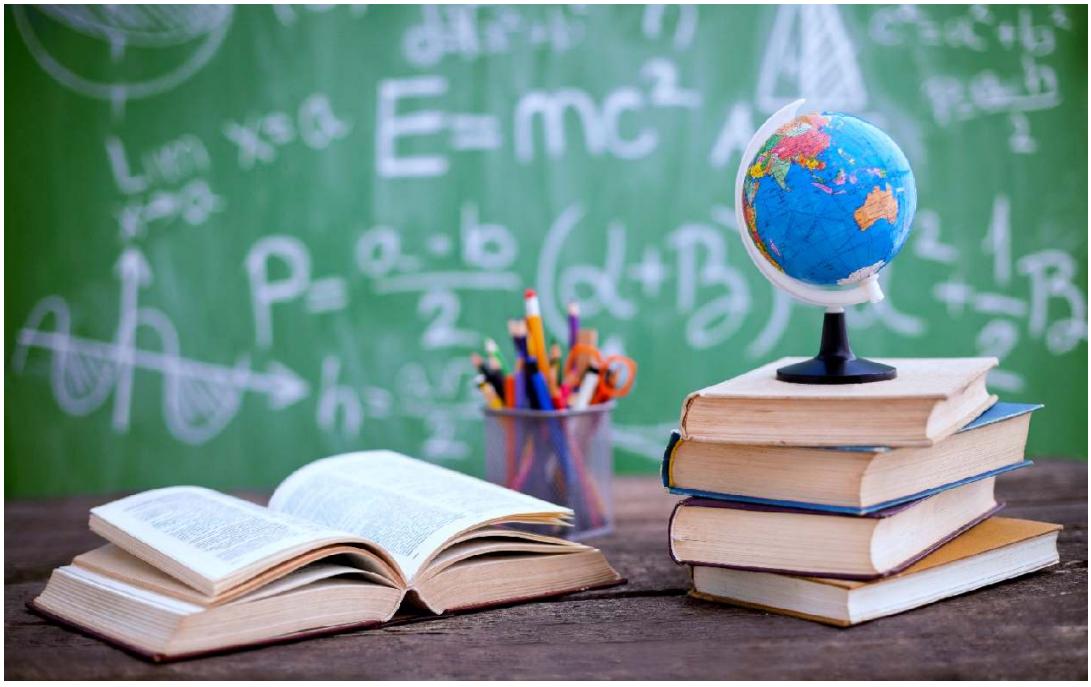
LUXERA
Luxembourg Educational Research Association

Conference 2026

4 - 5 November
Campus Belval

Digital Learning Hub

Conference Booklet



Conference Overview

Wednesday, 4 November 2026	
08h00 – 09h00	Registration
09h00 – 09h15	Welcome & Opening Words
09h15 – 10h15	Keynote
10h15 – 10h45	Coffee Break
10h45 – 12h15	Parallel Paper and Ignite Talk Sessions I & II
12h15 – 13h30	Lunch Break
13h30 – 15h30	Parallel Symposia I & II
15h30 – 15h45	Coffee Break
15h45 – 17h15	Parallel Sessions III & IV
17h30	General Assembly & Reception

Thursday, 5 November 2026	
09h00 – 10h30	Interactive Poster Session & Coffee
10h30 – 12h30	Parallel Symposia III & IV
12h30 – 13h30	Lunch Break
13h30 – 14h30	Fireside Chat “AI in Education”
14h30 – 15h00	Coffee Break
15h00 – 16h30	Parallel Sessions V & VI
16h30 – 17h00	Concluding Words

Conference Venue: DIGITAL LEARNING HUB



DLH Building



IFEN Building



Route between DLH and IFEN

Table of Contents

Welcome Address **4**

Detailed Conference Schedule **5**

Conference Keynote **9**

Abstracts - Symposia **10**

Abstracts - Parallel Sessions **31**

Abstracts - Poster **64**

Welcome Address

Welcome to the 9th! LuxERA conference in Belval.

We are very happy to welcome you to two days of presentations, discussions and exchange. With a varied program featuring a keynote, parallel sessions, posters, ignite talks, fireside chat and symposia, the conference creates a platform to share ideas, discover new perspectives, and exchange with colleagues that share an interest in and passion for Educational Research that is conducted in or relevant for the Luxembourgish context.

This year´s conference theme "The Future of Education in a Rapidly Changing World: Navigating Developmental, Educational, and Digital Transitions" speaks directly to current narratives in the educational debate in both Luxembourg and beyond. Indeed, with all societal and technological changes, the conference provides a valuable opportunity to reflect on emerging challenges and possibilities, explore new directions and consider how educational research can contribute to shaping the future of education.

The conference will open with a keynote by Nicole Zillien, Professor of Sociology at the University of Koblenz, followed by two days of presentations in a mix of different formats. We encourage you to engage in stimulating discussion and invite you to also join us for coffee, lunch and the welcome reception as these social events provide an ideal opportunity to network and exchange in a more informal manner.

The LuxERA General Assembly will take place on Wednesday afternoon, and we would welcome all LuxERA members to attend, be informed about and contribute to LuxERA´s ongoing work and development.

This booklet contains the most important information you will need during the conference, including venue information, an overview of the scientific program, and abstracts and authors of all presentations. We hope it will help you navigate the conference with ease and wish you an inspiring, enjoyable, and memorable few days.

As president of LuxERA and on behalf of the board, I would like to sincerely thank the organizing committee, especially Joanne Colling, Carole Dording, Martha Ottenbacher and Linda Romanovska, for their efforts to bring together exciting and diverse program. I am equally grateful to all the reviewers of the abstracts (we always have two reviews for each submission), the Digital Learning Hub for hosting the event and to everyone who has provided support in the background.

Finally, thank you for being part of the LuxERA community. We wish you a wonderful and inspiring LuxERA conference!

Ineke M. Pit-ten Cate

LuxERA president

University of Luxembourg, October 2026

Detailed Conference Schedule

Wednesday, 4 November 2026

08h00 – 09h00 in front of Auditorium	Registration
09h00 – 09h15 Auditorium	**Welcome** & **Opening Words**
09h15 – 10h15 Auditorium	**Keynote**
10h15 – 10h45 in front of Auditorium	Coffee Break
10h45 – 12h15	**Parallel Paper** & **Ignite Talk Sessions**

SESSION I: Digitalisation in Higher Education	**SESSION II:** Policy and School Leadership in Luxembourg and Beyond
Auditorium (chaired by Justin Powell)	IFEN Building D (chaired by Joanne Colling)
Sealing the Student's Prior Before AI Speaks: Oracle as a Method for Studying Belief Movement in Higher Education *by Ivana Budišin*	Strengthening School Leadership in the Global South: Lessons from India, Indonesia, and Sierra Leone *by Gautam Anand et al.*
Shaping Higher Education for a Digital Future: The Role of University-Industry Collaboration in Luxembourg and Europe *by Jennifer Dusdal*	Between Policy and Practice: Responding to Student Heterogeneity in a European Public School in Luxembourg *by Elif Tuğçe Gezer et al.*
Ignite Talk: Outdoor Learning as a Catalyst for Transformative Competencies in a VUCA World: Evidence from Luxembourg and European Higher Education *by Alina Lemling & Janne Fengler*	Ignite Talk: On the long-term effects of early grade retention in Luxembourg *by Martha Ottenbacher et al.*

12h15 – 13h30 in front of Auditorium	Lunch Break

Wednesday, 4 November 2026

13h30 – 15h30 **Parallel Symposia**

SYMPOSIUM I: Implementing the UN CRPD in Luxembourg? Inclusion in Education and Employment Systems and School-to-Work Transitions of Young People with Disabilities

Auditorium (chaired by Stephanie Da Gloria Soares)

Beyond Ratification? Uncovering Global Disparities in Disability Rights Implementation, 2011-2025 *by Marcelo Marques & Justin Powell*

Comparative Analysis of Interinstitutional Coordination in School-to-Work Transition Systems for Young People withDisabilities in Switzerland and Luxembourg *by Kevin Simoes Loureiro et al.*

(Dis)abling school-to-work transitions of youth with disabilities in Luxembourg *by Stephanie Da Gloria Soares*

SYMPOSIUM II: Towards Unpacking the Black Box of Learning Environments: Exploring the Measurement of Teaching Quality Across Classrooms and its Relation to Student Outcomes at Different Educational Levels

IFEN Building D (chaired by Joanne Colling & Axel Grund)

Development & Psychometric Validation of a Generic Learning Environment Scale for Secondary Education: First Evidence from Luxembourg's Large-Scale School Monitoring Context *by Joanne Colling et al.*

Teacher & Student Perspectives on Support in Secondary School Learning Environments: Implications for Alienation from Learning *by Alyssa Grecu et al.*

Is order half the battle? Probing interactive effects within different dimensions of learning environment *by Axel Grund et al.*

15h30 – 15h45 Coffee Break
in front of Auditorium

15h45 – 17h15 **Parallel Paper Sessions**

SESSION III: Measuring Instruction Language Competencies

Auditorium (chaired by Ineke Pit-ten Cate)

From Luxembourgish to German: How Home Language Background and Language Skills in Grade 1 Shape German Listening & Reading Comprehension in Highly Linguistically Diverse Primary School Students in Grade 3 *by Lena Kaufmann et al.*

Standardized Testing as a potential support measure – exploring the possibilities for ESG-VP students with severe reading difficulties *by Charlotte Krämer et al.*

Exploring performance profiles of multilingual third-graders' reading and spelling skills in German *by Linda Romanovska et al.*

SESSION IV: Qualitative Research Practices and Educational Trajectories

IFEN Building D (chaired by Elif Tuğçe Gezer)

Growth & Fixed Mindset: A Qualitative Study of Cycle 4 Students' Beliefs and Learning Practices *by Lena Plützer & Robert Reuter*

Parents' mediating roles in the homeschooling settings *by Yana Nebolsina*

Secondary school career choice through perceptions of the labor market: a qualitative study in French and Luxembourgish contexts *by Clémentine Robert & Claude Houssemand*

Starting 17h30 **LuxERA General Assembly** & **Reception**
Auditorium

Thursday, 5 November 2026

09h00 – 10h30 **Interactive Poster Session & Coffee**
in front of Auditorium

Musical experiences in Luxembourg *by Kyriaki Pafiou*

Next Gen Narratives of Struggles: Younger Generations Navigating Cultural Markets in Luxembourg *by Natalie Wilson*

Assessing key Luxembourgish grammar markers in multilingual preschoolers *by Anissa Werdel et al.*

From Paper-Pencil to Digital Learning Environment: Navigating the Digital Transition of Summer Remediation with MathemaTIC *by Paul Roland Klensch et al.*

Influence of language background and exposure to Luxembourgish on multilingual preschoolers' acquisition of grammatical gender *by Kenan Starcevic et al.*

A Chat4EFL Platform for Personalized Learning *by Dimitra Anastasiou et al.*

10h30 – 12h30 **Parallel Symposia**

SESSION III: Differentiated Instruction and Inclusive Pedagogy in Transition: Evidence, Perspectives, and Preparation in Luxembourg and Beyond

