

LUXERA

Luxembourg **Educational
Research
Association**

1st LuxERA Emerging Researchers' Conference

06 November 2019

University of Luxembourg

Conference Booklet

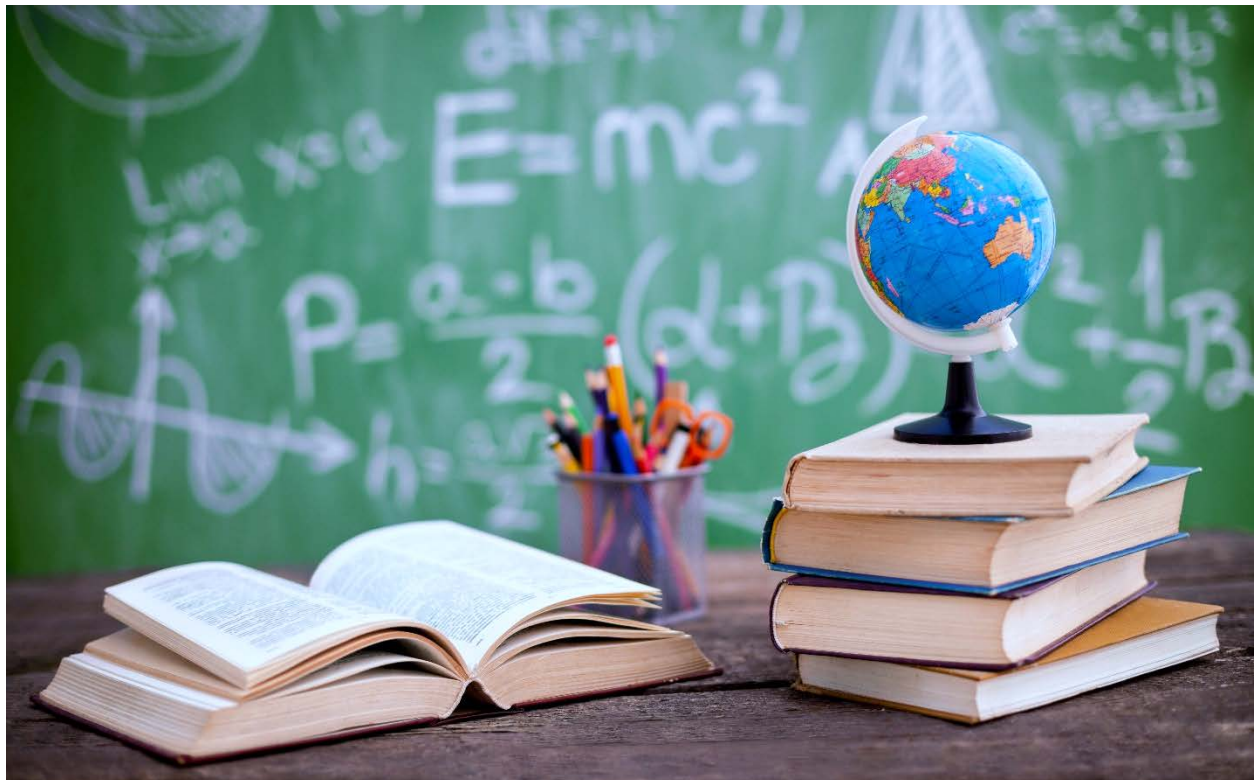


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Welcome address

Dear colleagues,

The Luxembourg Educational Research Association (LuxERA) is happy to hold the first LuxERA Emerging Researchers' Conference on 6 November 2019. As had been decided by the LuxERA members at the last General Assembly in November 2018, one of the measures LuxERA is taking to support the scientific and career development of emerging researchers is this annual conference. We believe that both emerging and more senior researchers are of equal value for carrying out and enhancing educational research. Thus, we favour lean structures in academia and other educational research contexts. I hope that this Emerging Researchers' Conference is to the benefit of us all. A conference is always about exchanging ideas, receiving feedback on our research, socialising with other scholars to initiate joint small-scale and large-scale research projects, conference presentations or publications. We are very happy to have received a large number of interesting and high-quality contributions from emerging researchers on various educational research topics. The highly cooperative and professional climate among LuxERA members may provide a perfect environment for such conference activities. I would like to encourage all participants to ask questions, give feedback, liaise and socialise with others.

We also would like to thank the organisers of this LuxERA Emerging Researchers' Conference, partly being LuxERA emerging researchers themselves, and the institutions that financially supported this LuxERA activity: the Faculty of Humanities, Education and Social Sciences, the Research Unit Education, Culture, Cognition and Society (ECCS) and the Luxembourg Centre for Educational Testing (LUCET) at the University of Luxembourg.

Last but not least, **please save the date** for the next Emerging Researchers' Conference & the (biennial) LuxERA conference - **11/12 November 2020**.

Enjoy the conference.

Andreas Hadjar

LuxERA president

Belval, November 2019

Conference schedule

Introduction	
08:30 – 09:00	Arrival & Registration (MSA 4 th floor)
09:00 – 09:15	Welcome
Room: 4.500	Andreas Hadjar & Christina Haas
Parallel Sessions	
09:15 – 10:45	Session 1: Educational practices
Room: 4.500	chaired by Monique Reichert
	<ul style="list-style-type: none"> ▪ <i>Mehrsprachige Lern- und Handlungsräume in der Portfolioarbeit</i> by Melanie Noesen ▪ <i>Luxembourgish Primary School Students' Narratives on Lived Experience of Language and Language Education Policies</i> by Sarah Muller
09:15 – 10:45	Session 2: Cognition and (perception of) academic achievement
Room: 4.410	chaired by Christine Schiltz
	<ul style="list-style-type: none"> ▪ <i>Dimensional and Social Comparison Effects on Domain-Specific Academic Self-Concepts and Interests with First- and Third-Grade Students</i> by Lindie van der Westhuizen et al. ▪ <i>Need for Cognition across School Tracks: The Importance of Learning Environments</i> by Joanne Colling et al. ▪ <i>Predicting Academic Success in Early Primary School: A Propensity Score Matching Approach</i> by Rachel Wollschläger et al.

Coffee break

Parallel Sessions

11:00 – 12:00

Room: 4.500

Session 3: Learning outcomes I

chaired by Philipp Sonnleitner

- *The effects of syntax- and lexical-oriented trainings on nominal capitalization in fifth graders*
by Linda Brucher et al.
- *The effect of grade retention on reading skills of immigrant children in multilingual elementary school. A longitudinal study.*
by Cíntia Ertel et al.

