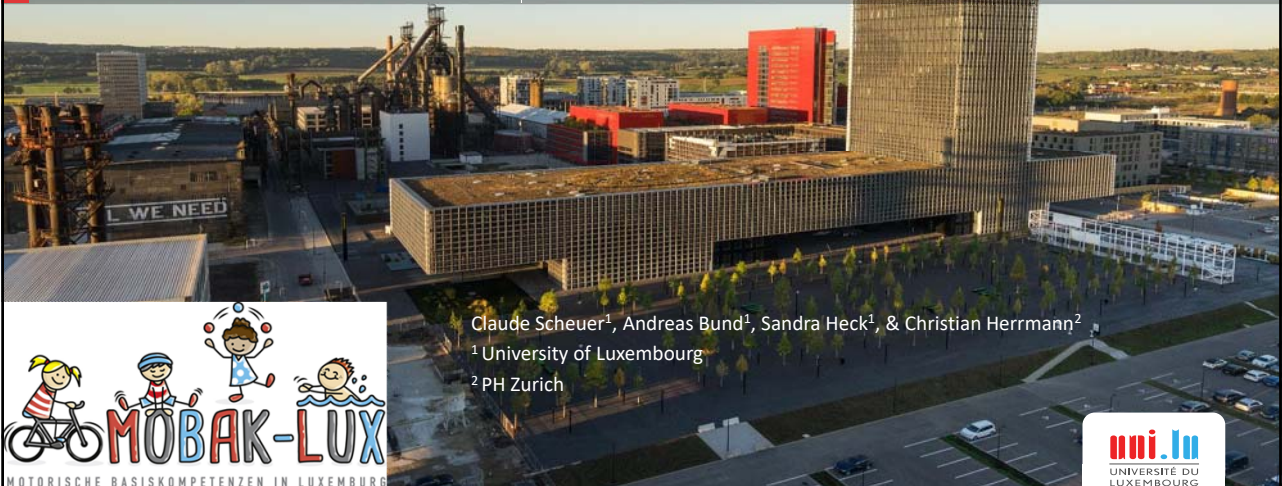


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Evaluation of basic motor competencies in primary school in Luxembourg



Claude Scheuer¹, Andreas Bund¹, Sandra Heck¹, & Christian Herrmann²
¹ University of Luxembourg
² PH Zurich



Overview

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1. Background
2. The MOBAK-LUX test instruments
3. Application purpose and implementation of MOBAK-LUX
4. Selected research results
5. Conclusions and implications



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Background

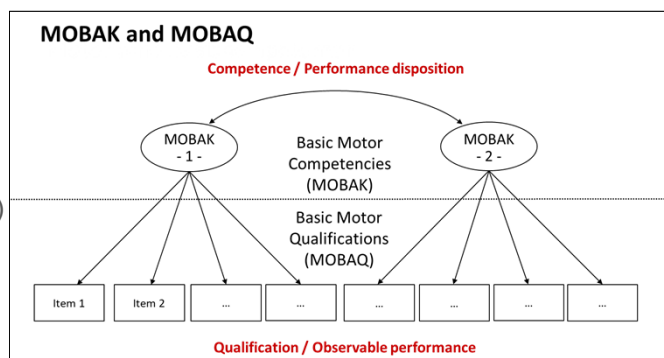
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Basic Motor Competencies

- Dispositions or latent constructs
- Not measured directly, but recorded by the presence of basic motor qualifications
- Product-oriented in the form of the successful solution of a given problem situation
- Based on the expected learning outcomes as formulated in the curriculum (curricular validity)

(Herrmann et al., 2015; Herrmann, Gerlach, & Seelig, 2015; Scheuer, et al., 2017)



The connection between basic motor qualifications and basic motor competencies (Herrmann et al., 2015)