Auditorium (chaired by Marcela Pozas)

Unveiling the relevance of practice experience in teaching students with special educational needs in inclusive settings: exploring personal and contextual factors that shape teachers' use of DI through German largescale data *by Verena Letzel-Alt et al.*

Differenzierung zwischen Anspruch und Wahrnehmung: Lehrkräfte- und Schüler*innenperspektiven an Luxemburgs Schulen *by Martine Frising & Anne-Marie Müller*

But what kind of disabilities do the children have after all? Teaching and learning the how to of creating child-centered inclusive learning environments in a university school-collaboration model *by Diane Dhur & Michelle Proyer*

SESSION IV: Au-delà du vrai et du faux: former la souveraineté cognitive des futur · es enseignant · e · s par les littératies scientifique, numérique et attentionnelle

IFEN Building D (chaired by Christian Meyers)

La souveraineté cognitive en formation initiale des enseignant · e · s: La lecture et l'écriture scientifiques comme accès médiatisés à la réalité empirique *by Christian Meyers & Robert Reuter*

La souveraineté cognitive en formation initiale des enseignant · e · s: Comprendre le numérique avant d'agir avec *by Gilbert Busana et al.*

La souveraineté cognitive en formation initiale des enseignant · e · s: L'attention comme condition de toute pensée *by Christophe Watelet et al.*

12h30 – 13h30 Lunch Break
in front of Auditorium

Thursday, 5 November 2026

13h30 – 14h30 **Fireside Chat**
Auditorium

How AI Impacts Educational Research & Teaching

Moderated by Joanne Colling

Invited speakers: *Elouise Botes, Robert Reuter, Philipp Sonnleitner, Régine Poussin*

14h30 – 15h00 Coffee Break
in front of Auditorium

15h00 – 16h30 **Parallel Paper Sessions**

SESSION V: Writing Competencies in the Instruction Language(s)

Auditorium (chaired by Linda Romanovska)

How home language shapes German spelling errors in Luxembourg's multilingual educational context *by Silke Crols et al.*

Enhancing Academic Language Competencies in German – First Results of an Intervention Programme for Secondary School Students *by Charlotte Krämer et al.*

Learning to write in two school languages: German and French writing productions at the end of primary school (Cycle 4) *by Constanze Weth*

SESSION IV: Innovative Hands-on Practices for Maths Education

IFEN Building D (chaired by Carole Dording)

Opening the Glass Box: Transparent and Negotiable Adaptive Mathematics Practice in Luxembourg's Secondary Education *by Paul Roland Klensch et al.*

Bricks, Bots and Coaching: Embedding the FIRST® LEGO® League in the Digital Sciences Subject *by Paul Roland Klensch et al.*

16h30 – 17h00 **Concluding words**
Auditorium

Conference Keynote

Digital Transitions from a Sociological Perspective: Reflections on Knowledge Production, Inequality, and Tech Abuse

Prof. Dr. Nicole ZILLIEN, University of Koblenz

In my presentation, I will address the LuxERA 2026 theme of 'The Future of Education in a Rapidly Changing World', focusing particularly on knowledge transfer and knowledge production during society's digital transition. Against this backdrop, I will present selected findings from my sociological research on (1) digital inequality, (2) sleep tracking and (3) digital intimate partner violence. I will then conclude with a discussion of the (4) concept of affordance.

My starting point is the findings of digital divide research:

(1) Studies on digital inequality show that social status is linked to the capital-enhancing use of the internet. Those with higher levels of education and income are better able to convert access into advantages, thereby reinforcing existing inequalities. Differences in digital literacy are often seen as the main reason for these unequal benefits from internet use. This has led to calls from society and the education sector to promote digital literacy, particularly among marginalised groups. In my presentation, I argue that skills in using digital technologies are undoubtedly a key competency. At the same time, however, the skills required in a digital world are often extremely complex, which makes it very difficult to find an appropriate definition of digital literacy.

(2) Sleep tracking illustrates this complexity. Our research understands self-tracking as a form of everyday self-experimentation aimed at reducing uncertainty. The necessary competencies are extensive and difficult to capture in conventional concepts of digital literacy. This makes the promotion of digital literacy far more challenging than it initially appears.

(3) Furthermore, using the example of digital violence in intimate relationships, I would like to emphasize that the call for digital literacy can sometimes be problematic. Measures to combat tech abuse often focus on the digital skills of those affected, recommending that they either acquire the necessary skills or deactivate their devices, accounts and apps entirely. However, this shifts responsibility onto those who are already disadvantaged, effectively amounting to victim blaming in these cases.

(4) Accordingly, it is too narrow an approach to focus exclusively on the digital competencies of different population groups. My presentation concludes with the observation that digital technologies themselves must also be examined, since societal agendas are embedded in their design. Thus, to analyse society's digital transformation, the social sciences must develop a suitable concept of digital literacy and comprehensively analyse the characteristics of digital technologies, as set out in the 'affordance' approach.

Abstracts - Symposia

In alphabetical order

Symposium

Towards Unpacking the Black Box of Learning Environments: Exploring the Measurement of Teaching Quality Across Classrooms and its Relation to Student Outcomes at Different Educational Levels

Joanne Colling & Axel Grund

Learning environments are institutionalized or naturally occurring social, physical, psychological or pedagogical contexts, in which learning occurs. Rooted in theories suggesting that human behavior (e.g., learning) is the dynamic interaction between individuals and the environment they are experiencing (e.g., classroom environment), an encompassing body of research indicates that positively perceived learning environments are systematically associated with student outcomes, such as academic achievement, motivation and deeper approaches to learning (Praetorius et al., 2018).

Given Luxembourg's highly diverse and multilingual education system, in which academic inequalities have repeatedly been identified (Hornung et al., 2021), a deeper understanding of the learning environment characteristics that foster student development is particularly important. Considering that this knowledge remains limited (Emslander et al., 2024), the present symposium tries to advance the field by addressing both measurement and theoretical aspects.

Using data from the Luxembourg School Monitoring Programme, the first study presents a generic learning environment scale (e.g., psychometric validation) before illustrating differences between school tracks and school offers (e.g., European Public Schools). Integrating student and teacher perspectives, the second study focusses on supportive learning environments in relation to school alienation. Finally, in the third study, classroom management is investigated as a potential precondition to create learning environments that are supportive and cognitively activating.

The symposium closes with discussing how this multi-perspective knowledge could contribute to fostering high quality learning environments and how such environments could in turn create more equal opportunities in a highly diverse setting such as Luxembourg.

Keywords
Learning environments; Teaching quality; School alienation; Academic achievement

References

Emslander, V., Rosa, C., Ofstad, S., Levy, J., & Fischbach, A. (2024). Instructional quality and school climate in Luxembourg's Écoles fondamentales: Findings from the SIVA study. In National Education Report Luxembourg 2024. Luxembourg Centre for Educational Testing (LUCET) & Service de la Recherche et de l'Innovation pédagogique (SCRIPT). https://doi.org/10.48746/bb2024lu-en-23

Hornung, C., Wollschläger, R., Keller, U., Esch, P., Muller, C., & Fischbach, A. (2021). New longitudinal findings from the national school monitoring programme ÉpStan in Grades 1 and 3: Negative trends in competence development and the ineffectiveness of grade retention. In National Education Report Luxembourg 2021. University of Luxembourg.

Praetorius, A.-K., Klieme, E., Herbert, B., & Pinger, P. (2018). Generic dimensions of teaching quality: The German framework of three basic dimensions. ZDM Mathematics Education, 50(3), 407–426. https://doi.org/10.1007/s11858-018-0918-4

Development and Psychometric Validation of a Generic Learning Environment Scale for Secondary Education: First Evidence from Luxembourg's Large-Scale School Monitoring Context

Joanne Colling, Elouise Botes & Axel Grund

In a recent review on learning environments research, Fraser (2023) identified three main types of learning environment research: (1) linking learning environments to student outcomes, (2) evaluating educational programmes (e.g., curricula), and (3) improving the environments (e.g., via teacher training).

Whereas encompassing research exists on the relation between learning environments and student outcomes in specific subjects (e.g., mathematics), less research has focused on comparing educational programmes, even though this would be particularly relevant for Luxembourg, whose educational landscape is characterised by reforms aiming at reducing educational inequalities (e.g., European Public Schools).

This research gap might partially stem from existing measurements at classroom level, which adopt a compartmentalized approach (e.g., single-subject focus). A more holistic view, in which learning environments are understood not solely as isolated classroom contexts, but as interconnected educational experiences, could thus advance the field, particularly in secondary school where students are exposed to various instructional environments (e.g., multiple teachers).

Based on the Three Basic Dimensions (TBD) of Teaching Quality Framework, in which classroom management, teacher support, and cognitive activation are identified as central (Praetorius et al., 2018), our study introduces a generic learning environment scale for secondary school using full-cohort data of 9th graders (N ≈ 6.000) from the Luxembourg School Monitoring to examine the scale's psychometric validity in a highly diverse population (e.g., socioeconomic status, language background).

In addition, we investigate whether the three school tracks at secondary school level as well as the recently introduced offer of European Public Schools differ from each other when it comes to teaching quality, with the aim of better understanding of how high quality learning environments can be fostered.

Keywords

Learning environment; Educational measurement; Validation

References

Fraser, B. J. (2023). The evolution of the field of learning environments research. Education Sciences, 13(3), Article 257. https://doi.org/10.3390/educsci13030257

Praetorius, A.-K., Klieme, E., Herbert, B., & Pinger, P. (2018). Generic dimensions of teaching quality: The German framework of three basic dimensions. ZDM Mathematics Education, 50(3), 407–426. https://doi.org/10.1007/s11858-018-0918-4

Teacher and Student Perspectives on Support in Secondary School Learning Environments: Implications for Alienation from Learning

Alyssa Grecu, Katharina Molitor, & Sira Neuhaus

Drawing on the Structure–Support–Challenge–Orientation framework (Bäumer et al., 2019), this study conceptualizes teacher support as a core dimension of learning environment quality. Supportive learning environments are assumed to foster students' sense of competence, relatedness, and agency, thereby strengthening motivational resources and protecting students from becoming alienated from learning.

Alienation from learning (Hascher & Hadjar, 2018) refers to students' emotional and cognitive distancing from learning activities, expressed in declining interest, reduced perceived relevance of schoolwork, and lower engagement with educational processes. Using a multi-informant perspective on learning environments, this study examines how emotional and instructional support in mathematics are associated with Grade 5 students' alienation from learning. Assuming that learning opportunities emerge through the interaction between instructional provision and students' uptake of these opportunities both teachers' and students' perspectives are integrated.

The study uses data from the German National Educational Panel Study (NEPS) and focuses on Grade 5 students and their mathematics teachers during the first year of secondary education. Multilevel analyses examine how student-reported and teacher-reported support are associated with alienation from learning.

Findings show that students who perceive higher levels of emotional and instructional support report significantly lower levels of alienation. In contrast, teacher-reported indicators of support are not significantly related to students' alienation. The findings underline the importance of student-centered instruction, supportive teacher–student relationships, and systematic attention to students' perceptions of support as promising avenues for preventing alienation from learning and fostering long-term educational engagement. As school alienation is also a concern in Luxembourg, the findings extend beyond Germany.

