members of the Research Unit participate both as researchers and as members of the school. This means that although researchers do not teach, they are actively involved in school development processes, for example, by (co-) designing internal teacher training courses or supporting the design of teaching concepts, curricula, etc.

Beyond this formal collaboration between educators and researchers in the context of research and development projects, there are also numerous opportunities for informal exchanges between the two professions. As Bielefeld University and Laborschule are located right next to each other, educators and researchers also encounter each other frequently in their everyday lives: be it in the open staff lounge of Laborschule, in its cafeteria, during joint conferences, at festivities or simply by chance. And if there is a need for further exchange, all teachers have the opportunity to drop by spontaneously at the school office of the head of Laborschule's Research Unit, who offers an open office hour at Laborschule one day per week, while otherwise being at Bielefeld University next door.

Experimentation: In accordance with its conceptualisation as an Experimental School for the state of North Rhine-Westphalia, Laborschule has always placed emphasis on developing new forms of teaching and learning directly within everyday contexts – namely by experimenting. In this sense, Laborschule's founder, Hartmut von Hentig (1988), referred to it as a school open to trial and error, in which neither the solutions nor the exact problems are totally clear beforehand:

> "At an Experimental School [such as Laborschule Bielefeld] pedagogical practices are not perfected through empirical research (i.e. controlled methods). Instead, it is rather the idea of searching, trying, opening up to new problems and solutions, changing perspectives and topics that is at the heart of this process. [...] Therefore, teachers and their awareness of their role at an experimental school are paramount and must be considered when structuring this kind of school. [...] It is only through experimenting that criticism and conformity can be reconciled." (Hentig, 1988, p. 3)[2]

It is also in this sense that today's research and development endeavours are geared towards this idea of "searching, trying, opening up to new problems and solutions" (ibid). This does not only mean that there is an emphasis on teachers generating ideas for research projects from day-to-day school life, but also that there is room for experimenting and adjustments during the research and development process. This latter aspect includes the possibility that Laborschule's research and develop-

2 This quote was translated by the authors of this chapter from the German source text to English.

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ment groups may test alternative approaches or change their research focus towards a new aspect that has only just emerged during their work. The former implies that the research and development projects are allowed to make mistakes: they are allowed to fail and to start over (if they like).

Transformativity: Laborschule has not only modified and developed its own practice over the years but has also continuously worked towards generating knowledge and innovations that are supposed to be helpful to other schools as well as the general school system. For this reason, Laborschule strives to adapt the innovations created in its research and developments projects for its reference systems: Laborschule attempts to contribute to educational research literature, can be of assistance to the wider school system, and may inform education policymaking discourses. To do so, the school mainly pursues four strategies:

- *Welcoming:* Each year, Laborschule is visited by over 1,000 visitors from different schools as well as from scientific and political institutions. These visits may be part of so-called "visitors' afternoons" or they are part of more focused and thematically guided tours and work shadowing. Furthermore, Laborschule is open to external researchers who may conduct empirical research projects at Laborschule in case they are of relevance for the school. In addition, many university students visit the school. Students of Bielefeld University may take part in guided tours, internships, or do research for their Bachelor and Master theses at Laborschule. Students from outside North Rhine-Westphalia regularly visit Laborschule as well, e.g. via study trip seminars (Lernreise).
- *Sharing:* Every year, educators and researchers publish about 50 works on theory, practice, and Laborschule's history in research and teacher journals, academic anthologies and Laborschule's self-published series. In addition, members of the research and development projects regularly present their work and findings at conferences for educators and/or researchers. They oftentimes are also involved in teacher development courses or are interviewed by media outlets. Laborschule's *teacher-researchers* also take over teaching assignments at Bielefeld University or are invited as guest lecturers. Thereby they are also involved in the training of future teachers.
- *Networking:* Laborschule is part of several networks. One of these networks is called Blick über den Zaun (BüZ; roughly meaning "looking beyond the fence"). It consists of various progressive schools that aim to encourage bottom-up school development. Through visiting each other's schools and giving feedback as critical friends, BüZ promotes the direct exchange of knowledge and experience among these schools. The network strives, on the one hand, to promote mutual critical reflection on school and classroom practices and, on the other hand, to exchange and further develop pedagogical practice.
- *Supporting:* Occasionally, Laborschule can offer some support to schools that want to integrate new practices into their everyday school life and classrooms

doi.org/10.35468/6040-03

– for instance via workshops or consultations. This type of support, however, generally exceeds the capacity of Laborschule, which is why it is only feasible in exceptional cases.

5 Pedagogical principles

After having presented and discussed the research approach of Laborschule, we would now like to shift the focus to its pedagogical concept. Therefore, we take a closer look at what is often called "Laborschule pedagogy" by outlining the four most important pedagogical principles of Laborschule and presenting some elements of its democratic education. Lastly, we will illustrate what this looks like in everyday school life in Laborschule's four different key stages. Key stage I includes years 0 (preschool) to 2 which means that students are typically between five to eight years old. Key stage II comprises years 3 to 5, thus welcoming the eight- to eleven-year-old students. Subsequently, key stage III covers years 5 to 8 with students usually ranging between the ages of eleven and thirteen. Finally, key stage IV includes years 8 to 10 which means that students are usually fourteen to sixteen years old.[3]

5.1 School as a space for sharing experiences and living together

Laborschule strives to be a school whose students feel welcome and enjoy spending their time. This includes enabling students to have a large number of diverse experiences. Teaching follows the principle of learning through and from experience while largely rejecting the notion of primarily instructing students. The idea of school as a space for experiencing and living together promotes learning opportunities that students can benefit from during their school day: a wood and metal workshop, a kitchen, a creative workshop, laboratories for natural sciences, a big school garden on the school premises including chickens and guineapigs, a forest garden in the school's neighbourhood, a school library that is open all day long, a learning bureau, a big gym, a gymnastics hall, a disco, a room for art lessons, a music room, and several booths for music practice. Outside, there is a natural playing ground where students have access to wood planks and tools, a playground with swings, a spinning turntable as well as structures for climbing and balancing, and a station for renting playing equipment, including drift go-karts with pedals and inline skates. There are a few facilities at Bielefeld University that students are allowed to use as well (e.g. a swimming pool). Apart from this, Laborschule considers itself a school that forms part of the city, meaning that its work also entails offering learning opportunities that take into account its neighbourhood, nature, community, and region.

3 The following sections are based on Groeben et al. 2011

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5.2 Being part of a community

Laborschule aims to serve as a bridge between a student's life in their family and an adult's life in society. Young students' learning takes place along the different parts of a day. Lessons are not structured according to different subjects and instead take into account overarching topics, questions and issues that transcend individual subjects. In line with an increase in differentiation of learning and the different approaches for certain subject matters, areas for and of experience emerge. With an increasing level of specialisation of learning activities and types of learning, the conventional school subjects emerge step by step over the course of a student's years at Laborschule.

Laborschule students' learning takes place in various, slowly expanding group settings. The smallest reference unit is the group setting. Apart from this, there is the year group, key stage and whole school. By combining obligatory classes and courses that students choose according to their own interests, students get to know learning situations in different, oftentimes mixed-age groups. At Laborschule, maturity and responsibility are not considered goals for the distant future but, instead, are essential components of everyday learning. Dealing with issues and problems, be it in the group or elsewhere, therefore is part of day-to-day school life at all age levels. A space for dealing with these issues is provided in the daily assembly of each group, the student parliaments of the key stages and the parliament of the whole school. The group assembly serves as a forum for interactions, discussions and conflicts of all sorts. Here, students may experience that there is a way and that there are measures that can be taken to deal with these issues in a peaceful and rational manner on a daily basis. Here, they learn how to voice their own needs and opinion and to respect other people's views, to look for solutions and, at the same time, to stand up for their own convictions.

Both living and learning at Laborschule aim at promoting values such as responsibility, independence, and cooperation. The youngest students already responsibly perform certain tasks for the community. For them, it is self-evident that not everyone has the same duties. They recognise that individual students or small groups work on different tasks and that students take learning into their own hands or work with others.

The school building and its premises allow for many options for shaping, re-designing and adapting the space to the needs of its inhabitants. The building therefore was created as an open-space environment in which each group is assigned its own space. This so-called *core area* allows each group to be aware of the neighbouring groups and to also be able to get in touch with them. As a result, the building serves as a space for the community which requires its inhabitants to behave and act accordingly.

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5.3 Living with differences

Laborschule embraces the vision of diversity as enriching the school community. As a consequence, learning is largely individualised, thus taking into account the students' different learning paces and their varying interests, needs and abilities. Laborschule students live and learn together in groups that encompass both different age groups and heterogenous performance levels. Laborschule does not support practices of excluding or homogenising students. There is no repeating classes and no outer differentiation, instead students may choose from different classes. In addition, students receive individual feedback regarding their learning and social behaviour in the form of personal conversations and development reports.

5.4 School as society on a small scale

Laborschule considers itself a community for all people learning, teaching and working here that accept and respect each other in their diversity. The behaviours that society expects from adult citizens can and should be acquired in everyday school life: peacefully and rationally dealing with issues and aiming to solve the community's challenges. This type of learning is achieved by means of responsibility and participation. In such a small-scale society individuals learn to develop a sense of responsibility for their tasks and, increasingly, for their own learning path. The structure of the different key stages at Laborschule aims to incorporate these principles.

6 Democratic education at Laborschule

The democratic principles of Laborschule are in general based on the idea of school as an *embryonic society* introduced by John Dewey (1899/1976, p. 12). As Kurz et al. (2022) outline, Laborschule aims to represent such a small-scale democracy. In order to achieve this goal, the student body mirrors society itself, and more specifically, the population of Bielefeld. Therefore, student intake is based on certain criteria to ensure that all social groups are represented proportionally. The idea of the *embryonic society* still guides Laborschule's pedagogical work towards being a democratic school today. In this sense, democracy is not only a lesson topic explicitly taught in politics classes or projects, but also an integral part of everyday life and living in a school community. Students and grown-ups as citizens of Laborschule both have rights and obligations. Teaching democratic principles and learning to live together as well as to participate in a community are not isolated elements, rather they are embedded into various situations of everyday life. Students are encouraged to act responsibly.

In this section, we outline Laborschule's spiral concept according to which students learn to participate in society on a small scale from the beginning to the end of

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their school life. Naturally, younger students have other means and opportunities for participation than those who are about to leave school.

6.1 The helper system

From day one, students experience how to act responsibly within a group. Every student has an older student as a helper to guide them through a school day: exploring the school area, helping with the learning tasks and being a playmate. After their first year at Laborschule, students become a helper themselves for the ones who are starting pre-school in year 0 at the age of five. When students move from stage I to stage II, which is also accompanied by a change of buildings, they again get one or two helpers to support them while starting into year 3. In this new part of the building there are new things to explore and learn about: rooms for crafts, the cafeteria, the gym or the students' cafe, to mention but a few.

6.2 Learning plans and project work

From the beginning of key stage I (year 0-2), students learn very independently and decide what and when they learn. They set their own goals together with their teacher and may then pick from different working areas and options. Each student's learning path is therefore designed with and accompanied by their teacher. Each student has their own study plan or schedule. Sometimes there are joint projects with other groups, e.g. a circus or music project in stage I or subjects may be combined in stage II (year 3-5) when working on topics like space, refugees, current affairs, and other things they are interested in. At the end of such a project, students present their work to each other. Sometimes this presentation may be a special event, other times it may take place during the daily assembly. At key stage III (year 5-8), there are two substantial social and learning changes which for most children take time to adapt to. On the one hand, students now learn in age-homogenous groups and, on the other hand, the timetable gets more split up into subjects. Within the subjects, there still are a lot of options to pick a topic according to one's interest, but students also have to learn that they might have to study some things they would not choose otherwise. This is a gradual process during which teachers need to accompany their students and offer help according to their needs.

6.3 Making group relations and issues a priority

After an open check-in phase, there is a daily morning assembly in each group. On Monday morning this is a school-wide time to talk about school life, group issues or individual questions and requests which might be important to the group. Students take the lead during these morning meetings, which serve as an orientation and help structure the day as well as ease the start into a school day. The daily assembly in each group usually starts with some time to talk about what is happening at home, what the students experienced or how they feel – whatever is

doi.org/10.35468/6040-03

important to them in that moment. The assemblies give students the opportunity to present products, texts or ask questions about new topics and questions. They listen to their peers, their issues, problems or presentations. One of the effects of the daily assembly is giving students a feeling of safety. They know that there will be an assembly the next day at the latest. Hence, the heterogeneity of the group is, on the one hand, very apparent and, on the other hand, a natural part of their group from day one. During the assembly, educators also have time to explain, for example, how the school works in general or what will be a learning topic over the next days or weeks.

6.4 Being aware of oneself and expressing your feelings[4]

One of Laborschule's research and development groups focuses in particular on Rosenberg's non-violent communication. The participating educators and researchers are Laborschule's in-house experts in this area and train colleagues and students. Rosenberg's approach to communication is split into four steps to prevent and resolve miscommunications. The aim of this method is to express your own feelings and needs and make them transparent for others (if necessary). At the same time, children and grown-ups learn to be aware of other people's feelings, to listen and to negotiate a solution for conflicts in a respectful way (see Freke 2022). That way students learn that their feelings are respected, their voices are heard and that an occurring conflict can be solved. Here, they have a safe environment and feel secure. In the end, this leads to a better understanding of both other people's as well as one's own feelings and needs. Referring to the land animal with the largest heart, Laborschule's version on non-violent communication is called *Giraffe language*.

6.5 Engaging with society beyond school life

Many topics find their way into daily school life. World issues are addressed even with the youngest students, because many children see things on TV or in a newspaper and want to talk about what they have seen and are eager to learn more about that topic. Such topics can be elections, COVID-19, tragedies like natural disasters and terror attacks, climate protection, etc. Moreover, almost every group at Laborschule has students with a refugee background. Naturally, students are interested in learning more about each other and their (new) classmates. Students from Laborschule also took part in the *Fridays for Future* movement and the climate protests. As mentioned above, students' learning process is guided by a more subject-based timetable starting in year 6. Whereas any subject might be an entry point to talking about politics in general, the interdisciplinary subject German/Social Sciences in particular plays a major role for discussing politics and society at large. Until year 10, there are class projects about people with disabilities, children from

4 You can find more information and materials here: https://www.labschoolseurope.eu/solving-conflicts-peacefully/

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around the world, the Middle Ages, and other history topics. On top of that, Laborschule is an UNESCO school and therefore is committed to incorporating the 17 sustainable development goals (SDGs) into its subjects whenever possible. The annual class trip is always related to political, environmental or cultural topics. For example, year 6 students travel the region around Bielefeld and experience its nature and humans' impact on it. During that time, students live and learn together for a week, preferably in a self-sustained house or campground, where they cook and clean for one another. This process continues throughout the following years: In year 7, students go on a trip "into the snow". In years 8 and 9, students can participate in a language exchange and finally, in year 10 every group goes on a cultural trip to Italy. All these trips are incorporated into the curriculum and therefore prepared in advance during various lessons and reflected on afterwards.

6.6 Participating in school life

Laborschule identifies itself as a space for living and experiencing life. Every child and adult is asked to actively participate in it. Issues of everyday life are discussed and solved within the groups. Additionally, student committees are an important part of every key stage at Laborschule. Key stage I and II (year 0-5) have a student parliament. The parliament meets once a week and consists of student representatives from each group. It is a voluntary board, which holds its meetings during one of the lunch breaks and is open to everybody. The participating students select two educators to support them and accompany the meetings. At key stage I, two older students support their younger peers by representing this stage. The parliament serves as a forum in which students can address and discuss issues within the community of the key stages. From year 6 until year 10, each group annually elects a representative. Those representatives meet on a regular basis and discuss school issues and look for the person in charge or the appropriate institutions they might have to address along the way. For example, they initiated a veggie day, which started out as a proposal from a single student. It was taken to the parliament where it was discussed first, before it was adopted, and has since then become an integral part of the school cafeteria's meal planning. To institutionalise student participation, Laborschule also developed a unique school constitution; in fact, there are two constitutions, one for key stage I (year 0-2) and one for key stage II (year 3-5), which take into account the age differences and subsequent needs of students. The school constitutions address all school-related issues. For example, they lay out when students are able to make decisions for themselves (e. g. whether to wear a jacket outside or not), when students have a voice in decision-making processes and when they do not have a say (e.g. for safety reasons during class trips).[5]

5 For more information about Laborschule's school constitution, see here: https://www.labschoolseurope.eu/bill-of-rights/

doi.org/10.35468/6040-03

6.7 Living and learning in a democratic space

The close link between everyday school life and democratic education at Laborschule is significantly strengthened by its architecture: Designed as an open-plan school, it almost completely dispenses with the spatial separation of individual groups in classrooms and instead endeavours to educate all students together in an open learning landscape under one large roof. This decision was motivated by the idea of reflecting the educational principles of the school as a democratic „embryonic society" on a spatial level: by creating a "civilising" public sphere through its open layout; by allowing the entire school community to experience each other as a unity when letting one's gaze wander in this open space; by providing a multitude of meeting possibilities and allowing all its inhabitants to switch flexibly and spontaneously between these possibilities; and by providing diverse, especially informal, opportunities for encounters between students as well as between the generations. For this last reason, the "staff room" of Laborschule Bielefeld is also part of the open-plan space – and as such freely accessible to all students (Zenke, 2018).

7 Everyday school life at Laborschule

After having outlined the pedagogical principles and some elements of the school's democratic education, we will showcase what this looks like in everyday school life in the following section.

7.1 Day-to-day school life at key stage I (Years 0-2)

Being a student at Laborschule is a different kind of school experience when comparing it to a the experiences of a student at a conventional German school. Starting from a student's very first day, everything is geared towards a personalised, strengths-oriented, democratic, and above all celebratory experience. In fact, it begins even before the first day of school. The day before class starts, every new student is welcomed – a huge celebration with present and future students, family, friends, and faculty. The current students sing, dance, and perform for the new students, before each new child is gifted a sunflower signifying growth, beauty, positivity and difference. Sunflowers come in all sorts of wonderful different shapes and sizes, after all – as do their new owners.

Every group consists of around 16 students and a team of two pedagogues; a teacher and a social educator, who support every student in their individual learning goals. The groups are mixed-age groups. For a smooth transition, students at Laborschule start school at the age of five - one year earlier than is usual for the German school system. The students are therefore between the ages of 5 and 7. The philosophy behind the mixed-age groups is to strengthen peer-teaching and support. Older Laborschule students take great pride in assisting their younger classmates (and, at

doi.org/10.35468/6040-03

the same time, help to further develop their own social skills). Another important element is the helper system (see section 6.1), whereby each grade 0 student is assigned two older buddies who support them, look after them, show them the ropes, and mainly answer any questions they may have about the school.

The morning assembly for each group starts at 8:30 a.m. However, the un-fenced, open-plan school grounds are buzzing with students from 8:00 a.m. onwards, thus allowing every student to start at their own pace. Assemblies are a major part of the communication and democratic education system within Laborschule. In this context, it is notable that a large proportion of students participate in them. Students moderate the assemblies, they lead the conversations, propose topics, tell stories, and assign responsibilities such as announcing the daily schedule, taking register, or describing the weather in a foreign language. Students and educators, usually a tandem, decide on matters such as next tasks, projects, and food choices for lunch. The assemblies in house 1 (the building for approximately 200 students from key-stage I) are usually concluded with a story, read by the teacher. One of the noteworthy and touching sights during storytime is the myriad of listening positions adopted by the students. They may sit, stand, lie, lean, snuggle (or all of the above). Laborschule recognises its students' rights to listen and learn in a way that feels comfortable to each of them.

Another important democratic element of Laborschule is the Giraffe language (see section 6.4). Giraffes famously have the largest hearts of all land animals and Laborschule students and educators try to communicate with each other with similarly big hearts. Talking and interacting with each other should be conflict-free, respectful, and polite – just like a giraffe. This goes not only for informal classroom or playground communication but also within the many school parliament bodies. Each group elects two representatives (of any age) who join the two educators elected by the students to meet once per week to discuss group matters and key stages matters, such as playground architecture, in the school parliament for key stage I (see section 6.6). In addition, each group decides on specific issues affecting their group such as where to put shoes, how conflicts are sorted out, and which park to visit next.

Every day at key stage I follows the same routine but without a fixed timetable. The day is divided into learning sessions (60 minutes) and breaks, and the motto is organically combining living and learning throughout the day. Learning sessions consist of learning how to read, write and do maths as well as project work, art, music, English, learning about nature, cooking, baking, acting, dancing, swimming, PE, etc. The aim is to find a stable balance between concentrated academic work, relaxation and play time.

A pivotal maxim at Laborschule is that students do not receive any grades for their work until year 9. Instead, detailed developmental and reinforcing feedback is given either verbally or in written form. In addition, each student's performance is

doi.org/10.35468/6040-03

discussed at regular meetings with parents or guardians, the student and educators. Each child also receives a personalised report at the end of each school year.
Inclusivity, diversity, awareness and acceptance are core elements at Laborschule. Educators work hard to make any special needs support feel part of the day-to-day. Special needs educators, social pedagogues and psychologists situationally accompany students with or without special needs as part of the regular school routine.
The whole school building was designed to have multiple learning and relaxation areas but without traditional classrooms (see section 6.7). Students may move freely around the different areas. The outside play areas could be described as areas that students can roam freely rather than as typical playgrounds. The outdoor area consists of multiple spaces with hills, tunnels, swings, slide, trees, lawns, etc. to attract the students to play to their hearts' content. Lunch completes the timetable with each group eating together in the school dining hall at staggered lunch times.
The parents or guardians play a central role in their child's education. To this end, there are confidential drop-in sessions with a social educator, social worker or psychologist as well as parent-teacher meetings, a parents' council or parent-student afternoons. The latter are informal gatherings in the school organised by the parents and students and celebrated together with the teachers and social needs educators. This includes barbecues, games afternoons, crafts sessions, group cooking events etc.
Each student in house 1 spends two nights per school term away from home sleeping, playing and discovering new things together with their classmates and educators on a class trip. These typically take place at youth hostels and are an addition to the numerous excursions (e.g. museums, zoo, concert, farm, playground, nature, etc.) during the school term.
To round off the celebratory nature of Laborschule, there are different festivities. For example, the whole of house 1 dresses up and parties for a whole school day to celebrate carnival. Then there is the house 1 concert where students, educators and alumni entertain the students, their families, and friends with music and performances. At the end of the term, the final house 1 celebration takes place as a farewell celebration for the second year students during which the students and adults send off the oldest ones to house 2 with a giraffes heart and the ubiquitous Laborschule song, which is adapted to have a line about every single student and their character.

7.2 Day-to-day school life at key stage II (Years 3-5)

Key stage II at Laborschule Bielefeld consists of nine (currently eight) groups which, like all groups, are named after colours (cobalt, green, topaz, azure, reseda, orange, navy, turquoise, and olive). Years 3, 4 and 5 are taught in mixed-age groups, as they were at key stage I, so that the respective groups consist of 20 to 24 students between the ages of eight and ten. There is one teacher who is permanent-

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ly assigned to these (learning) communities and who teaches almost exclusively in this group. Our experience shows that having a permanent reference person is important for students at this age. The teacher represents consistency in everyday school life and is someone to whom they can address their concerns, questions, and needs at any time. Since the groups are mixed age, this community changes a little every year, so that new opportunities and challenges arise at the beginning of each school year. The oldest students in the group have to also find and master different ways how to live and learn with students from other groups. They can choose two basic courses of key stage III, which are also taught in mixed-age groups (years 5/6/7). In these courses, they are – in contrast to their regular group – among the youngest students. These courses can be chosen according to individual preferences so that sports, technology, gardening or a second foreign language besides English can be chosen.

Community life is strengthened by various activities and projects. For example, there is a helper system that helps new students of the third year to have a smooth transition to key stage II at the beginning of the school year, especially because these students also switch to a new building. At the same time, the older students in the group take on more and more responsibility for the other members of their small community in the mentoring process. This idea is also realised in various overnight stays at school and the annual one-week group trip to different places in Germany. The group trip is firmly anchored in Laborschule's own travel curriculum (see section 6.5). While at key stage I the destinations are still in or around Bielefeld, key stage II groups already travel throughout Germany.

Festivals and celebrations are of particular importance during key stage II. For example, at the beginning of each school year, the transition to year 3 (students moving from key stage I to key stage II) and year 6 (students leaving key stage II for key stage III) is celebrated extensively with a ritualised procedure, including a polonaise through the whole school building and a banquet in the new group. Similarly, the farewell of the students in year 5 is celebrated at the end of each year.

Another important community aspect is learning how to deal with issues in a peaceful and reasonable way by taking over responsibilities and by all members participating, just as it is expected of adults in society at large. Therefore, the forms and modes of communication acquired at key stage I are broadened and deepened. In particular, the daily assembly is an essential component of this pedagogy. It is used for conversations and contributions and also to express conflicts and wishes. In addition, the group council with its fixed, ritualised procedure is another form of self-organisation. It also serves to raise and explain concerns to the other students of the group, to discuss them and, if needed, to look for common ground so that every student can feel heard, seen and respected with regard to their concerns and needs. Topics that are relevant for the whole key stage II are brought to the key stage II parliament (see section 6.6).

doi.org/10.35468/6040-03

However, it is not only the concept of living together as a community, but also the idea of learning in a community that are based on the principles of responsibility, autonomy, and the willingness to collaborate. Every group is made up of different individuals with numerous varying abilities and needs. On top of that, a third of each group's students changes due to the mixed-age groups every year. Lessons, therefore, need to create a setting in which everyone can participate and where everyone can receive the support that fits their abilities and needs. This approach always keeps an inclusive perspective in mind and is guided by the principle of learning from and by experience (see section 5.1). Every topic and issue is made accessible for various learning styles and students can choose individually, thus allowing everyone to learn at their own pace. The differentiation of learning and the process of specialisation of each student that began at key stage I continues and increases at key stage II. This individualisation of learning is viewed as a benefit to the community as opposed to arrangements that lead to isolated learning next to each other. On the contrary, individualisation is explicitly understood as learning from and with each other.