11:00 – 12:00

Room: 4.410

Session 4: Multilingualism and language practice

chaired by Christina Siry

- *Newcomers' translanguaging practices in learning situations*
by Sarah Degano
- *Plurilingualism, ideologies and identity of Chinese immigrant families in Luxembourg: choices between heritage and integration in language practices*
by Peiru Bai

Lunch break

13:15 – 14:15

Room: 4.500

Keynote by Claudia Schuchart, University of Wuppertal

Education systems and their contribution to reducing social inequalities

chaired by Ineke Pit-ten Cate

Parallel Sessions

14:15 – 15:45	Session 5: Learning outcomes II	chaired by Rachel Wollschläger
Room: 4.500	<ul style="list-style-type: none"> <li data-bbox="456 422 1419 527">▪ <i>Number line tasks and their relation to arithmetics in second to fourth graders</i> by Carrie Georges & Christine Schiltz <li data-bbox="456 600 1370 688">▪ <i>Math and Reading Difficulties in a Multilingual Educational Setting</i> by Sophie Martini et al. <li data-bbox="456 762 1419 909">▪ <i>Similarities and differences of value-added scores from models with different covariates: A cluster analysis</i> by Jessica Levy et al. 	
14:15 – 15:45	Session 6: Perception and effects of learning environments	chaired by Claudine Kirsch
Room: 4.200	<ul style="list-style-type: none"> <li data-bbox="456 1079 1419 1226">▪ <i>How students perceive instructional quality in everyday school life: The factorial validity of three basic dimensions on a lesson-to-lesson basis.</i> by Irma Talić et al. <li data-bbox="456 1299 1419 1446">▪ <i>Adolescents' perceptions of how teachers encourage creativity (not just in the arts!)</i> by Éanna O'Boyle <li data-bbox="456 1520 1419 1652">▪ <i>Scoring concept maps: insights from an international, systematic literature review</i> by Björn Rohles 	

Coffee break

Poster Session

16:15 – 17:15

Moderated Poster Session

chaired by Antoine Fischbach

- *Comparative Analysis of School Curricula in Luxembourg and Japan: Exploring School Curricula for Inclusive Education*
by Miwa Chiba
- *Growing up far from home: A qualitative study about the wellbeing of children and adolescents placed by justice in care institutions, psychiatry or juvenile prison.*
by Elisabeth Clees
- *The stability of academic self-concept profiles – a latent transition analysis*
by Patrick Franzen et al.
- *Eurostudent – insights into study and living conditions of higher education students in Luxembourg*
by Irina Gewinner et al.
- *User Experience challenges for designing and evaluating Computer-Based Assessments for children*
by Florence Kristin Lehnert
- *GRASP – Facilitating reflection on agreement structures and syntactic markers to improve spelling in German and French – the rationale of a training study*
by Lisa Klasen et al.

- *Systemic Exploration Mapping: Co-designing collaborative knowledge visualisation methods to improve systemic thinking and dialogue in group projects*

by Bo M. Raber

- *Collaboration vs Competition as a strategy to increase the motivation on sciences subjects*

by Constanza Ruiz & Victoria del Río

17:30 – 19:00

Room: 4.500

LuxERA General Assembly

Alternative: Luxembourg Learning Centre tour

(17:45 – 18:30)

Reception & buffet dinner

Keynote

Education systems and their contribution to reducing social inequalities

Claudia Schuchart, University of Wuppertal

Education systems are highly variable worldwide. A general distinction is made between stratified school systems – where pupils are sorted into different tracks - and integrated school systems. Among the first are, for example, the education systems in Luxembourg and Germany, and among the latter, the education systems in the USA and Finland. Stratified education systems in particular are suspected of consolidating social inequalities in terms of participation in education through early tracking, while social inequalities may even be compensated for in integrated school systems. But is this correct? Often, for example, it is ignored that even in stratified systems at the level of upper secondary education there are various “second chance” opportunities to catch up on educational qualifications, which is particularly used by low-privileged pupils. Against this background, theoretical reasons are discussed as to how education systems affect the development of educational inequalities and empirical findings are presented that allow a classification into the question of whether integrated education systems are actually superior to stratified ones.

Notes:

Paper abstracts

Session 1: Educational practices

Mehrsprachige Lern- und Handlungsräume in der Portfolioarbeit

Melanie Noesen

Das Forschungsprojekt IMUPSE untersucht wie und unter welchen Bedingungen in einer inklusionsorientierten Lerngemeinschaft Werkzeuge des Sprachenlernens im Rahmen der Portfolioarbeit gebraucht und entwickelt werden können. Die Studie wurde in einer luxemburgischen urbanen Grundschule mit ethnographischen Methoden der Datenerhebung durchgeführt.

Vor dem Hintergrund der kulturhistorischen Lerntheorie (Vygotskij, 2002; Engeström, 2011), dem subjektwissenschaftlichen Ansatz Holzkamps (1995) und der Epistemologie Peirce (1997) wird Lernen hier als subjektgesteuerter Prozess betrachtet, der Optimierung von Handeln mittels (sprachlicher) Zeichen in sozial-historisch begründeten Situationen zum Ziel hat. Das Portfolio wird als potentielles Werkzeug gesehen den Subjektperspektiven über Lernen Ausdruck zu verleihen und Aushandlungsprozesse in der Lerngemeinschaft zu organisieren (Häcker, 2011a [3.Aufl.]). Sprache ist somit Lerngegenstand und gleichzeitig Mittel des Lernens und der Bewusstwerdung, Ermöglichung und Veränderung des Lernens.

Die Ergebnisse aus der Diskursanalyse (Bloome, 2005) von Gesprächen mit Lernenden (Klassenstufe 2.1), Lehrpersonen und Eltern beleuchten, wie die Akteure einer Lerngemeinschaft im Rahmen der Portfolioarbeit ihre Strategien des Sprachlernens im Spannungsfeld von Diskursen von Mehrsprachigkeit und Inklusion situieren, Barrieren wahrnehmen und mehrsprachigkeitsdidaktische Möglichkeitsräume ausfüllen.

Erste Resultate zeigen, dass das Portfolio wenig zur Reflexion und Verbesserung von Sprachlernsituationen gebraucht wird und dass Lehrpersonen gelungene Praktiken konkret reflektieren, wenn diese kooperativ oder unter externer Begleitung ausgearbeitet wurden.