Keywords
Learning environment; School alienation; Teacher support

References

Bäumer, T., Preis, N., Roßbach, H.-G., Stecher, L., & Klieme, E. (2011). Education processes in life-course-specific learning environments. Zeitschrift für Erziehungswissenschaft, 14(2), 87–101. https://doi.org/10.1007/s11618-011-0183-6

Hascher, T., & Hadjar, A. (2018). School alienation: Theoretical approaches and educational research. Educational Research, 60(2), 171–188. https://doi.org/10.1080/00131881.2018.1443021

Is order half the battle? Probing interactive effects within different dimensions of learning environment

Axel Grund

Regarding Fraser's (2023) first type of research on learning environments, linking learning environments to student outcomes, previous studies typically treated the three basic dimensions, classroom management, cognitive activation, and teacher support (Praetorius et al., 2018), as parallel predictors for student outcomes. According to the TDB framework, classroom management and cognitive activation are expected to facilitate primarily student achievement via students' depth of processing and time of task, respectively, whereas supportive learning environments are expected to facilitate primarily student motivation via the satisfaction of basic psychological needs (e.g., Praetorius et al., 2020).

However, it has also been suggested—yet seldomly verified empirically—that classroom management might play a more prominent role in this triad, serving as a critical precondition to create learning environments where cognitively activating and supportive practices can unfold their full potential (Klieme et al., 2001). Knowledge on such decisive effects of classroom management would not only be of theoretical importance but could also help inspire Fraser's (2023) type 3 research on how to specifically improve learning environments.

Drawing on the measurement model described in the first contribution of this symposium—and initial findings from a pilot study—the present study tests moderating effects of classroom management when using cognitive activation and teacher support as predictors for students' competencies as well as their subject-specific self-concept and interest in a comprehensive structural equation model. We hypothesized that positive effects of the other two basic dimensions on student outcomes become larger when classroom management is higher. These interactive effects within the different dimensions of learning environment are tested across grade 7 and 9 of the 2025 data from the Luxembourg School Monitoring programme.

Keywords

Learning environment; Classroom management; Academic achievement

References

Fraser, B. J. (2023). The evolution of the field of learning environments research. Education Sciences, 13(3), Article 257. https://doi.org/10.3390/educsci13030257

Klieme, E., Schümer, G., & Knoll, S. (2001). Mathematikunterricht in der Sekundarstufe I: "Aufgabenkultur" und Unterrichtsgestaltung. In E. Klieme & J. Baumert (Hrsg.), TIMSS-Impulse für Schule und Unterricht. Forschunsbefunde, Refominitiativen, Prasixberichte und Video-Dokumente (S. 43 – 57). Bonn: Bundesministerium für Bildung und Forschung.

Praetorius, A.-K., Herrmann, C., Gerlach, E., Zülsdorf-Kersting, M., Heinitz, B., & Nehring, A. (2020). Unterrichtsqualität in den Fachdidaktiken im deutschsprachigen Raum: Zwischen Generik und Fachspezifik. Unterrichtswissenschaft, 48(3), 409–446. https://doi.org/10.1007/s42010-020-00082-8

Praetorius, A.-K., Klieme, E., Herbert, B., & Pinger, P. (2018). Generic dimensions of teaching quality: The German framework of Three Basic Dimensions. ZDM Mathematics Education, 50(3), 407–426. https://doi.org/10.1007/s11858-018-0918-4

Symposium

Au-delà du vrai et du faux: former la souveraineté cognitive des futur·es enseignant·e·s par les littératies scientifique, numérique et attentionnelle

Christian Meyers, Christophe Watelet, Sophie Gobert, Gilbert Busana, Tom Hildgen, Chris Krier & Robert Reuter

Les dispositifs hérités des Lumières, à savoir libre examen, vérification factuelle, debunking, furent conçus pour combattre un dogme visible dans un régime informationnel stable et rare. Le régime contemporain en inverse les conditions: saturation, accélération, fusion du réel et du virtuel, primauté de la captation sur la véracité. Cette captation, dont Simon (1971) posait le principe en faisant de l'attention la ressource rare, devient chez Zuboff (2019) extraction d'un «surplus comportemental» orientant les conduites. Exploitées par des projets idéologiques mobilisant des besoins d'appartenance et de salut, ces logiques laissent intactes les croyances invisibles qui rendent l'information désirable indépendamment de sa vérité: une critique bornée au tri du vrai et du faux manque sa cible. À cette «économie de l'attention», Citton (2014) oppose une «écologie de l'attention»: un milieu commun dont il faut prendre soin plutôt que se l'approprier. Nous y inscrivons notre démarche vers la souveraineté cognitive: penser par soi-même mais pas tout seul — une pensée autonome, théoriquement fondée, collectivement validée et transformatrice. Elle présuppose trois conditions rarement articulées dans les curricula qu'explorent nos réflexions sur nos pratiques de pédagogie universitaire dans le Bachelor en Sciences de l'Éducation: Meyers, la littératie scientifique comme accès médiatisé au réel; Reuter, la littératie numérique critique comme refus de se laisser conduire par l'outil; Watelet, l'attention comme condition de toute pensée critique. Ces conditions ne s'additionnent pas mais s'emboîtent: sans attention préservée, ni la lecture scientifique ni la vigilance envers l'outil ne sont praticables; sans ces littératies, l'attention reste sans prise sur le réel. C'est leur articulation qui fait pédagogie d'une souveraineté cognitive transformatrice. La discussion portera sur ses conditions, agencements et efficacité en formation initiale.

Keywords

Formation des enseignant.e.s; souveraineté cognitive; littératie scientifique; littératie numérique; littératie attentionnelle

References

Citton, Y. (2014). Pour une écologie de l'attention. Éditions du Seuil.

Simon H. A. (1971). Designing organizations for an information-rich world. In Greenberger M. (Ed.), Computers, communications, and the public interest, 37–72. John Hopkins University Press.

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La souveraineté cognitive en formation initiale des enseignant·e·s: La lecture et l'écriture scientifiques comme accès médiatisés à la réalité empirique

Christian Meyers & Robert Reuter

Cette contribution examine la place de la littératie scientifique dans la formation initiale des enseignant·e·s à travers le cours Scientific Reading and Writing (BSCE-231), relié au concept de souveraineté cognitive. Par là, nous entendons l'autonomie intellectuelle des futur·e·s enseignant·e·s: la capacité à juger des savoirs par soi-même, sans se soumettre à l'argument d'autorité ni aux affirmations non vérifiées. Notre pari est que la lecture et l'écriture scientifiques constituent un levier privilégié de cette autonomie: lire avec discernement et écrire selon les exigences de la démarche installent un outillage rigoureux de libre examen. Nous qualifions cependant de médiatisé l'accès au réel qu'autorisent ces pratiques: la démarche met bien en contact avec les faits, mais ce contact passe par des intermédiaires (concepts, méthodes, langage). Cette médiation assumée rend l'accès au réel plus fiable que l'intuition ou l'autorité, et fait de la littératie scientifique une composante centrale de la formation d'enseignant·e·s cognitivement souverain·e·s. Sur le plan méthodologique, l'approche est celle d'une observation participante et de réflexions entre pairs dans une logique de conception itérative. Le cours a été recentré sur deux productions: une revue de la littérature et un poster adressé à un public extérieur. Cette configuration demeure toutefois possiblement surdéterminée par les attendus de la formation à la recherche, au détriment des besoins de l'enseignant de l'école fondamentale. Nous envisageons dès lors de prolonger la session de poster par une simulation d'entretien enseignant–parent, structurée par une argumentation fondée sur des données probantes. Ce jeu de rôle contraindrait les étudiant·e·s à transposer les connaissances issues de la revue vers un public non spécialiste, en les rendant accessibles sans les simplifier à l'excès ni les dénaturer.

Keywords

Formation des enseignant.e.s; littératie scientifique; pédagogie universitaire; souveraineté cognitive

References

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La souveraineté cognitive en formation initiale des enseignant·e·s: Comprendre le numérique avant d'agir avec lui

Gilbert Busana, Tom Hildgen, Chris Krier & Robert Reuter

Les cours « Education in the digital age » (BSCE-222), introductif et théorique, et « Konstruktivistischer Einsatz digitaler Medien im Grundschulunterricht » (BSCE-522), avancé et pratique, forment une trajectoire cohérente: comprendre le numérique avant d'agir avec lui. Cette progression contribue à la souveraineté cognitive des futur·e·s enseignant·e·s en évitant un piège central: se laisser conduire par un outil ou un récit technologique plutôt que de le soumettre à un jugement autonome. Elle prolonge la question précédente: comment évaluer un outil avant de l'adopter? BSCE-222 refuse de traiter la technologie comme neutre: en posant les relations entre évolutions technologiques et socioculturelles comme objet d'étude, il rend visible ce qui structure silencieusement le rapport au savoir, et interroge l'idéologie que les référentiels internationaux, dits consensuels, véhiculent. BSCE-522 traduit cette compréhension en agentivité: choisir une technologie selon un objectif pédagogique, et non l'inverse, fonder son usage sur une théorie de l'apprentissage, puis expérimenter, documenter et réévaluer la pratique. C'est l'inversion du rapport de captation: ce n'est plus l'outil qui dicte l'usage, c'est l'enseignant·e qui décide et adapte. Un troisième fil les relie: la réflexivité, déclinée par la vidéo individuelle (BSCE-222) et la production collective (BSCE-522) selon la formule «penser par soi-même, mais pas tout seul». Une limite demeure: cette littératie reste institutionnelle et didactique. Elle n'aborde pas les logiques de captation de l'économie de l'attention, ni les récits de salut (transhumanisme, accélérationnisme) que ces technologies véhiculent hors de l'école. La souveraineté développée est celle du cadre professionnel face au numérique — préalable nécessaire, qui appellerait, pour devenir pleinement critique, un volet sur l'économie de l'attention et les idéologies des technologies. La communication suivante prend cet objet pour centre.

Keywords

Formation des enseignant.e.s; littératie numérique; pédagogie universitaire; souveraineté cognitive

References

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La souveraineté cognitive en formation initiale des enseignant·e·s: L'attention comme condition de toute pensée critique

Christophe Watelet, Sophie Gobert & Christian Meyers

À l'heure des transitions numériques, le futur de l'éducation ne se réduit ni aux outils, ni aux plateformes, ni à l'IA. Il oblige à demander comment former la souveraineté cognitive : préserver l'attention, la parole, le jugement et la pensée lente dans des environnements saturés d'informations, d'écrans et d'évaluation.Cette contribution présente une design study menée dans un cours luxembourgeois d'éducation aux valeurs en formation d'enseignants. Elle s'appuie sur un constat de terrain, des observations et des feedbacks de trois enseignants avec 145 étudiants de 5e et 6e semestres, sur deux semestres. Dans les grands groupes, les étudiants consultent téléphones, ordinateurs, réseaux sociaux, messageries, jeux ou IA ; les longues présentations provoquent le décrochage ; les règles limitant les écrans suscitent des résistances. Points et insécurité linguistique freinent aussi la parole en français. La recherche interroge la conception d'un milieu pédagogique soutenant la souveraineté cognitive dans un contexte de saturation numérique, grands groupes, plurilinguisme et culture de l'évaluation. Elle mobilise la design-based research (McKenney & Reeves, 2018), les travaux récents sur distraction numérique et motivation autodéterminée (Flanigan et al., 2023; Martin et al., 2025), les approches "human-centred" de l'IA en éducation (Alfredo et al., 2024) et la théorie de la résonance (Rosa, 2018). Le dispositif articule classe inversée, exposés courts, ateliers actifs, inducteurs variés, échanges en cercle, pauses attentionnelles et analyse de la captation numérique. Les outils alternent entre moments avec outils, sans outils et outils délégués. L'IA est travaillée comme partenaire de pensée, non comme machine à réponses. Les premiers constats indiquent que la règle seule ne suffit pas : préparer le futur de l'éducation suppose de concevoir des milieux où la souveraineté cognitive redevient praticable.