Another feature of learning and teaching at key stage II is that instead of following the conventional division into subject lessons, there are so-called comprehensive classes which comprise all subject areas and can be designed individually by the teacher. This allows for an individual and flexible implementation of the key stage II curriculum depending on the group and teacher. It is, however, important that the students have covered all areas of learning and the respective topics during their three-years at key stage II. Only Physical education (P.E.), Swimming, English, and Technology lessons are partly taught as subject lessons. This is due to specific security measures and teacher's competences.

Learning at Laborschule can be described as both practical and transcending the boundaries of individual subjects. This approach is frequently implemented via group and project work with regard to topics including outer space, vehicle engines, your biography, or Pascal's triangle. These contents are also explored in learning spaces outside of the school context, e.g. at the school garden, the museum or the forest. Students often present their work in the following formats: reading self-written poetry and stories, acting in a play, presenting a film. During parent-child afternoons, parents can experience first-hand, what their child has worked on and how.

Each student learns according to their individual learning plan. It is thus perfectly natural for each student of a group to work on different tasks at their own learning pace, and, as a learner, to be responsible for their own learning. In practice, this is achieved through an individually organised rhythm of the school day.

Starting at 8.00 a.m., school begins with an open start so that the daily assembly can take place at 8.30. All lessons are 60 minutes long. They include exercises on arithmetic, writing and reading, work phases dedicated to the students' projects,

doi.org/10.35468/6040-03

and shared mealtimes. The teacher and the students in the group can adapt and change the daily rhythm to fit their needs at any time. The aim is to find the right balance between rest and movement as well as concentration and relaxation each day. Therefore, the timetable sometimes changes for the whole group (bicycle trip, walk in the forest). This type of flexibility can also be applied to individual needs, for example, if students need a short break to move around and stretch their legs or if they decide to swap the official break times with learning phases for themselves. They could, for instance, continue working on their assignments while everyone else is having a break, and then take time off from learning at another time.
Moreover, there are spaces where students can choose their activities in a highly self-determined way: on the construction playground, they can build their own hut with a hammer, saw and pliers or make a campfire; in the school zoo, the small animals (guineapigs, chickens) have to be taken care of; in the creative workshop, students can express themselves artistically; the music room and the disco are for making music and dancing; on the sports field, they can move their body.
Students receive different kinds of feedback for all activities, but never numerical grades. From peer assessment – students give a written feedback to each other – to written or oral feedback from adults, there are various ways to make individual learning explicit and visible to students and parents. In addition, there is a compulsory thirty-minute consultation with each family twice per year. In this meeting, the teacher, parents, and student discuss what the student has learned so far and, together, they agree on further steps and goals. At the end of the school year, each student also receives a written report in form of a letter. It addresses the most important milestones of the individual student's achievements, successes, and challenges of the past school year and points towards possible next steps for the student's further growth and development. These measures replace the report cards students typically receive at German schools.

7.3 Day-to-day school life at key stage III/IV (Years 6-10)

Having spent their whole school career at Laborschule in mixed-age groups, students experience a new setting once they enter year 6 and, by that, key stage III: they become part of a group of students of a similar age. This transition gives them a feeling of excitement and a bit of pride. From their perspective, they now belong to the older ones. Nevertheless, they enjoy having four (stage III) or seven (stage IV) lessons per week in mixed-age groups to meet younger and older students. These are great opportunities to maintain old friendships or start new ones.
The first lesson of every week is scheduled for the group to start the new week together. This lesson is reserved for group issues and for addressing and resolving conflicts, holding elections or planning trips and activities – all of which until now had taken place at the daily assembly (see section 5.2).

doi.org/10.35468/6040-03

Most of the lessons take place within the main group of the same age. There is always one educator who teaches two or three of the main subjects. A large number of groups also have a co-teacher for support. In order to foster stable relationships, the fluctuation of teachers in a specific group is kept as limited as possible.
At key stage IV (years 8-10) several changes take place. First, from year 8 onwards, students pick one course as another main subject for three lessons per week. They may choose from artistic courses (Theatre, Music, Arts), literary and social courses (Social Sciences, Ethics, English), science courses (maths, Crafts, Nature) or physical-education courses (P.E.). These courses are important for the final qualification as they count just as much as maths or German. The second change is that more self-organisation is requested from the students. Every year each student takes on a self-chosen project for a year. This may be writing a text, building something or exploring a new field of interest. This process, which always includes a written part, is accompanied by an educator and is also part of the report card.
At the end of year nine, report cards with numerical grades are introduced. Until then most students will have developed a sense for their own learning and studying. This makes it easier to deal with this process. What also stands out at Laborschule, is that these grades are not only based on oral and written products but also include the development of each individual. This is particularly difficult for teachers and requires ongoing conversations and reflections. Therefore, students at Laborschule are monitoring their own learning from very early on.
In addition to this, a large part of school life both in key stage III as well as in key stage IV is about creating experiences for students outside of the classroom (see section 6.5). There is a class trip every year and each trip is embedded into the curriculum. For example, there is a trip into the snow which is a big focus in year 7. The preparation includes forming cooking groups, calculating ingredients (maths), learning about the environment (natural sciences and social studies), writing a diary (English, German) and inline-skating (P.E.) as preparation for skiing. On-site, students cook for each other in small groups, hold presentations about animals or plants, draw landscapes, go hiking and learn how to ski. Back at Laborschule, they write a diary about their experiences. Similar structures are in place for the other trips or internships. In year 6, there is a trip to an outdoor destination close to Bielefeld for five days. After the trip into the snow, the next outside experience is a one-week internship at a Kindergarten. In year 8, students participate in an exchange with a Swedish, Polish or English school as well as a self-organised challenge project. At the end of year 8, there is a two-week internship at a company of the students' choice. In year 9, they visit the exchange students from Sweden or Poland and again they do a two-week internship at a workplace of their choice. The final school year is organised around a cultural trip to Italy, where students live in groups in small cabins on a camp site and have to organise food and living together by themselves. In preparation for this trip, students become experts for a specific

doi.org/10.35468/6040-03

topic. They then use this knowledge to act as their own tourist guides during their trips around the area.

8 Conclusion

In 2024, Laborschule Bielefeld will celebrate its fiftieth anniversary. This will be a time for Laborschule's community to look back on half a century of developing new ways to overcome inequalities within German education as well as supporting students on their way to becoming citizens that can positively shape society. To this end, numerous approaches have been developed, evaluated, adjusted, and disseminated. Yes, some things may have changed in the last decades. For instance, while in the beginning all teachers were meant to engage in research, today, the research process is more structured and Laborschule's educators are supported by a Research Unit. What has prevailed, however, is the Laborschule pedagogy and its unique teacher-researcher model.

It is an opportunity to remember all of the wonderful educators and researchers of the past, whose work and ideas guide Laborschule's path to this day. Therefore, the anniversary will be a moment to look back and feel pride to follow in such big footsteps. It will also be a moment for Laborschule's educators, researchers, students, parents, and alumni to celebrate the accomplishments of the past and present. At the same time, we take a look into the future to see the paths that Laborschule and its community will be able to build for the coming generation. Nevertheless, the question is and always will be: How to keep reforming a reform school? We believe, that part of the answer lies in Laborschule's engagement in and with research. In our research and development projects, Laborschule's educators together with researchers from the Research Unit share the aspiration to further the transformation of our school as well as the German education system by means of transdisciplinary, collaborative and experimenting research.

So what might the future bring for Laborschule? One challenge in the not too distant future will be the remodelling of its iconic school building. But whatever challenges may arise, what will undoubtably be helpful facing them is the collaboration with others – within the school, with Bielefeld University, across the city, in North Rhine-Westphalia, throughout Germany, across Europe and even beyond.

Having been the only laboratory school in Europe for many decades, the opportunity to collaborate with laboratory and university schools on the *LabSchoolsEurope* project is a sheer delight. Working with fellow European educators and researchers from Austria, the Czech Republic, England and France, getting to know their schools and practices as well as their national traditions and local contexts has been a wonderful experience. But even more important: it provided us with invaluable insights that are essential for reflecting on our own practices.

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In this context, the conference "Researching Schools: Bridging Research and Practice at Laboratory and University Schools" that took place in Bielefeld in September 2022 will be remembered fondly for a long time. It was not only the highlight of the LabSchoolsEurope project, but also the very first European conference for laboratory and university schools. Fortunately, over one hundred school leaders, educators and researchers from all over the world participated. They introduced their schools, shared their experiences and knowledge, discussed new approaches, and got to know each other better, which is an invaluable basis for future collaborations. These two days not only provided important impulses for Laborschule's future work, but also built the foundation for the future collaboration of European laboratory and university schools. With this in mind, we are looking forward to a time when schools across Europe can collaboratively work on their shared mission.

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Pascale Haag and Marlène Martin

Lab School Paris: An educational living lab

1 Introduction

Education and school institutions are currently undergoing rapid and unprecedented changes worldwide. Under the influence of different factors such as the growing influence of digital technologies, comparisons between countries – PISA, TIMSS, PIRLS –, and more generally societal developments that redefine educational needs as well as the respective roles and places of adults and children (Renaut, 2002; Singly, 2009), new proposals of all kinds are made. The idea that we are in a phase of "educational transition" (*transition éducative*) is sometimes put forward (Germain, 2020; Jamet & Vincent, 2016), which needs to be accompanied in order to better train young people for the challenges of the world to come. It is to participate in this movement that Lab School Paris was created in 2017. In this chapter, we introduce Lab School Paris, the first lab school in France. After a general presentation of the university school context in France, we present the history of the foundation of Lab School Paris, the main theoretical principles upon which our pedagogical approach is grounded, and the wider network of research that aims at contributing to strengthen the links between scientific research in education and actual practices in the classrooms.

2 The French school system and university schools in France

Complexity and variations on institution names constitute a distinguishing feature of the history of education and teacher training in France. The creation of a national system designed to ensure public education for children has been the subject of many historical studies. They reflect the system's institutional complexity (Prost, 1968; Jacquet-Francillon et al., 2010) and the evolution of teacher training (Prost, 2014). This system has long existed independently from the universities, which have been established since the Middle Ages: teacher training was not officially attached to the universities until the creation of University Institutes for Teacher Training in 1989 [*Instituts Universitaires de Formation des Maîtres*].
For a century and a half, teachers built their professional skills in special training schools called *"Écoles normales"*, whose organisation and curricula were defined by the Ministry, under the control of inspectors, in a highly hierarchical structure.

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Training included preparation for the *brevet supérieur* [advanced certificate] and then the *baccalauréat* [baccalaureate], which were the required qualifications to become a teacher. The practical part of the training took place partly in specialised schools, created in 1887 and affiliated to the Écoles normales: they were referred to as "*annexes*", when they were located on the same premises as the Écoles normales, and as *"écoles d'application"* [training schools], when they were located within an ordinary public primary school. In both cases, they were primary schools in which pre-service teachers practised teaching under the supervision of a teacher specially appointed for that purpose. The teachers of these écoles annexes or d'application, who were responsible for handing down their pedagogical practices and their way of teaching, following a transmissive model, were recruited according to specific criteria, in particular their age, their experience and their previous position (Buisson, ed., 1911).

After the period of the Vichy regime, during the Second World War, and its temporary reform of teacher training (Prost, 2014), the *écoles d'application* were re-established. An official circular of 7 March 1946 (Ministère de l'Education nationale, 1946) stated that "it is obvious that the teachers [of those schools] must be excellent educators", and emphasised their "technical value", without, however, specifying the criteria for this value, which were left to the inspectors' appreciation.

The model of *écoles d'application* thus clearly differs from the concept of lab schools as theorised and put into practice by John Dewey (Cucchiara, 2010; Durst, 2010): it is only concerned with the practical training of new teachers and not with research, and it is rather conservative. The *écoles d'application* aim is to transmit practices considered best by headmasters and inspectors, the teachers' hierarchical superiors, on the basis of empirical criteria; those practices are to be implemented in an identical manner, or at least as close as possible to the original. This model is thus not linked to research or university, it is based on the replication of an ideal model. The application-oriented and pragmatic dimension of this model could offer a reassuring aspect to the student-teachers who received it, providing them with professional behavioural schemes and ready-to-use pedagogical tools (Chartier, 2016), but it may also be conducive to a culture that is not very supportive of bottom-up pedagogical innovation and is not open to other inspirations. In this respect it is also quite different from the concept of lab schools as described in the introduction chapter of this book.

Teacher training institutes underwent various name changes: First the creation of University Institutes for Teacher Training in 1989, then, as a result of the Bologna Process standardising university curricula in Europe and instituting the *Licence-Master-Doctorat* system (2007), that of the Higher School of Teacher Training and Education (*Écoles Supérieures du Professorat et de l'Éducation*), from 2013 onwards, and finally the National Higher Institutes for Teacher Training

doi.org/10.35468/6040-04

and Education (*Instituts Nationaux Supérieurs du Professorat et de l'Éducation),* since 2019. In this process, the *écoles d'application* have gradually been abolished. Theoretical training is now clearly provided in university settings, while practical training takes place in mainstream schools: through several internship periods during the first year of the Master's degree, and then with a part-time teaching assignment during the second year of the Master's degree. Pedagogical advisers and tutors formally guide trainee teachers, while regular teachers in schools often provide informal mentoring through discussions with their colleagues during recess or the sharing of pedagogical material.

More precisely, during the second year of training, a young trainee teacher is in a so-called "in-charge" placement, i.e., he or she must provide certain lessons alone, while benefiting from supervision by a tutor. However, this supervision varies greatly and there is little research on this subject (Chaliès, 2016). In addition, the tutor is not present with the trainee teacher on a daily basis; instead, the latter is part of the team of the school in which he or she works, and benefits from the presence of other teachers, some of whom may be very experienced. In the same way, trainee teachers can adopt a very sustained attitude of observation of the "tricks of the trade", which are not transmitted during university training, and even more so when certain practices implemented by colleagues differ from the prescriptions issued during training (Dubois et al., 2006).

Apart from the increasingly rare training schools, the links between the National Higher Institutes for Teacher Training and Education and the schools to which the trainees are assigned take the form of their presence and the visits of their tutors. These links do not formally extend to other teachers in the schools.

The French teacher education system does not currently offer the possibility for teaching, training and research to take place in the same location on a permanent basis. Other ways to link research and practice do however exist. For example, there are on-site initiatives such as the *Lieux d'Éducation Associés* (LéA), launched in 2011, which are designed to encourage researchers and teachers to work together on collaborative and applied research projects (Carosin & Monod-Ansaldi, 2018). They aim to respond to teachers' practical concerns, but only for a limited duration, since these projects are scheduled to last three years.

More recently, in 2018, the concept of laboratory schools inspired Frédérique Alexandre-Bailly, the Rectrice of the Académie of Dijon (regional schooling district), in the Burgundy region. Unfortunately, it was not possible to create a new school based on this model ex nihilo in the public system, but she did identify a high school in the small town of Montceau-les-Mines, the Lycée Parriat, in which various experiments were already being carried out – tablet classrooms, cogni-classes project (which offers a training to teachers about neuroeducation, in order to make them aware of cognitive processes which occur during learning, such as formation of memories, creative processes, social and emotional cogni-

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tion), interdisciplinary 10th grade class, no-grade classrooms, etc. She proposed to the lycée's headmaster that her school participated in a pilot project: a temporary status for three years allowed to receive additional resources and carry out research projects with various institutions, like the Institute for Research on Education of the University of Burgundy, the Dijon teacher training institute (called at that time ESPE), and the Dijon academy board of education (*rectorat*). Thanks to the leadership of its head, the Rectrice Frédérique Alexandre-Bailly, to the commitment of enthusiastic teachers and to the support of school heads, a school-wide transformation could take place. More broadly, Frédérique Alexandre-Bailly's goal was to transform the Académie of Dijon into a "learning Académie". The aim was not only to develop pedagogical innovation with the support of researchers and to weave a network of learning establishments in the Académie with the "lab school label", there again for three year periods, but also to develop a culture of lifelong learning, based on the latest developments in research. The example of the Lycée Parriat has inspired other schools and several projects are currently underway in the Académie of Dijon, both at the middle school and elementary school levels (Haag, 2018).

Such arrangements differ from the lab school model as conceived by Dewey because of the temporary nature of the "lab school label", which is institutionally necessary in order to grant the same funding opportunities and connections with scientists to all the schools that might apply for them (even if, for different reasons, Dewey's laboratory school did not last more than a few years, established lab schools are not conceived as temporary). They also differ in that not all teachers within the same institution may wish to be involved in a project with researchers. This can create tensions within an educational team and can make it difficult to conduct investigations on a school-wide scale: interesting observations can be made in a single classroom, suitable for qualitative research, but a small sample size does not allow for generalisable results.

However, the French system of education in the 21st century is not comparable to that of the United States at the end of the 19th century and it is therefore necessary to reflect on how the concept of laboratory school can be adapted to a different historical, social, cultural and political context. Nevertheless, all attempts to encourage teachers to take research results into account, benefit more from it, and to promote encounters between education and research professionals should be encouraged, as they contribute to the transformation of professional cultures.

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3 History of the foundation of Lab School Paris

Lab School Paris is part of a wider network founded in 2015 at the initiative of the first author of this chapter, Pascale Haag. This community, the French Lab School Network (https://en.labschool.fr), is made up of a number of social actors from different backgrounds (teachers, researchers, parents, association members, etc.). Its main goal is to promote the use of research for educational success by strengthening the links between research and teaching practices. Managed by a non-profit association, the Lab School Network seeks to contribute to the educational transition in various ways:

1. by creating opportunities for exchange, mutual training and awareness-raising through events for different target groups (e.g. via open forums, seminars, conferences)
2. by promoting the lab school concept across France through the foundation of the first school based on this model
3. by carrying out collaborative action research projects with teachers who are interested to work with researchers

The initial plan was to run a project within the French national education system, but this did not come to fruition despite the interest shown by representatives of public authorities such as the Education advisor to the French President and the Cabinet officer to the Minister of Education, with whom several meetings took place in 2015 and 2016. Lab School Paris has therefore been created as a private school (*école privée hors contrat*), run by a non-profit association. However, close links have been and are still cultivated with representatives of the public education system who share our vision of education and there are regular collaborations between the Lab School Network and public schools. Two years of preparatory work were necessary before Lab School Paris' opening, to set up the network, develop the educational project, find premises suitable for a school, set up a team and, finally, identify families willing to commit to an adventure that was unprecedented in France, and therefore a little risky. Indeed, for any alternative school project that is created, the first year constitutes a complex stage (Viaud, 2017). At the same time, the network has endeavoured to make different educational research better known to the non-specialist public, through seminars, conferences and participatory events. The links with this network are a way of affirming and enriching the research dimension of the school's project.

Lab School Paris was established at the beginning of the 2017/2018 school year with a team of two teachers and a multi-grade class from grades 3 to 5 (called CE2 to CM2 in French, 8 to 11 years old). Lab School Paris' mission is to be an innovative, multi-level, bilingual (French-English), solidary, secular and eco-responsible school. With these values, its aim is to accompany children both in

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the acquisition of knowledge and in the overall learning process, enabling them to become responsible, enlightened, autonomous, supportive and blooming citizens. Its goal is also to welcome children from diverse backgrounds in order to build a real social mix, by proposing a system of scholarships according to a fee scale indexed to family income. Another goal is to create an inclusive school, integrating some children with special educational needs.

Initially located in a small room of about 80 square metres in the centre of Paris, and with additional space in an associated structure, the Liberté Living Lab (a place dedicated to creativity and social innovation, where independent workers share offices), the school has welcomed nearly 30 children over its first year, with departures and arrivals. Two teachers were permanently present, one Anglophone and one Francophone. The team was able to open the 6th grade (6e, the first level of the secondary school, called *collège* in France) for its second year. For its third year, at the start of the 2019 school year, the school kept on expanding, by opening first and second grades, also hiring three new teachers. With a move to larger premises in the spring of 2020, the school continued to grow: at the start of the 2021/2022 school year, it offered all levels of elementary and middle school, for around 85 children from CP to 3e (i.e. grades 1 to 9; 6 to 15 years old) and in 2022/2023, the first year of High school opened (grade 10) and a total of 120 students were enrolled. They are accompanied on a daily basis by an educational team consisting of 15 teachers, one curriculum director and three other staff members, as well as interns, volunteers and young people doing a service civique [civil service, a voluntary commitment to the service of the State or an association for 16-25 year old, supervised by a state agency], who also benefit from a training and first professional experience at the school.

4 Project-based collaboration with research institutions

Even if Lab School Paris is not officially attached to a higher education institution, the Lab School Network has a privileged relationship with the *École des hautes études en sciences sociales* (EHESS), the institution where Pascale Haag, the first author of this chapter, works. Indeed, at the time of the creation of the Lab School Network, the President of the EHESS accepted that the head office be located in the premises of the EHESS and many meetings and events have taken place there. EHESS was founded in 1947 as a section of the École pratique des hautes études, from which it became independent in 1975. With the privileged status of "grand établissement," it functions like a doctoral or graduate school covering the whole spectrum of humanities and social sciences. Its 250 full professors (directeurs d'études) and associate professors (maîtres de conférences) are in charge of the supervision of Master and Doctoral students and conduct graduate-level seminars

doi.org/10.35468/6040-04

on topics directly linked to their own research. Hundreds of seminars, guest speakers, and conferences are being held at the EHESS every year, with a focus on interdisciplinarity. Approximately half of the students enrolled are international students.

Students from EHESS can choose Lab School Paris to do an internship or as a field of research. For instance, in 2019-2020, an EHESS student in sociology did his Master thesis on Lab School Paris's student councils (Duval-Valachs, 2020); in 2021-2022 another EHESS Master student in Gender Studies contributed to a study on Identity formation during adolescence involving middle school students as co-researchers (Haag et al., 2022). Each year, one or two students come to Lab School Paris for an internship or to do research. There could hardly be more, taking into account the size of the school and the fact that education research is not central at EHESS.

Moreover, Lab School Paris also has links with other universities, both in France and abroad, through agreements to host university students for research projects or internships, most often in the fields of psychology, education or sociology.

5 Scientific approach: from lab to classroom

5.1 Evidence-based education

Evidence-based education, which is essentially Anglo-Saxon in origin and refers to the approach of the same name developed in medicine from the 1970s onwards by Archie Cochrane, took off in the 1990s, following severe criticism of the usefulness and quality of the research carried out in education: "a lack of cumulative character, [...], ideological biases [...], confused and not very explicit approaches, [...], methodologies that give pride of place to qualitative aspects and theory to the detriment of rigorous empirical bases; – studies that are not widely disseminated, not well known by practitioners and not very productive" (Rey, 2006).

In response to these shortcomings, the evidence-based education movement has defined the following objectives:

- to improve the scientific quality of educational research and in particular its capacity to provide convincing results of a causal nature on educational activities
- to favour methodologies that meet this objective, in particular experimental (or quasi-experimental) approaches as well as "systematic reviews of research" (or meta-analyses) (id.)

While much work on various issues has been conducted with reference to the field of evidence-based education by authors who promote it (Davies, 1999; Oakley, 2000; Slavin, 2002; Pring & Thomas, 2004; Sprenger-Charolles, 2016), this new

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paradigm, which is part of the epistemological turn, continues to be the subject of significant controversy, as to the very possibility of its existence, for example by questioning the validity or feasibility of randomised controlled trials in education or the scientific method of choice (Hammersley, 1997; 2005). Lessard (2006) points out that evidence-based education is just as ideological as other approaches, but that it is "a particular ideology that refuses to name itself as such" (*une idéologie particulière qui refuse de se nommer comme telle)* (p. 30).

More generally, as Rey (2006) notes, "the transition from scientific findings to the possibility of their incorporation into practice is often questioned" (p. 4). This suspicion is reinforced by work carried out in the economics of education, which shows that certain positive results obtained in an experimental context are not found when one tries to implement the very same practices on a larger scale in schools. Gurgand (2018) accounts for these limitations by noting that "caught up in the complexity of the classroom, previously experimentally validated approaches fail". He does point out some of the causes of these failures: the design of experiments in laboratory conditions far removed from real conditions, less training, in terms of quality and duration, of the teachers who are subsequently responsible for applying the methods, less commitment to the approaches, especially when they are imposed. Bianco (2018) also points out that it is by relying on institutional mediation between researchers and teachers, in a professional training and development approach, that the gradual adjustment of practices is most likely to produce positive effects.

Despite all the questions and limitations we have just mentioned, there is no doubt that evidence-based education is a growing trend.

In France, despite the interest shown by policymakers in evidence-based education since the late 2010s, research has had little influence on training systems (Gaussel, 2020). Indeed, the "appetite for evidence" cannot be improvised or decreed (Quéré, 2017). In the absence of procedures aiming at facilitating the appropriation of research knowledge by teachers, the lack of a link between research and pedagogical practices remains, as does the mistrust of teachers towards researchers (Gaussel, 2020; Marchive, 2008; Rey & Gaussel, 2016). Indeed, in France, researchers are often criticised for not communicating the results of their work to education practitioners (Marchive, 2008; Rey & Gaussel, 2016). The latter sometimes have the feeling that they are considered as providers of data, without benefiting in return from information that enables them to change their practices in the classroom.