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Notes:

Luxembourgish Primary School Students' Narratives on Lived Experience of Language and Language Education Policies

Sarah Muller

The Luxembourgish education system is often portrayed as a model multilingual education system in the European context. However, it has also been critiqued for contributing to the reproduction of social stratification through, among others, its rigid language regime and structural processes. This PhD research analyses the perspectives of primary school students navigating this education system, exploring their understandings of their linguistic repertoires and lived experience of language. The research is underpinned by a repertoire approach with a focus on the lived experience of language (Busch 2015) and critical approaches to language education policies (Shohamy 2006, Tollefson and Tsui 2004). The theoretical framework also draws on language ideological perspectives (Woolard and Schieffelin 1994) and interactional discursive understandings of language attitudes (Liebscher and Dailey-O'Cain 2009).

Data collection and fieldwork were carried out over a 12-week period with 33 cycle 4.1 primary school students in Luxembourg City. Data collection adopted a qualitative approach and participants took part in up to four semi-structured interviews which included multimodal elements. Classroom observations served to further contextualise the data, which are analysed thematically (Braun and Clarke 2006). This presentation will draw on data analysis of one-on-one, semi-structured interviews that were conducted with 22 participants in the final research phase. The presentation will explore dominant themes that emerged in the data in relation to students' narratives about German in school, both as a medium of instruction and a language subject. Aiming to explore how young people understand their linguistic repertoires and negotiate language policies and practices in the education context, the outcomes of this research are expected to contribute not only to educational research in Luxembourg, but also to broader research on experiences of language policy in multilingual settings by young people.

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Notes:

Session 2: Cognition and (perception of) academic achievement

Dimensional and Social Comparison Effects on Domain-Specific Academic Self-Concepts and Interests with First- and Third-Grade Students

Lindie van der Westhuizen, Katrin Arens, Ulrich Keller, Samuel Greiff, Antoine Fischbach, & Christoph Niepel

Academic self-concepts (ASCs) are self-perceptions of one's own academic abilities. The internal/external frame of reference (I/E) model (Marsh, 1986) explains the formation of domain-specific ASCs through a combination of social (i.e. comparing one's achievement in one domain with the achievement of others in the same domain) and dimensional (i.e. comparing one's achievement in one domain with one's achievement in another domain) comparisons. This results into positive achievement-self-concept relations within the math and verbal domains, but into negative achievement-self-concept relations across these domains. The generalized internal/external frame of reference (GI/E) model (Möller, Müller-Kalthoff, Helm, Nagy, & Marsh, 2015) extends the I/E model to the formation of other domain-specific academic self-beliefs such as interest. Research on the validity of the (G)I/E model for elementary school children is limited, especially for first-graders. This study examined the associations between verbal and math achievement and corresponding domain-specific self-concepts and interests for first-graders and third-graders. Two fully representative Luxembourgish first-grader cohorts and two fully representative third-graders cohorts (N=21,192) were used. The analyses were based on structural equation modeling. The findings fully supported the (G)I/E model for third-graders: Achievement was positively related to self-concept and interest within matching domains. Negative relations were found between achievement and self-concept and between achievement and interest across domains. For first-graders, achievement was positively related to self-concept and interest within matching domains. However, the majority of cross-domain relations were non-significant, except for the negative path between math achievement and verbal interest. Hence, while the formation of domain-specific ASCs and interests seem to rely on social and dimensional comparisons for third-graders, only social comparisons seem to be in operation for first-graders. Gender and cohort invariance was established for both grade levels. The findings are discussed within the framework of ASC differentiation and dimensional comparison theory applied to elementary school students.

References

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Notes:

Need for Cognition across School Tracks: The Importance of Learning Environments

Joanne Colling, Rachel Wollschläger, Ulrich Keller, Mireille Krischler, Franzis Preckel & Antoine Fischbach

Need for Cognition (NFC) is a personality trait, most commonly defined as an individual's "tendency to engage in and enjoy thinking" (Cacioppo & Petty, 1982, p. 119). In educational research, NFC relates to intelligence (e.g., Fleischhauer et al., 2010), academic self-concept and interest (Dickhäuser & Reinhard, 2010). The relation between academic achievement and NFC has repeatedly been analyzed and NFC has been found to explain incremental variance in academic achievement, over and above other predictors such as academic self-concept and interest (Keller et al., 2016). The assumption that children develop NFC when encountering cognitive challenges and experiencing feelings of personal satisfaction when mastering them (Cacioppo et al., 1996) highlights the potential importance of learning environments. In many countries, the institutional stratification of students into school tracks impacts both achievement and personality development (Baumert et al., 2006; Becker et al., 2012). Higher school tracks are characterized by higher levels of cognitive activation, more extensive assignments, and more variation in academic experiences (Gamoran & Berends, 1987). Therefore, they might present an intellectually more stimulating environment that potentially favors the development of NFC. However, knowledge on NFC in differential learning environments and among subgroups of students remains scarce. Therefore, the present study investigates NFC and its relation to academic achievement in different learning environments using large-scale data from the Luxembourg School Monitoring Programme (ÉpStan; Martin et al. 2015) from a full cohort of 9th graders with regular educational pathways ($N = 3.355$; 50.1 % female). SEM models indicated that after controlling for students background variables (e.g., gender, SES, language, migration background) NFC significantly predicts achievement for highest and middle track students, while being non-significant for the lowest track students suggesting that the predictive validity of NFC for academic achievement varies by learning environment. The presentation is going to discuss which characteristics of the environments might be beneficial or detrimental to NFC and reflects on potential implications for evidence-based policymaking in countries with highly stratified educational systems.

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Notes:

Predicting Academic Success in Early Primary School: A Propensity Score Matching Approach.

Rachel Wollschläger, Danielle Hoffmann, Caroline Hornung, Philipp Sonnleitner, Ineke Pit-ten Cate & Antoine Fischbach