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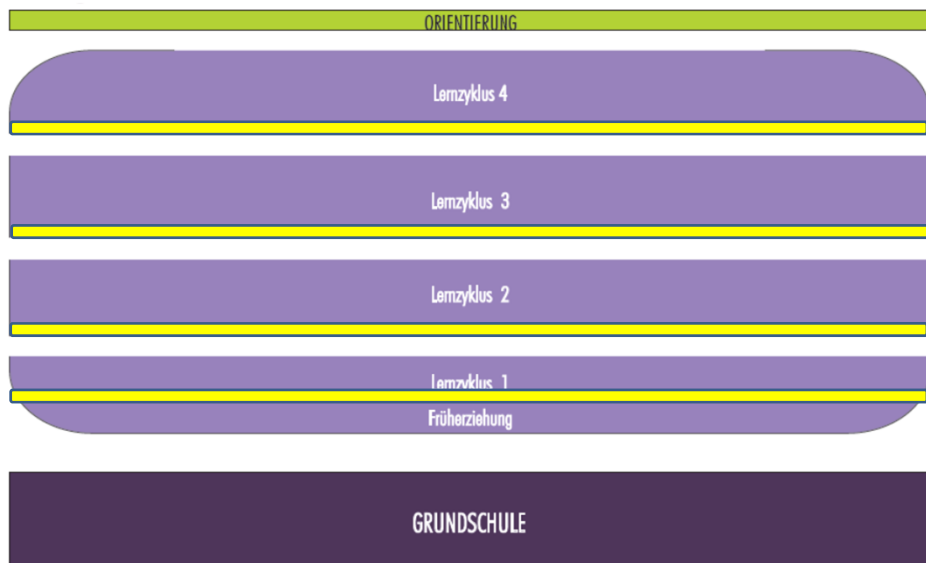


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MOBAK-LUX Basic Motor Competencies in Luxembourg

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MOBAK-LUX Test dimensions

-  **Locomotion**
-  **Object control**
-  **Object locomotion**
-  **Moving in water**



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				 <small>MOTORISCHE BASISKOMPETENZEN IN LUXEMBURG</small>
				 <small>UNIVERSITÉ DU LUXEMBOURG</small>
Competence area	MOBAK-LUX-1.1	MOBAK-LUX-2.1	MOBAK-LUX-3.1	MOBAK-LUX-4.1
Locomotion	Balancing	Balancing	Balancing	Balancing
	<p style="text-align: center;">Dichotomous items (pass/fail) on two difficulty levels -> ordinal scale 0-1-2</p> <p style="text-align: center;">0: fail 1: pass level 1 2: pass level 2</p>			Rolling
				Stabilizing
				Coordinated running
Object control				Rhythmic skipping
				Throwing and catching
	Dribbling			
Object locomotion				Controlling with a stick
				Hitting a target
				Changing track
	Braking and stopping			
Moving in water	Slalom riding	Slalom riding	Slalom riding	Slalom riding
	Moving	Moving	Gliding	Swimming
	Diving	Diving	Diving	Diving
	Floating	Floating	Floating	Floating

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	 <small>UNIVERSITÉ DU LUXEMBOURG</small>
<ol style="list-style-type: none"> 1. Background 2. The MOBAK-LUX test instruments 3. Application purpose and implementation of MOBAK-LUX 4. Selected research results 5. Conclusions and implications 	
	 <small>MOTORISCHE BASISKOMPETENZEN IN LUXEMBURG</small>

MOBAK-LUX

Basic Motor Competencies in Luxembourg



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Application purpose

- **Pedagogical diagnosis**
 Identification of students with low motor competencies / specific educational needs
- **Educational monitoring**
 Identification of risk populations with low motor competence levels and quality management by feedback to the school system on the school and system level

(Scheuer, et al., 2017; Scheuer, Bund, & Herrmann, 2019)