Keywords

Formation des enseignant.e.s; littératie attentionnelle; pédagogie universitaire; souveraineté cognitive

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Symposium

Implementing the UN CRPD in Luxembourg? Inclusion in Education and Employment Systems and School-to-Work Transitions of Young People with Disabilities

Stephanie Da Gloria Soares, Marcelo Marques, Justin Powell, Kevin Simoes Loureiro, Andreas Hadjar

A persistent gap remains between the near-universal ratification of the UN Convention on the Rights of Persons with Disabilities (CRPD), ratified in Luxembourg in 2011, and the lived realization of its defined rights. This symposium examines how the UN CRPD's transformative promise is implemented, deferred, or even counteracted. To do so, we focus on two rights central to young people's life chances: inclusive education (Article 24) and employment (Article 27), situating Luxembourg within European and global patterns.

The first paper maps global disparities in CRPD implementation, drawing on 14 years of collected and recoded UN human rights monitoring data (2011–2025) across 98 countries. It finds international oversight often favors incremental legal adjustment over structural transformation, positioning Luxembourg and Europe within a global landscape of uneven implementation.

The second and third papers turn to the school-to-work transition in Luxembourg, where educational and employment rights converge. Drawing on the PATH_CH-Lux project, one paper analyzes how guiding professionals — social workers, educators, therapists — navigate contradictory mandates between individualized support, institutional procedure, and rights-based advocacy, and how multi-professional collaboration can reproduce or dismantle ableist assumptions. The third centers disabled youth's own perspectives, asking how young people come to know, claim, and perform rights to inclusion, self-determination, and support in transitioning from school toward the labour market, comparing Luxembourg and Switzerland.

Together, the papers move across scales — from global monitoring to professional practice to youth subjectivity — to interrogate how human rights commitments are translated, or not, into structural and agentic change. The symposium asks what Luxembourg's stratified, multilingual education and labour-market system reveals about conditions for realizing the CRPD's potential, and invites discus

Keywords

Disability rights (UN CRPD); school-to-work transition; educational inequalities; Luxembourg; PATH_CH-Lux Project

References

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Beyond Ratification? Uncovering Global Disparities in Disability Rights Implementation, 2011-2025

Marcelo Marques, Justin Powell

While the near-universal ratification of the UN Convention on the Rights of Persons with Disabilities (CRPD) marks a normative victory, yet a persistent gap remains between legal commitment and lived reality. This paper offers the first comprehensive, cross-regional analysis of how global human rights monitoring identifies and frames disparities in CRPD implementation. Drawing on 2,092 concern items from the Universal Human Rights Index (UHRI) covering 98 countries, 5 regions, and 14 years (2011–2025), we examine the alignment between monitoring practices and the Convention's core obligations.

The study focuses on five themes: alignment with the international human rights model of disability; adequacy of national legal frameworks; strength of governance structures; participation of persons with disabilities and their organizations (DPOs); and reporting of systemic shortcomings. Unlike prior research focusing on the Global North or specific sectors, this analysis leverages UHRI data from treaty bodies, special procedures, and the Universal Periodic Review (UPR) to map global patterns.

Findings reveal distinct thematic and regional disparities in state accountability. Framing of obligations varies significantly between regions, reflecting broader political contexts rather than a unified rights standard. Juxtaposing European experiences with global trends, the study reveals that even within Europe, CRPD implementation is uneven, mirroring disparities found elsewhere. It suggests Europe's welfare state future depends on domestic reform and addressing limitations in monitoring mechanisms that have insufficiently enforced the Convention's transformative potential. The current global monitoring architecture, while valuable for awareness, often reinforces path-dependent reforms rather than driving the radical paradigm shift required for genuine inclusion. By exposing these disparities, we offer critical perspectives and suggestions for policymakers and stakeholders.

Keywords

Disability rights; UN CRPD; discursive governance; Universal Human Rights Index

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Comparative Analysis of Interinstitutional Coordination in School-to-Work Transition Systems for Young People with Disabilities in Switzerland and Luxembourg

Kevin Simoes Loureiro, Andreas Hadjar, and Justin Powell

The school-to-work transition for young people with disabilities involves distinct institutional barriers. Framed by the life-course approach, this study investigates how institutional settings shape transition trajectories by comparing disability school-to-work transition systems across Luxembourg and Switzerland, focusing on two Swiss cantons (Basel-Stadt and Fribourg). Combining expert interviews with organisational network mapping, the analysis uncovers lacking inter-institutional coordination and complex organizational field structures that shape individual transitions. Findings show that coordination effectiveness depends less on federal versus centralized governance than on whether institutions actively resource formal coordination mechanisms. Conflicting logics among education, labor market and social welfare sectors persist even where formal coordination exists, inter-institutional coordination capacity serving as the central determinant of continuous, individualized transition support. The findings highlight the importance of structural and cultural reforms that deliberately resource boundary-spanning mechanisms and emphasize the importance of coordination.

(Dis)abling school-to-work transitions of youth with disabilities in Luxembourg

Stephanie Da Gloria Soares

In Luxembourg, national policies increasingly emphasise inclusive education and the school-to-work transition of young people with disabilities, placing new demands on the guiding professionals implementing these aims. Yet it remains unclear how these developments have reshaped professional roles and multi-professional collaboration. Embedded in the PATH_CH-Lux project (Powell, Hadjar et al., 2024), this contribution asks: how does "transition management" shape the practices and relationships of professionals guiding young people with disabilities from school into employment?

Theoretically, the study draws on disability studies and sociological perspectives on inclusion, tracing tensions between universal aspirations and targeted measures within Luxembourg's stratified education and labour-market systems. Methodologically, it draws on 27 qualitative interviews with guiding professionals — social workers, educators, and specialised therapists — ongoing across Luxembourg.

Drawing on this theoretical lens and initial observations from ongoing fieldwork, the study expects these professionals to occupy a central yet ambivalent position: providing individualised support while complying with institutional procedures and advocating for young people's rights per supranational standards (e.g., UN-CRPD). Such contradictory demands are expected to generate tensions within multi-professional teams, particularly when pathway decisions balance institutional constraints against young people's aspirations.

The contribution argues these dynamics are not merely organisational challenges but shape the social construction of dis/ability and pathways into the labour market. Multi-professional interactions may reproduce ableist assumptions when decisions prioritise system requirements, or open possibilities for equitable transitions when cooperation is reflective and coordinated. It aims to identify conditions for sustainable school-to-work transitions for young people with disabilities.

Keywords

School-to-work Transitions; guiding professionals; young people with disabilities; Luxembourg

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Symposium

Differentiated Instruction and Inclusive Pedagogy in Transition: Evidence, Perspectives, and Preparation in Luxembourg and Beyond

Marcela Pozas

Despite policy mandates for inclusive education, teachers' implementation of differentiated instruction (DI) to meet student diversity remains inconsistent across contexts (OECD, 2023; Saloviita, 2018; Tomlinson, 2014). This symposium brings together three complementary contributions addressing this theory-practice gap, situated within and around the Luxembourgish educational context. The first contribution (Letzel-Alt, Woltran & Pozas) draws on German large-scale data (NEPS, n = 805 in-service teachers) to examine personal and contextual factors predicting teachers' use of inclusive teaching practices such as DI, highlighting the role of self-efficacy, training opportunities, and teaching experience. The second contribution turns to Luxembourg (Frising & Müller), combining two OEJQS datasets to contrast teacher and student perspectives on DI across primary and secondary schools. Findings suggest that DI may be less a uniform practice than a variably interpreted concept. The third contribution (Dhur & Proyer) addresses teacher preparation, presenting a University of Luxembourg university-school collaboration in which student teachers design differentiated, UDL-informed materials in dialogue with children and schools. Together, the contributions move from large-scale evidence on DI predictors, to Luxembourg-specific evidence on its enactment and perception, to an innovative model for teacher preparation. The general discussion will synthesize implications for teacher training and further research in Luxembourg.

Keywords

Inclusive education; Differentiated instruction; Teachers; Students; Teacher preparation

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Unveiling the relevance of practice experience in teaching students with special educational needs in inclusive settings: exploring personal and contextual factors that shape teachers' use of DI through German large-scale data

Verena Letzel-Alt, Flora Woltran, and Marcela Pozas

Diversity among students in classrooms is evident. Since the ratification of the UN Convention of the Rights of Persons with Disabilities (2008), Germany is committed to implement an inclusive school system for every student, regardless of their individual (learning) needs. In order to implement inclusive education at the school level, teachers have to meet the individual needs of their students through the use of specific teaching practices, such as differentiated instruction (DI) (Loreman, 2017; OECD, 2023; Tomlinson et al., 2003). However, research has already shown that teachers are struggling with teaching inclusive learning groups and that their implementation of DI into their daily teaching practice remains scarce (Gaita & Martins, 2017; Letzel, 2021; Pozas & Letzel, 2019; Schwab & Woltran, 2023). This study aimed to explore personal and contextual factors that influence teachers' (n = 805 in-service teachers) use of DI through data from the National Educational Panel Study (NEPS). Results of the hierarchical linear regression analysis revealed that high levels of self-efficacy as well as many learning opportunities during teacher training are associated with a higher rate of DI implementation. Moreover, the amount of teaching experiences and teaching at primary schools also had a significant influence. The results point at the need to develop teacher training curricula by strengthening practical learning and teaching opportunities.

Keywords

Differentiated Instruction; Practice Experience; Large-Scale Data; Inclusive education; Special Education

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Differenzierung zwischen Anspruch und Wahrnehmung: Lehrkräfte- und Schüler*innenperspektiven an Luxemburgs Schulen

Martine Frising, Anne-Marie Müller

Im vergangenen Jahrzehnt hat Luxemburg mehrere Reformen (2017/2018, 2023) zur verbesserten Inklusion von Schüler*innen mit sonderpädagogischem Förderbedarf (SFB) umgesetzt. Auf der Ebene des Unterrichts gilt die Differenzierung – die proaktive Anpassung von Inhalt, Prozess und Produkt an die Heterogenität der Lernenden (Tomlinson, 2014) – als zentrales Element inklusiver Praxis. Wie sie in Luxemburgs öffentlichen Schulen tatsächlich verstanden, umgesetzt und erlebt wird, ist jedoch bislang wenig systematisch untersucht.