School career and academic achievement are known to largely affect an individual's path through life (e.g., Trapmann, Hell, Weigand & Schuler, 2007; Jimerson, 2001). In addition to the student's cognitive and socio-emotional abilities and learning effort, context characteristics such as family background, student-teacher interaction, school and teaching environment have been found to impact school achievement (e.g., Weinert, 2001; Helmke, Rindermann & Schrader, 2008). In Luxembourg, recent findings indicate that at school entrance (i.e., the beginning of Grade 1) the majority of the students achieve or even surpass the required minimum level of competencies for mathematics, Luxembourgish listening comprehension as well as early literacy (Hoffmann, Hornung, Gamo, Esch, Keller, & Fischbach, 2018). However, in Grade 3 (i.e., after the first two years of elementary school) many students do no longer achieve the required minimum level of competencies in math and literacy, whereby several context characteristics are associated with students' learning progression (ibid.). The current study aims to investigate which specific factors may facilitate (or hinder) learning progression by using longitudinal data and advanced statistical techniques. More specifically, using longitudinal data of the Épreuves Standardisées from Grade 1 (2014, 2015) to Grade 3 (2016, 2017, 2018), students with irregular pathways (i.e., those who remained longer in Cycle 2 than the expected two years and thus suffered grade retention) will be identified as treatment group and compared to a stratified control group of students with regular pathways. For each student of the treatment group, one or more students from the control group will be matched on their mathematics competency level of Grade 1 through propensity score matching, a matching procedure based on logistic regression. As a result of this procedure, mathematics achievement level at Grade 1 will not differ between the two groups. In a second step, the two groups will be compared in regards to language competency levels as well as context variables such as language background, parental education, student-teacher interaction, school satisfaction, class climate, and school anxiety. Consequently, this strategy allows investigating, which factors contribute to differences in math achievement in Grade 3 for students with similar ability in mathematics at school entrance.

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Notes:

Session 3: Learning outcomes I

The effects of syntax- and lexical-oriented trainings on nominal capitalization in fifth graders

Linda Brucher, Sonja Ugen, Reinold Funke & Constanze Weth

Nominal capitalization is an orthographic syntactic marker, not represented in phonology. The spelling of this marker is difficult for L1 and L2 learners throughout schooling. This concerns infrequent nouns, abstract nouns (*der Lärm* ‘the noise’) and nominalizations (*dasFliegen* ‘the flying’) in particular. Two concurrent didactic approaches to teach nominal capitalization exist. The most commonly used approach in German literacy education is the *lexical approach* that links capitalization to the lexical-semantic characteristics of the word class ‘noun’. The alternative approach is the *syntactic approach* that links capitalization to the agreement structure of the noun phrase. Research has shown that the syntactic approach fosters pupils’ spelling (Wahl, Rautenberg & Helms, 2017; Bîlici, Ugen, Funke & Weth, 2017.). However, the conducted interventions also revealed some difficulties with the syntactic strategies.

Therefore, the present intervention study contrasts the two didactic approaches and evaluates their effects on the spelling of nominal capitalization. Moreover, it compares two groups trained according to the syntactic approach, one using paper-pencil and another using an additional tool that allows a schematized representation of a sentence and increases attention to the agreement structure. The intervention study is set in the Luxembourgish school context and includes 192 fifth graders who acquired literacy in their second language German.

Considering the effects of previous intervention studies, the following hypotheses are tested: (H1) The group trained according to the syntactic approach outperform the group trained according to the lexical approach in the post- and follow-up test. (H2) The group trained according to the syntactic approach with the additional tool outperforms the group trained with paper-pencil in the post- and follow-up-test. The results confirm the first hypothesis but reject the second hypothesis. The findings indicate that syntax-oriented trainings might have an additional value in German literacy education.

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Notes:

The effect of grade retention on reading skills of immigrant children in multilingual elementary school. A longitudinal study.

Cíntia Ertel, Aigul Alieva, Caroline Hornung & Christine Schiltz

Thirty-four per cent of a sample of language-minority children studying in a multilingual elementary school were lost due to grade retention in this longitudinal study. These children had been followed from kindergarten to grade 3 of elementary school. To characterize differences among promoted and retained students, we assessed them in various language and socioeconomic measures. We also examined a subgroup of promoted students, scoring lower in grade 2 than the mean of retained students in reading comprehension. The current study revealed four main findings. Firstly, there were no significant differences between promoted and retained students in their first language vocabulary (Portuguese). Secondly, there was a significant difference in second language vocabularies (Luxembourgish and German) and in the German reading tasks through all four time points, with promoted students scoring higher than retained students. Thirdly, retained students did not catch up with promoted students in the German measures even after grade retention, but they did in Luxembourgish. Fourthly, by grade 3, the low-achieving promoted students improved significantly in German reading comprehension compared with the retained students. Principally, the last result underlines that grade retention does not lead to improvement in children's German reading comprehension. As vocabulary is one of the main predictors of reading comprehension, programs that improve poor readers' vocabulary knowledge may be more efficient than grade retention. The present findings corroborate previous studies reporting that grade retention is not beneficial and that low-achieving students promoted to the next grade show better academic outcomes later than retained students.

Notes:

Session 4: Multilingualism and language practice

Newcomers' translanguaging practices in learning situations

Sarah Degano

To expand learning opportunities for all, including newly-arrived, students in bilingual schools, a growing number of scholars advocate for implementing translanguaging pedagogies that leverage the students' full range of semiotic resources (García et al. 2012). Yet, research which focusses on the newcomers' translanguaging practices and involves multiple languages remains scarce. Counting less than 2% of Luxembourg's primary school population (MENEJ 2018), newly-arrived students face an important educational challenge as the instruction of French, German and Luxembourgish accounts for 40.5% of all curricular time. While the present doctoral project investigates the language practices of fourth-graders of different language and migration backgrounds, this paper explores the extent to which two newcomers from different schools, Portuguese-speaking Harry and Slovenian-speaking Leon, mobilize their semiotic resources to learn curricular content in French and Science lessons while interacting with their peers and teachers. Data stem from forty-two days of observation throughout Years 4 and 5, approximately twenty hours of video-recordings and four semi-structured interviews with the students about some of the recorded events. Findings first show that, with peers, Harry and Leon used all institutional languages to discuss curricular content and Harry additionally used Portuguese and English. Second, with teachers, Leon flexibly used all institutional languages, but Harry did not. Third, both newcomers regularly translanguaged in Year 4 but almost completely dropped this practice in Year 5. The students' differing translanguaging practices likely connect to the language practices of their interlocutors and the learning situations within the classroom contexts.

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Notes:

Plurilingualism, ideologies and identity of Chinese immigrant families in Luxembourg: choices between heritage and integration in language practices

Peiru Bai

My research is primarily based on the multilingualism that characterizes Luxembourg, the linguistic dynamics in the migratory context and the challenges for both Chinese immigrant parents and children in a multilingual and multicultural environment. Within the framework of family language policy (Spolsky 2004, 2009) and language ideologies (Woolard 1998), my study aims to examine how and to what extent family language practices are ideologically shaped, on the one hand, by personal experiences, on the other hand by parental attitudes and environmental factors (Curdt-Christiansen 2009; Gogonas & Kirsch 2016). In particular, I focus on the formation of language ideologies of Chinese immigrant families vis-à-vis Chinese languages and the languages in Luxembourg, as well as their attitudes toward children's plurilingual development and plurilingual education in Luxembourgish educational system. A comparative analysis of the language ideologies between Luxembourg and China will also be addressed.