Another aspect relating to the use of research work in the classroom is the relationship between researchers and teachers; Barrère, a sociologist, refers to the "double disappointment" that often characterises the relationship between researchers and practitioners, because even if research knowledge circulates, its status is rarely di-

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rectly operational and it needs to be carefully recontextualised each time (Barrère, 2006, p. i).

In addition, especially in France, the issues of preserving autonomy and professional identity are at stake, as noted by Garcia (2013) and by Schuller and al. (2006). Rey and Gaussel (2016) expand on this idea by noting that "the fundamental problem of the relationship between research and the field (in France at least) lies in its degree of acceptability (and use) by practitioners, or on the contrary, in its rejection when research is seen primarily by teachers as a means of controlling their activities rather than improving them" (p. 5).

Zadina (2015) points to the lack of a shared professional culture between teachers and researchers, practical constraints and objectives that are not convergent, making encounters between the two worlds difficult and frustrating. Draelants, a sociologist of education, insists on the lack of understanding towards teachers that researchers would show, because they "focus on the moral and cognitive legitimacy of the reforms, largely ignoring or underestimating another form of legitimacy that is decisive for the reception and success of cultural change: functional or pragmatic legitimacy" (2018, p. 111). For him, "new pedagogical prescriptions are tested and accepted as long as they do not overburden the daily practice of an already complicated profession" (p. 130), a view that leads to optimistic perspectives for the encounter between research and education, within the framework of mutual consideration between the actors.

In the context of the Lab School Network, we refer to the continuum proposed by Schlesinger-Devlin, Elicker and Anderson (2017), which ranges from experimental laboratory research led by academics to research conducted autonomously by teachers in their classrooms (teacher as researcher), and which has already been addressed in the introduction to this volume.

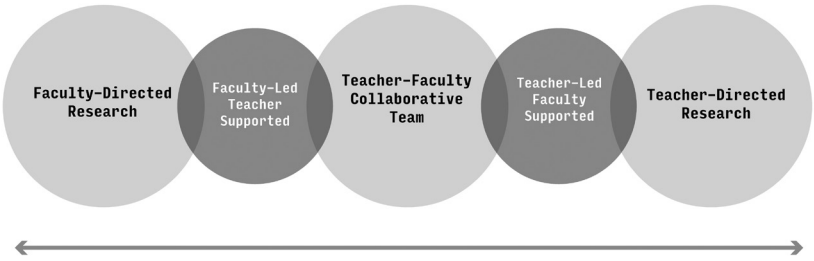

Fig. 1: Continuum of research designs according to Schlesinger-Devlin, Elicker et Anderson (2017)

Faculty-directed research is "classical" experimental research where the role of teachers is limited to selecting student subjects according to certain criteria. For such research to be useful to teachers as well, it is important that the objectives

doi.org/10.35468/6040-04

of the study and the research protocol be presented to them in advance and that feedback on the results be provided. In a *Faculty-led supported by teacher* academic research, teachers are involved in the collection of data or the interpretation of results, but have no say in defining the protocol.

In *collaborative research*, a team of teachers and researchers share the conceptualisation and conduct of the research project equally – developing the research question, the method and the protocol – so that the research benefits both.

Another form of action research consists in asking a researcher to accompany a *research project led by one or more teachers* to solve a problem raised by the teaching staff.

Finally, the teacher may engage autonomously in action research, controlling the process from the elaboration of the research question to the analysis of the results. This is sometimes referred to as *"teacher as researcher"*.

This categorisation is useful for facilitating dialogue between teachers and researchers because it is by getting to know each other better that researchers and teachers will be able to develop their relationships and build protocols that meet the expectations of all.

5.2 Research at Lab School Paris

The research projects carried out at Lab School Paris or in connection with the Lab School Network are developed on the basis of consultation between the teachers and the school's pedagogical and scientific management team. Projects are mainly (but not exclusively) focused on collaborative action research, aiming at making research results usable in the classroom in order to meet students' requirements in the best possible way.

Some research projects are conducted in Lab School Paris itself, and others in the wider context of the French public education system. They are conducted in collaboration with colleagues from various institutions, or by PhD or Master students working under their supervision, from EHESS and other institutions (Paris University, Caen University, Aarhus University in Denmark, North Carolina at Chapel Hill in the United States, etc.).

The topics are defined in close collaboration with the teachers, in order to make them useful to teachers and students, and to make scientific research progress at the same time. Here is the process, starting from the needs identified by the teachers and the school leadership team in order to meet students' requirements in the best possible way. Once they're agreed upon, we start looking for partners to conduct the research in our environment, most often, colleagues who supervise Master or PhD students; sometimes, although less frequently, it is the other way round: researchers or university students apply for an internship in the school and, if we find their research topic useful and inspiring for the team, their proposal is submitted to the teachers. After that, the research protocol is designed by a team

doi.org/10.35468/6040-04

composed of the research partners and the Lab School curriculum and scientific directors, in strict compliance with the ethical conditions validated by the laboratories to which the researchers belong. The study is implemented during the school year and, once the results are analysed, a public restitution is offered to the teachers, the students and the parents, either in the form of a video or during our yearly event *"Fête de la science et de la recherche du Lab School Network" [Lab School Network Science and Research Day].*

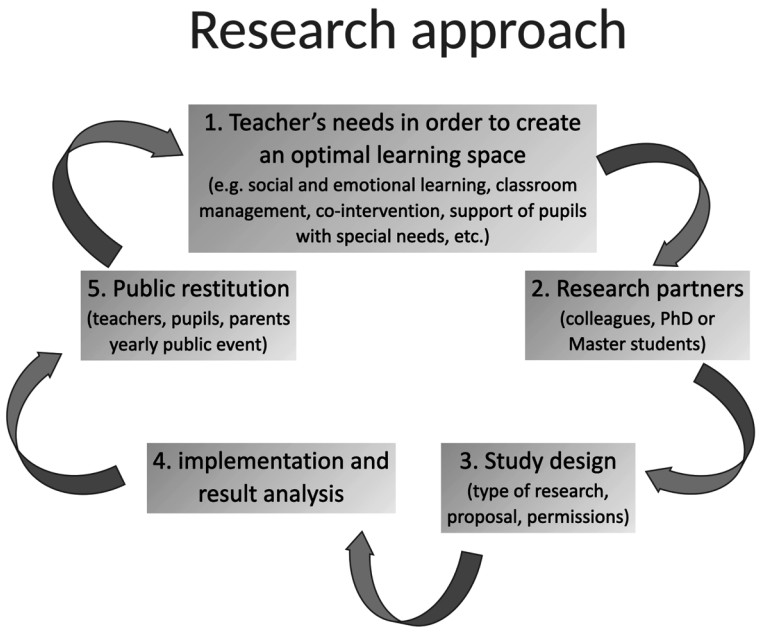

Fig. 2: Cycle of research projects at Lab School Paris

Our current research projects are mainly focussing on three domains: Social and emotional learning (SEL) and inclusion; School democracy; and how we can create an optimal and efficient learning space. Examples include:

1) SEL and inclusion

- *Links between students' well-being and socio-emotional skills (age: 9-13 yrs)* – Master thesis in psychology[1]
- *Critical Disability Studies Informed "Inclusive" Education: A Participatory Action-research* – PhD thesis in psychology[2]

1 https://en.labschool.fr/post/quelles-recherches-au-lsn-1-les-comp%C3%A9tences-socio-%C3%A9motionnelles-en-cycle-3-audrey-bauwens

2 https://www.youtube.com/watch?v=33e9aVyFQS8&list=PLA8xWBsZoGAtpbfEYG4DKAuSxlASONEjA&index=4

doi.org/10.35468/6040-04

- Help me to learn with my emotions (in Kindergarten)[3]

2) School democracy

- *A Child's Game. Ethnography of deliberative democratic practices in an alternative school* – Master thesis in sociology[4]
- *Pupils' expressive engagement in primary school* – PhD thesis in sociology
- *Emotions, soft skill and democracy: how to embed them into the common core of key lessons* – Lab School Network research group (forthcoming, academic year 2021-2022)

3) Creation of an optimal and efficient learning space

- *Reflexive practitioners:* How and why? A Participatory Action-research – Lab School Network research group
- *Co-intervention in the classroom: evolving models of teaching professionalism and training for teachers and educational staff* – PhD thesis in education (forthcoming, academic year 2021-2024)

To highlight Lab School Paris approach to creating transdisciplinary, collaborative and transformative research projects that are based on experimentation, we outline three research projects in the following in more detail.

6 Pedagogical concept

The fundamental principles of lab schools are a) to implement the concrete recommendations that can be drawn from research results in real classroom situations, in educational and pedagogical practices, and b) to experiment with innovative pedagogical practices in order to evaluate their effectiveness.
This two-fold link to both already consolidated and ongoing research is intended to be applied across all aspects of the everyday life at the Lab School Paris:

- in the material organisation – ergonomics of facilities, making spaces consistent with the activities carried out (Adé et al., 2006; Gal-Petitfaux & Roche, 2015)[5]
- in the choice of school rhythms – distribute teaching time over five mornings and three afternoons, whereas the majority of French public schools concentrate classes over four long days, despite the data gathered by chronobiologists against this model (Leconte, 2014); organisation of the day taking into account attentional variations: fundamentals topics (maths, science, languages) mostly

3 For a presentation of this project: https://www.youtube.com/watch?v=UhRMzJK8azQ&list=PLA8xWBsZoGAtpbfEYG4DKAuSxlASONEjA&index=2

4 https://www.youtube.com/watch?v=pu_Ucbibve4&t=7s

5 These two short videos give a concrete idea of the classroom settings in Paris Lab School: https://www.youtube.com/watch?v=Rx_OrAe oRqw for the youngest group (6-9 years old) and https://www.youtube.com/ watch?v=fty95azxIr4&t=5s for the elder students (9-12 years old)

doi.org/10.35468/6040-04

taught in the morning, over rather long study time (one hour), in order to allow concepts to be worked on in greater depth, quiet time or PE at the time of the drop in vigilance peak in the beginning of the afternoon, resumption of activities at the end of the afternoon, when attentional capacities recover (Challamel et al., 2001)

- in the relational approach (Bissonnette et al., 2017), which aims to promote the development of social-emotional skills, relying in particular on tools derived from Freinet pedagogy, such as student councils, attribution of 'jobs" (Connac et al., 2019); students thus learn to express themselves calmly, to debate, to assert their point of view and to respect that of others, they are initiated into various social roles, they vote and learn to accept decisions taken by a majority of students...
- in the construction of psychological attitudes conducive to learning, such as self-confidence (Marsh & O'Mara-Eves, 2008), sense of self-efficacy (Bandura & Schunk, 1981), growth mindset (Dweck, 2012); similarly, given the proven harmfulness of the usual grading practices, as highlighted by converging sociological studies (Merle, 2018), students are not subjected to any numerically graded assessment[3], assessment being thought of as a permanent process of adjustment of the activities proposed by the teachers (formative assessment vs summative assessment), so as to provide the most immediate feedback possible to the students, a guarantee of its pedagogical usefulness (Hattie & Yates, 2014).
- finally, in the overall pedagogical design themselves, they thus integrate the contributions of cognitive psychology (Willingham 2010; Hattie & Yates, 2014): teaching according to the principles of explicit pedagogy (Richard et al., 2016), attention paid to memorization and the reactivation of knowledge (Masson, 2020).

Studies evaluating explicit pedagogy approaches tend to show its effectiveness in reducing inequalities in school results linked to social origin (Guilmois, 2019). With reference to the theory of cognitive load (Chanquoy et al., 2007; Mottint, 2018; Tricot, 2017), one of the explanatory hypotheses of this effectiveness is that this approach provides all students with prior knowledge (Tricot & Sweller, 2016), and avoids situations of overload linked in particular to the double task (Chanquoy et al., 2007). Thus, it also allows for the use of project-based teaching, which is appreciated by students but which, unless specific conditions are met here, tends to increase the achievement gaps (Tricot, 2017).

The teaching tools proposed for writing (Dumont, 2016), reading (Dehaene, 2007) and mathematics (Neagoy et al., 2019) are derived directly from research or are designed on the basis of it. All the practices and tools are regularly evaluated within the team, and benefit from the comments of the trainees who see them implemented.

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A specificity of the Lab School Paris consists of implementing reciprocal immersion (Fialais, 2019) regarding the mastering of both French and English languages by the students. Although the issue is still being debated, research seems to show the value of early second language learning (Munoz, 2011), in order to benefit from the peculiar cognitive window (DeKeyser, 2000).
Generally speaking, the school thus combines diverse pedagogical approaches, depending on the learning objectives targeted. This is why the school's approach is described as "hybrid pedagogy", without exclusive reference to any one current or approach, but with the aim of combining them in a coherent and well thought-out manner, supported by confirmed research work. Of course, on a day-to-day basis, the articulation of these different principles and these different points of support derived from research presents significant challenges: for example, the organisation of school time over 5 days is not the one preferred by some teachers; the appropriation of pedagogical methods that are not those taught during the usual teacher training requires time; maintaining the coherence of practices with a team that is regularly growing demands a significant amount of reflection and training[6].

7 Concept of democratic education

In the following section, we present various dimensions of democratic education that are fostered in Lab School Paris: diversity, participation, collaborative practices, and school councils.

7.1 Student diversity

To enable the dissemination of the lab school model and teaching practices in public education systems, it is essential that they be tested in ecological conditions, i.e. relatively comparable to those prevailing in public schools, particularly from the point of view of the socio-economic characteristics of the students enrolled. Indeed, since the creation of the Laboratory School at the University of Chicago by Dewey, and in the majority of current American lab schools, the students enrolled belong mainly to privileged categories, which constitutes a limit to the extension of the model (Cucchiara, 2010). Given the particular situation in France, where the gaps in educational success linked to the social origin of students are particularly large (OECD, 2019), it was essential for the team behind the Lab School Paris project to have a socially mixed recruitment.
As the school does not receive any public subsidy, the mix is made possible by adapting the school fees to the parents' income: the fee paid by the most privileged is higher than the real fee and allows the least advantaged families to benefit from

6 For a better understanding of how research is put into practice at Lab School Paris, see: https://www.youtube.com/watch?v=0UFOj7UMX7w&t=3s

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lower fees. Various actions (teacher training courses, events, fundraising) also help to increase the association's income and foster social diversity as much as possible, although it cannot be denied that families who are interested in the approach proposed by progressive schools are often socially and culturally privileged people. However, a survey conducted in 2019-2020 (Duval-Valachs, 2020) showed that 21% of the fathers and 19% of the mothers of students at the Lab School Paris had a diploma at or below the French baccalaureate, which is the case for 55% of the general French population. Even though parents at Lab School Paris certainly did attend college or French "grandes écoles" much more than French average, a significant portion of them do not have any higher education degree.

Students who attend the school have also had diverse educational backgrounds, since they come from privileged public schools, from public schools located in the *Réseau d'Education Prioritaire* (REP, disadvantaged areas), from Montessori schools, from various schools abroad, or even from being educated at home.

Finally, the enrollment of students with special educational needs is an essential dimension of opening up to cognitive diversity: the enrollment of these students in ordinary schools has increased sharply in France since the laws of 2005 (*law for equal rights and opportunities, participation and citizenship of people with disabilities*) and 2013 (*orientation and programming law for the refoundation of the French Republic School*), constituting a break with previous segregated schooling models. The aim is therefore to reconstitute, at the school level, a small community representative of today's socially and culturally diverse society in France.

7.2 Fostering participation and involvement

Sociology of education studies show important differences depending on the social background with regard to relational and communication skills, such as ease of expression, feeling of legitimacy in expressing one's opinion (Millet & Croizet, 2016; Lahire, 2019) as well as the effect of gender on speaking out (Gleyse, 2015). The teachers' awareness of these dimensions allows them to ensure the regulation of speaking out, which makes it possible to involve all the students, while taking into account their own personalities. Teachers strive to empower the children with the linguistic and behavioural tools that are needed to become confident and active citizens. This approach is in line with contemporary ideas on the transition from a representative democracy to a truly participatory democracy. The limits of representative democracy can be observed through the civic disengagement manifested by citizens in several Western countries, in contrast with a truly participatory democracy, in which the involvement of all is sought (Albertini, 2014; Callon et al., 2001). It should be noted in this respect that participatory democracy requires citizens to master the scientific and technical issues of contemporary problems, and that the thinkers of participatory democracy, following Latour (2004;

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2006), agree with Dewey (Hatzfeld, 2011) on the need for equal acquisition of knowledge enabling informed decision-making (Pestre, 2011).

7.3 Modelling collaborative practices

Originally implemented in order to ensure bilingualism in the classrooms and to manage multi-levels and mixed-ages teaching, the presence of two teachers in each class – both of them having a very good command of English and French, but one being a French native speaker, and the other one being an English native speaker –, co-teaching practices (Friend & Cook, 2013) also appear to be likely to model collaboration between adults, on a day-to-day implicit basis. Contrary to the classic schooling model (Vincent, 1994), which reproduces a hierarchical system, the teacher standing symbolically above the students and being the only one in charge, we are currently investigating if being exposed to a co-teaching model could also stimulate actual teamwork between students.

7.4 Researching the effects of student councils

Introducing student councils, their possible benefits, but also their limitations, are the subject of much work. However, it should be noted that the real effects of this tool, whether on students, teachers or the functioning of the classroom, have not been clearly demonstrated, as highlighted by the meta-analysis of Mager and Nowak (2012). Such reservations obviously do not justify abandoning the practice of student councils, but may suggest ways of monitoring or improving them in order to implement them as efficiently as possible for the students, from a reflective and critical perspective on the part of teachers.

8 Outlook: Development efforts

8.1 Past projects

Following on from previous projects designed to encourage the sharing of practices within the framework of the French national education system – such as support for an action research project to develop the management of a district into a "learning district" in 2017-2019 with 22 schools, or the "Help me to learn with my emotions" project with a preschool (2019-2020) –, the Lab School Network keeps embarking on new projects along with the French national education system.

Lab School Paris continues to grow at the same rhythm as its students and will open an Advanced Placement 10th grade in September 2023. The school is currently a candidate for the IB diploma. Training sessions for school creators who would be interested to open a school are also organised twice a year. Until this date, over 40 persons have attended these sessions. However, so far, no new lab

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school – whether private or public – has been created in France. Several factors hinder their development: 1) the creation of private schools is subject to increasingly strict controls from the French State, which may discourage project bearers, the majority of whom have no connection with the research world to begin with ; 2) the support that can be offered by the small Lab School Network team, in the absence of financial subsidies, is limited: 3) in the public system of education in France, any deviation from the norm – even when it is a question of giving more resources to institutions serving a disadvantaged public – is perceived as presenting a risk of breaking the constitutional principle of equality (Demeuse et al., 2005). This constitutes a potential barrier to any form of innovation.
Since the Lab School Network has so far not succeeded in promoting the creation of new public schools based on the lab school model, its members have opted for other ways of collaborating with the public system in order to achieve its fundamental objective of strengthening links between researchers and practitioners, aiming to contribute to the transformation of the education system and to help it face contemporary challenges.

8.2 MotivAction project

One of the most important projects so far involves research and training of around 200 1st grand public school teachers in two Frenc Académies. This fout years project (2020-2023) has been launched by educational economists (Paris-Dauphine University, Sciences Po Paris) in order to test the effectiveness of teacher training to develop socio-behavioural skills of students, such as a sense of self-efficacy, cooperation, and a growth mindset. The trainings, conceived in the framework of a partnership between the French Éducation nationale, the École Normale Supérieure and the Lab School Network, will be evaluated by an experimental design with a control group; they have been tested within the Lab School Paris, thus responding to its vocation as a place of experimentation of innovative practices based on research. The Lab School Network team also took part in designing the assessment approach of the effects of the training which includes the use of the Classroom Assessment Scoring System (CLASS, Pianta et al., 2008).

8.3 Emotions, soft skills and democracy

This project takes as its starting point the genre of the fable, in particular the Fables of the French author Jean de La Fontaine, in order to foster democratic education through the development of critical thinking, social-emotional skills and creativity. One of the aims of this project is to create pedagogical resources that can be shared with teachers from other schools. Another aim is to see how democratic education – understood in the broad sense – can be incorporated into all subjects in the school curriculum, so that teachers can teach skills that support

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pro-democracy behaviours without adding activities to an already overloaded curriculum.
The Lab School Paris team drew inspiration from the baroque music group Faenza who had already produced a show based on La Fontaine's Fables. Throughout the school year 2021-2022, all the students of the school, from 1st to 9th grade, produced, with the help of teachers, researchers and artists, an original stage performance. Its preparation involved all the school teachers and all subjects, from language to study fables and to write new ones, to art in order to design the costumes and sets, history to understand the purpose of this genre (to avoid censorship) and its evolution through time, science to study the animals involved, etc. The outcome of this project was a show entitled *The animal comedy, a rebellion in three acts* – a title chosen by the students –, which was performed in a beautiful theatre in Paris, the Théâtre de l'Atelier in June 2022[7].

9 Conclusion

In the French context, the creation of Lab School Paris could take place thanks to the benevolent interest of institutions, notably the French Education nationale, the EHESS, and others, but also thanks to the active support of the EdTech community and the social innovation space Liberté Living Lab, which acted as a sort of incubator. Without all the "good fairies" who bent over the cradle of this project, given the financial constraints that weigh on any new school foundation initiative, it is quite likely that Lab School Paris would never have seen the light of day.
Navigating the challenges we have faced while staying true to our values during these first six years has not always been easy for the educational team, for the students and for the parents. The involvement of all stakeholders has been essential, the trust of families, the unfailing support and the constructive criticism of the members of our scientific committee have enabled us to constantly adapt, especially in the recent context of the COVID-19 health crisis.
Moreover, if it was only a question of creating a small school, the project would not have met its goal, which is to contribute, more broadly, to transforming education to meet the challenges of a globalised and changing world, where education and school institutions are undergoing unprecedented and rapid changes, leading teachers to constantly make their practices evolve. The Lab School Network aims to be a "learning community" where researchers and teachers collaborate to find answers to their questions, share experiences, innovate, produce resources and

7 https://www.youtube.com/watch?v=SOaxU62GeAs&list=PLA8xWBsZoGAtOhh_WhwMaGvYcZ7fnniR4&index=10

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support each other, in order to "break down the walls of solitary practice and create safe spaces where teachers share and learn from each other" (Bryk, 2017).

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Labyrinth Lab School Brno: Creating a socially responsible learning community

1 Introduction: the school and its vision

Labyrinth is the first laboratory primary (ages 6 to 11) and lower secondary (ages 11 to 15) school in the Czech Republic. The school was accredited by the Czech Ministry of Education and then established as a private school in 2016. The laboratory and the private aspects give the school the opportunity to look for its own educational path within a Czech environment that in the past was strictly centralised. Being a private school also allows the school to keep creating new opportunities for its community while still taking into account developments in not only the Czech educational system, but also in other areas of education and elsewhere in the world. Thus, the school can build on a broad field of ideas and achievements.

In 2016, the Czech environment was not set up to accept the concept of a laboratory school in its system of public education. And as there was enough interest within the community to work on the introduction and establishment of a laboratory school concept in Czech education, the private path had to be taken. Even though Labyrinth is a private school, it continues to work in contact with and with the support of public education, thus addressing one of the key principles of the school philosophy, i.e. social responsibility. The strong connection between Labyrinth and state education is pursued through teaching practice for students of the Faculty of Education and the Faculty of Arts at Masaryk University Brno, seminars for teachers, collaboration with state schools through various projects, etc. Thus, the private label here does not stand for profit, but rather for social responsibility and for a path beyond but alongside the system of public education.[1]

1 The whole education system was centralised and run by the state for decades. It was only after 1990 that private schools started to emerge, and initially their reputation was low. Now the situation is very different, especially at primary and secondary level. Private schools have been established all over the country on the initiative of either teachers or parents who were looking for alternative pedagogies (e.g. Montessori, Dalton Plan, Step by Step, Waldorf, diverse forms of homeschooling or unschooling). However, unlike the programme of the Labyrinth laboratory school, the programmes of these schools have very little common ground with the public system of education.

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Labyrinth is a school that aspires to follow the principles of an ecosystem school (Luksha et al., 2018), i.e. a school with permeable boundaries, a school that is part of society and thus interconnected via various societal patterns, notably private enterprises, galleries, and the municipal administration. Labyrinth continually builds awareness of social responsibility towards the community and follows the laboratory-school mission of transformativity and experimentation. It is a school that works systematically towards creating functional networks that have come out of the needs of the glocal community (as described in Section 4) (Featherstone et al., 1995) and while reflecting changes in society and their effect on individual needs, the school is constantly prepared to innovate in terms of infrastructure, tools and methods (Senge, 2012) in the ongoing search for a system that can act upon the ideas and opinions of all parties involved.

Currently, there are 313 students cared for by a team of 44 people, including educators, teacher assistants, school assistants, psychologists and project managers. In September 2021, the school officially applied for an increase in student capacity. The total capacity of the school will be 360 students as well as 160 students per the 4-year grammar school.

Labyrinth builds on meaningfulness, lived values and integrity. Diversity and variety of perspectives, and intrinsic motivation are viewed as prerequisites for the appreciation of open, inclusive and empowering concepts in both education and life. Each day there is space for reflecting on values and their presence in daily decisions, and on how our relationship with ourselves, with other people and with the world is affected and formed by our values. The teacher is viewed as a guide who provides inspiration, a space for discussion, and integration in a safe and non-judgmental environment.