Gestützt auf die Selbstbestimmungstheorie (Deci & Ryan, 2000) verbindet dieser Beitrag zwei OEJQS-Datenquellen. Im Mittelpunkt steht eine landesweite Studie über die Beschulung von Schüler*innen mit SFB an Primar- (N=157) und Sekundarschulen (N=40) (2021–2024; OEJQS, 2025), die über deskriptive und korrelative Analysen Lehrkräfte- und Schüler*innenperspektiven gegenüberstellt. Ergänzend fließen einige Resultate der Consultation nationale des acteurs de l'enseignement fondamental (OEJQS, 2024; N=1825 Grundschulakteure) ein.

Die Ergebnisse deuten darauf hin, dass sich hinter dem Begriff Differenzierung unterschiedliche Praktiken verbergen könnten. Lehrkräfte berichten von hoher Kompetenz und Motivation, sind jedoch der Ansicht, dass die Umsetzung durch Rahmenbedingungen und verfügbare Ressourcen eingeschränkt wird (OEJQS, 2024). Zudem variiert auch die selbstberichtete Häufigkeit, mit der Lehrkräfte Differenzierungsmaßnahmen einsetzen, erheblich – während der Differenzierung in der Grundschule tendenziell systematisch erfolgt, wird sie in der Sekundarschule eher punktuell eingesetzt (OEJQS, 2025). Schüler*innen nehmen Differenzierung ihrerseits kaum wahr. Da beide Perspektiven unterschiedliche, jeweils eigenständig gültige Einblicke liefern (Grühn, 2000), werden sie systematisch gegenübergestellt.

Ob diese Resultate auf eine geringe Umsetzung oder wenig sichtbare Einbettung hindeuten, bleibt offen. Sie werfen die Frage auf, ob Differenzierung weniger als einheitliche Praxis, denn als variabel gedeutetes Konzept zu verstehen ist (Caron, 2008).

Dieser und weiterer Fragen zum Thema Differenzierung, wird das OEJQS, in Zusammenarbeit mit der Universität Luxemburg, in dem dedizierten Projekt „DILUX“ (Start 2027) nachgehen.

Keywords
Differenzierung; Inklusion; sonderpädagogischer Förderbedarf; Lehrkräfte- und Schüler*innenperspektiven; Luxemburg

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But what kind of disabilities do the children have after all? — Teaching and learning the how to of creating child-centered inclusive learning environments in a university school — collaboration model

Diane Dhur and Michelle Proyer

Teacher education and continuous professional development courses in inclusive education are often are often characterized by a strong emphasis on theoretical concepts, while learners' practical pedagogical questions frequently remain underexplored (Florian & Beaton, 2018): How does inclusive pedagogy work? How can teachers develop meaningful learning materials? In "integrated" teacher education, where inclusive education often occupies limited curricular space, opportunities to engage with these questions are scarce.This paper presents findings from an ongoing university–multi–school collaboration designed to create safe spaces for experimentation and reflection in inclusive pedagogy, where sometimes unknown factors, such as limited details on the children's diagnosis play a role. Where possible, children and teachers provide topics along the different school cycles and university students build (digital) learning environments where children can explore these topics autodidact or in small groups. The process is framed by theoretical training and a loop of feedbacks from peers, university teachers and teachers from the collaboration schools. Materials, so called science boxes, are based on principles such as sustainability and easy to use. The materials are designed to offer diverse learning pathways and to respond to a wide range of learner needs and prerequisites. This is achieved through the use of differentiation, scaffolding, UDL principles, and accessible design (Kimhi & Bar Nir, 2025). Generated materials are being tested with children and supposed to be provided to the school after successful adaption post trial. The data base stems thematic analysis (Brown & Clarke, 2021) of students' anonymized preparation and implementation protocols of UL's BScE-program. Research is embedded in the Inclusive education and pedagogy module and students are free to opt in and out, the research is not part of the course assessment.

This paper argues for the importance of localized approaches to inclusive pedagogy (Proyer et al., 2021) and innovative learning and safe experimentation settings. Findings are to add to open questions related to the role of teacher training in implementation of inclusive education (Donath et al., 2023).

Keywords

Initial inclusive teacher education; inclusive pedagogy; child-orientation

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Abstracts - Parallel Sessions

In alphabetical order

Strengthening School Leadership in the Global South: Lessons from India, Indonesia, and Sierra Leone

Gautam Anand, Tejas Airodi, and Dewi Susanti

Foundational Literacy and Numeracy (FLN) remains a critical challenge in the Global South, with high levels of learning poverty and persistent inequities. While many interventions target teachers as the primary lever of change, there is growing recognition that school leaders are critical actors who can sustain and scale such initiatives by shaping school-level practices and fostering instructional innovation (Bush, 2023). Despite evidence that school leadership positively influences student learning, instructional leadership in low- and middle-income countries is under-researched and often under-supported (Anand et al., 2023).

This paper draws on mixed-method research conducted between 2021 and 2024 in India, Indonesia, and Sierra Leone, examining how school leaders support FLN-focused, innovative instructional interventions. We highlight the mechanisms through which school leaders influence program implementation, including classroom observation, teacher mentoring, logistical facilitation, and follow-up support. The paper also discusses systemic and contextual barriers - time constraints, administrative burdens, frequent transfers, and limited autonomy - that shape school leaders' capacity to lead instructional change.

Findings emphasise the importance of integrating school leadership development within broader systemic reforms and the value of middle-tier actors in supporting both leaders and teachers. Practical implications include strategies for designing innovative, scalable, context-sensitive FLN interventions that leverage instructional leadership, foster professional learning communities, and use of technology to sustain teacher practices. This chapter offers insights for policymakers, practitioners, and researchers seeking to strengthen educational outcomes through strategic investments in school leadership in complex and resource-constrained settings.

Keywords

School Leadership; Foundational Learning; Global South; Education Systems

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Sealing the Student's Prior Before AI Speaks: Oracle as a Method for Studying Belief Movement in Higher Education

Ivana Budišin, Luxembourg; under instruction of Prof. Robert Reuter

Generative AI research often evaluates model outputs or final student work, but rarely captures what a student thought before exposure. This makes it difficult to distinguish genuine belief revision from post hoc reconstruction. This paper presents Oracle, a research instrument developed during a University of Luxembourg internship under the supervision of Prof. Robert Reuter. Before consulting AI, students record a structured prior consisting of a claim, reasons, evidence, an assumption, a qualification, a change condition, and confidence. The prior is sealed, the AI response is compared with these preregistered standards, and the student's subsequent revision is recorded as directed movement rather than simple agreement or disagreement.

The presentation reports the design, build, and preliminary verification of the instrument, including a prior blind decomposition stage, auditable response receipts, early human and machine agreement checks, and an ethics approved feasibility pilot using fixed AI style texts. A dual audience reporting layer, designed to produce separate student facing and instructor facing session reports, remains at the specification stage and has not yet been implemented or evaluated. Preliminary engineering and calibration work indicates that semantic similarity alone is insufficient because disagreement can be expressed through shared vocabulary and hedged rhetoric. Oracle therefore treats the discrimination between rhetorical proximity and logical engagement as a central educational skill.

The contribution is methodological: a way to study student and AI encounters without relying on retrospective accounts of what the student believed before the interaction. The paper discusses how the instrument could support research on AI literacy, calibration, and reflective judgment in Luxembourg higher education, while clearly distinguishing built features from claims still awaiting participant validation.

Keywords
Generative AI; AI literacy; belief revision; reflective judgment; higher education

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How home language shapes German spelling errors in Luxembourg's multilingual educational context

Silke Crols, Linda Romanovska, Sonja Ugen, Ineke M. Pit-ten Cate

Early spelling requires acquiring phoneme-grapheme correspondences (PGC) via phonological awareness to encode spoken phonemes into written graphemes1,2,3. However, even in transparent orthographies like German, these mappings are not strictly one-to-one4,5. Consequently, developing spellers must transition towards more complex spelling strategies to obtain good spelling accuracy6,7,8. This trajectory is well-established for monolinguals, but may be influenced by multilinguals' home language(s)9,10. This is highly relevant in Luxembourg, where literacy is typically acquired in German; only 2.1% of children speak German and 32% speak the closely related Luxembourgish at home. This study investigates the impact of home language background on German spelling accuracy and the prevalence of phonological (i.e., errors in PGC encoding) versus orthographic errors (i.e., errors related to other spelling principles).

To address these questions, third-grade children (N = 688) completed a German sentence dictation task after 2 years of German literacy instruction. Participants were grouped by home exposure to the language of literacy instruction: German/Luxembourgish only (n = 218), German/Luxembourgish and another language (n = 72), or no German/Luxembourgish (n = 398). A one-way ANOVA showed that children without home exposure scored lower in spelling accuracy. A quasi-binomial regression showed that home language background predicted spelling error type distribution. Predicted probabilities indicated that children with no German/Luxembourgish home exposure had a higher probability of making phonological rather than orthographic errors, compared to those speaking German/Luxembourgish at home.

These findings suggest that a lack of home exposure to the language of literacy instruction may lead to less robust PGC, highlighting the need for continuous phonological support within Luxembourgish and other multilingual educational contexts to protect multilinguals from literacy gaps.

Keywords

Spelling errors; phonological awareness; primary school; home language background; language of instruction

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Shaping Higher Education for a Digital Future: The Role of University-Industry Collaboration in Luxembourg and Europe

Jennifer Dusdal

Rapid technological change, particularly in computer science (CS) and artificial intelligence (AI), is reshaping higher education (HE) by transforming how universities educate students, organize research, and collaborate with industry. This presentation examines how university-industry collaboration is reshaping higher education (HE) systems (Evans 2010; Hünermund et al. 2026), asking what these developments imply for HE, educational provision, and digital capacity-building in Luxembourg?

The study draws on the Triple Helix framework (Leydesdorff & Etzkowitz 1998) and institutional logics (Thornton et al. 2012). It introduces the concept of the industry partnership shift, describing how industry actors become embedded in universities strategic priorities, funding, doctoral education, and research governance (Lakhno et al. under review).

Using qualitative documentary analysis, the study compares 5 European HE systems—Germany, the UK, Finland, Luxembourg, and Switzerland—through the lens of CS. It identifies three collaboration models showing that although industry engagement is increasing across all cases, collaboration is organized through different institutional mechanisms. Luxembourg exemplifies a hybrid strategic model in which national innovation priorities and university-industry collaboration increasingly shape research and doctoral education (see also MESR 2026a, b).

The presentation contributes to educational research by showing that digital transitions are reshaping not only research systems but also HE. As industry partnerships become embedded in doctoral education, curriculum development, and the training of future AI and CS professionals, universities face new tensions between academic autonomy, labour-market responsiveness, and public missions. The Luxembourg case illustrates how governance can align HE, research, and innovation to prepare graduates for a rapidly evolving digital economy (Moradel-Vasquez & Dusdal 2026).