My research draws on an in-depth qualitative study, with a small sample size. Semi-structured interviews, participant observations and in-home interactions are the major data collection in the fieldwork. Content analysis and discourse analysis will be utilized in data analysis. In the presentation, I will present my first results which are based on a preliminary analysis of my data obtained from interviews and parent-child interactions. The analysis of transcripts enables the identification of important features by thematic categorization, but also an understanding about how language practices, ideologies and identity are socially constructed in the research context. The first results will reveal how Chinese immigrant families perceive different languages, plurilingualism and language-related practices, and how they negotiate between family domain and social domain in their language practices in a multilingual context.

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Notes:

Session 5: Learning outcomes II

Number Line Tasks and their Relation to Arithmetics in Second to Fourth Graders

Carrie Georges & Christine Schiltz

Considering the importance of mathematical knowledge for STEM careers, we aimed to better understand the cognitive mechanisms underlying the commonly observed relation between number line estimations (NLEs) and arithmetics. We used a within-subject design to model NLEs in an unbounded and bounded task and to assess their relations to arithmetics in second to fourth grades. Our results mostly agree with previous findings, indicating that unbounded and bounded NLEs likely index different cognitive constructs. Bounded NLEs were best described by cyclic power models including the subtraction bias model, indicating proportional reasoning. Conversely, mixed log-linear and single scalloped power models provided better fits for unbounded NLEs, suggesting direct estimation. Moreover, only bounded but not unbounded NLEs related to addition and subtraction skills. This thus suggests that proportional reasoning likely accounts for the relation between NLEs and arithmetics, at least in second to fourth graders. This was further confirmed by moderation analysis, showing that relations between bounded NLEs and subtraction skills were only observed in children whose estimates were best described by the cyclic power models. Depending on the aim of future studies, our results suggest measuring estimations on an unbounded number line if one is interested in directly assessing numerical magnitude representations. Conversely, if one aims to predict arithmetic skills, one should assess bounded NLEs, indexing proportional reasoning, at least in second to fourth graders. The present outcomes also further highlight the potential usefulness of training the positioning of target numbers on bounded number lines for arithmetic development.

Notes:

Math and Reading Difficulties in a Multilingual Educational Setting

Sophie Martini, Antoine Fischbach & Sonja Ugen

The relation between language and math has long been established. However, little research has investigated the relation between math, reading and co-occurring math and reading difficulties in a multilingual educational setting, such as Luxembourg. In the Luxembourgish school system, kindergarten is taught in Luxembourgish. From grade 1 onwards, students learn to read and write in German, but most pupils speak other languages at home, e.g. Luxembourgish, French, Portuguese or a South Slavic language. In this study, large-scale data from the Luxembourg school monitoring programme are analysed to investigate the relation between math, reading and co-occurring math and reading difficulties and students' backgrounds (home language, SES, and gender) in thirdgraders. Most cut-offs on standardised tests to identify potential math and reading difficulties are based on monolingual samples, which may lead to an overidentification of difficulties in students who do not speak the instruction language at home. As the number of students who do not speak the instruction language at home is growing in Luxembourg, as well as many other countries, adequate identification of math and/or reading difficulties in these students is paramount. We compared different ways of setting cut-offs to identify students with math and/or reading difficulties. First results show that depending on which cut-off criteria are used, home language and SES play an important yet different role in the identification of math and/or reading difficulties. The implications of the different cut-offs are discussed.

Notes:

Similarities and differences of value-added scores from models with different covariates: A cluster analysis

Jessica Levy, Martin Brunner, Ulrich Keller & Antoine Fischbach

As student diversity is increasing in Luxembourg, but also in other countries, leveling out the influence of students' backgrounds is of special interest for fair school evaluations. Value-added (VA) models intend to find the "value" that has been added by teachers or schools to students' achievement, independent of students' backgrounds (e.g., Amrein-Beardsley, Collins, Polasky, & Sloat, 2013). VA models are mainly used for accountability and high-stakes decisions but are also a promising approach for the identification of effective teachers or schools to learn about factors that promote students' achievement (e.g., Blazar, Litke, & Barmore, 2016; Rutledge, Cohen-Vogel, Osborne-Lampkin, & Roberts, 2015). Given their far-reaching impact, it is surprising that there is no consensus on which covariates should be used to calculate VA scores (Everson, 2017; Levy, Brunner, Keller, & Fischbach, 2019).

Using longitudinal data from the Luxembourg School Monitoring Programme (LUCET, 2019), the aim of the present study is to systematically compare school VA scores as obtained for math and language achievement by using different sets of covariates (prior math and language achievement, students' backgrounds, and motivational variables). Similarities and differences between the resulting school VA scores are analyzed with k-means and hierarchical clustering. Results indicate three clusters in the math VA model and five in the language model. In both models, similarities of scores with prior achievement in the same topic could be observed. In the math VA model, the other two clusters were those with prior achievement in a different topic (i.e., language) and those without any prior achievement. In the language model, additional clusters were built through the inclusion or exclusion of students' backgrounds, indicating the importance of students' backgrounds in the Luxembourgish school context.

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Notes:

Session 6: Perception and effects of learning environments

How students perceive instructional quality in everyday school life: The factorial validity of three basic dimensions on a lesson-to-lesson basis

Irma Talić, Jens Möller & Christoph Niepel

The perceptions of instructional quality differ between students. However, the structure of these perceptions within a student in everyday life (i.e., under situation-specific influences) remains unclear. In a diary study, we investigated the factor structure of three basic dimensions of instructional quality (support, cognitive activation and classroom management) on two levels: Besides differences between students (i.e., the student-level), we examined differences between multiple lessons within the same student (i.e., the lesson-level) in four school subjects (math, physics, German and English). Data of 372 German 9th and 10th grade students ($M = 15.3$ years) from 18 classes were collected via smartphones at the end of every lesson in these subjects (i.e., in up to 16 lessons) over three weeks, using two items per dimension (adapted from PISA 2012). Multilevel confirmatory analyses were performed in Mplus8. Considerable variation of perceptions of instructional quality from lesson to lesson were indicated by the student-level intraclass correlation coefficients, ranging from 0.29 to 0.43. Reliabilities on the lesson-level ranged between $\omega = 0.70$ and 0.86. Across all subjects, we could establish the three-factor structure on both the student- and the lesson-level. This factor structure fit data better than more parsimonious solutions and held invariant across levels. The aggregated student-level measure was significantly related to paper-pen (trait) measures of instructional quality and academic interest (which were both assessed pre- and post-diary phase), indicating convergent validity. In sum, differences were found on both levels of examination: Besides differences between students (hinting at trait-like, more stable and general perceptions), we found that students also reliably discriminate the three basic dimensions of instructional quality between lessons. Thus, our results suggest a state-like, lesson-specific measure of instructional quality in addition and point out the relevance of the dimensions in every lesson.