Students are guided to find their own learning strategy, plan and continuously evaluate their learning, and experience individual and team success. Furthermore, as illustrated in Table 1, Labyrinth cultivates core values, which are perceived to be a scaffolding for social and emotional competencies and competencies for the 21st century, as these are relevant to the Czech educational environment. Firm foundations for the values are interwoven with the necessary knowledge and experience that lead a person to become a self-confident, anchored, open-minded, concerned citizen and a self-directed learner.

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Tab.: 1 This table illustrates the lived values supported in Labyrinth. In the manner of can-do statements, they are written in the first person singular.

Respect	I act with respect to others and to myself. I believe in my own value and in the internal value of all people around me. I act honestly and fairly with respect not only to the environment but also to feelings, culture, and opinions of those who surround me.
Consideration	I think about others, I'm aware of their needs and I sense their feelings. I am kind and empathetic to others.
Exceptionality	I strive to maximise my personal success and at the same time I am aware of my contribution and responsibilities for the success of the team and community I live in. I always try my best; I permanently want to improve. I am not afraid to attempt unfamiliar things. New opportunities are my stimuli for personal growth.
Morality	I adhere to common ethical principles. I do the right things at the right time, and I am not scared to stand up for things I believe are right.
Responsibility	I have a responsibility to myself. I am honest and sincere and finish tasks I have started. I am responsible for my behaviour towards people and the environment that surrounds me.
Resistance	I believe in myself. I know that when I try to achieve something I can do it. I know which strengths to develop and weaknesses to work hard on, and I do this. I am not afraid to accept new challenges. I can adapt to unexpected changes and perceive them as new opportunities.
Harmony	I promote social cohesion. I appreciate cooperation, tolerant communication, and reciprocal trust. I see diversity as an opportunity for learning and growth.

2 Labyrinth and its position in the Czech school system

On its founding, the school set itself the goal of presenting an open system based on cooperation and participation of students, teachers, parents, and other partners. The idea was born in the minds of several Czech educators who initiated an open forum of teachers, leaders in education, researchers, psychologists, political representatives, parents and other people interested in innovative education. Discussions took place on philosophical concepts and values and effective practices reflecting the needs of society in the 21st century. These discussions became the basis for the shared vision and mission of the Labyrinth laboratory school.
In contrast to other schools established on a private basis in the Czech Republic in recent decades, Labyrinth declared its attitude of social responsibility from the

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beginning. In practice, this means providing a diverse, multicultural and understanding environment, cooperating and sharing outcomes of innovation with the public system, and supporting active citizenship within the school.

The school is part of a network of "faculty schools". Labyrinth cooperates closely with Masaryk University, Brno. It shares its outcomes with the Ministry of Education, the Czech School Inspectorate, and other educational institutions. It regularly holds workshops and lectures for other teachers, welcomes future teachers for training, and presents teaching practices on social media. Over the last three decades the system of education in the Czech Republic has undergone radical changes which have quite naturally been reflected in teacher education. The shift from a highly centralised education system to a competence-based education model with equal importance for national and school curricula has brought about a shift in the demands posed on teachers. From the responsibility to deliver only a centrally prescribed national curriculum, teachers' competences were extended to include responsibilities as curriculum designers at micro and at meso level (Janík, 2013). This required a completely new set of competences which previously had been the remit of an assigned group of scholars only.

It is obvious that the current practice needs teams of experts entrusted with curriculum design. This is what is now expected from the teachers vested with this new responsibility. It is nowadays common practice across the country that all teachers participate in the process of designing a school curriculum, thus contributing to the unique nature and profile of a particular school. Hence a critical role of experienced expert teachers is to guide the student teachers during their formative years. For this reason, teacher training faculties in the Czech Republic strive to build a network of faculty/clinical schools[2] and establish models of cooperation between student teachers, schoolteachers (the term "guiding or faculty teachers" is used) and teacher training institutions. To provide a solid framework for mutually beneficial cooperation, a three-year project focused on improving cooperation with faculty schools was implemented from 2018 to 2020. The aim of the project was to increase the quality of reflected practical preparation of student teachers at Masaryk University's Faculty of Education, and so to intensify cooperation of university lecturers and teachers from primary and secondary schools. As a result, we have managed to establish a well-functioning cooperation with guiding teachers whose preparation includes courses for the acquisition of necessary mentoring skills. Apart from the training, *The Standard of Quality of Professional Competencies of Student Teachers* and *The Standard of Quality of Cooperation of the Faculty of Education and Faculty Schools* were designed and are currently used by students (for

2 Schools where university students – teacher trainees – do their teaching practice are generally called "faculty schools". Clinical schools are schools which take on teacher trainees for a more intensive, usually one-year internship, as part of their teaching practice.

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planning and assessment of their development) and by the guiding teachers (who supervise the teacher trainees during extensive teaching practice).[3]
Labyrinth is one of the faculty schools, but the cooperation goes far beyond the mandatory level of involvement. The teaching practice of our university students (trainees) is generally organised by a coordinator (a teacher from a particular faculty school), whose responsibility it is to choose guiding teachers, create pairs of guiding teachers and trainees, and monitor the whole process. In this respect, Labyrinth is one step ahead of the mainstream schools: the trainees do not only do their teaching practice here, but they can also get involved in research towards their degree (e.g. in support of a Bachelor thesis) stemming from the Labyrinth school's needs.

3 Pedagogical concept and scientific approach

In this section, we first describe the ideas that the educational concept of Labyrinth is built on. We start by listing our educational inspirations with the help of Bertrand's classification of educational theories (2003), thus placing Labyrinth within the historical context of educational approaches. We then take a look at a new paradigm described by Robinson and Aronica (2016) and a broader approach to democracy in education as elucidated by Pol et al. (2006). We devote space to describing in more detail significant aspects of Labyrinth's philosophy, such as the concepts of the embryonic society (Kurz et al., 2022) educational ecosystems (Luksha et al., 2018), school as a learning organisation (Senge, 2012), creative school (Robinson & Aronica, 2016), and the paradigm of internally driven learning (Nováčková, 2001).
The theories we describe in this section are relevant to the Czech educational environment since 1989. Before 1989, the Czech educational environment did not really follow the international educational mainstream and trends. Western pedagogy could even be described as taboo in the Czech environment of 1948 to 1989. After 1989, Czech education changed quickly under the influence of a lot of factors. In the field of didactics, theoretical thinking was long rooted in the Central European context and as such influenced by the *Fachdidaktik* of German-speaking countries (e.g. W. Klafki and his *Neue Studien zur Bildungstheorie und Didaktik*, published in Czech in 1967). It was only after 1989 that other Western perspectives, most notably in the form of curriculum studies, were first incorporated into educational research. For these reasons, the implementation

3 One of the major aims of *The Standard* is to bridge the gap between theory and practice, not only by formulating clearly what knowledge and skills teacher trainees need to develop, but also to develop common professional discourse understood and shared by practising teachers, teacher trainees and university teachers.

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of democracy in Czech schools might differ from its counterparts in German, French, Austrian and British schools. The concept of democracy as such is still establishing itself in the lived values of Czech society and thus of the Czech state school system.

3.1 Classification of theories in education as introduced by Bertrand (2003)

The educational situation in a school is viewed as an engaged interaction of four structural elements. These four elements are the student, content, society, and learning environment including the teacher. The school embraces the dynamic aspect of the educational situation, i.e. the need for constant observation of and action towards changes in individuals and society. Thus, in epistemological terms, by placing itself in the stream of subjectivism and interactionism as classified in Bertrand (2003), the school sees knowledge as subject to individual interpretation but also as an interactive process of reality, as a matter of interactions, as the result of ever-changing reality, and as an interactional process fed by never-ending interactions (Bertrand, 2003). Labyrinth builds on aspects of learning environment theory and social theory as classified in Bertrand (2003). A description of Labyrinth's position in the ever-changing process of education at the time of writing is given in Table 2.

Tab. 2: Relevant educational theories, as classified in Bertrand (2003), and some of their aspects that are applied in Labyrinth.

Learning environment theories	Cognitive theories	- Interest in the mind's action when learning occurs. - Mental modelling of knowledge. - Structuring the body of knowledge by problemsolving. - Individual differences in learning structures. Multiple intelligences (Gardner, 1993). Accommodating teaching to learning styles. - Teaching strategies.
	Social cognitive theories	- Cultural and social factors are crucial in the construc-tion of knowledge. - Knowledge acquisition springs from participation, but also from observation and taking others as our model. - Influence of social and cultural interactions on learning mechanisms, processes, and structure. - The development of the human mind is part of a social and historical process. This process goes both ways. - Zone of proximal development; knowledge is socially constructed, knowledge is learned in a social environ-ment through interaction (Vygotsky). - The three sets of elements that influence one another in the development of knowledge: events in the environ-ment, characteristics of the individual, and behaviours (Bandura). - Learning as a form of interpretation and action in a particular cultural setting. - Contextualised learning. - Cooperative social interactions.

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Social theories	Critical pedagogy theories (Freire, Grand'Maison, Shor)	- Working on analysis of the present social and cultural structures. - Developing critical abilities and critical language. - The focus: social and cultural structures of modern and industrial culture, and participation. - Openness to cultural, political and social modifications of the current status. - Social development of an individual, established through the interpretation and the creation of mean-ings. - Dialogue, pedagogy grounded in reality. - Social awareness, critical language, social selfempow-erment, school as a cultural system.
	Learning community theories (Freinet, Dewey, Vygotsky)	- Education operating at the crossroads of personal de-velopment and social development. - Equal importance to the individual's personal growth and to social responsibilities in the community. - Equal emphasis on theory and practice, personal development and cooperation, individual work and working together. - Building a learning community. - Cooperative learning (Freinet) – pedagogical principles such as partnership rather than competition, flexibility, helping each other and selfevaluation. - Educational progressivism, linking personal and social development (Dewey, Vygotsky). - Personal growth and social transformation. - Understanding and doing. - Peermediated learning and instruction. - Responsibilities in the community
	Ecosocial theories (A curriculum for the future in particular –Toffler)	- The future will be different from the present. Bringing the future into learning is tied to the underlying currents of change. - Three false distinctions: work and learning, school and community, theory and practice. - Learning through action

3.2 Changing paradigm(s)

Changes in the world, and thus in society, bring with them changes to paradigms (Kuhn, 1970). Robinson and Aronica (2016) state that the current education system, the old paradigm, was designed and structured in the intellectual culture of the Enlightenment and the economic circumstances of the industrial revolution. In the mid-19th century, public education was considered revolutionary. It was designed in the interests of and modelled on industry to include standardisation, lines, separate subjects, ringing bells, the assumption that age is the most important thing children have in common, etc. Informed by the Enlightenment and its intellectual model of the mind, education was connected to deductive reasoning and knowledge of the classics. People who do not share this attitude of mind are easily marginalised by this system of public education (Robinson & Aronica, 2016).

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The new paradigm builds on the idea of organic farming. For an organic farm to flourish, four principles must be successfully addressed: health, ecology, fairness, and care. While being guided by these principles, a new-paradigm school constantly strives to do its best to ensure that good living conditions for the whole person and the community are in place, therefore helping to raise physically, emotionally and intellectually healthy individuals (Robinson & Aronica, 2016).
Further, as Robinson and Aronica (2016) claim, schools will not be able to meet the unpredictability of the future by doing what schools did in the past, as this approach does not take into consideration what an individual finds important. The new education paradigm moves the mindset of society towards awakening what is in the child; towards supporting divergent thinking; away from dualisms such as academic versus non-academic; and towards collaboration (Robinson & Aronica, 2016). The new paradigm places the child at its centre (Robinson & Aronica, 2016; Senge, 2012), which is relevant to changes that have been happening in the Czech educational environment of the last thirty years.

3.3 A school as a learning organisation

> "Learning is at once deeply personal and inherently social, it connects us not just to knowledge in the abstract, but to each other." (Hall, in Senge, 2012).

Senge (2012), like Robinson and Aronica (2016), challenges the industrial aspect of education, with its machine-age thinking and schools as assembly lines, and believes in the need for change for human society to thrive and survive (Senge, 2012).
Senge (2012) and his concept of the school as a learning organisation serves as a firm basis for the Labyrinth concept. The school fosters a connection between living and learning and perceives no boundaries between learning and life. According to Senge, schools must strive to create a safe place where children can make the transition from their homes to the larger society and where they can grow in each other's company. This can happen at a school that reflects upon and reacts to individual and societal needs and changes, in other words a school that learns (Senge, 2012).
An organisation that learns is created through the ongoing practice of five learning disciplines (Senge, 2012), which allows for the involvement of everyone in the system and expression of their opinions. It also allows for the building of awareness and the development of capabilities to learn and grow together. Thus, Labyrinth acknowledges the need for a clear expression of I see you. Through applying the disciplines of mental models, personal mastery, system thinking, team learning and building a shared vision, the school strives to become a learning place where everyone's identity and values are nourished and their development is supported.

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Based on Senge (2012), our aim is to create a school that is understood as a living system, i.e. organised with an appreciation of the value of living systems, similarly to Robinson and Aronica (2016). We understand the school as a web of social relationships where constant questioning is central to its nature, and studying subjects as if they were alive and treating the school as if it were alive involves:

a) learner-centred learning
b) encouraging variety, embracing multiple intelligences
c) understanding the world of interdependency and change
d) constantly reflecting on theories used
e) continually exploring how to integrate diverse academic subjects into meaningful experiences for children.

3.4 An educational ecosystem

Similarly to Senge (2012) and Robinson (2001, 2016), Luksha et al. (2018) observe that education is in a state of transition. They appeal for change in education based on the quickly changing world. Like Bertrand (2003), Luksha et al. (2018) see education as reflective of personal, social, ecological, and cultural changes (Bertrand, 2003, p. 393).

Luksha et al. (2018) trust in the power of educational institutions to lead the way towards a wisdom-based society, i.e. based on collective wisdom for the common good. Change in the world calls for change in the paradigm. It involves digitisation, automation, transformation of social institutions, demographic shifts, and transition toward sustainable societies, thus supporting the idea of self-guided and life-long learning.

As stated by Luksha et al. (2018), societal expectations force schools and universities to remain within the existing designs. "School freedom" alone does not allow the system to evolve significantly unless purposeful and concerted action undertaken by educational innovators and policymakers makes this transition more efficient and directed. First of all, a direction for intentional evolution needs to be set (Luksha et al., 2018). Such a huge ambition cannot be in the hands of one person, even if this person is a gifted leader, nor of a group of people. Such a goal needs the cooperation of many various actors from within and beyond the school environment. To achieve a learning ecosystem becomes the common goal. Luksha et al. (2018) define the ecosystem as a dynamically evolving and interconnected network of educational spaces, with individual and institutional providers offering a variety of learning experiences to individual and collective learners across the learning lifecycle. Ideally and within the educational ecosystem of the laboratory school, the central space of the system acts as an open portfolio, thus working with and also creating prototypes, innovations, and good practices for generation across the system of the school and making these available to other schools and practitioners. Ideally, educators, systems leaders, designers/hosts, and practitioners work

doi.org/10.35468/6040-05

together to cultivate learning and collaboration that supports increasing levels of impact for societal transformation (Luksha et al., 2018).

3.5 Democracy in education

Under the new paradigm (see 3.2 above) and within an educational ecosystem (see 3.4 above) democratic values are prerequisites for the system to flourish, and fostering them is of paramount importance. Thus, for a democratic institution to pursue its values, aspects of democracy such as the complex interplay of all parties, practices of participatory decision-making, rules and organisational arrangements based on democratic principles, respectful and equal interpersonal relations in and outside the school, and interactive teaching and learning methods should be aspired to (Tools for Democratic School Development). Huddleston and Garabagiu (2005) state that schools apply democratic education if they function on democratic principles, teach democracy and work for democracy. In this context, the theme of democracy in education can be understood as relatively new in the Czech Republic, where in 1989 a non-free, communist regime was substituted by a young democratic system. Therefore, most Czech sources and inspirations from which Labyrinth draws are of recent origin, although some attempts to reform pedagogy using democratic principles (inspired by the pedagogy of Dewey) can be traced back to the period between the two world wars, as represented by the work of Příhoda (Cách & Váňová, 2000) and Chlup (1958). This attempt to reform schooling as based on the concept of the laboratory school was interrupted by the communist regime in 1948 and could not be readdressed sooner than 1989[4]. The question of democracy is broad and has been treated as such throughout history. For the purposes of democracy in education, and inspired by Pol et al. (2006), we understand that we can approach democratic inspirations as coming from three fields: politological, reform-pedagogical and managerial. The politological view allows us to look at democracy in education from three points of view: liberal (democracy as an individual opportunity); social (democracy as an opportunity for groups); participatory (democracy as a local voice and influence) (Pol et al., 2006). The reform-pedagogical view allows us to build on educational theories as listed in Bertrand (see section 3.1). The managerial view (confidence in the individual and human abilities, communication) allows us to build on systems such as Senge's (2012) school as a learning organisation, as described in section 3.3. To these inspirations, we can add the learning ecosystems theory (Luksha et

4 Příhoda's concept was designed to concentrate on the child and to create a so-called unified but internally differentiated school (under the influence of Dewey, but also of world educators such as Thordike, Decroly and Dalton) and work on systemic changes in education (especially in the 1930s). Before that, immediately after 1918, attempts to reform education tended to be individual and unsystematic. Unfortunately, all attempts to reform and systemically transform education were interrupted by World War II and the subsequent rise of communism in Czechoslovakia. Communism denied the focus on the student's individuality by promoting a collective view. (Svatoš, n.d.)

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al., 2018), as described in section 3.4. We are open to anything new and inspiring that comes our way, as we view Labyrinth as a changing organisation within a changing world.

Democracy is often associated with values such as participation, justice, equality, joint decision-making, teamwork, cooperation, division of powers, mutual respect, diversity, and participation. It is understood that democracy cannot stand in isolation; it must rely on the presence of democratic methods in all social relations, i.e. the right to equal treatment, the right to gain information, participation in decision-making, and the right to respect. Thus, relations with all groups of educational actors are fundamental to this democratic process (Pol et al., 2006). In order for a student to accept democracy as a way of life, certain conditions must be met. It is vital for the student to be given the opportunity to learn what such a way of life means and how it should be led; additionally, the curriculum should emphasise the transfer of democratic experience to young people, and democratic structures and processes of school life must be established. It is a matter of respecting the student and acknowledging that students "own" and have a significant influence on their learning (Pol et al., 2006). If schools are to be democratic places, it is expected that the idea of democracy will be reflected in the roles that adults take on at the school, the creation of specific structures, and all relationships viewed together (Pol et al., 2006).

Managerial inspirations (Pol et al., 2006) lead us to pay significant attention to internal relational characteristics, i.e. an individual's relationship to work, co-workers, leadership, climate, and culture. Internal relational characteristics thus displace external ones, meaning that inner motivation replaces reward, punishment and control (see also Nováčková, 2001; Robinson & Aronica, 2016), and the non-democratic relation of superiority and subordination between teacher and student is erased. The theory and practice of successful leadership thus begin to be perceived as is typical of a democratic order, with attention paid primarily to school climate, school culture, cooperation, respect and equality, and justice (Pol et al., 2006). Thus, as described by Beane and Appel (1995, in Pol et al., 2006), Labyrinth works with the following:

- open flow of ideas regardless of their popularity (ensuring awareness)
- confidence in people's individual and collective ability to solve problems
- care for the common good
- care for the respect and rights of individuals and minorities
- understanding of democracy not as ideals to be realised but as an idealised set of values to be lived by (Pol et al., 2006).

As described by Ekholm (2004, in Pol et al., 2006) democratic learning is a matter of experience – it is a hidden agenda, i.e. the teaching itself could be taking up the time a student needs for hidden learning. In order for a student to learn de-

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mocracy in practice, they must be able to ask important questions, participate in decision-making, take responsibility for decision-making, and participate in the evaluation of the entire process. Thus, if students are to learn democracy at school, it seems inevitable that more time will be devoted to experiential learning and less to traditional[5] teaching.

Based on Dewey's concept for his laboratory school (Dewey, 1972/1896; 1942), Labyrinth brings together not only the community but also theory and practice within that community. Labyrinth is a university-affiliated school, i.e. a space that is open to various actors who understand their role of social participation in the sense of enriching the educational milieu, and a space that serves as a training environment for democracy and where democracy is reflected in everyday life. The school is understood as a social institution, whose role is to present society to every child in such a way that they feel part of it and actively participates in it. Education is understood not as preparation for life but as part of life itself (Dewey, 1897).

In addition, there is a place for every child at Labyrinth, and each child is perceived as an individual. Thus, as in Robinson (2001, 2016) and Senge (2012), the child is at the centre of the educational process. The school community is formed by dynamic, diverse groups of children, and the school works with both strengths and weaknesses of individual children. Thus, Labyrinth embraces different paths of learning, while students discover their own learning strategies and work with mistakes. Thus support is given to students for learning about the community, within the community, for the community and among its generations. In doing so, Labyrinth uses varied, verified and innovative teaching methods and approaches, such as inquiry-based and place-based learning, and development of thinking in a global context and "schola ludus". The result is a creative school.

3.6 Creative schools and the paradigm of internally driven learning

According to Robinson and Aronica (2016), the main key to transforming education is the keeping alive of our need to learn through the school years, as children have an extraordinary capacity for innovation. The talent in each child and creativity in education are as important as literacy, and so they should be given the same status. Supporting divergent thinking is essential for creativity, as it is for seeing multiple answers and multiple paths. Also, creativity goes hand in hand with not being scared of making mistakes. As Robinson (2001) states, there can be no originality without an odd mistake along the way.

The old educational paradigm stigmatises mistakes. In fact, they are the worst thing you can do. Thus, such a system educates children in a way that drives them away from creativity and towards making them afraid of getting things wrong.

5 In the Czech context, the term "traditional teaching" can be viewed as non-experiential and teacher-centred, as it includes a lot of memorisation and emphasis on factual, declarative knowledge.

doi.org/10.35468/6040-05

The new educational paradigm embraces mistakes and works with them in a creative way (Robinson, 2001).
The new educational paradigm also embraces the intelligence of human beings in all its diversity, dynamism, and distinction. In doing so, the old hierarchy of subjects in which mathematics and languages are paramount while dance and drama are at the bottom is being replaced by a non-hierarchical collection of equal subjects, thus adopting a new conception of human ecology in which the richness of human capacity is cherished, the principles on which children are educated are rethought, and human beings are not stripped of their commodities – all in the hope that human beings educated in such ways will not deprive the earth of its commodities (Robinson, 2001).
According to Robinson (2001), support should be given to eight core competencies in a child and four functions of a school. The four main functions of a school are:
1) helping students personally by building on their individual talents
2) boosting the economy by generating innovative workers
3) understanding one's own culture and appreciating other cultures
4) generating politically engaged and compassionate citizens

The eight competencies nurtured by a school are curiosity, creativity, criticism, communicativeness, collaboration, compassion, composure, and citizenship (Robinson, 2001).
Furthermore, in Labyrinth we recognise the importance of the learning environment and of students learning from each other, while creativity is viewed as essential for the ability to adapt to the uncertainty of the future. Like Robinson (2001) and Senge (2012), Nováčková (2001), a Czech psychologist who has devoted her long career to awakening the paradigm of internally driven learning within the system of Czech public education, emphasises the necessity of:

- contrasting external/controlled and internal/autonomous motivations, thus contrasting the prevailing outward driven learning paradigm with the paradigm of internally driven learning
- supporting teaching that builds on taking seriously the basic needs of children, psychological safety in schools, respectful behaviour, clean language, and formative assessment

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4 Theory in practice: creating a functional and supporting network of relationships

From the beginning, when Labyrinth opened its doors in 2016, there was a clear vision and a community of teachers, education professionals and parents whose 32 children were placed in two classes of equal size. The vision has persisted, and the community within and around the school has grown in size and thus in complexity. In an organisation where people are connected by mutual ties inside and outside the school (Luksha et al., 2018), and where the school, as a living system, takes its vitality and energy from the commitment invested in it by people involved (Senge, 2012), personal mastery, shared vision and team-learning can flourish (Senge, 2012).

Labyrinth is a school that perceives itself as a part of life, a place of learning, cognition and communication. It also sees itself as a culture and community centre in support of children, their parents, and the wider community. Cooperation among children, school, family, and community as well as the well-being of all parties involved are of key importance to the concept of the school (see Figure 3).

Labyrinth is a socially responsible organisation that welcomes anyone who believes in meaningful and innovative education. The school is open to supporting other schools and teachers. It connects businesses, public institutions, and education, while continually working to enable children to go happily through the educational system and to develop their potential while being part of a community, of an educational ecosystem.

4.1 The self-directed learner

On the inside, a school is expected to create a safe environment in which each child can flourish. On the outside, it is expected to follow changes in society and adjust its inner educational processes so as to be in sync with the ever-changing world. When these two main educational tasks merge, a school fulfils its potential by being well-equipped to educate children of today's world, for today and tomorrow, while supporting self-directed learning.

Labyrinth is guided by clear educational principles. The individual needs of each child are respected; each child's potential is developed; diversity and intrinsic motivation are supported. Further, children are encouraged to find their own strategies for learning and reflect upon the learning process, therefore experiencing individual and team success. On the outside, there is an ever-changing world where the sets of skills needed to succeed are subject to rapid change. For this reason, it is crucial for a school to go with the flow while providing solid ground on which new skills can be practised.