Keywords

Higher education; university-industry collaboration; computer science; artificial intelligence; higher education governance

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Between Policy and Practice: Responding to Student Heterogeneity in a European Public School in Luxembourg

Elif Tuğçe Gezer, Dr Susanne Backes, Dr Ineke M. Pit-ten Cate

Across education systems, increasing student heterogeneity has necessitated policy responses to promote inclusion and equity. Drawing on Ball's policy enactment theory [1] and responsive pedagogical perspectives [2][3][4], the present study examines how policy outcomes are shaped and transformed through institutional contexts, organizational practices, and actors' interpretations. Focusing on European Public Schools (EPS), an alternative pathway within Luxembourg's public education system, it investigates how the European Curriculum is interpreted and enacted in practice, and how these processes reflect conceptualizations of student heterogeneity and responses to diverse student needs.

The study adopts a qualitative case study design based on in-depth interviews with five educators across leadership to teaching roles. The interviews were analysed to examine how participants enact policy in their everyday practice, with a specific focus on how they conceptualize student heterogeneity and respond to students' diverse needs.

Findings indicate that student heterogeneity is understood both as an institutional commitment and as a demographic reality. Participants described language sections, EPS' comprehensive school model, and the multi-layered support system as key mechanisms for responding to diverse student needs. These practices emerge through policy enactment within a hybrid governance context shaped by both the European School System and the Luxembourgish education system. The curriculum's capacity to address student heterogeneity depends not only on its design but also on its enactment within these institutional structures, pedagogical practices, and the governance constraints.

By examining how a transnational curricular framework is enacted in a specific institutional context, the study contributes to research on policy enactment and to broader debates on diversity and inclusion in education systems.

Keywords
Educational inequalities; inclusive education; policy enactment; European Public Schools; case study

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From Luxembourgish to German: How Home Language Background and Language Skills in Grade 1 Shape German Listening and Reading Comprehension in Highly Linguistically Diverse Primary School Students in Grade 3

Lena Maria Kaufmann, Joanne Colling (shared first authorship/presentation), Elouise Botes, Dzenita Kijamet, Sonja Ugen & Caroline Hornung

Research shows that a solid proficiency in the language of instruction is crucial for students' academic success as it shapes how effectively they acquire literacy skills (e.g., listening and reading comprehension) and impacts how well they understand instruction in other subjects (e.g., Einarsdóttir et al., 2016). Most countries thus actively foster early language skills (e.g., phonological awareness, oral language) in the instructional language before children start school.

In Luxembourg, however, German as the language of literacy acquisition is only introduced with the onset of reading and writing instruction in primary school. In preschool, Luxembourgish is the main communication language. This has long been justified by the understanding that Luxembourgish, which is linguistically similar to German, functions as a bridge language supporting German literacy acquisition (Weth, 2018).

Considering that Luxembourgish is a second language for most students, which might impact the expected bridge function between Luxembourgish and German, and in light of research findings that students with non-Luxembourgish language backgrounds are at a higher risk of struggling academically (Hornung et al., 2021), our study explores how prior language skills (Luxembourgish and German listening comprehension in C2.1) relate to German listening and reading comprehension in C3.1 among different language groups (monolingual Luxembourgish, French, and Portuguese students, and a multilingual group of students speaking Luxembourgish plus another language).

Using full-cohort data from the Épreuves Standardisées (ÉpStan), this study aims to deepen the ongoing debate on language transfer effects (e.g., Wealer et al., 2025) between first and second instructional languages via descriptives, regression analyses, and structural equation modeling. Findings might thereby inform literacy instruction in a linguistically diverse learning context.

Keywords

Language development; literacy development; linguistic diversity; language of instruction; large-scale data

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Bricks, Bots and Coaching: Embedding the FIRST® LEGO® League in the Digital Sciences Subject

Paul Ronald Klensch, Christian Meyers, Robert A.P. Reuter, Gilbert Busana, Yves Kreis

As education navigates rapid digital transitions, schools must develop students' mathematical thinking, problem solving and 21st century skills, and keep learning joyful. Luxembourg's Digital Sciences subject in secondary education answers with six pillars, from data and robotics to AI. Yet its badge activities often lack perceived relevance. Research on the FIRST® LEGO® League (FLL), an international STEM competition, reports positive outcomes and describes coaching as under-researched (Graffin, Sheffield & Koul, 2022).

In 2025/26, the sports high school in Luxembourg piloted the FLL (UNEARTHED season) in the researcher's class. For 2026/27 (BIOGLOW season), the pilot grows into an elective FLL track. Up to 24 students from four 5e classes, mixing classical and general tracks, apply with a motivation statement. The standard course remains open and both validate the same curriculum. In the FLL track, students learn by making (Papert, 1980): they organise themselves, cooperate and program a robot to solve open problems through trial and error, then present and defend their solutions before juries, while the teacher accompanies rather than instructs. It is the school's first Deeper Learning project (Sliwka & Klopsch, 2022). The paper reads the redesign as the pilot's lessons made visible, from opting in to project-based assessment.

Within the doctoral project EMERALD, a mixed-methods case study grounded in self-determination theory (Ryan & Deci, 2000) and self-regulated learning (Zimmerman, 2002) asks how this opt-in design supports motivation, engagement and mathematics-related learning (geometry, ratios, algorithms), and which coaching strategies foster them. Data combine questionnaires, task-based measures, observations, interviews and a coaching diary.

The paper presents the first season, the redesign and the study design, and invites exchange.

Keywords
FIRST LEGO League; coaching; educational robotics; digital sciences; motivation

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Opening the Glass Box: Transparent and Negotiable Adaptive Mathematics Practice in Luxembourg's Secondary Education

Paul Ronald Klensch, Christian Meyers, Robert A.P. Reuter, Gilbert Busana, Yves Kreis

At a time when mathematical foundations matter for every student, adaptive learning systems promise personalisation. Yet most work as black boxes: they decide which task a student receives next, and the learner cannot see or contest how difficulty and pace are set.

This paper presents EMERALD (Enhancing Mathematics Engagement through Responsive and Autonomous Learning Design), a doctoral project in which a mathematics teacher designs and studies a curriculum-aligned digital learning environment. It replaces neither teacher nor lesson, and it runs in a browser, at school or at home, when a student learns best, and errors stay private, with no loss of face in class.

The environment is a glass box: the adaptation is visible and open to discussion. On a map of topics, students see what it estimates and how sure it is. Before practising, they judge their own level and compare it with the result. Feedback is immediate and its criteria explicit, making assessment transparent. They may ask for easier or harder tasks, and difficulty follows a continuous rating within the zone of proximal development (Vygotsky, 1978). The project follows design-based research, using questionnaires, tests and pseudonymised logs. The design is grounded in cognitive apprenticeship (Collins, Brown & Newman, 1989), self-determination theory (Ryan & Deci, 2000), self-regulated learning (Zimmerman, 2002), and open learner models (Bull & Kay, 2016). A classroom study, starting in autumn 2026, will examine whether students can learn foundational skills autonomously, whether this helps them judge their own learning, supports motivation and eases mathematics anxiety, and whether outsourced practice frees lesson time for differentiated, cooperative and project-based work.

The paper presents design findings such as a mastery path with fading guidance and test-out, module tests after a delay to measure retention, and a negotiable learner model, together with the glass-box versus black-box study design.

Keywords

Open learner model; metacognitive calibration; adaptive learning; design-based research; mathematics

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Enhancing Academic Language Competencies in German – First Results of an Intervention Programme for Secondary School Students

Charlotte Krämer, Sandra Baumann, Joanne Colling, Constanze Weth, Sonja Ugen

National and international large-scale studies have repeatedly identified significant educational inequalities, with students from non-Luxembourgish or non-German-speaking backgrounds being particularly at risk of experiencing academic difficulties in the Luxembourg education system (Hornung et al. 2021). In secondary school, findings from the National School Monitoring Programme reveal that even in the highest school track Enseignement Secondaire Classique (ESC), one in four students struggles with German reading comprehension (GRC) (https://dashboard.epstan.lu, 2025 results for GRC in grade 9, ESC, levels "1" (16%) and "below 1" (13%)). This is concerning, since German is one of the main languages of instruction — and thus of education — in primary school and during the first years of secondary school. Against this backdrop, we would like to present the results of a delayed intervention programme for 8th graders (N = 178), piloted at a lycée classique during the last school year (2025-26). Participating students received 15 hours of additional German lessons either during the winter or summer semester (groups A and B). These lessons focused on three different areas to enhance academic language competencies: (1) key aspects of German academic language, i.e. complex words and sentence structures, (2) reading of age-appropriate factual texts, and (3) writing (academic) texts.

The effectiveness of the intervention was evaluated through a mixed-methods design that encompassed standardized achievement tests at three time points (before (T0), after intervention for group A (T1), and after intervention for group B (T2)), student questionnaires, and classroom observations.

Preliminary results suggest that future interventions should focus particularly on writing skills in order to help students acquire academic language skills in German. The results of the study can thereby inform language-sensitive pedagogical practices in Luxembourg's multilingual educational context.

Keywords
Academic language; multilingualism; language support; secondary education; Luxembourg

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Standardized Testing as a potential support measure – exploring the possibilities for ESG-VP students with severe reading difficulties

Charlotte Krämer, Cécile Braun, Philipp Sonnleitner

In Luxembourg's highly diverse educational landscape, many students are facing challenges, and, as a result, some of them attend the vocational preparatory school track (ESG-VP), where they are taught at their own pace hoping to encourage them to reach their highest potential. Nevertheless, data from the national school monitoring programme Épreuves Standardisées (ÉpStan) show a dramatic shortage of basic reading skills in this school track. In fact, in 2025, most ESG-VP students (78% in German and 60% in French) did not master the minimal level of reading competence. They are indeed struggling with very simple and short texts and are placed below the current ÉpStan measurement range.

To address these challenges, we have been conducting a pilot study in which we are trying to establish a more detailed description and analysis of these "low achievers" by extending and adapting the ÉpStan reading comprehension tests on the lower end of the competency scale. Building up on our first presentation in 2024, we now would like to show how we were able to differentiate between three distinct groups of basic readers by applying Cognitive Diagnostic Models (CDMs) on more robust 2025 ÉpStan main test data for both, French and German reading comprehension. We furthermore deepened our analyses by cross-referencing students' performances with their background characteristics (SES, migration background, language spoken at home), and their motivation towards the target languages and school in general.
We would like to conclude our presentation by sharing our ideas on how we could personalize ÉpStan test feedback in order to support students in their learning process, and teachers in tailoring instruction to meet individual student needs, readiness levels, and learning styles.