Notes:

Adolescents' perceptions of how teachers encourage creativity

(not just in the arts!)

Éanna O'Boyle

There are repeated calls and efforts to promote creativity more in schools. In this regard, the key role of teachers in developing creative learning environments has become well recognised. In discussions about how teachers can do this, creativity researchers have occasionally consulted young children for their perceptions of how creativity can be encouraged but have rarely consulted adolescents. This study aims to add adolescents' views and experiences to the agenda of how we can foster their creativity in schools.

Using Straussian grounded theory, I adopted a case study approach to understand adolescents' perceptions of how creativity was fostered by teachers in the curriculum. The research is set in a highly-regarded international school in central Europe. I consulted 14 to 16-year-old adolescents studying in the final two years of the International Baccalaureate (IB) Middle Years Programme (MYP). I also consulted their teachers on themes that the adolescents found relevant. The purpose of the study is encapsulated by the three research questions: 'how do adolescents define creativity?', 'how do adolescents perceive creativity being encouraged by teachers?' and 'between adolescents, teachers and researchers, how aligned are beliefs about fostering creativity in the classroom?'.

Participants shared their perceptions through online questionnaires, focus groups, online discussion forums, individual and paired interviews, and emails. Through ongoing data collection and analysis, four main categories of creativity-fostering teaching practices emerged. These were disciplinary relevance (D), student empowerment (E), personal and social relevance (R), and creative metacognition (M), all interrelated through the core category 'shaping boundaries'. This categorisation led directly to the development of what I called the 'DERM model' that aims to provide teachers with guidance for fostering creativity in the classroom. This model reflects the beliefs of adolescents which shared many similarities with those of teachers and creativity researchers.

Notes:

Poster abstracts

Comparative Analysis of School Curricula in Luxembourg and Japan: Exploring School Curricula for Inclusive Education

Miwa Chiba

Introduction

This study aims to explore the relationship between “curriculum” and “inclusive education”, with comparative analysis of primary school education in Luxembourg and Japan. “Curriculum” is one of the most important topics of research of school education system, and the term is used in very diverse meanings. It may simply refer to “school subject”, however it can refer much broader and comprehensive senses, e.g. curricula that are planned or intended, implemented, experienced, or even hidden. The term “inclusive education” is also used in diverse meanings depending on contexts. Some use the term mainly as a replacement for “special education” for students with special educational needs, but it may, as proposed by UNESCO, be referred to in much broader senses of education aiming to build upon all diversities of students, such as family backgrounds, cultures, languages, ages, abilities, and so forth. The world society has been trying to improve the equal opportunities in education for all people, and there have been more and more recognitions of the importance of “inclusive education” both in Luxembourg and Japan, where both countries still face challenges for further developments of inclusive education.

Research Purpose and Design

This is a multi-methods qualitative comparative study. It tries to understand what has been happening at school education in Luxembourg and Japan in their historical and social contexts since the introduction of the idea of inclusive education. The study will firstly analyse curriculum documents in both countries to find out if there have been any changes in design and management of school curriculum in consideration of the idea of inclusive education, especially related to the two subjects of ethics (moral education) and mathematics. Interviews and observations will follow to find out how changes in formal curricula have been implemented at schools, corresponding to diverse backgrounds and needs of students. The study will be based on theories and concepts in social sciences (sociology) such as institutionalism, organizational field and educational science such as curriculum theory and inclusive education.

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Notes:

Growing up far from home: A qualitative study about the wellbeing of children and adolescents placed by justice in care institutions, psychiatry or juvenile prison.

Elisabeth Clees

My research questions: (1) What does children and adolescents placed by justice in care institutions, psychiatry or juvenile prison, help to feel good and to grow up well?

(2) Which are the factors that decrease the wellbeing of children and adolescents and their chance for a healthy development?

The study will be a retrospective qualitative study using adolescent's perspectives on their childhood and adolescence experiences in care institutions. The main goal of the study consists in using the collected data to identify protective and risk factors which strengthen or weaken the wellbeing of children and adolescents placed in Luxembourgish care institutions. The study will focus on stress situations and/or traumatism the adolescents experienced during their stay in institutions as well as on individual and structural resources for the wellbeing of the children. It will clarify the actual situation in different Luxembourgish care institutions in order to make proposals how to increase the psychical wellbeing of the children and adolescents in these institutions.

To identify the protective and risk factors 30 young people, aged between 15 and 27 years and who have spent one part of their live in a care institution, juvenile prison or juvenile psychiatry will be interviewed. In addition to that they will be asked to fill out the SDQ (Strengths and Difficulties Questionnaire). The SDQ will help to find out current behavioral problems (emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behavior).

We expect to find out that the main factor which contributes to the wellbeing of children and/or adolescents during their stay in institutions is the experience of stable, secure and valorizing relationships with nursing or education staff.

The stability of academic self-concept profiles – a latent transition analysis

Patrick Franzen, A. Katrin Arens & Christoph Niepel

According to the internal/external frame of reference model (Marsh, 1986), dimensional comparisons (the comparison of one's achievement in one domain with one's achievement in another domain) are important for the formation of domain-specific academic self-concepts (ASCs). Dimensional comparisons can lead to contrast effects across math and verbal domains: Higher achievement in math strengthens one's math ASC, but weakens one's verbal ASC, and vice versa. Therefore, students often view themselves as more competent in one of the two domains and hence either as a verbal person or a math person. This categorization into math or verbal persons can also be shown when using person-centered methods. A latent profile analysis by Marsh, Lüdtke, Trautwein and Morin (2009) demonstrated that ASC profiles follow either a math-type (higher math ASC, lower verbal ASC), a verbal-type (lower math ASC, higher verbal ASC), or a mixed-type (equally high ASCs in all domains). To date, it is unclear whether these types are stable or if students can switch between these types. The present study aimed to address this question. A sample of $N = 382$ German students from 18 classes completed a questionnaire on their ASCs in math, physics, German, and English at two time points within a four-week period. Latent transition analysis revealed a four-state solution ($BIC = 7797.8$; Entropy = 0.884). The four states could be defined as a math-type (higher math and physics ASCs), a verbal-type (higher German and English ASCs) and two mixed-types (equally high ASCs for all domains but with either generally higher or generally lower ASCs). The results further supported the high stability of ASC states: All participants were assigned to the same state at both time points; the transition probabilities ranged between 0% and 5%. The findings are discussed against the background of ASC stability and dimensional comparison theory.