Each school year begins with a get-together during which all students and teachers discuss class and school rules in order to establish a framework for fair commu-

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nication and behaviour. This approach is understood as a way to equip children with important competencies such as respect, responsibility, communication, participation, and coordination with others. Further, it gives first-graders a chance to work on their class identity (e.g. class name, class logo, class rules).
Since its founding, the school has worked with the concept of direct democracy by constantly monitoring students' well-being and giving them opportunities to express their opinions daily, on all issues that they find relevant. In the past, whole-school issues were addressed at school assembly, an approach that gave every child a chance to participate directly in the decision-making process. In the school year 2021/2022, however, Labyrinth decided to introduce a school parliament, for which each class nominated two deputies. The parliament meets regularly to discuss an agenda gathered from particular classes and students.
The school has preserved the practice of a whole-class morning session, known as the morning circle. This serves as a forum for giving new information, expressing and sharing feelings, solving conflicts, and working on class agreements or decisions. The forum supports the children in fair communication, promotes empathy and active participation, and is crucial for social-emotional learning. Friday sessions are used for a summary of the week's developments, and also for giving and receiving feedback. In this way, the school ensures that each child's voice is heard.

4.2 The children's parents at Labyrinth

A child and her or his parents need to be familiar with the school vision and feel part of the school environment. This process is supported by meetings with the headteacher and monthly meetings of children, parents, and teachers, which are called education groups.
The meetings with the headteacher start prior to the child's admission to the school. Expectations on both sides are compared, as are personal and educational attitudes. These meetings are regarded as a crucial part of educational diagnostics. In addition to meeting up with the parents of the school's students throughout the year, the head regards it as his duty to meet any parents seeking advice in terms of education, and he is in regular communication with parents fulfilling the school's mission of social responsibility.
Communication in the democratic environment of the school is based on transparency and accountability. Labyrinth aims to ensure that every voice is heard and that the school provides tools for involving all its actors in the decision-making process. Actors include students, teachers, parents and the wider community. Communication and cooperation with parents are of crucial importance for the school community's well-being, and for the community to feel safe and grow. Parents take part in class meetings (teacher-child-parents) to discuss the child's achievements, to agree on steps to be taken, and to discuss where support is need-

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ed. Besides this, through online tools such as Edookit, Google meets and Umíme to, parents are regularly informed about their child's achievements.
Parents participate in the running of the School Council and the Parents' Assembly. The School Council is an official school body whose representatives are teachers and parents; it includes the school's head. The Parents' Assembly is represented by the students' parents of each class; it raises and discusses topics with the school management. The school also maintains the contact with parents by hosting many other activities, e.g. informal parent and grandparent meetings, informal teacher-parent meetings, parent TEDx presentations, and a regular newsletter.
The community around the school has been working on a so-called Partnership Agreement, i.e. mutual assistance among parents with the emphasis on social responsibility and heterogeneity. It will provide financial support for some students and parents.

4.3 School partners

Partners including Masaryk University, museums, galleries, libraries, NGOs and businesses play an important role in the life of the school. In cooperation with parents and other partners, the school provides a safe, supportive environment that is a natural stepping-stone to later life. Everyone can participate in a curriculum that emphasises key values and competencies for the 21st century and aims to support each child as she or he becomes a self-confident, anchored, and open-minded person, an active citizen, and a self-directed learner.
Labyrinth's cooperation with the Faculty of Education of Brno's Masaryk University began in 2016. The school offers short- and long-term teaching practice to faculty students and students on Erasmus programmes. Labyrinth is also involved in the professional development of teachers. It offers various workshops and lectures and motivates all age groups for learning. Labyrinth teachers work as mentors or senior teachers; they present different topics at conferences and offer a wide range of courses, including one on formative assessment and an academy for headteachers. As a Centre of the Lego Foundation and a Digi Centre, Labyrinth hosts workshops for students and teachers. The school cooperates with the Italian organisation INDIRE (National Institute for Documentation, Innovation and Educational Research), the Teacher Training School in Rovaniemi, Lapland, the Technology Agency of the Czech Republic on a project called *Implementation of geographical information systems into learning at primary and secondary schools*, and Prague's Charles University on the research project *Key skills at primary school students – diagnostic tests – preparation and standardization of the diagnostics tests of reading skills with special emphasis on reading comprehension*.
In the boxes below we describe three projects in which Labyrinth is involved. The first was developed in cooperation with the Faculty of Education of Masaryk

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University. In the second frame we describe two projects, one based on IT, the other on LEGO.

Casual exposure time room

A theoretical language concept for practical language skills was developed in collaboration with the Department of English Language and Literature at the Faculty of Education of Masaryk University. Over several months, regular meetings of teachers and researchers were held in which theoretical and practical aspects of language teaching and learning were brought together. The four dimensions of this concept are illustrated in the diagram below.

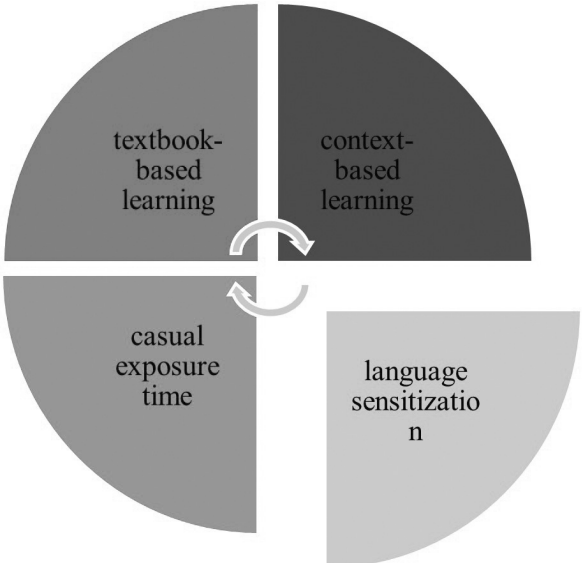

Fig. 1: The language concept

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The language concept is based on a balanced combination of explicit and implicit learning. The idea of the necessity of a casual exposure time room was born within the team of teachers and researchers and later researched within a diploma thesis project by a student from the Faculty of Education. Following set-up, the room has continued to develop. Activity centres are adapted or removed, while books are added to the collection of the reading centre to meet the wishes of students. This project supports children's language skills through activities in a stimulating English-language environment. Once it has been established and tried out in practice, it will be worked on further so as to be transferable to the public education system, thus once again fulfilling the social responsibility principle of a laboratory school and highlighting the laboratory school's research principles of transdisciplinarity, collaboration, experimentation, and transformativity (Šikulová, 2021).

The DIGI centre and the LEGO education centre

From its founding in 2016 onwards, it was obvious that technology would feature heavily in the school's programmes. IT lessons are part of students' curricula from the earliest years. Research has focused on students' ability to participate actively in programming and working with technologies, e.g. robots and ozobots, and on creating a continual digital competence model.

For wider support, and in respect of its social responsibility principle, Labyrinth became a member of the DIGI centres network, which is part of a project called Elixir to Schools. So far, there are 7 such centres in the Czech Republic.

The centre's aim is to support teachers in developing their digital competencies and to give them a space in which they can share their experience. Labyrinth also hosts a LEGO education centre. The LEGO Innovation Studio (LEIS) opened on 1 November 2018. LEGO Education has equipped LEGO spaces with robots and other aids that can be used to activate teaching methods in school education from preschool to secondary-school level. Not only is LEIS at Labyrinth the first such innovation studio in the Czech Republic, but it is also one of the first in central and eastern Europe.

IT teachers at Labyrinth provide expertise for other teachers. They share their experience through workshops and lectures and participate in state-wide discussions on IT curriculum reform, thus once again following the laboratory principle of social responsibility.

The most recent Elixir to Schools report shows the impact of the centres on teachers and students. In 2020, nearly 4,000 teachers participated in activities of the DIGI centres network, consequently having an impact on 196,000 students in the Czech Republic (https://elixir-do-skol-digicentrum-brno.webnode. cz/).

Fig. 2: Description of an IT and a LEGO project

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4.4 Teachers and other educators

Concepts of personal mastery and mental models are practised at Labyrinth, where there is togetherness in building a shared vision (Senge, 2012). Each individual is supported in developing their strengths, both professional and personal, and it is understood that these interconnect. The school works with mental models and comfort zones. It acknowledges that crossing a comfort zone may be a repetitive and challenging procedure that can be achieved only in a space where one feels safe. Further, building a shared vision entails creating something new, something original. It is understood that realising this process is impossible without making an occasional mistake (Robinson & Aronica, 2016). Thus, spaces where people share ideas, support each other's ideas and work with mistakes in an organic way (Robinson & Aronica, 2016) are created and the concept of team learning (Senge, 2012) in a safe environment is practised.

At Labyrinth, the system of relationship-oriented leadership (Spurkeland in Pol et al., 2006) is put into practice, i.e. there are leaders at all levels, coaching and mentoring, teams of professionals, year-group teams, support for beginning teachers, and tailor-made jobs. Labyrinth offers varied teaching loads and various types of jobs, i.e. working as a full-time and part-time teacher, full-time and part-time educator for afternoon clubs and afternoon activities, full-time and part-time psychologist, part-time special education teacher, and part-time assistant teacher. This variety of contracts and teaching loads ensures that the school can work towards its vision of being an educational ecosystem (Luksha et al., 2018), where not only full-time teachers participate in further development of the school concept. In this way, Labyrinth naturally serves as a platform for regular meetings of teachers, researchers, experts, or the wider community connected to the laboratory school. Teachers meet once a week in the staff room. These meetings serve the purpose of presenting of information, addressing of organisational matters, sharing professional experience, providing inspiration, and working on future plans. Other weekly meetings are held for the school management and special interest groups. Apart from these meetings, teachers from expert groups and grade groups meet as time permits and their needs demand. These teachers have a reduced number of teaching hours to allow for two hours of planning, sharing and evaluating. There are also intensive sessions for planning (before the school year) and evaluating (at the end of the school year). Various informal gatherings of teachers include joint holidays and a teachers' choir; they place an emphasis on teacher well-being and the creation of a supportive environment for teachers.

Occasional meetings with partners and researchers take place by individual agreement, either at school or at the office of a participating organisation. The school organises themed workshops on particular issues. Teachers are motivated to be proactive and to participate in sharing personal experience and innovation with the system of public education.

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4.5 Leadership

"A creative leader nurtures an environment where creative ideas can flourish" (Robinson, 2001).

This integrative system provides space for and encourages teacher autonomy. This task can be well completed through a system of relationship-oriented leadership within which the traditional system of top-to-bottom hierarchy is dismantled, and multi-level leadership takes place. For people within the educational ecosystem to be proactive, the leadership creates boundaries within which it is possible to move while also creating conditions under which people can express themselves freely. The boundaries are not perceived as a set of general rules but are created within each individual's relationship with the leadership, so that there are a variety of paths that stem from individual agreements. This high degree of freedom is a crucial part of relationship-oriented leadership. There is freedom for one's own actions within the system, and feedback mechanisms are in place so that no one is left behind. Relationship-oriented leadership is a system in which the individual's mastery (Senge, 2012) is emphasised. It is up to the leadership to ensure that each individual's mastery is not isolated but permeated by the team around them. Under such circumstances, a shared vision (Senge, 2012) can flourish. There is a system of regular and various meetings within the team, e.g. weekly teacher meetings, grade teacher meetings, an online information system, and team building activities. The headteacher is seen as an integrated part of the institution, rather than the top of its hierarchy.

5 Labyrinth as a safe and supportive learning environment

As illustrated by the diagram below, there is a complex safety net around each child at Labyrinth. This safety net is created by active communication and cooperation between the school, the parents and the wider community, while the individual needs of each child are considered and acted upon with the aim of supporting each child's education.

Differentiation: In a system with the child at its centre, differentiation is a prerequisite. Differentiation is practised at Labyrinth through stable ties within the school, and with the help of an individualised and differentiated approach to each child. Each person is unique, and the school strives to develop everyone's strengths, and support everyone in areas where they might not feel confident. For differentiation to be fully practised, various mechanisms have been put into practice. There is tandem learning. There are rainbow lessons, i.e. lessons in which children within a class are approached differently and in various groupings depending on their level and interest in the given subject. There is a complex passable schedule system within which children can move to another group, or to

doi.org/10.35468/6040-05

another grade. There are school counsellors who address the needs of students and help the team to meet each child's academic and developmental needs. Thanks to the clarity of the system in place, counsellors' suggestions can be acted upon swiftly by other team members. Thus, children's needs can be targeted quickly, as time is viewed as of the essence for differentiation to take place.

***Learning environments*:** At Labyrinth, we understand the learning environment to be an important condition of the learning process. It can be seen as a motivating factor. Real-world environments can be brought to any school subject, from natural sciences (e.g. environmental learning) to mathematics (e.g. Hejný's mathematics). Suitable learning environments, e.g. classroom setting, but also learning outside classrooms, learning in nature, learning in natural children's environments (playgrounds, families), learning online or through technology, are chosen depending on the pedagogical activity.

At Labyrinth, we also work with the school's city-centre location. The school space is customised to support and develop learning, but learning takes place outside the classroom as well – at the university, in nature, at museums, and at other places of culture. As the STEAM concept is reflected in Labyrinth education, art plays an important role in the school. Some lessons regularly take place at the Moravian Gallery, which is one of Labyrinth's official partners. Students are in direct contact with artists, and curriculum topics are connected to pieces of art or the gallery's activities. The school holds regular summer camps for students in the gallery. The school follows the programme of "School like a gallery", a project supported by Brno City Hall the aim of which is to bring art into schools. Thus, the school is seen as a public space that can engage people's senses, and corridors and classes are used for various exhibitions. Below are some other learning environment case studies:

Design reflecting community life: Spaces are interconnected and shared. Teachers are accessible to students and parents. The school has access to a garden and playground, which are used for learning, playing and informal meetings. Labyrinth also serves as a community centre. The learning environment is created by the community around the school. People are welcome to come to Labyrinth for informal learning, tutoring and online learning. It is a place for after-school clubs, interest groups and day camps. Experts and the wider community can find a place here.

Breakout spaces: Flexible classrooms are equipped with desks and chairs that can easily be set up for teamwork, pair work or individual work. There are areas for digital work, creative work and researching. There is a casual exposure time room that supports students' English-language acquisition. Functionality is regularly discussed with designers and producers of school furniture, and the needs of everyday school life is reflected in new designs and prototypes.

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A learning environment which promotes independence, interdependence and self-motivation: The classrooms have class bookcases. Some classrooms have a place for doing research or for keeping a pet. There is a corner with board games, based on the preferences of the students.

Space for research: Every classroom has an interactive board. The school provides sets of laptops and a mobile digital classroom that allows students to use the equipment any time they need it. There is a school library. There is a bookcase for teachers and also for parents in various places across the school. Students are exposed to a variety of printed and digital materials, tools and equipment.

Special-purpose spaces: The school also provides spaces for relaxation. The school terrace is used either for teaching or relaxation; school events are held there too. There are relaxation and play areas for younger children, including a special wooden castle-type construction. Teachers use a shared staff room that works as a meeting point, silent staff room, copy centre, teachers' library, info-point and café with sofas. All corridors are understood to be public space. They often serve as a gallery presenting students' art or the work of professional artists.

Virtual spaces: The number of virtual spaces has grown in the last two years in reaction to the COVID-19 pandemic. In addition to the school's information system (Edookit for teachers and parents), teachers use Confluence for communication, sharing materials and organisational matters. Some lessons and meetings are held in Google Classroom. For informal virtual meetings the school uses tools such as WhatsApp groups, ZOOM and Gather Town.

6 Assessment for learning (assessment as learning)

At Labyrinth, we understand assessment for learning not as a set of techniques to apply during our teaching, but as a complex process which is directly linked to teaching, learning and the aims and content which our learners need to engage with. We understand that assessment starts at the moment of setting aims for our learners, continues with introducing criteria for their performance (considered vital for self-assessment) and is followed by monitoring and continuous, clear feedback.

Unlike in the majority of mainstream schools in the Czech Republic, where summative grading instead of formative assessment is still used, teachers at Labyrinth favour diverse forms of analytical assessments ranging from assessment criteria and rubrics to visualised feedback in the form of monthly plans shared with both the children and their parents. The system is based on the idea of a responsive classroom (Fletcher-Wood, 2018) where the teachers perform the role of a filter and a thermostat for the class as a whole and for individual children.

doi.org/10.35468/6040-05

In case individual intervention is needed, consultations are offered with the aim of naming the problem and suggesting a plan of action. The aims are set at three different levels: developmental, support and personal. First, the child tries to formulate what they can or cannot manage, what they find problematic, and what is the next smallest step they can take. Following this stage, feedback is provided by the teacher using non-judgemental descriptive language to offer their point of view (Košťálová, 2012).

At mid-term and at the end of the academic year, students receive a school report which not only evaluates their progress and performance in individual school subjects/fields of education but also goes beyond this to evaluate the development of the key competences.

The system as such is not a rigid scheme; assessment processes are constantly subject to evaluation and reflection on the part of teachers, school management and, of course, the children. Unsurprisingly, the COVID-19 pandemic brought about some changes and adjustments to the way feedback was given and elicited.

Asked to compare online and onsite teaching, many teachers reported that the online format was more challenging in terms of time. This apparently includes the amount of time that teachers can allot for feedback. Moreover, the non-verbal feedback in constant use onsite is very limited (if not impossible) online. Therefore, for responsive teaching (Fletcher-Wood, 2018) to take place Labyrinth teachers were faced with the need to stay effectively connected with children and their work. They started using tools for feedback offered by online teaching platforms, such as customised assessment rubrics in Google Classroom, so that learners would receive targeted feedback on their in-class and out-of-class performance. Another tool which proved useful and effective was the quiz, which was applied in different forms for easier and more complex tasks, including literacy development. Some teachers opted for individual interviews to provide weekly feedback on children's work and progress based on their monthly plan. Others went to a yet higher level to prepare tasks or activities tiered in three levels to reach children at different stages of development.

7 Professional learning

Professional learning is an active process of systematic inquiry into the effectiveness of one's teaching practices (Košťálová, 2012). This inquiry has many parallels with formative assessment practices used with students. The same processes are applicable in promoting teacher learning. Continuing development is the only way for a teacher can become an adaptive professional (Fisher et al., 2016). Systematic inquiry, challenges and meaning-making brings us back to Dewey and the way he conceptualised reflective practice.

doi.org/10.35468/6040-05

At Labyrinth, the system of teacher learning is primarily linked to the school's vision. Teacher development takes place not along the lines of a career system, but in a way that benefits both the teacher and the school. Labyrinth's Plan of Professional Development, a binding internal document, serves to integrate and plan for the progress of the teacher and the school, i.e. to find some synergy between the field of development a teacher is interested in and the school's vision. This plan is set for a year, during which the teacher and the school management meet to discuss progress as well as needs related to the teacher's goals. At the same time, the extended management team seeks feedback and input from the teaching staff regarding more general needs. Based on that, teacher development covering particular issues is managed at the whole-school level. In this way, teachers are integrated into a specific social network where both subjective and objective determinants of teacher development come into play, hence providing space for the teacher's professional identity to develop.

8 School as a part of life

Labyrinth bases its curriculum on the concept of integrated thematic instruction (Kovalik, 1994). At Labyrinth, we work with big ideas within which varied subjects are integrated. The tendency is to introduce each grade to a theme, which it then pursues throughout the school year. Students are encouraged to look at real-world examples, engage in authentic experience, and produce projects for real audiences. Emphasis is placed on the development of key competencies, as these are presented in the national curriculum (RVP ZV, 2021), with the aim of directing students towards participation and understanding themselves as part of a bigger picture. To achieve this aim, many smaller steps have to be taken. In early years of their studies, students focus on specific areas. This system builds upwards from the student's knowledge of the self, their surroundings, and their anchoring in time. After this, students are ready to move on to more glocal and global topics. Thus, upon reaching the lower secondary years, students know how to participate and how to become proactive, an attitude which would be hard to achieve without prior knowledge about themselves and the community. Only now can this knowledge be turned into an activity from which the community can profit. The steps students take on this journey are bound by their grade. They are illustrated in Table 3 below.

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Tab. 3: Integrated themes in grades one to nine

GRADE	WHOLE-YEAR TOPIC	ROLES TAKEN ON BY STUDENTS
1	Me	Discoverers
2	Time	Explorers
3	Cities and countryside	Businessmen and farmers
4	My country	Travellers
5	The world around us	Ecologists
6	Birth and life	Scientists
7	Community	Companions
8	Me – a human (rethinking)	Human beings
9	Looking for social justice	Active citizens

At Labyrinth, non-formal education is perceived to be an important part of children's development and is emphasised as such in pedagogical diagnostics. It can develop children's strengths and support them in areas in which they lack confidence. Labyrinth provides all-day education. To further develop children's interests, teachers and partner organisations draw on their deeper interests to provide a wide range of afternoon activities, i.e. arts and crafts, languages, sports, music, and research-based clubs.

The school also serves as a community centre, where exhibitions, concerts and lectures take place. Children act as guides at the openings of these events; they also participate in art workshops at exhibitions. The school regularly holds suburban camps that use the potential offered by the school's surroundings.

In the school year 2019/20, Labyrinth launched the unique Space Academy project. This project aims to acquaint children with all aspects of space research, not only in the Czech Republic, but also elsewhere in Europe. The Academy was established in cooperation with the Observatory and the Planetarium of the Capital City of Prague. Prague (Planetum), Brno Observatory, and Planetarium, S.A.B. Aerospace, which participates in unique space projects with the European Space Agency and the CzechInvest agency. After the pilot year, the project will be opened to other schools in the Czech Republic and abroad.

Additionally, since its founding Labyrinth has been dedicated to the systematic integration of art into school life. It cooperates with the Moravian Gallery in Brno, where students take part in regular activities and informal meetings. The school collaborates with the SE.S.TA association, whose main purpose is to help contemporary dance to engage in an international context and to open interdisciplinary cooperation and discussion.

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Labyrinth is one of six places in the Czech Republic with a so-called Digi Centre – a place where workshops focused on the use of technology in teaching and conducted in the form of collegial education of teachers are regularly held. In 2018, the LEGO innovation studio in the Czech Republic opened at Labyrinth, and LEGO is regularly used as an educational aid.

9 Outlook, vision and challenges

Schools, school management, teachers and students in the Czech Republic still face many challenges. The Czech educational system has recently focused on local resources, dialogue among schools and peer support. The Strategy of Education (Strategie vzdělávání 2030) presented by the Czech Ministry of Education emphasises active citizenship, well-being and professional development, while supporting equity in access to education and cooperation. Within and alongside the public education system, Labyrinth faces challenges that are crucial for its development as well as being inevitable for a socially responsible school that aspires to support changes in the educational paradigm. At Labyrinth, we strongly believe that changes made from within schools can bring them closer to real life and support students' ability to deal with the uncertainties of the future.

In 2021, Labyrinth celebrated its fifth anniversary. Its original vision, as described in this chapter, has not changed since 2016, although there has been a visible, remarkable change concerning its breadth, which has been expanded and enriched by experience and knowledge, as well as through input from the children, parents, educators, partner organisations and many other parties. Thus, the school has created a healthy, free and socially responsible ecosystem in pursuit of innovation while constantly questioning the decisions it takes on its journey. Personalised learning and education that go beyond academic results, integrated learning, interdisciplinarity, diversification of educational resources, a dynamic learning environment, new ways of learning, freedom vs responsibility, distributed management (e.g. increased number of part-time jobs, flexible workloads, diverse roles, varied competencies), a non-hierarchical community – all these are issues on which Labyrinth has recently focused while continuing to strike a balance between the conservative and the innovative.

The school will continue to expand in the coming years. Its physical environment will be enriched by two new buildings with a unique architecture, energy solutions and special educational spaces. In 2023, a new Labyrinth grammar school will open its doors to first-year students, thus expanding not only Labyrinth's metaphorical breadth but also its length, by extending the vision to another educational level.

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The University of Cambridge Primary School: Releasing the imagination of a new democratic education

1 Introduction

Cambridge is a small city on the edge of the Fens in the East of England. It is home to its world-famous University which has established an international reputation for excellence. The past 40 years of its history have seen an astonishing flowering of ideas in Cambridge, many generated in University departments and often in areas of information technology that have given rise to growth and economic prosperity in the city and the surrounding area (Rallison & Gronn, 2016). What has come to be known as the "Cambridge Phenomenon" has in turn become a significant challenge for the University itself. The historic centre of the city is congested with insufficient housing for key workers on whom the University relies. Several areas of the city are earmarked for growth, one such being the site previously occupied by the University farm to the north west of the City centre. This area is now called Eddington. The vision for the new development is set out on its website in Box 1:

BOX 1: The Vision for Eddington, Cambridge, UK

The vision for Eddington is to create a place that is sustainable, long-lasting and ambitious, offering a high quality of life to enhance both the City and University of Cambridge.

The University is one of the world's leading universities, but it must continue to develop and grow, and needs to address the lack of affordable accommodation for its staff and post-graduate students.

Eddington and the wider North West Cambridge Development seeks to secure the University's long-term future and contribute to the City's growth by providing homes for key workers, students and the public in a vibrant place to live.