Keywords

Épreuves Standardisées; Standardized Testing; Enseignement Secondaire Général - Voie de Préparation; Basic Reading Skills; support measure

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Outdoor Learning as a Catalyst for Transformative Competencies in a VUCA World: Evidence from Luxembourg and European Higher Education

Alina Lemling & Janne Fengler

The increasing volatility, uncertainty, complexity, and ambiguity (VUCA) of contemporary societies has intensified calls for educational approaches that foster transformative competencies and empower learners to navigate complex futures (OECD, 2019). The OECD Learning Compass 2030 identifies three such competencies: creating new value, reconciling tensions and dilemmas, and taking responsibility (OECD, 2019), complemented by Future Skills frameworks emphasizing creativity, collaboration, ethical reasoning, and self-regulation (Ehlers et al., 2024; Horstmann & CHE, 2023). This contribution explores the potential of Outdoor Learning (OL) to foster transformative competencies, drawing on two Erasmus+-funded projects: the completed OutAdvEd project, which developed a curriculum framework combining Outdoor Adventure Education with social-emotional skills (OECD, 2018) in Physical Education. The ongoing OLHE project investigating OL practices across European higher education. Findings show that OL offers authentic, place-based, experiential settings for fostering transformative competencies (Beames et al., 2023; Quay & Seaman, 2013): develop innovative solutions (creating new value, OECD, 2019), negotiating uncertainty and competing viewpoints (reconciling tensions and dilemmas, Sterling, 2011), responsibility for peers, communities, and environments (taking responsibility, Mann et al., 2022). In Luxembourg, OL implementation remains fragmented despite growing visibility in schools, teacher education, and sustainability initiatives. Luxembourg offers a promising context for further developing and testing findings. Drawing on OutAdvEd and OLHE, we outline strategies for systematically embedding OL across formal, non-formal, and higher education settings – curriculum anchoring, teacher educator training, cross-institutional collaboration – positioning OL as a strategic lever for transformative competencies and higher education's societal engagement and third mission.

Keywords

Outdoor Learning; Transformative Competencies; Future Skills; Teacher Education; Higher Education

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Parents' mediating roles in the homeschooling settings

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Homeschooling places parents as the main agents responsible for organizing and maintaining their children's learning, unlike conventional schooling where this duty is shared among professionals and institutions. Yet unlike the schoolteacher, whose role is institutionally delimited, the homeschooling parent's mediational function is unbounded. Parents play multiple roles simultaneously (e.g., facilitator, counsellor, lecturer) (Carpenter & Gann, 2016).

Drawing on sociocultural theory, this study examines how parents enable learning in homeschooling settings. However, existing literature has focused predominantly on parental motivations and pedagogical orientations, leaving the roles parents actually occupy comparatively underexamined (Neuman & Guterman, 2017; Thomas & Pattison, 2008; Mermelshtine, 2017). This paper addresses this gap by examining the roles that homeschooling parents occupy in supporting their children's learning. Data were drawn from 17 interviews with eight homeschooling parents, one of whom was observed for the 2023-24 school year; 3 informal conversations with a child from the observed family; and interviews with 3 representatives of the Ministry of Education. Interview data were triangulated with portfolios and teaching materials to corroborate accounts of parental roles in practice. A thematic analysis identified the roles participants occupy or describe.

Preliminary findings show a focus on planning-related roles, with less emphasis on direct instruction and assessment. These codes have not been systematically compared among participants, and the roles identified should not be assumed to be shared by all, including Ministry representatives.

These preliminary findings suggest that parental roles are unevenly distributed across the educational process, with implications for how support and guidance might be structured around planning-related tasks. Limitations include the small, single-context sample and the exploratory stage of the analysis.

Keywords
Homeschooling; educational practices; parental roles

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On the long-term effects of early grade retention in Luxembourg

Martha Ottenbacher, Aia Zaiter, Axel Grund, Philipp Sonnleitner

Grade retention is with rates of about 20 percent in primary education a highly prevalent and economically relevant educational intervention in Luxembourg (Ottenbacher et al. 2024). Previous research suggests predominantly negative or non-significant mid-term effects of grade retention in Luxembourg (Klapproth et al. 2016, Ottenbacher et al. 2025). The present study assesses the long-term effects of early grade retention in primary education on outcomes after the transition to secondary education. The study uses ÉpStan data that assess students throughout their educational career. More specifically, the study draws back on students entering grade 1 in 2015 and follows these students through grade 9 in 2023 (for regular pathways) to 2025 (for pathways with grade retention).

Of particular interest is whether being held back early on helps to catch up academically after the transition to secondary education? To that end, grade retention in primary education is assessed regarding its impact on track placement and future grade retention in secondary education. Additionally, the effect on academic achievement and psychosocial ratings of students with and without grade retention in grade 9 will be assessed.

The study applies propensity score weighting methods, accounts for the students' initial ability, and is representative for a whole cohort.

Preliminary results of multinomial and generalized linear estimations on grade 9 outcomes show that, compared to promoted peers, retained students:

- have significantly higher risk to be placed in ESG and ESG-VP than in ESC,
- score significantly lower in German and French reading comprehension,
- rate significantly lower on anxiety in Math and anxiety in general, and
- seem to have significantly lower self-concept in French and in general.

Considering Luxembourg is one of the top 5 countries regarding retention rates, as classified by OECD, this study sheds light on the effect of early grade retention on long-term outcomes.

Keywords
Grade retention; causal effects

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Growth & Fixed Mindset: A Qualitative Study of Cycle 4 Students' Beliefs and Learning Practices

Lena PLÜTZER & Robert A.P. REUTER

Mindset theory (Dweck, 2006) distinguishes growth and fixed mindsets – beliefs about the malleability of abilities assumed to shape learning behaviour. Yet the processes linking mindsets to achievement remain a "black box" (Yan & Schuetze, 2023); the Integrated Growth Systems Framework (IGSF; Mendoza & Yan, 2025) proposes that beliefs affect achievement only via concrete learning practices, mediated by motivational-affective processes and context.

This qualitative study, set in the little-studied Luxembourgish primary context, asked: (1) Which mindset orientations and associated learning practices can be found among Cycle 4 students? (2) How coherently are expressed beliefs and described practices related? Semi-structured interviews were conducted in Luxembourgish with seven students (aged 10–12) and analysed using qualitative content analysis (Mayring, 2022) with deductive–inductive coding.

All participants expressed the belief that abilities develop through effort and time, yet most relativised this malleability via talent, individual capacity or situational limits – a pattern better captured as a mixed mindset (Barroso et al., 2023; Lou et al., 2022) than by Dweck's dichotomy. Participants also understood malleability as bidirectional – abilities may decline without practice – a nuance the original theory scarcely accommodates. Unlike findings from older samples, no domain-specific mindsets emerged, consistent with Muradoglu et al. (2024).

Beliefs and practices were broadly coherent in goal orientations, effort beliefs and strategies, but ambivalent in task choice and dealing with failure; many practices were not self-initiated, pointing to social and structural co-shaping. The findings support the IGSF's mediation assumption and converge with intervention research showing that changing beliefs alone does not reliably improve achievement (Foliano et al., 2019): students also need explicit support in building and reflecting on concrete learning strategies.

Keywords
Growth mindset; fixed mindset; student beliefs; learning practices; primary education

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Secondary school career choice through perceptions of the labor market: a qualitative study in French and Luxembourgish contexts

Clémentine Robert, Claude Houssemand

In a rapidly changing labor market, secondary school students have to decide the educational path they want to pursuit. This choice comes before acquiring any direct professional experience. This raises a fundamental question: how do adolescents perceive the labor market, and how do these perceptions shape their educational choices? This qualitative exploratory study is based on 21 semi-structured interviews conducted with secondary school students aged 15-16 in Luxembourg and France (Grand Est region) facing an orientation choice. Data were analyzed using reflexive thematic analysis (Braun & Clarke, 2022).

Findings reveal that students perceive the labor market through six dimensions: structural, selective, professional, social, geographical, and temporal. An emotional dimension, in particular anxiety about labor market access and career decision-making, runs transversally across the six dimensions, shaping how students position themselves relative to perceived opportunities and risks. These dimensions are not constructed in isolation but emerge from the interaction of four poles of influence, that are the student's individual characteristics, the family and school environments, and the labor market as perceived. These interactions are formalized in the tetrahedron of career orientation, extending Lent et al.'s (1994) contextual affordances. Students develop perceptions of labor market opportunities and risks that act as an orientation filter, shaping compromises between aspirations and perceived constraints (Gottfredson, 1981). These perceptions are strongly mediated by family background, territorial context, and school environment, revealing significant inequalities in career imagination across social and geographical backgrounds.

This study contributes to the understanding of early career orientation processes in the Luxembourg educational context and offers practical implications for career guidance practitioners working with secondary school students.

Keywords

Labor market; perceptions; career guidance; secondary school; qualitative research

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Exploring performance profiles of multilingual third-graders' reading and spelling skills in German

Linda Romanovska, Ineke M. Pit ten-Cate, Silke M. Crols, Vera Hilger, Sonja Ugen

We have previously shown that children's home language and vocabulary skills in the language of school instruction (German) have a significant impact on their (lexical) word and text reading performance, with lesser impact on (non-lexical) nonword reading. However, the overall associations between multilingual children's (non-)lexical reading and spelling skills in the language of school instruction remain unclear. The aim of this research was to identify performance patterns in German reading and spelling skills of children speaking different home languages using data-driven latent profile analyses (LPA). LPA uses latent variable modelling to identify subgroups within a sample of data based on predefined variables1. In our sample of 578 multilingual third graders, these variables were: word reading, nonword reading, text reading, and spelling of target graphemes within words. The data for this research was collected as part of a validation study for a novel German reading and spelling test battery developed specifically for the Luxembourgish multilingual context2. Our preliminary analyses revealed four distinct latent profiles, of which three reflect similar performance across the three domains (lexical, nonlexical reading and spelling), namely: good, average and poor readers and spellers. A fourth profile showed a discrepancy between reading and spelling with lower spelling compared to reading skills. We will deepen our analyses of the newly identified performance profiles by inspecting the distribution of home language groups within each profile. Furthermore, we will explore how these latent profiles relate to children's national school monitoring scores in German reading and listening comprehension to investigate the potential of using large-scale school monitoring tests as screeners for reading and writing difficulties in order to provide early support measures.

Keywords

Multilingualism; reading and writing skills; latent profile analyses

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Learning to write in two school languages: German and French writing productions at the end of primary school (Cycle 4)

Constanze Weth

Children growing up in Luxembourg are confronted with a trilingual school system, in which the languages taught are often not their native languages (Lenz et al., 2024). They learn to read and write in two languages: German and French. Additionally, all children learn Luxembourgish in preschool. Luxembourgish is the language of communication throughout schooling, but it is not taught as a written language (Weth, 2026). All languages use the Latin script, but they have different writing systems. Little is known about how learners use their multiple languages and writing systems for spelling and text composition (Ely Lemke et al., 2021; Escamilla, 2006).

This talk will present narrative writing in German and French written by learners in Grades 5 and 6 who have become biliterate throughout the Luxembourgish primary school. The presentation will demonstrate how students produce written narratives based on picture stories in both languages. Analyses will illustrate how they verbalise the story at the levels of text structure (e.g., introducing aspects of the narrative setting), sentence (e.g., introducing protagonists), and word (spelling).

These analyses are based on a dataset including texts written by 273 students from 27 classes throughout Luxembourg. Each student wrote one text in German and one in French. In addition, background data was collected through questionnaires. This talk will provide an in-depth analysis of one class of 12 students who have grown up in the Luxembourgish school system. The analyses will reveal writing patterns in German and French at class level and at the level of each individual student.

The analyses will make visible the students' competences in writing narratives in the two school languages. They will also shed light on error patterns. These errors will be interpreted in relation to research findings on written language acquisition in German and French, second and foreign language acquisition, and on transfer between languages.