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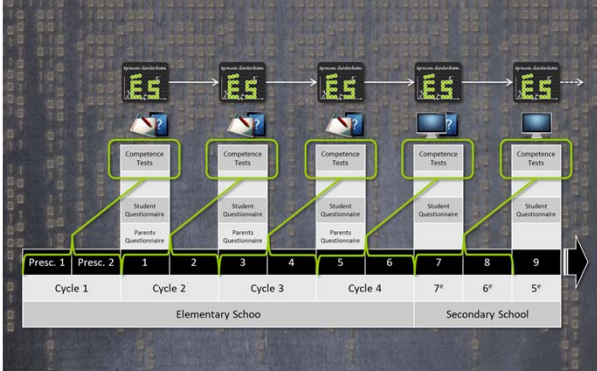



Link to the national educational monitoring surveys

Matching with data in Mathematics, German language and French language, undertaken by LUCET (Luxembourgish Centre for Educational Testing)



UNIVERSITY OF LUXEMBOURG
Luxembourg Centre for Educational Testing (LUCET)



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Year	N	MOBAK-LUX-1.1	MOBAK-LUX-2.1	MOBAK-LUX-3.1	MOBAK-LUX-4.1	Total
2015	Schools	/	/	20	/	/
	Classes	/	/	33	/	33
	Students	/	/	489	/	489
2016	Schools	/	25	21	/	/
	Classes	/	39	32	/	71
	Students	/	637	493	/	1130
2017	Schools	/	14	18	/	/
	Classes	/	31	37	/	68
	Students	/	488	586	/	1074
2018	Schools	22	14	15	18	/
	Classes	49	24	31	33	137
	Students	660	374	445	486	1965
Total	Classes	49	94 / M = 31.3	133 / M = 33.3	33	309
	Students	660	1499 / M = 499.7	2013 / M = 503.3	486	4658