This development will ultimately include:

- 1,500 homes for University and College staff
- 1,500 private houses for sale

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- Accommodation for 2,000 postgraduates
- 100,000 sq/m of academic and research and development space of which up to 40% may be private research with University connection or Research Institutes
- Community facilities including the University of Cambridge Primary School, Storey's Field Centre, health centre, Sainsbury's supermarket and local shops
- A hotel
- A care village
- Sustainable transport provision including cycle ways
- Sports facilities and playing fields
- Public open spaces

(retrieved on 15th December 2021 from https://eddington-cambridge.co.uk/about-us/our-vision-and-history)

In this chapter, we introduce the University of Cambridge Primary School (UCPS), the first University Training School in the United Kingdom. We explain the theoretical principles upon which our curriculum design, values and ethos are built and draw from practical implementation of democracy in education. The beginning of a story:

BOX 2: The ground-breaking at the school

It was a cold wintry November in 2014. The senior academics at Cambridge University gathered on the damp muddy field on the Northwest of Cambridge, U.K. The only colour, mimicking the memory of wildflowers in Summer, were the yellow hard hats worn by those attending the ceremony. The easterly wind blew. The Vice Chancellor walked with the lead architect and Headteacher-designate to the seemingly significant position on the barren soil and, awkwardly trying to hold the shovel together, dug the first hole. The ground-breaking ceremony is a tradition with builders – to break the ground of a new building is a significant moment. In the 800 years' history of the ancient University, this was its first adventure to run a primary school. The Vice Chancellor smiled and, directing his speech to the crowd, said: "Mr Biddulph, our inaugural Headteacher, for our school… excellence is the only option".

2 UCPS within the current education system in the United Kingdom

In the United Kingdom, schools are either publicly funded and free to parents or independent, and charge fees to the parents of the students. Each country within the United Kingdom has devolved responsibility for its education system. There are, however, fundamental similarities in the UK education system. All boys and girls must attend full-time education until the age of 18. Many students stay on

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at school after that age to prepare themselves for university or other careers. There are also significant divergences between practice in England and Wales, on the one hand, and in Scotland. Schools are run by a group called governors, although increasingly this is changing with government policy.

This simple divide of state/public and private/independent was made more complicated during the early 21st century as Labour and then Conservative governments encouraged market forces as a strategy to improve the quality of education. Since 2010, the education system in the United Kingdom has been subject to significant changes. This meant that due to bulge demographic school aged children, the need for more schools became apparent and the government invited applications from business and parents' groups to set up new schools. Local Authorities, which are local level government, used to maintain schools and be responsible and accountable for them no longer had control.

During this turbulent period, in which teachers and school leaders were vilified by politicians for lack of vision and during which teachers rose to professionalise themselves through the start of the official professional body – The Chartered College of Teaching – many schools were run by new charitable trusts. Whilst "not for profit" the contentious management of public education by essentially private trusts caused alarm.

The system has many accountability mechanisms within it as an attempt to improve standards in education. The Office for Education Standards (Ofsted) is the office which holds school trusts, headteachers and governors to account for the quality of education in schools. Their purpose is to make sure that organisations providing education, training and care services in England do so to a high standard for children and students; to carry out inspections and regulatory visits throughout England and publish the results online; to report directly to Parliament.[1]

Ofsted's responsibilities include:

Inspecting

- maintained schools and academies, some independent schools, and many other educational institutions and programmes outside of higher education
- childcare, adoption and fostering agencies and initial teacher training

Regulating

- a range of early years and children's social care services, making sure they're suitable for children and potentially vulnerable young people

Reporting

- publishing reports of our findings so they can be used to improve the overall quality of education and training
- informing policymakers about the effectiveness of these services[2]

1 See: https://www.gov.uk/government/organisations/ofsted/about

2 Retrieved from https://www.gov.uk/government/organisations/ofsted/about

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If readers look on social media, like Twitter, or google the views of Ofsted they will see the emotive responses to the inspectorate. Overtime, its policies and ways of working have eroded trust in the profession – quoting Ofsted's own research:

> "Overall opinion of Ofsted has fallen since last year. Agreement that Ofsted acts as a reliable and trusted arbiter has fallen from 35% in 2018 to 18% [in 2019]. But, for the most part, teachers are not more likely to disagree but to choose neither agree nor disagree" (YouGov, 2019)

The system is essentially "high stakes and low support"; it is a system where good inspections result in a collective sigh of relief and poor inspections lead, often time, to the resignation or removal of senior leaders and Headteachers. The contradiction is that governments want a robust and perceived rigid application of curricula and standard testing as well as seeking school leaders and teachers to be innovative. This creates an educational tightrope to balance a journey for the best outcomes for children – it is not easy and it requires considerable brave leadership.
Within this heavily politicized and ideological backdrop, an idea for University-run schools came to the fore and several universities in the U.K. applied to open schools that were to be Free Schools. In the end, only two Universities were granted the license to pursue their efforts to open schools: one secondary school in Birmingham and one primary school in Cambridge.
In October 2014, the Registrary of the University of Cambridge received formal notification from the Free Schools Group in the Department for Education (DfE) that, in the view of the Minister for Schools, Cambridge could move to the approval stage and that the University "should therefore proceed" to (what is known in officialise as) the "pre-opening phase" of its proposed University Training School (UTS) (Gronn & Biddulph, 2016). It was to be a school with a new vision for education. It was to be ambitious, innovative and inclusive. The notion of a "free" school comes from the Chartered College schools in the United States of America and the Friskolar in Sweden (Winter, 2010, p. 51). As we explained above, in the U.K. context, the very notion of freedom in a school is called to question, given the hyper-accountability school cultures and often arbitrary and rigid inspectorate upon which schools are judged.
There is a very real tension: that on the one hand, governments want schools to be bold and ambitious, to innovate the system, and yet on the other hand, keep schools accountable by often narrow systems and structures. Within this context, as we sketched the University of Cambridge Primary School's purpose and curriculum design, we needed to ask:

- How bold and innovative can we be?
- How will we ensure we challenge the status quo without damaging the reputation or scope of influence that would come with a negative view of the school from the inspectorate?

doi.org/10.35468/6040-06

- Where are the tensions and how do we allow them to remain so and when do we mitigate or accept limitations?
- Can a school be democratic?
- How does research interface with practice and vice versa?
- Is it possible for teachers to be researching practitioners given all the work they do in class and in running their classrooms?
- Could the role of the Headteacher or Principal be evolved so that he/she is of the highest academic standing commensurate with professors in academic departments?

James Biddulph, one of the authors of this chapter, is the inaugural Headteacher of the school and had the complex role of defining a vision for the school prior to it even being built. In one of his journal entries he wrote to explore the challenges ahead:

BOX 3: Reflections from the inaugural Headteacher

It is odd being a Headteacher without a school building, staff or children. Walking around the skeletal structure of our school, it is hard to imagine the conversations between adult and child, to see playtime through the round courtyard, to hear singing, the normal chatter of school life. It is hard to consider the practicalities. Our vision is compelling, I think, but how will we release it from the printed page? Where will the imagination fly? How will we celebrate? What is really possible in a high stakes accountability educational context? How will we realize the potentials for every child, teacher and member of community? How do I lead the way?

I remember being on a bus in India and reading Maxine Greene's work about releasing the imagination and of social imagination. The school needs a compelling vision that (a) sets out the purpose as a primary school and (b) bridges the towers of knowledge at the University and also the shared wisdom inherent in our teaching practices across the globe and (c) influences the future of education through its building of partnerships and research practice – it must be a Centre of Possibilities. Whatever that means?

(from my Headteacher's journal, April, 2015)

When we opened in 2015, achieving the broader vision of the school, knowing that a high reputational risk in the form of the government inspector was to visit each term and then formally within 2 years with externally graded judgements about the school put considerable pressure on the school leaders. With a short timescale amid the shifting sands of government policy, it was a difficult balancing act. In the background of our school developments, funding per student has been reduced year-on-year in real terms; teacher education continues to be reformed and currently a new Initial Teacher Training review is underway (called interestingly, the "Market Review") with the suggestion that universities are no longer at the centre of the process. Be that as it may, the University of Cambridge

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now has the foundations of an excellent primary school and a key pillar of its new community.

UCPS was designed and the expectations upon it were to function as: an inspiring learning community centred on a research-informed approach; aiming to provide a high quality and depth of education for children and families; to be a ground-breaking and innovative learning community with an explicit focus on exemplary teaching and learning practice. Rather than emulating how the Dewey Chicago schools had been conceived (see Rallison & Gronn, 2016, p. 8), it was this research function that was intended as the school's distinctive University Training School element. It was vital that research informed practice would aspire to varying levels of impact: local, regional and national in England, so as to align with the anticipated UTS contribution sought by the Government and DfE.

3 Building a University Training Schools in Cambridge, UK

There are only two University Training Schools in the United Kingdom: a primary school in Cambridge and a secondary school in Birmingham, the University of Birmingham Secondary School. They are both different in their context and vision and purpose. In this section, we briefly explain how we are uniquely different in the way we have constructed our work and purpose.

Many schools across the country work with universities; they work through Post Graduate teacher courses, preparing new teachers for the profession and engaging in some research work, where the school is the site of case studies or data gathering. There is no tradition of a school being solely run by a university; this is where the unique structure of the UCPS is seen. Prior to opening, researchers examined the history of research in education and how universities had engaged with schools (Gronn & Biddulph, 2016) and yet we also looked to the USA to understand how laboratory schools were developed.

UCPS is different from the USA models partly because the legal structures of running schools demarcate responsibilities clearly: schools are funded centrally from the government and there is no additional funding from the University (in the Cambridge school context), they are inspected by Ofsted which has considerable power over them and yet they are also independent (which UCPS was as a Free School). The complexity in the system meant that the school needed to establish itself with a confident vision to build on the expectations of the world class University – essentially we needed to mark our course and set sail to a destination aware that the wind may be blowing in the opposite direction (the wind being Ofsted and Government policy!).

The school works in three ways. Firstly, it is a primary school for young children between the ages of 4 and 11. Secondly, through the professional development

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processes of lesson study and of engaging with academic expertise at the University of Cambridge, to develop research-informed practitioners who are empowered to make evidence-based decisions because they are highly reflective and ambitious in a socially imaginative way. This is where the work of Maxine Greene shines through. For example, the school is working with Usha Goswami in developing understanding about dyslexia and the teaching methods which may aid better outcomes for dyslexic learners. Thirdly, the school is to become a centre for research – and as this chapter was being written, the concept for a Centre for Educational Possibilities has grown (see www.possibilities.org.uk). This centre aims to advance thinking about education and teaching/learning to respond to the challenges of the day: climate change, children's sense of purpose and fracturing democratic communities and systems. Taken as a trinity, the University of Cambridge Primary School aspires to reimagine the professionalism of educators, to shine a light on the vital importance of developing teachers' capacity to reflect, assess and engage students differently and to add innovation into a system that is not adequately responding to the 21st century context in which students will learn, grow and live.

4 Creating an enabling space for a new democratic school

BOX 4: Reflections from the inaugural Headteacher

Leading a school, whether new or established, is as much about developing systems and considering the practicalities as it is about the vision and ethos. But the vision is the route map and the ethos the spirit that guides the way; without these there are only buildings and practicalities.

In my journal reflection above I raised questions about the challenge of articulating a school vision and the vital role of leadership that is about communicating and orchestrating a compelling vision (Novak et al., 2014, pp. 3-16), and developing a rich context to lead *educational lives* for us all. As the metal structure wound its way out from the fields that were once the University's farm, our vision circled in our minds and conversations, discussed between governors and our new staff, rehearsed and evolving as we attempted to understand how we could *Release the Imagination and Celebrate the Art of the Possible*. How did we arrive at this strap-line? How did we form our approach? What principles guided our decisions?

Democracy is about people's lives. People experience the world through the stories they tell about themselves and their communities. The world is essentially storied. This is the story of a school in Cambridge, U.K., which focuses on *human beings and enabling the very best for them*. This, surely, is an obvious statement that is at once unassuming and yet also raises the very real question: aren't all schools focused on people? Or have they been forced to focus on the systems, often tech-

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nocratic, that generate the procedures, define the expectations, and set the goals of the purpose of education? Or in asking such questions, have we fallen into the trap of polarised discourse?

Alongside concerns around the crises of western democracies facing unprecedented threat, education by its nature, carries with it the hope for an alternative. Working back from the values, knowledges, skills and dispositions we need citizens of the future to carry with them, we can begin to consider how much the way we educate needs to change. Alongside core foundations of cognitive, health and emotional development, learners need to be given the opportunity to develop "transformative competencies" where they are able to shape their world with agency and work towards longer term goals for themselves and others (Howells, 2018). We were inspired by the first *Learning without Limits* study (Hart et al., 2004) and subsequent Creating *Learning without Limits* (Swann et al., 2012), realising that principled action and leadership that can enable inclusive learning for all children and teachers. These principles aligned with those of the *Cambridge Primary Review*, the largest study into primary education in the United Kingdom since the 1960s, focused on the importance of developing:

- Trust
- Co-agency
- An ethic of "everybody"

Creating Learning without Limits (Swann et al., 2012) identified seven key leadership dispositions for building an inclusive culture of challenge and success; in setting up the school, we created policies to inform practice that attended to these dispositions. They each relate to leadership in the broadest sense and include young people as leaders alongside class teachers and senior leaders. These dispositions are summarised in Table 1:

Tab 1: Seven key leadership dispositions (Swann et al., 2012, p. 88)

Seven key dispositions that increase the capacity for professional learning.		**States of mind that inhibit learning**
Openness to ideas, to possibilities, to surprise	**not**	belief that there is one right way, that outcomes are predictable
Questioning restlessness, humility	**not**	reliance on certainties and ready-made solutions

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Inventiveness creative responses to challenges	**not**	compliance with imposed models and materials
Persistence courage, humility	**not**	settling for easy answers, rejecting complexity
Emotional stability taking risks and resistance	**not**	fear of failure, fear of trying new things
Generosity welcoming difference	**not**	deficit thinking, desire for uniformity
Empathy mutual supportiveness	**not**	fear, defensiveness, blame

The key questions for us were:

- How do we enable a space, in the context of a hyper-accountability UK education system, that allows for teacher agency, trust and an inclusive ethic of everybody?
- What would our policies include and what would they exclude?
- How can leaders tread the tightrope of vision and accountability so that both are given sufficient attention to keep the school true to its purpose as well as safe from the external accountability agendas?

To respond to these concerns, we returned to theoretical principles upon which we built our practice. Inspired by John Dewey and most significantly, Maxine Greene, we developed the concept of imagination as a socially enacted force for change. The connection between an 800 hundred-year old world-class university and a brand new primary school wedded the vision for our school that built relationships between theory and practice, not as polarities in the educational discourse but rather as a symbiotic relationship: it was about *theorising practice* and *practising theory* (Burnard et al., 2015).

5 Introducing our theoretical positioning

Finding the language to express our vision for the new school, in a politically divergent lexicon, was both challenging and necessary. Philosophers John Dewey and Ludwig Wittgenstein understood the centrality of language *as practice* – that it is something we do and live by. Over the last two decades the language of education has transformed into a language of learning (e.g., learner-centred, assessment for learning, children described as learners rather than children). This

doi.org/10.35468/6040-06

change involves a repositioning of the relationship between teacher and child, and raises questions about authority, knowledge, curriculum and voice. Whose knowledge? Which knowledge is valued? By whom? And how does a school construct relationships that are rooted in values that help to create a learning environment in which everyone achieves?

As with the *Cambridge Primary Review* (Alexander, 2010), *Learning without Limits* (Hart et al., 2004) and *Creating Learning without Limits* (Swann et al., 2012), we wanted our school vision to be principled on empirical research and democratic at its core. We believe in an educational experience that is about developing a "shared, hopeful vision that pays attention to the diversity of perspectives in the human community" (Novak et al., 2014, p. 5) and which challenges traditional notions of children's ability as fixed to versions of *transformability.* This means that rather than thinking children are born with a predetermined "amount" of ability, with a response from teachers to teach to that ability, the notion of transformability emphasises the hopeful belief that through the right support and educational experiences EVERY learner has the possibility to transform, to become, to learn better, to learn something new. It reminds of a moment in a class room:

BOX 5: Interaction between Ismail (teacher) and Francis (child) (both pseudonyms)

Francis: I don't like music because I can't sing.
Ismail: Who told you you cannot sing?
Francis: My friends did and said that I was not good.
Ismail: Really?
Francis: Yes and also my grandma said I was not a natural singer…she was laughing and not being mean but…
Ismail: Look Francis, we all have our own talents but everyone has a voice and everyone can breathe and that is what singing is. You breathe in and you make your vocal chords work. We can all learn to sing, we just need to give it a go and try.

And in the next box, two contrasting examples of teachers' views about ability and transformability:

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BOX 6: Ability labelling versus transformability

Example 1: A class where ability is seen as fixed
Children are grouped into ability. There are five groups of six children. The children do not move groups during the year. The groups are called: Tortoise, Turtle, Cat, Hare, Eagle. These are bottom to top ability (bottom being Tortoise and top being Eagle. The children are given different tasks. Typically, children in Tortoise group are given easy tasks and children in Eagle group are given challenging tasks. Everyone knows what the groups mean. This created a fixed mindset of learner ability. The evidence from primary and secondary education suggests that, overall, structured ability grouping (streaming and setting), of itself, has no positive impact on average attainment, although, depending on the level of curriculum differentiation, can widen the gap between low and high attainers (Higgins et al., 2016).
Example 2: A class where transformability is seen
Children do not have fixed groups unless for organization of children around the space (e.g. to find where their books and pencils are located). Children are invited to choose their own level of challenge (in one school this is called Spicy, Chilli, Super Spicy). All children can have an attempt at the most challenging task and they are supported to work together, to use resources and seek advice as needed. Teachers carefully and sensitively support different learning needs and knowing children well, will explain which task would be best suited for them. Children have agency. They do mini exit tests to show the teacher they have understood. They talk about their mistakes in a positive way and show how they have grappled with the challenges in the learning. They edit their own learning outcomes.
James Biddulph and Luke Rolls have both worked in schools where these examples have been taken. The impact on children's learner attitude is considerably more positive in the second example. This is how UCPS aims to work with all its children.

The idea is to develop a school community of people who are reflective, aspirational and actively engaged educators; and equally, children who were central to the principles as co-constructors of *their* educational experience. Moreover, "we see our educational responsibility as a responsibility for the humanity of the human being" (Biesta, 2006, p. 106) – that there was a higher purpose, as well as the important logistics and practicalities of teaching the basics of reading, writing and mathematics.
Our vision came from educational theorists considered answers to the questions about the purpose of an education and importantly, the value of imperative of a democratic education. Maxine Greene's work especially resonated, bringing to light the responsibility of educators to find ways to *re-position perspectives* through an active engagement with open-space-making. In *Releasing the Imagination* (Greene, 2000), Greene advocates that teachers model the provocation to learners to pose their own questions and "name their worlds" (Greene, 2000, p. 58). Her focus was on inclusion, asking big questions, considering alternatives, developing a mind-set to release the possibilities inherent in the human imagination – to

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improve each child's opportunities to enjoy a happy, connected, choice-rich and contributing human life. Her emancipatory vision of education related to and informed our focus on student voice, diverse life experiences and the influence of school structures on children's educational experiences.

We eventually defined our aims as founded on three pillars of *ambition*, *innovation* and *inclusion*:

- Ambitious: everyone will be encouraged and enabled to achieve and attain highly;
- Innovative: the learning community will benefit from belonging to a research and teacher education community both within the school itself and as part of wider University and school partnerships;
- Inclusive: diversity will be welcomed in a caring environment where everybody will be valued.

Within a democratic education, we teach children that learning is not a competition; rather to inspire everyone to strive and learn from mistakes. We foster our three principles of ambition, innovation and inclusion through a culture in five school values that we identified and which are explicitly and implicitly taught within a democratic community. We want every voice to be valued and everyone empowered to be the best that he or she can be. Our view of democracy translated into the importance of collaboration – so that together everyone achieves more. Beneath our three aims, we developed five virtues or values that would guide our policies and approach to teaching and learning, behaviour management and various other practical matters. They were:

- Empathy: listening carefully to others, learning together for the benefit of all;
- Respect: treating everyone with dignity;
- Trust: building relationships with a shared vision;
- Courage: developing resilience, determination and releasing the imagination to develop possibility-thinking attitudes;
- Gratitude: acknowledging one another with good manners, with thoughtfulness and consideration for each member of our community, and the contribution they make.

6 The challenges of practice: how to enable democratic practices in schools?

Biddulph, Flutter and Rolls (2022) ask the question: is democracy dead? Or at least on life support? Given the challenges we see in democratic systems across the world, in the way information is used and misinformation is spread for political gain, questions about educating *through* democracy and *for* democracy become central. A starting point for considering how far democracy in education can be

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revived is in the ways educators position themselves and their roles in the classroom.

So called "Traditional-leaning" educators have long emphasised "core knowledge" approaches that situate learners as "novices" and emphasise maximizing the efficiency of instructional approaches to develop knowledge. The aims are to help children to be imbued with an understanding of the world that will equip them best for the future. Many have questioned within this approach, which or whose knowledges are defined, selected and considered worthy to being taught. There is an implication with these models of learning that dialogic forms of teaching are less valuable at this earlier stage of education because children need to know more before they can meaningfully participate in critical debate and thinking. One counter-argument to this line of thought is the reality that, to date, such an education does not appear to have created a world able to cope with the current physical, social, political and environmental threats the world currently faces. There is concern from many that market forces of modern capitalist societies create a world where democracy is essentially truncated by profit incentive neo-liberal systems. Is it possible to have democracy in education within this political context?

Jürgen Oelkers disagrees that schools can be democratic because he says there is a difference between the principles of democracy and the requirements of education. It is disingenuous to say that consulting children about the curriculum gives them the same voice and agency as the government, which in fact sets the expectation and requirements of the work in schools. Illustrating this difficulty further, Biesta's (2010) reading of Oelkers' position shows that, "as soon as the curriculum would be opened up for democratic contestation and negotiation, it would "dissolve into separate, individual interests" (Oelkers, 2000, p. 5). In such a situation, "everyone would pick out the education he or she needed but would not be *educated*…and would never have been subjected to the standards that a real education demands" (Oelkers, 2000 in Biesta, 2010, p. 94). One way to consider how democracy is possible in education is to re-situate curriculum aims and implementation by returning to first principles of participation, redistribution and representation (Fraser & Jaeggi, 2018).

We argue in this chapter that democratic competencies in children need to be fostered from a young age and that by not doing so until children gain the right to vote is in essence, too late. To disenfranchise children as they currently are, goes against both fundamental principles of democracy as well as their human right to have their voice heard, represented and taken seriously. We propose that, rather, opportunities need to be given for children's habits and dispositions to be systematically nurtured. When children are fully active citizens in society, they will then be able to do so with a more sophisticated and critical ability to question themselves, others and the types of knowledge they are presented with. It is naïve to think of education as being a neutral activity that does not influence children

doi.org/10.35468/6040-06

into ways of thinking. Educators themselves are required by their state to enact government policy and so by proxy become agents who are under various factors of influence in their role. Educators interested in democratic schooling have a duty to guard education against undue influence, protect children's right to explore independent thought and allow them to develop crucial learning autonomy. We propose three foundational practices for implementing democratic principles into practice: Children's Voices; Curriculum; Pedagogies and Assessment.

6.1 Enabling children's voices

Power lies at the heart of those whose voices are loudest and heard. In a democratic education, adults are required to use their own power to be advocates for all voices to be heard and enacted upon. Adults become advocates to represent children's interests, as well as they are able to, alongside having the humility to accept that they may not always "know best". Adults hold the power of decision making but equally the power to re-distribute this to children to enquire into what they need. Noddings (2005) makes a useful distinction here between *inferred needs* that tell us what adults think is best for children and *expressed needs* where children themselves talk about the things that they believe they need. Both are important and both with obvious pitfalls. Adults can never accurately claim to understand the diversities of children in a school and their backgrounds, feelings, experience and hopes for the future. And on the other side, to allow children to have a complete say how a school runs would negate the expertise and experience that adults have as professionals. Misconceptions about what children's voices often include these types of ideas of adult abandoning judgement and that listening to children's voice will equate to children choosing whatever they want to learn and how they will learn it. This is the tension that Oelkers warned against.

Attending to children's voices requires a nuanced and critical approach. It involves adults understanding that their children teach them on their own "blind spots" about how school is really experienced by them, not just as it was intended to be experienced. Children are given a meaningful say in shaping their environment and curriculum so that it proactively includes them. There is a negotiation between adults and children, where appropriate, to determine what relationships, ethos and spaces look like and feel like. To achieve this, adults recognize the need to listen, not just more, but differently. Adults understand that children's conation to talk is mediated by the invisible norms that exist in a school and take responsibility for make these enabling for children to feel heard. This has been called the "hidden curriculum" – the values and expectations that lie beneath what is taught and what is expected to be experienced. In the United Kingdom, it is intertwined with complex issues of class, ethnicity and economics – the system, it could be argued, propagates a white-middle class agenda. At the most simple level, children

doi.org/10.35468/6040-06

need to feel safe enough to talk and take up the courageous act of making their voice heard.

An example of the ways children's voices can be heard and their ideas valued, Box 1 describes the setting up of a school newspaper. Agency, Trust and Community are key features. Aimee Durning is a Director of Inclusion at the school (having previously been a Teaching Assistant). During the pandemic in which UK schools were closed for extended periods, she was concerned to find ways for children to maintain a sense of community and connection.

BOX 7: Children's voices during a national lockdown

On the 4th January 2021, the English government announced that the country would overnight be plunged into another period of national lockdown. As I cycled to school the following day many thoughts filled my head. Thoughts such as:

How would those children without siblings manage at home for many weeks?