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Notes:

Eurostudent – insights into study and living conditions of higher education students in Luxembourg

Irina Gewinner, Christina Haas & Andreas Hadjar

There is a solid body of research on higher education students in Europe. Over decades, it contributed to a substantial bulk of knowledge, such as processes of social reproduction and stratification, status attainment, gender issues, transition to work and employment modalities, and many others. Although the studies largely contributed to our understanding of social mechanisms and processes related to highly qualified individuals, they hardly provided insights into the situation of higher education students in Luxembourg. This is not surprising given the fact that higher education in Luxembourg is still quite young.

This piece of research seeks to reduce the existing gap by demonstrating first results pertaining to Luxembourgish BTS, undergraduate, graduate and PhD students. It is based on the data of the Eurostudent project that aimed to collect information on the social dimension of higher education students in Luxembourg and compare it with other European countries. An online survey with students in both public and private higher education institutions in Luxembourg conducted in May 2019, resulted in a sample of 1.384 cases, allowing to identify the first trends and facts about study and living conditions. This includes topics such as international mobility, students' social background, access to higher education, study and living conditions, employment situation as well study motivation and satisfaction.

In this poster presentation, we give a broad overview over the Eurostudent student sample and provide some first results on students' study and living conditions in Luxembourg, such as students' housing and employment situation. Furthermore, we will give an outlook on the expected outcomes and areas of further research.

Notes:

User Experience challenges for designing and evaluating Computer-Based Assessments for children

Florence Kristin Lehnert

Computer-Based Assessment (CBA), i.e., the use of computers instead of paper & pencil for testing purposes is now increasingly used, both in education and in the workforce. Along with this trend, several issues regarding the usage of computers in assessment can be raised. With respect to CBA, test validity and acceptance appear at stake during interacting with a complex assessment system. For instance, individual differences in computer literacy (i.e. ability to handle technology) or factors related to the technology acceptance might cause different outcomes that are not related to the problem-solving task. Prior investigation has shown that there is a scarcity of research on the User Experience (UX) in the context of CBA, also due to a focus on adult users.

This doctoral thesis aims to adapt and develop new evaluation methods from the Child-Computer Interaction (CCI) field, applied in the context of CBA. By tackling the described objectives, we will provide the following three complementary contributions: Empirical evaluation of the positive impact of UX on CBA validity; Research and development of new CCI methods (by combining and adapting current methods) for a better integration of UX into CBA. The contributions will finally result in the development of best practices guidelines for both research and practice on the application of CBA for children.

Notes:

GRASP – Facilitating reflection on agreement structures and syntactic markers to improve spelling in German and French – the rationale of a training study

Lisa Klasen, Katinka Mangelschots, Sonja Ugen & Constanze Weth

Silent orthographic syntactic markers, such as nominal capitalization in German and plural markers in French, are difficult to learn. Still these syntactic markers are crucial for readers in order to extract the structure of a sentence. Traditional pedagogical approaches often ignore the grammatical coherence of the language system but rather focus on single words and their lexical-semantic characteristics instead.

The current project intends to take a different, syntactic approach, by fostering students' analytical skills of grammatical agreement. In two interrelated experimental intervention studies with a parallel methodological design, multilingual fourth graders in Luxembourg will receive a specifically developed six weeks training in spelling orthographic syntactic markers in German and in French consecutively but in a counter-balanced order.

The aim of the study is to examine the short and long-term benefits of the syntactic training, as well as to detect possible transfer effects from the trained to the non-trained language, thereby focusing on the following research questions: (1) What effect does training in grammatical reflection have on syntactic spelling in French and/or German of multilingual pupils? (2) Does training in grammatical reflection in the target language influence the spelling of syntactic markers in the non-trained language?

Taking the effects of previous intervention studies into account, we expect our explicit syntactic training to significantly improve fourth graders' spelling of nominal capitalization in German and plural markers in French. Secondly, we predict a transfer effect of spelling skills from the trained language into the non-trained language and a better performance in both languages after the completion of the twofold training sequence.

The proposed poster will show the methodological design of the study focusing on the rationale of the tests and the trainings.

Notes:

Systemic Exploration Mapping: Co-designing collaborative knowledge visualisation methods to improve systemic thinking and dialogue in group projects

Bo M. Raber

The proposed paper introduces a *design-based research* framework for the iterative development and evaluation of collaborative learning materials that can be used to address and learn from complex problems in a project-based approach. The method collection fosters *systemic thinking* through *dialogic learning* and *collaborative knowledge visualization* techniques. The *systemic exploration* methods produce and/or make use of *systemic maps* to jointly explore and visualize different perspectives on complex problems. After sketching out concepts and practices that were considered for the base-line design, adaptations to both the learning materials and the evaluation methods are discussed in light of the first iteration results and in preparation of the co-design and implementation phase. In co-design workshops, educators contribute to developing learning materials that will serve to connect different subjects in an interdisciplinary manner with reference to sustainability challenges as examples at the food-water-energy nexus. Baseline teaching materials can then be re-designed in an iterative process in order to adapt them for specific learning and teaching groups (across ages and different subject combinations) to fit the curricular topics and educational needs. Second iteration findings are expected to support the hypothesis, that the adapted learning materials can improve the quality of dialog and the individuals' understanding of a given area of concern in project-based group work. Early in-class observation findings will be substantiated through in-depth video analysis and follow-up interviews, with the aim to build a lean implementation and evaluation framework with easy-to-observe indicators that can be used for formative and summative evaluation of inter- and transdisciplinary projects in daily (team) teaching routines in secondary schools in Luxembourg.

Collaboration vs Competition as a strategy to increase the motivation on sciences subjects

Constanza Ruiz & Victoria del Río

For most of the 20th century, school science curricula tended to focus on presented science in a form that focused on providing students with the basic facts, laws or theories related to the various disciplines of science rather than on the broader concepts of scientific enquiry and the evolving nature of scientific “truth”.

Taking this into account, and with the fact that we live in a Digital Era where our students are over-stimulating, we are able to understand how during the last few years the student’s motivation about science is deeply decreasing. In this sense, one of the most immediate ways to nurture interest in science among students may be is to increase the exposure to a real scenario of science's life.