Keywords

Narrative writing; learner language; language transfer; error analysis; biliteracy in German and French

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Abstracts - Poster

In alphabetical order

A Chat4EFL Platform for Personalized Learning

Dimitra Anastasiou[a], Natarajan Chidambaram[a], Despoina Schina[b], Hana Philippi[c], Isabela Miron[d]

Chat4EFL is an Erasmus+ project that explores how AI can improve the quality, inclusivity, and personalization of English as a Foreign Language (EFL) instruction in secondary schools. The main research questions are: (1) how AI-supported tools can enhance EFL learning for diverse student groups; (2) how teachers can develop the digital competences and confidence needed to integrate AI into classroom practice; and (3) how AI platforms can be effectively embedded into school curricula and everyday teaching.

The project is theoretically grounded in digital transformation and AI in Education, drawing on Universal Design for Learning, differentiated instruction, teacher professional development, and practice integration. Chat4EFL aims to support an inclusive and adaptive learning environment that responds to varying learner needs, including dyslexic, bilingual, and gifted students.

Methodologically, the project combines teacher training, platform development, and classroom piloting. An online Teacher Training Programme was developed, including three webinars: Introduction to AI Tools for Foreign Language Learning, Exploring the Chat4EFL Platform, and Inclusive Education and Personalised Learning with AI. The training focused on strengthening teachers' digital skills, confidence, and ability to use AI-based educational resources.

In parallel, the consortium developed the Chat4EFL platform using the BESSER agentic framework. The platform currently includes a grammar agent, flashcard agent, and spelling agent. The grammar agent uses the GPT-5-mini large language model to generate and assess grammar questions based on user-provided context. The flashcard agent generates both images and descriptive text, while the spelling agent provides exercises targeting spelling patterns, such as prefixes, suffixes, and silent letters. Accessibility and personalization features include dyslexia-friendly visual settings and text-to-speech
functions, advanced language levels for gifted students, and multilingual support for bilingual learners.

The platform will be piloted in schools in Luxembourg, Greece, Romania, and the Czech Republic to evaluate its educational impact and classroom integration.

Keywords
English as a Foreign Language, dyslexic, gifted, AI, personalisation, Teacher Training, inclusion

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From Paper-Pencil to Digital Learning Environment: Navigating the Digital Transition of Summer Remediation with MathemaTIC

Paul Ronald Klensch, Christian Meyers, Robert A.P. Reuter, Gilbert Busana, Yves Kreis

In a rapidly changing world, school should not only mean pressure. It should also feed curiosity, the need for cognition (Cacioppo & Petty, 1982) and the joy of learning. Summer remediation is where this fails most visibly. In Luxembourg's classical secondary education, 7.0% of students were assigned mandatory summer remediation in 2022/23, and more than half of them (54.5%) failed the follow-up test (MENJE, 2024). These figures are almost unchanged from the year before (8.4% and 53.2%) (MENJE, 2023). At LuxERA 2025, we argued that paper-based summer assignments, long, generic paper-pencil assignments completed without feedback risk widening the very gaps they should close. One year on, we report what we are changing next.

Generative AI sharpens the problem, because a paper-pencil assignment can now be photographed, solved by a chatbot, and copied. It never guaranteed learning, and now it does not even guarantee effort. This concern has reached the national level: parliamentary question no. 4110 and the ministerial answer ask whether graded assignments still reflect students' own work, and announce a review of assessment (Chambre des Députés, 2026).

Since 2025, the researcher has accompanied five remediation cases as teaching practice: one optional 2025 case completed voluntarily on the national platform MathemaTIC with positive feedback, one traditional paper-pencil assignment, and three redesigned cases in summer 2026. The redesign replaces the paper-pencil assignment with curated MathemaTIC sequences matched to each student's gaps: interactive tasks with immediate feedback, a gamified progression supporting motivation and perceived competence (Ryan & Deci, 2000), and traces that let the teacher accompany rather than merely collect the work. Completing the assignment then means doing the mathematics, not reproducing it.

The poster presents the redesigned format and first observations from summer 2026.

Keywords
Summer remediation; mathematics education; generative AI; gamification; MathemaTIC

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Musical Experiences in Luxembourg

Kyriaki Pafiou

Musical experiences are recognized as a fundamental mode of expression and interaction in childhood that can support communication and social connection (Custodero, 2024; Malloch & Trevarthen, 2009). In Luxembourg, opportunities for musical experiences exist across ECEC, schools, conservatoires, and music schools. However, despite national policies for inclusion, there is little systematic evidence regarding which children access these opportunities, the barriers and supports that affect access, or how inclusion is enacted for children who experience developmental, social, or emotional challenges and/or other identified disabilities.

This poster presents the conceptual and methodological framework of MusicALL, a doctoral research project grounded in the concept of Musical Care, which positions music as a pedagogical and relational practice that can foster participation, learning, and well-being (Spiro et al., 2023). Guided by this framework, the project explores the factors that shape children's access to musical experiences and the contextual conditions that enable meaningful participation.

To address the identified gap, MusicALL adopts a sequential mixed-methods design comprising two studies. The first investigates factors influencing access to musical experiences through an online survey of parents and caregivers, followed by semi-structured interviews. Building on these findings, the second employs qualitative multiple case studies involving observations of children's musical experiences and interviews with their teachers to examine how meaningful participation is enacted across different contexts.

The poster presents the study's conceptual framework and research design. Expected results include evidence on children's access to and participation in musical experiences. Overall, MusicALL aims to contribute to the development of more inclusive musical opportunities for all children and to inform future research, policy, and practice within Luxembourg's context.

Keywords
Musical care; access; participation; inclusion

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Influence of language background and exposure to Luxembourgish on multilingual preschoolers' acquisition of grammatical gender

Kenan Starcevic, Caroline Hornung, Linda Romanovska, Christine Schiltz, Anissa Werdel, Sonja Ugen

Developmental language disorder (DLD) is characterised by impaired language acquisition in children, which cannot be attributed to an identifiable physical or psychological basis. Rather, it can be attributed to a limitation in the processing capacity, and a defect in inflectional morphology, such as gender marking. Thus far, there is no standardised Luxembourgish grammar test battery for diagnosing DLD and the currently used, predominantly German, tests do not accurately represent Luxembourgish grammar principles. Moreover, these tests do not provide accurate norms for the Luxembourgish preschool context, where more than two-thirds of all children speak a language other than Luxembourgish.

We have therefore developed a novel test battery for multilingual 4 to 6 year old preschoolers attending Luxembourgish public schools. The test battery assesses six distinct domains: vocabulary; grammatical number and gender; subject-verb agreement; verb placement in second and last position in main or subordinate clauses. A pretest of the newly developed materials was conducted in 375 children across all 15 primary education directorates from January to March 2026.

The poster presents preliminary results regarding the oral production task in the grammatical gender subtest. Namely, we expect that children with Luxembourgish as their first language will show higher article-noun agreement than children with other linguistic backgrounds and exposure to Luxembourgish. Furthermore, we will look at the developmental progress of children aged 4 to 6 while controlling for their vocabulary. This study reports first data on oral language development in Luxembourgish in a multilingual learning context. Finally, a lack of communicative competencies could impact reading, writing and learning, leading to academic underachievement, which eventually leads to socially impaired behaviour in their adulthood. The development of this test battery will support professionals in the diagnostic process.

Keywords

Developmental language disorder; language acquisition and development; Luxembourgish grammar skills; diagnostic tool; multilingual context

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Assessing key Luxembourgish grammar markers in multilingual preschoolers

Anissa Werdel, Linda Romanovska, Caroline Hornung, Christine Schiltz, Kenan Starcevic, Sonja Ugen

To date, no standardized test battery exists in Luxembourgish for identifying Developmental Language Disorder (DLD) — persistent difficulties in language acquisition and use that may affect receptive and/or expressive abilities across vocabulary, phonology, morphology, syntax and spoken communication (Bishop et al., 2017). Currently used German diagnostic tools are suboptimal for the Luxembourgish context, as they neither reflect Luxembourgish grammatical structures (Gilles, 2023) nor provide suitable reference norms for Luxembourg's multilingual population, in which over two-thirds of children have another first language than Luxembourgish (MENJE, 2024).

To address this gap, a novel test battery targeting Luxembourgish grammar was developed for preschool children aged 4–6 years attending Cycle 1.1 and 1.2 in Luxembourgish public schools. The battery includes a vocabulary task and five grammar tests covering number, gender, case, subject-verb agreement, and verb position in main and subordinate clauses. A pretest of the newly developed materials was conducted with 375 children in all 15 primary education directorates in spring 2026.

The poster presents first results on two key grammar markers: subject-verb agreement and verb position in main and subordinate clauses. We hypothesize that children who speak Luxembourgish at home will show higher subject-verb agreement and place the verb in a sentence correctly more frequently than children speaking other languages at home. Furthermore, we expect that the duration of exposure to Luxembourgish will have a significant influence on task outcomes among children in the latter group.

The expected language-related performance differences highlight the relevance of developing home language-based reference norms that facilitate the distinction between multilingual speech development and DLD. This norming will improve the diagnostic process by reducing the risk of confounding language proficiency and DLD in multilingual children.

Keywords

Developmental Language Disorder; Luxembourgish grammar skills; language acquisition and development; home language-based reference norms; multilingual context

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Next Gen Narratives of Struggles: Younger Generations Navigating Cultural Markets in Luxembourg

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Traditional economic indicators alone no longer determine how countries distinguish themselves (Bessigner, Anaya & Nienaber, 2025). Social well-being and welfare have become increasingly important (Fellner & Kanesu, 2022). Accordingly, younger generations should receive greater attention to diverse (non-formal and institutionalized) forms of cultural capital to strengthen state welfare and diversify markets (Bourdieu, 1973). In Luxembourg, young people face complex social development challenges at the intersection of education, integration, and culture (Schumacher, Käckmeiste & Samuel, 2025). In this context, non-formal actors contribute knowledge and, consequently, capital to (multi)cultural markets. In Cultural Border Studies, cultural markets are understood as physical and symbolic spaces where cultural goods are produced and distributed across borders, driven by supply and demand (Fellner & Wille, 2025). Consequently, this poster uses theoretical frameworks to analyze younger generations' narratives in lived borders and experiences within Luxembourg's cultural markets. The poster is guided by the following research question: How do younger generations "cope" with the responsibility of integrating into Luxembourg's cultural markets? Drawing on two months of participant observation in a Luxembourgish youth organization, this analysis examines 11–19-year-olds' experiences of cultural fragmentation and the solutions they develop. Preliminary results suggest that coping mechanisms involve a complex interplay among development in response to social integration expectations, technology, and global pressures. Moreover, the findings indicate behavioral trends among this next generation regarding cultural borders. Ultimately, this article identifies behavioral trends and proposes recommendations to promote social and cultural sustainability for younger generations.

Keywords

Cultural Border Studies, Cultural Markets, Luxembourg, Non-Formal Education, Participant Observation, Youth Social Development, Third Space, Cultural Fragmentation, Lived Borders and Experience

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