What could we do in school to build bridges between school and home or from home to home and back to school again?

What lessons had we learnt from the previous lockdown of 2020?

The main thought that played constantly on a loop was, "How could we create or maintain a child-led community when the majority of our children were at home?"

It was decided that we would offer a historical opportunity, during a global pandemic, for some of our children in school to create a com-munity newspaper. Six children were selected from the year 5 and 6 school bubble. Children who were being educated at home were of-fered the opportunity to take part in this project. These children were selected through invite-only by myself, a teaching assistant who had an understanding of their skills and what they could offer to this com-munity project. I was in a unique position as a teaching assistant because I didn't have to consider the normal classroom pedagogies and behaviours. This group would be allowed to grow organically. I could attempt to discover an optimum democratic environment where crea-tivities would grow.

My hopes were that the newspaper would be as democratic as possible and that the children would be allowed the time and the space to come to their own agreements. This process would allow for all members to have a voice, opinion, and a say in how the meetings operated and the end result, publication of The Storey. Without adult intervention or per-suasion. I asked the children if they would like someone to lead the newspaper team. 10 out of the 11 said "no way"; it was a team effort with only one child stating that she hoped to be the leader. The others would however not allow this. It appeared that this small group of children would make decisions on what the majority wished for.

doi.org/10.35468/6040-06

During the project the children met in many rooms across the school. Twice a week they met altogether via Microsoft Teams. Or the in-school team would meet to discuss and finalise that week's publica-tion.
The first meeting happened on a grey day in January. Myself and a colleague decided that we would observe from a distance and not in-terfere in the children's discussion or thinking. We invited the chil-dren to come to one of the school's spacious seminar rooms and sit around the boardroom table. The adults in the room sat back and watched the chaos unfold!
The children spoke at speed and very loudly over one another. My colleague, a teacher, sat with me and on more than one occasion, I had to prevent him from interfering with the child lead process. This was not how I had imagined their first meeting would be as I cycled to work that day!

> "So can we just be quiet and everyone put their hand up."
> "No one is writing. Why is no one writing?
> "What question are you up to lady?"
> "Listen, I have a system….I have an idea so we don't keep talk-ing over one another….. like in philosophy."
> Robert sat with his palm, resting on the table, facing up. He ges-tured to his up turned hand.

Sadly, the group, except one of the year 5 children, ignored him and carried on talking. Talking over one another. The excitement was tan-gible. This was a demonstration of children being children. I could liken it to excited conversations on the playground when the children were learning a new game or had news to share. None of the children appeared to be offended by the constant interrupting or raised voices. They appeared to take on roles naturally depending on their skill sets. Some were happy to write articles and research news stories. Whilst others wished to carry out interviews or create puzzles and write jokes.
Within the boardroom structure, one child always attempted to lead the discussion and be in charge of the direction of conversation. This environment was not particularly democratic. Those members of the group who were identified as having certain vulnerabilities were at a real disadvantage to their peers in this setting.
On occasions when the in-school team met with the children at home, they would naturally form a semi-circle around one computer. At this point they would suggest and agree that one person should do the talk-ing and work through the agenda points. The semi-circle then framed the lone child who spoke to the children on the screen. This environ-ment reduced talk regardless of how many times the child doing the talking attempted to include the others in the group. Some children stated that they disliked virtual conversations and much preferred face to face dialogue.

doi.org/10.35468/6040-06

> The optimum environment was discovered by the children during an impromptu meeting one Friday. The children suggested to me that they should meet to discuss the edition that was due for community circula-tion that Friday afternoon. As we stepped into one of the school's empty classrooms, the children naturally sat in a circle on the floor. One child decided to sit on a chair rather than the floor. As the chil-dren sat on the floor with no barriers between them, they took turns to talk. Dialogue appeared to ripple around the circle, they were no cha-otic shouts witnessed previously in the boardroom. Each child ap-peared to accept that they would have to speak, offer an opinion or share their contribution. In the circle the children appeared to scaffold one another's understanding and fill in any missing background in-formation. Furthermore, the circle offered their individual vulnerabili-ties, there was nowhere to hide. This was the time when the group had to support one another to reach their desired goals.

As well as defining what an effective education could be, examples of practice like this one raise questions about individual responsibility and the democratic values of tolerance and fairness, respect and rule of law are increasingly emphasized in government policy. When children are given space and time and when teachers stand back as a stranger, as Maxine Greene would say, it is possible to release the social imagination. This is not easy. It is in many if not most educators' DNA to step forward and try and facilitate learning, to help, to resolve and to make decisions for the common good. What Aimee did was to create that enabling space of trust, co-agency and the ethic of inclusion and considering everybody, that gave rise to children speaking their realities.

In the next section, we focus on the formal aspects of our work in attempting to create a democratic education – or at least opportunities for democratic engagement within our school curriculum.

6.2 Designing a democratic curriculum

When we consider the manner in which curricula are often designed: by a particular group of adults and often shaped by political influence, it is perhaps not surprising to learn that curriculum is often experienced as something that failed to represent the children it was created for. Fraser and Jaeggi's (2018) principles of redistribution, recognition and representation are key lenses to understand what curriculum offer all children get, whether it is equitable, representative of their needs and positively works with promoting protective characteristics such as ethnicity, religion, [dis]ability, gender and sexual orientation.

Considering curriculum design and content though is not just a matter of what is being taught; it is also crucially how it is taught and how children experience it. Takahashi (2021) notes that between the intended, implemented and attained curriculum, there is space: between that which is intended and implemented and

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between that which is implemented and attained. In exploring these spaces, educators can better plan for understanding what happens in their teaching interactions. Are educators able to anticipate children's responses, make contingency plans for these and capture the impact of the implemented curriculum? How were children's responses different from those which were expected? How should teaching be adapted for the future? What did children say about what they learned and how the learning took place? What suggestions did they give as active agents of their learning about their learning experience could be improved?

Our curriculum design evolved over time and was built on the theoretical and research informed principles from the *Cambridge Primary Review, Learning without Limits* and the work of Maxine Greene and John Dewey. As such, our principled approach to designing our curriculum is at its heart, rooted in democratic notions of education (Dewey, 1916; Greene, 2000; Freire, 2018; Hart et al, 2004; Swann et al, 2012) in which children's voice is central: in which we empower children to make sense of the complex world in which they live (Rudduck & Flutter, 2004); in developing their ability to question; to discuss, challenge and contest diverse positions respectfully and compassionately; and to consider views about our world and how we should live in it. There is a critical thinking nature so that we question assumptions about truth and knowledge. In understanding the intercultural communities in which we live, there is a need for children to learn with the diversities that exist in their local and global communities; inspired by the words of Lord Williams

> "If you're going to be a decision-making citizen, you need to know how to make sense and how to recognise when someone is making sense…that there are different ways of making sense, different sorts of questions to ask about the world we're in, and insofar as those questions are pursued with integrity and seriousness they should be heard seriously and charitably" (Lord Williams, 2008; quoted in Alexander 2010, p. 13)

At the core of our curriculum is the hope to nurture and develop compassionate citizens who want to make a positive contribution to their local and global worlds. The curriculum passionately advocates to inspire a relentless optimism for and about children.

6.3 The enabling space of our curriculum: relationships and ethos

In order to develop compassionate citizens for now and the future, we realise that the ways we engage with children informally and formally throughout their time in school spaces and how they are engaged with at home, will determine how the principles are enacted and "lived out". In the UK, the Warwick Commission Report (2015) reminds us that, globally, our education systems should be creative learning landscapes, infused with possibility spaces (Colucci-Gray et al., 2017). So, we aim to develop enabling spaces for possibilities to arise; spaces construct-

doi.org/10.35468/6040-06

ed collaboratively; that foster agency, communality and engender trust so that children can learn to make sense of uncertainties and complexities in learning. Following on from Learning without Limits (Hart et al., 2004) and Creating Learning without Limits (Swann et al., 2012) and aligned with the Cambridge Primary Review recommendations, the enabling space in our school is developed with trust, co-agency and an ethic of everybody as its foundations.

We define this enabling space as one infused with values of empathy, respect, trust, courage and gratitude. These are the guiding values of the school. Furthermore, there is also a range of evidence investigating the environmental contexts that support the development of children's playfulness, oral language and other representational abilities, and their development as self-regulating learners. Broadly, this research (see Whitebread et al., 2015) indicates the importance of an emotionally warm and positive social climate in the classroom, of high expectations and challenge, of support for children's sense of autonomy and competence, and of opportunities for metacognitive talk when emotional and cognitive mental processes are articulated and discussed.

An enabling space also refers to the architectural structures and also the ways in which schools can evolve their spaces, even if these are old and not fit for 21st Century learners. The school was created with key principles of flexibility, democracy and safety (both physically safe but also in creating spaces which children could feel inspired to learn more). The design was research based and deliberately led by education principals established by University of Cambridge Education Faculty, such that learning could take place everywhere, inside and out. Despite being a large 3 classes of entry (e.g. three class of thirty children in Year 1, 2, 3 etc) the desire was that it could be divided into smaller communities while still being part of a united whole.

This led to a circular-plan formed by three classroom clusters of six classrooms, plus an early years cluster and a two storey block of all the common parts; creating the unifying central courtyard where the whole school can gather. The courtyard also makes a nod to Cambridge's historic courtyards, but differs from traditional courtyards in that it opens up to the playground and landscape beyond. It is enclosed yet open. Every classroom is articulated in plan, has no doors and opens on one side to a shared learning street and on the other onto a covered outdoor learning space. This controlled openness facilitates not only children's learning but also adult learning, teacher training and research that also takes place in the school. The seamless connection between inside and outside allows learning to effortlessly move beyond the classroom, following forest school principles. How does this thinking about school design allow children and educators the opportunities to think differently? In particular, how are the relationships nurtured in a democratic space that is physically and philosophically created for this purpose? How does a

doi.org/10.35468/6040-06

space foster a sense of children's agency? How is freedom and community brought together through the architectural decisions?
In these ways, the relationships forged through the explicit nurturing of our school values creates the enabling space which contextualises the curriculum design and the learning and teaching within it (see the golden framing of our curriculum model).

Photo: University of Cambridge Primary School

6.4 Research-informed curriculum design: three pedagogic golden threads of our curriculum

From our review of the literature, and building from the work of the Faculty of Education, Cambridge University, we identify three golden threads that bind the curriculum together: Habits of Mind, Dialogue and Oracy, and Playful Enquiry. Brought together, these threads strengthen our focus on developing children as independent autonomous learners who can self-regulate well; who are articulate, confident and able to express their views respectfully and intelligently; who are curious, creative and playful in ways that deepens knowledge and understanding of the world.

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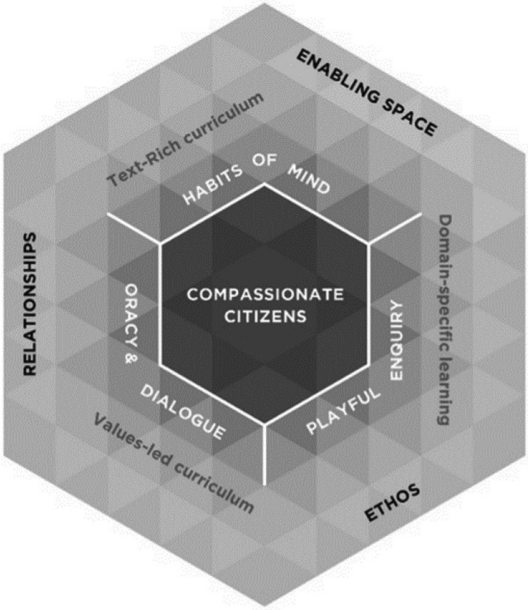

Fig. 1: UCPS Curriculum Model

First golden thread: Habits of Mind

The term "Habits of Mind" was used by Costa and Kallick (2008) who outlined and described sixteen psychological attributes and problem solving skills which when utilised aid the learning process. These attributes range from developing resilience when faced with new and unknown situations to reducing one's impulsivity. Costa and Kallick (2008) identify six dimensions: Value, Inclination, Sensitivity, Capability, Commitment and Policy and that it is the progression through these dimensions that see children be the problem solvers of the future.

The wide-ranging facets that Habits of Mind incorporate allow teachers to adapt their practice in the classroom to encourage children's metacognitive understanding and mental flexibility when solving problems. For example, having discussions with children about how they know what they know and supporting them to develop strategies that they can draw on in their learning. Having an understanding of how they think enables children to develop both short and longer term learning dispositions (Chatzipanteli et al., 2014).

Second golden thread: Oracy and Dialogue

Within the context of a profoundly interconnected world facing various challenges, complex communication skills are widely recognised as invaluable characteristics of productive and intercultural citizens (Autor et al., 2003). Embedded within

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school curriculum learning, is the potential for learners to develop an ability to articulate thinking within a shared space with others; speakers and listeners "inter-think" by building on the ideas of their own and others (Alexander, 2008). Dialogue has been defined as the "kind of talk in which every answer gives rise to another question" (Phillipson & Wegerif, 2016). Evidence-based approaches employed at the University Primary School, such as Philosophy for Children enable learners to create and discuss their own questions, change their minds and use their peers as effective instructional resources (Gorard et al., 2018). Within this dialogic space, the importance of learners being "caring, collaborative, critical and creative" is emphasised (Phillipson & Wegerif, 2016). As such, dialogue is understood as reliant on and mediated by productive learner habits of mind such as reciprocity and developed cooperative learning skills (Vrikki et al., 2019).
Using the Cambridge Oracy Skills Framework (Mercer et al., 2017), which sets out a comprehensive overview of the Physical, Linguistic, Cognitive and Social and Emotional aspects of effective dialogue, teachers are able to set out clear "dialogic intention" for planning and assessing learning sequences, and work with systematically developing these.

Tab. 2: Cambridge Oracy Framework (taken from Mercer et al., 2017)

Physical	
Voice	Fluency and pace of speech Tonal variation Clarity of pronunciation Voice projection
Body Language	Gesture and posture Facial expression and eye contact
Cognitive	
Content	Choice of content to convey meaning and intention Building on the views of others
Structure	Structure and organisation of task
Clarifying and Summarising	Seeking information and clarification through questioning Summarising
Reasoning	Giving reasons to support views Critically examining ideas and views expressed
Linguistic	
Vocabulary	Appropriate vocabulary choice

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Language	Register Grammar
Rhetorical Techniques	Rhetorical techniques such as metaphor, humour, irony, and mimicry
Social and Emotional	
Working with Others	Guiding or managing interactions Turn-taking
Listening and Responding	Listening actively and responding appropriately
Confidence in Speaking	Self-assurance Liveliness and flair
Audience Awareness	Taking account of level of understanding of the audience

Third golden thread: Playful Enquiry

There are several strands of evidence which all point towards the importance of play in young children's development, and the value of an extended period of playful learning before the start of formal schooling. These arise from anthropological, psychological, neuroscientific and educational studies. A range of anthropological studies of children's play in extant hunter-gatherer societies (Gray, 2009) and evolutionary psychology studies of play in the young of other mammalian species (Smith, 2006) have identified play as an adaptation strategy which evolved in early human social groups that enabled humans to become powerful learners and problem-solvers. Neuroscientific studies have supported this view of play as a central mechanism in learning. Pellis and Pellis (2009), for example, have reviewed many studies showing that playful activity leads to synaptic growth, particularly in the frontal cortex, that part of the brain responsible for all the uniquely human higher mental functions. A range of experimental psychology studies has also consistently demonstrated the superior learning and motivation arising from playful as opposed to instructional approaches to learning in children (Sylva et al., 1976; Pellegrini & Gustafson, 2005; Whitebread & Jameson, 2010). Within educational research, a longitudinal study by Marcon (2002) demonstrated that, by the end of their sixth year in school, children whose pre-school model had been academically-directed achieved significantly lower marks in comparison to children who had attended child-initiated, play-based pre-school programmes.

6.5 Democratic education for uncertain futures

Across the world, there is recognition that curricula have found it challenging to keep up with societal change. One such development needed with immediacy is to prepare children with the critical digital literacies that will help them to navigate their online lives. Human behaviour, relationships and habits are already

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being significantly shaped by the ways we interact with technologies and targeted algorithms. A correlated increase of mental health problems and suicide in young people (Riehm et al., 2019), digital dependency and polarising of political thinking (De-Wit et al., 2019) in recent years demonstrate that the consequences of technological influence are far reaching and require intentional intervention from educators. One recent MIT study found for example that targeted fake news on Twitter spread six times faster than real news (Dizikes, 2018). For our children to be truly autonomous, they need to understand the impact that the new "attention economy" has to manipulate their behaviour and how the affordance that profit incentives in a digital world can give business algorithms to exploit their interests. The introduction of smart phones to children's lives and related rise of social media has been closely linked with a dramatic rise in mental health issues for young people, increasing feelings of loneliness, negatively impacting on well-being, anxiety, depression, poor sleep and low self-esteem (Kelly et al., 2018; Royal Society for Public Health, 2017).

Curriculum cannot also be just about attending to the past or present; it must also hold within it some "best bets" about the knowledge, skills and concepts that will help children to thrive in the future. We need to question to what extent our current curricula attend to "preparing for a world that cannot yet be imagined". What will remain constant is the need to develop human physical and emotional health, resilience and purpose. For democracies to rejuvenate, there will be an ongoing societal need for collaboration between citizens to actively contribute to positively shaping the sustainability of their collective futures.

6.6 Creating new pedagogies for democratic education

To teach the complex needs of a future-oriented curriculum and democratic education, what teachers really need are pedagogical repertoires that they can call on for different educational aims. Amongst this repertoire need to be those that involve children in their education as active agents and that engage children in dialogue. In this practice, knowledge is understood as being something not fixed but rather co-created out of inter-thinking with others. Wegerif (2017) defines such forms of dialogic education in these terms, as going beyond the common conventions of face-to-face talk and questioning, to the lived experience of the "dialogic space" felt between two agents who think together. In this space, positions and arguments move from individuals identifying with different ideas and defending these to a shared line of thought and logic created "in-between"; one that arises beyond what each person could think of independently.

As increasingly polarized political divides have emerged in recent years, spurred on by the interaction of social media and divisive politics, the concept of dialogic space provides a key pedagogical goal to support children to start to learn about how to take better account of other's views. In such true dialogic interactions, chil-

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dren engage with others with different perspectives and ways of thinking to their own, learn to accept and incorporate diversity of thought into their understanding of reality and find "logic across difference".

7 Advocating for children in the present and for the future

Dame Alison Peacock is the CEO of the Chartered College of Teaching which is the first professional body for teachers. Unions are not professional bodies but organisations that support workers' rights. The new Chartered College vision is different to the purpose and function of unions:

> We are working to celebrate, support and connect teachers to take pride in their profession and provide the best possible education for children and young people. We are dedicated to bridging the gap between practice and research and equipping teachers from the second they enter the classroom with the knowledge and confidence to make the best decisions for their pupils. (retrieved from website on 15th December 2021 https://chartered.college/aboutus/)

Dame Alison notes the vital importance for democracy in education as enabled to become a reality through raising expectations about what the profession expects of itself. Education cannot be usefully thought of in terms of something "done onto" children. Nor can curricula, pedagogy and assessment approaches be done to educators. Education extends beyond the school gates and truly comes to life when it is realised as a partnership between children, families, schools and communities. It requires of us to rethink accepted practices around structuring in and out of school time, curriculum content, the use of technology, pedagogy, to what extent children's voice is authentically heard and to what extent they feel included. Currently, dialogue about visions for education are typically and often unhelpfully split between those who emphasise methods of "21st century education" such as project-based learning and giving children increased autonomy, and those who affirm forms of core knowledge and foreground cognitive science findings around the inefficiency of certain instructional styles. Dialogic forms of education that attend to the space for children to meaningfully contribute, a curriculum that represents children and their future interests and pedagogies that develop a sense of agency go beyond these approaches to both acknowledge and engage with the complexities of what is needed to include in an education for tomorrow. Ultimately, we need the best of different approaches: in different amounts, at different times, in different ways and for different purposes. Customising our approach and response-ability to children a journey requires everyone in a school community to play an active part. This is perhaps the beginning of a democratic education that is 22nd Century.

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University College of Teacher Education Vienna: Cooperation between schools and university with a focus on democratic education

1 Introduction

Austrian University Colleges of Teacher Education are responsible for the education, advanced training, and further professional development of future teachers. A core element of all University Colleges is providing research-based education, particularly in the areas of work-related research, teaching and learning research, pedagogy, subject didactics as well as school and teaching development (BMBWF, 2021a).

An exceptional feature of the 14 University Colleges of Teacher Education in Austria are their 23 integrated Praxisschulen (12 primary schools and 11 middle schools) which serve as model and research schools and thereby connect theory and practice. They play a central role in the University study program, since university students must complete an 8-semester long teaching-practice module at Praxisschulen.

At the University College of Teacher Education Vienna (Pädagogische Hochschule Wien, PHW), one primary school (Praxisvolksschule, PVS) and one middle school (Praxismittelschule, PMS) make the linking of theory and practice possible. Here, teachers create an optimal learning environment for children and young people, introduce university students to the field of work and the profession, develop new concepts and approaches based on findings from educational research, and evaluate and investigate them with regard to their practical suitability together with university lecturers of PHW.

PHW is Austria's largest public educational as well as professional development institution for current and future educators. At present, it offers Bachelor of Education programs for teaching in general compulsory schools and vocational schools, as well as university courses for other pedagogical professions, such as recreational education and elementary education. Currently, approximately 3,200 university students are enrolled in these programs. In addition, Master's degree

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programs with different specializations can be completed in the areas of primary education and secondary vocational education.
Together with the University of Vienna and other regional University Colleges for Teacher Education, PHW is part of the "Development Network North-East" and therefore integrated into a joint Bachelor's Degree Program in Secondary General Education. In the area of continuous professional development, PHW supports educators throughout their entire professional life. It offers approximately 2,600 continued training courses with around 58,000 registrations a year.
The university campus covers approximately 53,000 m2 and is located in the tenth district of Vienna, named Favoriten – the city's most populated district with a high number of residents with a migration background. Integrated into the campus of PHW are the two Praxisschulen, the PVS and the PMS with a total of about 400 students.

2 The education system in Austria

The educational path of every child in Austria begins with voluntarily attending kindergarten at the age of three. Yet, the last year of kindergarten is obligatory. Compulsory schooling in Austria starts at the age of six and lasts for nine years. Children who have reached the age of six but are not ready yet for school need to go to preschool for a year. Compulsory primary schooling lasts four years and aims at providing a general education as well as fostering students' social, emotional, intellectual, and physical abilities. In order to promote equal opportunities and employability, education is obligatory until the age of 18.
Having finished primary school, children must either attend a middle school or a lower secondary school. After middle school children at the age of 14 typically proceed to vocational schools or even start to work. Some also transfer to upper secondary school. Upper secondary schools are, however, usually attended by those who have visited lower secondary level already. Secondary schools aim at generally preparing children for university education. Children and young people with special needs receive a basic general education either in an inclusive class of a primary or middle school or in a centre for inclusion and special education.
While almost all EU countries run compulsory schools as comprehensive schools, differentiation takes place very early in Austria. Already after attending primary school, pedagogues must decide whether a child should proceed to middle school or to lower secondary school. This early differentiation often results in an educational inequality where usually children from a lower socio-economic background have less chances of obtaining a higher education. Despite clear research results, the discussion about early school selection is still on going and prevents the nationwide introduction of comprehensive schooling (BMBWF, 2021b).

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3 Praxisschulen at the University College of Teacher Education Vienna

"Living at school together" – this is the central guiding principle of the two Praxisschulen of PHW. It applies to everyone involved in school life and refers to a collective participation in terms of being actively involved in school development and taking part in decision-making. Cooperation and supporting each other are fundamental aspects of the school community whereby the strengthening of the individual is focused on as well. To ensure that appreciation, responsibility, acceptance, and inclusion are brought to life and that PHW Praxisschulen remain a place of democratic learning, necessary basic democratic competences such as moral awareness, judgement and opinion-forming are gradually initiated and practiced with the students.

PVS is a school for 6- to 10-year-olds. Around 200 students, who speak 19 different languages, are taught by 21 teachers. There are seven regular classes and two multi-level ones at PVS. Pedagogical work focuses on the following aspects: Independent Learning, Social Skills Training, Progressive Teaching Strategies, Research-Based Learning, STEM Disciplines, Alternative Assessment, Digital Literacy Training, Action-Oriented Teaching, Gender Conscious Pedagogy, Individualization and Differentiation, Active Learning, and work at the juncture of primary and secondary school.

PMS is a school for 10- to 14-year-olds. It is oriented towards the strengths of each individual student and focuses on the promotion of subject-specific as well as essential personal competencies. PMS has a total of eight classes, with one inclusive class, and two multi-level classes, where students from the age of 10 to 14 are taught together. Each school level is supervised by a small team of teachers. Teaching is mainly done in teams. The basic principles are openness to the world, tolerance, and inclusion. PMS considers itself a place where all involved find a pleasant learning and working atmosphere (Jakl et al., 2017a).

A central concern of both PHW Praxisschulen is their work in the area of school development, such as the development of new as well as the advancement of existing pedagogical and didactic models and their evaluation. In addition, the pedagogical work at PHW Praxisschulen offers university students and university lecturers of PHW an ideal field for common research projects (see section 4).

Another important task of both schools as a place of learning, research and reflection is to accompany university students during their practical studies and to support the development of their teaching personality (see section 3.3).