This "real scenario" brings us to the conception of combine the concepts of Collaboration and Competition, which have historically been related to sciences and also to business environment. The idea is to bring to the classroom the competencies that they are going to need in their professional future. The knowledge of how the environment of Scientific’s profession and the utility of the concepts is crucial to increase motivation (Hoffmann & Häussler, 2002).

Some studies show that co-opetition (understood as collaboration within the group and competition between groups) is could be the best learning strategy to stimulate the students. The point is that competing entities can collaborate with each other for the sake of a common benefit that, individually, could not be achieved. This form of relationship broadens its market since the entities are able to complement each other and offer a final product with greater attractiveness, so many times much better than the sum of the individual products (Brandenburger & Nalebuff, 1996).

Therefore, the joint application of both types of techniques on science subjects let us contributes to the general development of learning.

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Notes:

Luxembourg Learning Centre tour

As an alternative to those participants who do not attend the LuxERA general assembly, there is the option to join the Luxembourg Learning Centre tour.

Start: 17:45 at the library main entrance area. We could walk to the LLC together.

“The Luxembourg Learning Centre (LLC) is more than a library. It is a meeting place, a space for knowledge sharing in the heart of Belval. The various work and relaxation spaces at your disposal have been conceived to meet your needs. The LLC encourages exchange of ideas and contributes to your work, both individual and collective.” (<https://llc.uni.lu>)

Visit the University Library and find out about innovative services, comfortable spaces for individual and collaborative work. Or let the exceptional architecture inspire you!

The tour is held in English and takes about 45 minutes.

For more information on the LLC, visit <https://llc.uni.lu/en/>

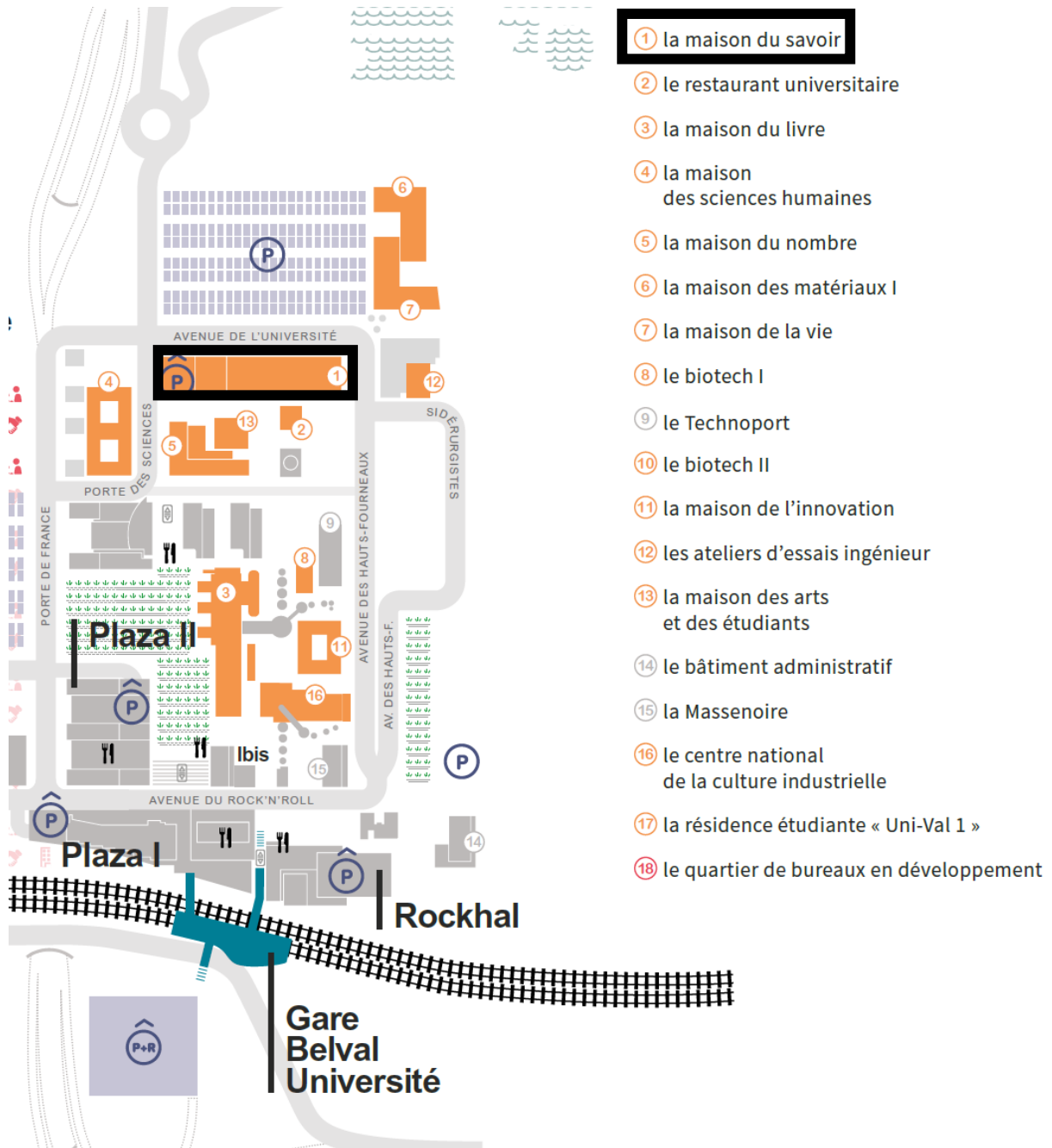
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Location map – Maison du Savoir



Conference organizers



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LUXEMBOURG CENTRE
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Schedule overview

08:30 – 09:00	Arrival & Registration	MSA, 4 th floor
09:00 – 09:15	Welcome	4.500
09:15 – 10:45	Parallel session 1	4.500
	Parallel session 2	4.410
10:45 – 11:00	Coffee break	
11:00 – 12:00	Parallel session 3	4.500
	Parallel session 4	4.410
12:00 – 13:15	Lunch break	
13:15 – 14:15	Keynote by Claudia Schuchart (University of Wuppertal)	4.500
14:15 – 15:45	Parallel session 5	4.500
	Parallel session 6	4.200
15:45 – 16:15	Coffee break	
16:15 – 17:15	Moderated poster session	
17:30 – 19:00	LuxERA General Assembly	4.500
	Library tour (start: 17:45)	
19:00	Reception & buffet dinner	

Venue

University of Luxembourg

Maison du Savoir

4th floor