3.1 Founding history

In the School Act of 1962, post-secondary teacher training with university character was established in Austria for the first time. 1966/67 the Pädagogische Akad-

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emie Wien started with a four-semester long Primary School teaching program. From1976 onwards it also offered a six-semester long graduate program for Lower Secondary School and Special Needs School. In this context, Praxisschulen, formerly called Übungsschulen (training schools), had the task of gradually introducing student teachers to professional life. Step by step, Übungsschulen developed into training and research schools and began to set clear contextual impulses for the practical studies of prospective teachers (Klement et al., 2002).

Finally, as part of a consistent further development of teacher education, University Colleges of Teacher Education were founded in 2007. They became the third academic educational institution in addition to universities and universities of applied sciences (see section 2).

Every Austrian University College of Teacher Education integrates two Praxisschulen: a primary school and a middle school. In 2005, paragraph 23 of the Higher Education Act (HG) defined their tasks as follows: "...to participate in the introduction of university students to teaching by means of a highly job-related practical education, as well as providing a platform for testing new ways of teaching" (Jonak & Münster, 2014, p. 91). Furthermore, "the practical training in education and teaching is to be supplemented and consolidated with regard to school reality" (ibid.). For the implementation of these legal requirements, teachers with appropriate professional, pedagogical and methodological-didactic competencies are employed at Praxisschulen. Today there are 14 University Colleges of Teacher Education with 23 integrated Praxisschulen (12 primary schools and 11 middle schools) in Austria.

As a further important step of reform in teacher education, competence-orientation was introduced in 2015. Since the goal is to guarantee a high-quality academic education based on scientifically grounded theory and practice (BMBWF, 2021c), an intensified integration of theory, research and practice has been implemented into the curricula.

All educational programs follow the Bologna structure, which means they are divided into a four-year Bachelor's program and a Master's program lasting at least one or two years.

3.2 Legal aspects

According to § 23 of the Higher Education Act (HG), the legislative body has clarified that the provisions and curricula specified in the School Organisation Act are binding for Praxisschulen (RIS, 2021a) as well. Additional tasks and duties of Praxisschulen are also statutory (§ 33a para. 3, HG). Furthermore, rectors of the University Colleges of Teacher Education can lay down more detailed requirements for on-site teaching practice (RIS, 2021b).

In the light of this legal background, PHW defines several further achievements and goals of PHW Praxisschulen. PVS and PMS thus consider themselves "...ped-

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agogical centres [...] for teaching and education focusing on the individual promotion of the development [...] of social competence, research- and evidence-based school and teaching development in the sense of 'good practice' examples for other schools, for the development, implementation and evaluation of future-oriented didactic-methodical models and concepts as well as teaching and learning formats, and as a permanent didactic research facility" (PHW, 2023a, p. 45).
Ultimately, PHW Praxisschulen must adhere to the same content-related requirements regarding democratic education as any other school with the right of public access. However, due to its educational commitment stated in the HG and defined in the provisions of PHW regarding research-guided, exemplary and contemporary teaching, democratic education is carried out with particular attention to its exemplary function, scientific foundation, special didactic quality, and future orientation. To fulfil these distinctive goals, research-based and pioneering concepts of democratic education are provided not only for PHW Praxisschule but for other schools as well.

3.3 The pedagogical concept of Praxisschulen at PHW

Both Praxisschulen consider themselves as being part of PHW. Therefore, Praxisschulen need to fulfil numerous further functions than regular public schools and thus face further challenges, such as also integrating university lecturers and university students into school life. Furthermore, not only the school's curriculum but also the university curriculum needs to be acknowledged. Lesson contents thus are not only aligned with the school curriculum, but also with the curricula of PHW together with the needs of both students and university students.
PHW Praxisschulen see themselves as places for developing skills and competencies of students, university students, teachers, and university lecturers. PHW Praxisschulen are the meeting point between theory and practice since practice alone will never be able to specify all theoretically possible situations and thus will always remain incomplete, and theory, on the other side, will never be able to provide concrete action guidelines for all conceivable situations and thus will not be able to claim completeness (Adl-Amini et al., 1979, p. 135).
The guiding principle of PHW "learning by reflective doing" refers to the concept of the Reflective Practitioner by Donald Schön (Schön, 1991). In this context, university students learn to engage in a reflexive dialogue with students and thereby adapt lessons situationally, but also improve lessons in retrospect by developing a scientifically reflexive habitus (Schrittesser & Hofer, 2012, p. 149). PHW Praxisschulen run as workshops rather than as traditional schools. So they offer the necessary space for action and support learning and teaching not only facilitated by the spatial proximity of PHW Praxisschulen and PHW but also by the fact that some teachers work as university lecturers as well. In special settings (e.g. Didaktik Live), university lectures also teach at PHW Praxisschulen as part of their courses.

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This scientific yet practice-oriented approach is also crucial for democratic education as a teaching principle at PHW Praxisschulen. Since 1978, democratic education in the form of a teaching principle is compulsory for all types of schools, grade levels and subjects in Austria. In didactic terms, Krammer's (2008) competence structure model of democratic education is a prerequisite for the enactment of democratic education as a teaching principle in Austrian schools.
The broad framework set by the fundamental decree, ranging from the further development of democracy and human rights all the way to overcoming racism, xenophobia, and antisemitism, enables teaching to be adapted to the interests of the students and teachers (see section 4).

4 The linking of University and Praxisschulen

The law does not regard Praxisschulen as one of the departments of PHW. Yet, PHW does and so enables a closer cooperation with both schools. PHW Praxisschulen are managed by PHW's Department of Educational Sciences and Practical Studies which supports university students during their practical studies. Both PHW and PHW Praxisschulen are considered entwined places of learning and reflection which significantly contribute to competence development and professional understanding and related attitudes (Fichten, 2017). During the entire academic year, university students of all semesters teach at PHW Praxisschulen. In close alliance with the university courses, university students build up professional competence and are consistently forced to base their actions on research. All university students gain their first teaching experience at PHW Praxisschulen and consequently are prepared for the following semesters in which teaching takes place at regular public schools throughout Vienna.
Teachers at PHW Praxisschulen fill in two roles: on the one hand, they are educators of their students and, on the other hand, they work as mentors of university students from PHW. They supervise and support university students by developing their professional skills and preparing them for the job. They share the responsibility of teaching and transmitting didactic knowhow as well as basics of educational science with university lecturers.
The organization of the practical studies at PHW is very complex. During the Bachelor's program, university students are expected to complete their practical studies not only at different school levels in different districts of Vienna but also under the supervision of teachers of different pedagogical and professional foci, such as reform pedagogy, creativity, language education, or STEM. At PVS approximately 120 university students from the BA program are assigned to teachers in groups of 3 to 5. Additionally, 30 students from the MA program need to be served as well. This makes around 150 students completing their practical studies

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at PVS each semester. Throughout Vienna more than 294 groups of university students need to be accommodated.

Teachers of PHW Praxisschulen do not only act as mentors within the practical studies. They also teach courses which are part of the Bachelor's studies, for example in primary education and didactics.

An example of networking between PHW and Praxisschulen in the field of education is the project "Didactics Live". The aim of the project is to link teachers and students of PHW Praxisschulen with university lectures and university students. Together with university students, university lectures conduct their lessons in co-operation with teachers and students of PHW Praxisschulen. The primary intention of "Didactics Live" is not only to theoretically acquire subject-specific contents of the university courses, but also to experience them practically and authentically with students during the lessons. The formation of a democratic culture in an educational institution is beneficial to the development of an understanding of democracy among all those involved. "Didactics Live" is an example of democratic culture at PHW together with its Praxisschulen where university lecturers autonomously decide whether their seminar is taking place in the seminar room or practically in the classroom. In addition, seminars with a curricular reference to democratic education or political education offer the opportunity to transfer concepts directly to students and university students (Burtscher-Ebner & Jakl, 2017).

Lifelong learning is a fundamental principle of the European education policy (Terhart et al., 2014) in which teacher training plays an important role. This is why teachers from PHW Praxisschulen participate in the conception and implementation of sustainable courses in the field of further education and also act as university lecturers.

In order to further develop school and teaching, it is legally anchored that Praxisschulen proactively design, test, and evaluate new ways of teaching based on evidence (Jonak & Münster, 2014, p. 91). Research activities are thus always carried out in close cooperation with PHW. Research teams of PHW work on questions from PHW Praxisschulen and report back results as a basis for further work. Teachers at PHW Praxisschulen can also be part of research teams together with university lectures. Moreover, PHW Praxisschulen provide a field of research for university lectures and students. University students have the opportunity to conduct research at PHW Praxisschulen as part of their Bachelor's and Master's theses, to develop and explore their own ideas, and to become involved in everyday school life.

As examples of research activities, two joint research projects of PVS, PMS and PHW will be briefly presented. Both illustrate the possibilities of linking these two places of learning – PHW and PHW Praxisschulen – in a profession-oriented

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manner and show the intensive collaboration between educational research and educational practice. The focus is on generating evidence-based school practice.
The research project *"Professionalization by Resource Orientation: A Potential Analysis at Praxisschulen"* was carried out to meet all tasks and duties of PHW Praxisschulen. The objectives were: 1.) to make the existing resources and strengths of the surveyed teachers at PHW Praxisschulen as a building block of school and teaching development and as examples for students of how professionalization processes can take place visible, 2.) the presentation of links with other institutions, 3.) generating ideas, visions, wishes and expectations for the further development of the pedagogical and organisational concepts of PHW Praxisschulen and 4.) the collection of information about purposeful efforts to support students as mentors within the scope of Practical Studies since PHW Praxisschulen also provide a clear impetus for the practical studies of students in schools. Teachers of both PHW Praxisschulen were interviewed in their roles as actors and experts in order to reveal resources such as training, language skills, personal competences, but also external relations and ideas about further developments. In this way, existing resources within PHW Praxisschulen as well as connections to other institutions can be made visible. The results of this research, which is designed as an ex-ante evaluation, are also used as the basis for the planning of prospective duties and responsibilities of mentors in the context of teacher training and enable the expansion of the networking between PVS and PMS and serve as a basis for collaboration in research and development projects (Ctibor-Petrik et al., 2017).
"Heart over foot" ("Herz über Fuß") was developed and introduced as a project in the field of social learning at the PVS in the school year 2015/16. The aim is to strengthen students' personality development and self-efficacy and so affecting the entire school culture in the long run. (Jakl, 2017b) (see section 5.2). The accompanying research project aims at evaluating the extent to which the project contributes to empowering students to develop strategies for dealing with difficult situations, to gain a more conscious body perception and to increase expression in speech and body language. Furthermore, the influence and effects of the project on everyday school life in the context of teacher professionalization processes is investigated. For this purpose, focused group discussions (Bohnsack, 2000) were held with students and teachers. On the one hand, these group settings were based on the idea that experience can be reconstructed in shared narration, and particularly on the creation of familiar situations for the students. On the other hand, the focused group discussion served to display topics that have been set as evaluation objectives by the research team in advance.
Selected results of research show the development and modes of action of the project "Heart over foot". Teachers report that the project has a fundamentally positive effect on the students' personality development. They become more self-aware, start to gradually perceive their own needs and develop self-confidence and

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empathy. On the other side, teachers question the project's effects on students who show disruptive behaviour, such as laughing out loud or not participating at all – seemingly due to an inability to handle the content. Yet, most of the students perceive the effects of the project solely positive regarding self-awareness, self-confidence, positivity, and empathy.
Teachers regard the project as an entry into the broad field of personality development. It thus aims at the well-being of everyone involved in school, including students, teachers, parents, and university students. From a researcher's point of view, however, three essential points are necessary to further develop the project: parental work, dealing with difficult students, and the organizational problems of integrating the project well into the school day (Schuh, 2020; Riegler, 2021).

5 Democratic education at PHW Praxisschulen

PHW Praxisschulen are a place of democratic education and a place where democratic values and human rights are lived, exemplified, and learned. This requires a scientifically based didactic concept which derives from pedagogical and socio-political everyday experiences.

5.1 Theoretical considerations

Due to the high degree of abstraction and the complexity of the topic, democratic education is often only assigned to students at the upper secondary level. However, empirical studies such as those of van Deth's project „Demokratie Leben Lernen" show that the development of political awareness and political socialization already begins in early childhood (van Deth, 2007).
The following didactic principles are at the centre of the concept of democratic education.

Action orientation in the life world of students (inductive approach): from the concrete example of the life reality of the students to the general abstract. One approach to democratic education takes place in an action oriented way (Behrmann, 1996, p. 121 in Liggesmeyer, 2019, p. 33). The central element is the experiential learning of democratic elements which can be found in the life of the students, meaning that only aspects which students are exposed to in their social environment can be used for democratic education. Simple imitation of democratic elements is thus not desired. Rather, it is about gaining an understanding of the connection between elements from the students' daily lives and their relationship to democracy. Social learning must be integrated into the context of learning democracy and into a context of justification. In this way, students should understand how social behaviour is related to a democratic society. This is challenging to implement, and of course, the younger the students are, the more

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it is since politics usually have low significance in their lives. It is thus necessary to, as Behrmann puts it, convey the context of meaning. (Behrmann, 1996, in Liggesmeyer, 2019, pp. 33f).

Real participation instead of pretended participation: Real participation means being able to exert real influence and take responsibility. School as a pedagogically protected space for democratic education (Liggesmeyer, 2019, p. 41) enables experience-led action by avoiding undesirable external influences on the one hand, but on the other hand, harbours the danger of uncritical pedagogical action without an external corrective. Often, there is hardly any transfer from what is learned at school to real political understanding. Experiential learning yet only takes place by genuine participation. Inauthentic, pretended participation which rarely has any effects on real life leads to political apathy and disinterest (Kempf & Kuhn, 2017, p. 279). Genuine participation requires basic democratic structures, a distribution of responsibility, and a loss of power by teachers as former decision-makers. Teachers need to accept this and simultaneously make students aware of their own increase in power by consistently setting clear boundaries.

Democratic sense-making and maturity instead of imitation and specialized knowledge: Student's political autonomy and maturity must be considered when planning and giving lessons as an overall goal. The focus is not on retrievable factual knowledge but on providing students with working knowledge to develop their competencies since the formation of meaning enables orientation in a political world. According to Lange, this construction of meaning is developed in civic consciousness and "... makes it possible to interpret political-social reality and to influence it by action." (Lange et al., 2013, p. 22) in order to make political reality understandable and explainable. While some core concepts such as heterogeneity, distribution, conflict, or participation are already suitable for primary school students, concepts such as statehood, social change and rule or legitimacy of rule are to be increasingly incorporated at the secondary level.

Self-determination, co-determination, solidarity, and human rights: As a further concept for learning democracy, Herdegen sees reason as a central element for democratic education. Through early practice in dealing with problems which concern everyone as well as experiencing democracy at school, not only loyalty to democracy but also acceptance of democratic principles, an understanding of their meaning, and the formation of a constitutional patriotism should be developed (Herdegen, 1999, p. 6 in Liggesmeyer, 2019, pp. 37f). Self-determination and co-determination with the goal of political autonomy must not be put in opposition to solidarity and human rights since social and political learning go hand in hand, and consequently enable reasonable self-determination, the ability for co-determination and solidarity (Liggesmeyer, 2019, p. 37).

doi.org/10.35468/6040-07

5.2 Practical implementation of democratic education – selected examples

Based on the theoretical ideas described above (see section 5.1), PHW Praxisschulen have developed their individual programs and mission statements (see figure 1). As visible in figure 1, both heads of PHW Praxisschulen are deeply committed to support and motivate any process and project which enables active democratic participation. Thus, action orientation and genuine participation in school are considered a core element of school life. At PHW Praxisschulen, students should not only acquire subject-specific knowledge but also personal and social skills.

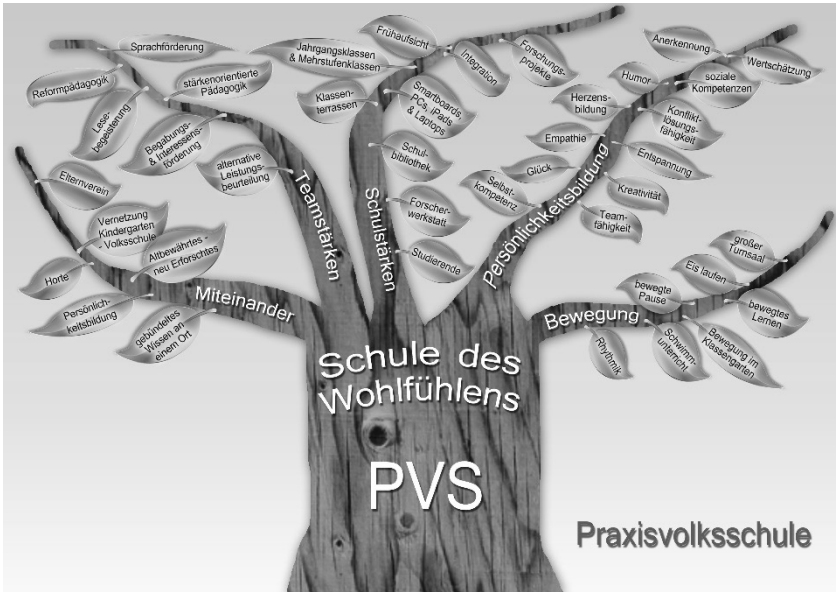

Fig. 1: School of well-being (Graphic: S. Jakl)

Ideally, students will thus evolve into self-confident personalities who are committed to democracy (see figure 1). At PHW Praxisschulen, genuine participation means having the chance to vote class and school representatives, participating in the students' parliament, or establishing class or even school rules together. These conventional forms are defined by law and enable students to help shape their school.

Consequently, rules and values which are important for a successful collaboration and a positive class atmosphere are worked on in all classes at PHW Praxisschulen. These are always captured in a creative way so to easily adhere to them (see figure 2). Each class at PVS and PMS elects two class representatives who collect the children's concerns, discuss them with the teachers or bring them forward to the school parliament. In addition to the class representatives of all classes, both elect-

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ed school representatives attend the regular meetings of the school parliament. All class representatives also elect a guidance teacher who discusses their concerns with the elected representatives in the school parliament.

Fig. 2: Setting class rules together (Photo: S. Hanzlik)

Step by step, however, further innovative forms of students' participation are established. The main goal of these innovations is to help students to stand by their opinions, to accept other opinions and to experience that everyone can make a difference. Students are, for instance, allowed to participate in the process of lesson planning. They are invited to bring in their topics of interest and then collectively decide on the ones that will be worked on collaboratively. Students of grades 3 and 4 are even allowed to make suggestions concerning the teaching method. Consequently, attention and motivation highly increase in class.

Other forms of participation involve the design of sports weeks or project weeks where students usually plan and develop daily programs in groups. Different alternatives are then presented and finally a collaborative democratic decision is made by the majority.

Currently the students of PHW Praxisschulen are working on the design of an outdoor site near the school building. After a general renovation of the school building, which was completed in 2021, an existing open space is now to be

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adapted for students and university students for lessons or leisure activities. For this purpose, a multi-stage participation process has recently started where students can contribute their ideas and suggestions in workshops.
In the following, further projects from everyday school life at PVS and PMS in the field of democratic education are presented.
Assembly: At PHW Praxisschulen school assemblies are part of the daily agenda and serve not only to exchange information but simultaneously to create a strong feeling of belonging and membership. At PVS and PMS all students, teachers, school administrators, and university students are invited to attend the meetings once a month. Current topics are discussed, key aspects from the "Heart over Foot" program are implemented, non-violent communication is practiced, news is exchanged and special projects or events in the classes are reported. At the end of each meeting all participants sing the school song together (see figure 3).

Fig. 3: Assembly at PVS/PMS (Photo: PVS)

„Nightingale": The project "Nightingale" is a mentoring program for students with special needs (Nightingale included) and/or migration biographies (Nightingale Vienna). Over a whole year, university students of the PHW meet with students of PHW Praxisschulen once a week for spending time and talking about issues which currently affect the child. The program provides a practical insight

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into the work of inclusive education. Moreover, it facilitates learning by doing and offers a platform for gathering practical experience. University students intensively experience the students' world. Additionally, the possibility of joint recreational activities allows for a meaningful participation of students as well as university students. Before the program starts, university students need to attend an obligatory workshop where they analyze the educational and personal situation of their assigned student by comparing it to average or ideal conditions. In doing so, university students, typically coming from the educated middle class, often gain invaluable insights which help them realize how privileged they are not only in material but also emotional terms. As part of the program, they are obliged to keep a diary and share their insights in regular meetings with a university lecturer. In a final meeting of reflection, one university student once said: "When I started the project, I thought I was only helping one child. I never expected to learn so much about myself. I never thought the relationship and the weekly meetings could be so intense".

Observing – Interpreting – Shaping: The "BIG" project integrates everyone involved in the developmental process of a child. Through this holistic approach, children, parents, and teachers bring in diverse perspectives as equal partners and thus together expand the scope of action in order to enable the child's further development. Whilst teachers observe students participating in making democratic decisions and learning to deal with problems unconscious emotional dimensions through collective interpretations are uncovered and lastly will set further processes in motion. Here, too, the participatory approach of democracy is directly communicated to the students through a non-hierarchical structure. Different core concepts can be used to perceive different perspectives. Students, for instance, may experience participation as a core concept, whereas parents may feel the concept of their child's integration into the school process strongest, whilst teachers, on the other side, might notice the concept of appreciation (Leskowa, 2017).

„Heart over foot": In recent years the interest in developing the students' personality and promoting their social competences has grown. To promote these competences, subjects called "personality development" and "social learning" were introduced (Hoffmann, 2008, p. 13). The project "Heart over foot" was created to foster personality development. The project name was developed in collaboration with students. The heart is seen as a symbol for the emotional world of everyone involved. The attached feet represent the huge focus on body language that is part of the project (see figure 4). Physical struggle was discussed in one class and a child shared the following solution strategy: "First the heart and then the foot" (Jakl, 2017b, p. 104).

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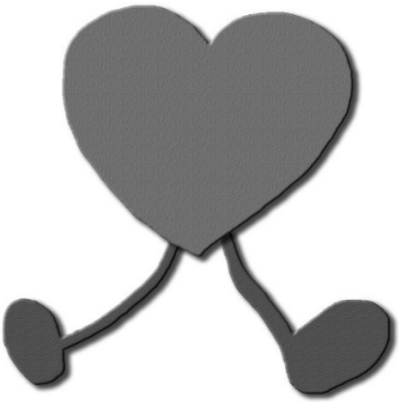

Fig. 4: Hear over foot project logo (Design: Sandra Melchart)

"Body language makes up more than 80% of our communication" (PHW, 2023b). Communication skills are thus to be developed as an essential part of the policy-related competence of the students (Krammer et al., 2008). Article 29 of the UN Convention on the Rights of the Child, which is referred to in the Basic Decree on Political Education, stipulates that education shall be directed towards the development of the personality of children (RIS, 2021b). The "Heart over foot" project specifically promotes body perception, the development of a positive self-image, the expressiveness of body language and the resilience of students (see figures 5, 6). The aim of the project is to develop, promote and strengthen social competences of all participating students. The ability to cooperate, to handle conflict, to work in a team and to build self-esteem are just some of the competences to be achieved (Jakl, 2017b, pp. 105f). According to a multi-stage program, guided exercises and reflections are regularly held at school (PHW, 2023b). This broadens personal competences in the sense of democracy as a way of life (Himmelmann, 2008). These include self-learning and self-competence (Schuh, 2020).

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Fig. 5: Student works (Photo: S. Hanzlik)

Fig. 6: Student works (Photo: S. Hanzlik)

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6 Outlook

In the context of participating in the LabSchoolsEurope project, four key research principles which seem to guide the work of much of today's lab schools were identified : transdisciplinarity, collaboration, experimentation, and transformativity.
For PHW Praxisschulen, transdisciplinary collaboration is of great importance and is lived daily. On one side, transdisciplinary collaboration is legally anchored within the framework of practical studies by accompanying university students into professional life and offering a field of research for both university lecturers and students. On the other side, cooperation takes place between teachers and university lecturers within joint research projects and university seminar courses. The cooperation is also supported by the fact that both schools are part of the PHW campus and thus learning spaces such as the Media Lab, the House of Mathematics, the Researchers' Lab and the Learning Lab can be used by both Praxisschulen and PHW.
Furthermore, all professional development courses at PHW are available for university lectures as well as teachers of PHW Praxisschulen.
Currently, Praxisschulen are undergoing a transformation process (Krainz-Dürr, 2019). In addition to the support and guidance of university students in the context of their practical studies, research and school development are equally focused on. Praxisschulen are therefore constantly asked to develop and implement research-driven and evidence-based concepts and methods as well as to create realistic scenarios for a school of tomorrow in order to contribute to the technological, demographic, socio-economic, ecological, ethical, and cultural challenges of today's society.
In the coming years, PVS and PMS will gradually be converted into all-day schools and merged into one campus for students between 6 and 14 years old. Correspondingly, democratic education will also continue to progress and flourish as part of this school-related development.

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Lab School Paris: An Educational Living Lab

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Labyrinth Lab School Brno: Creating a socially responsible learning community

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University College of Teacher Education Vienna: Cooperation between schools and university with a focus on democratic education

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Across Europe, laboratory schools find new ways to tackle the educational issues of our time. Their work is guided by educational experimentation and the aim to strengthen the bond between educational practice and research. In this book, lab schools from Bielefeld, Brno, Cambridge, Paris, and Vienna provide unique insights into how they bring John Dewey's framework for a lab school to life. This book is the result of the Erasmus+ project „LabSchoolsEurope: Participatory Research for Democratic Education". It is a testament to the potential of collaborating across borders.

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