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Interpretation

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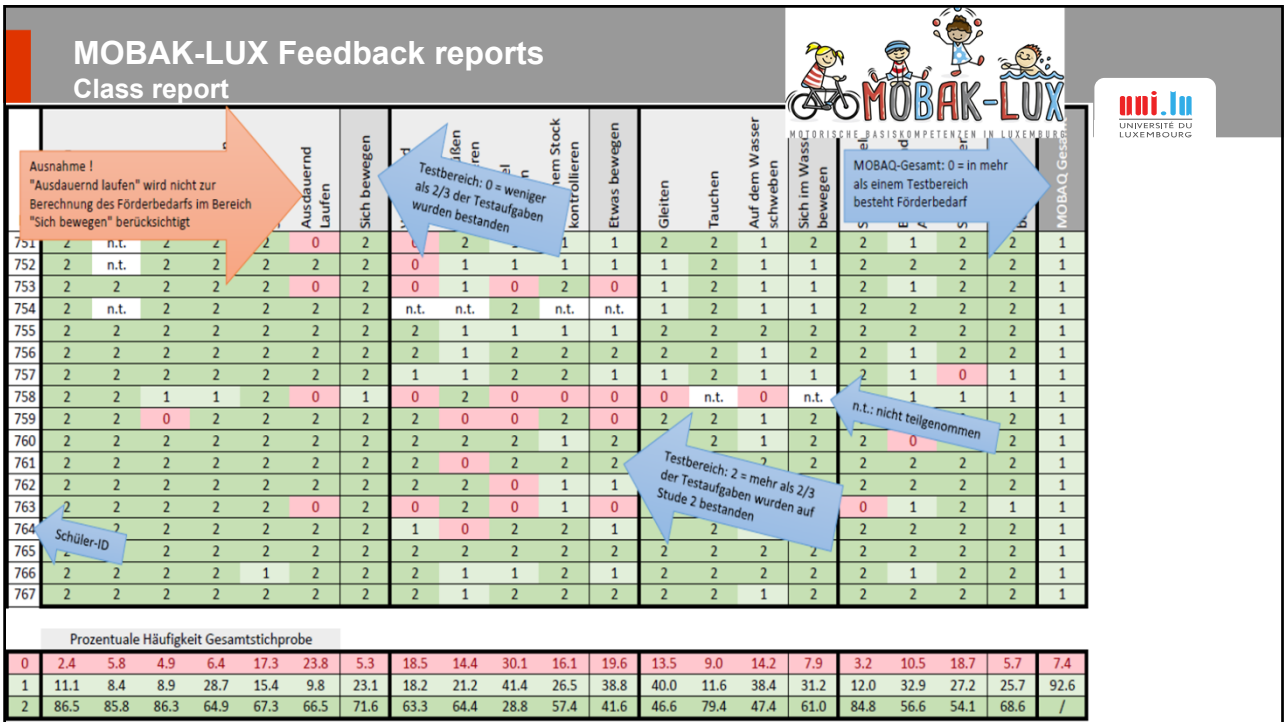
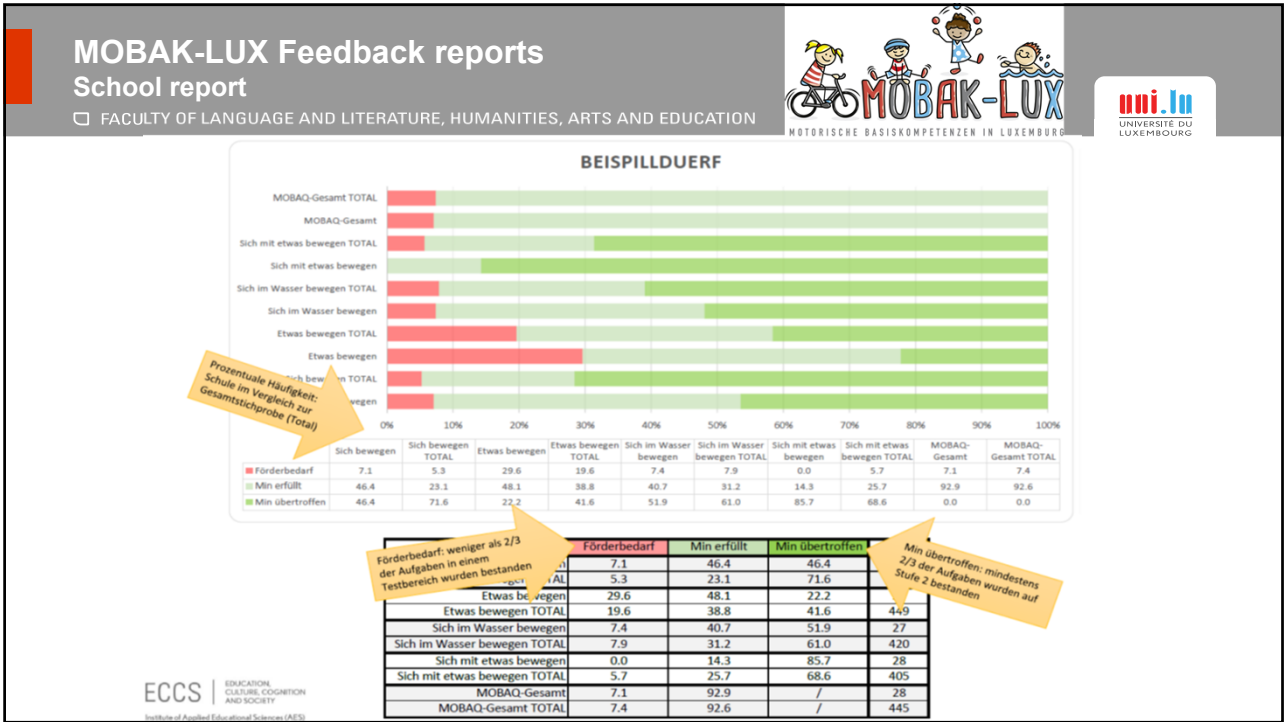


Definition *Special needs* – Normative approach

- If **at least two thirds of the tasks** in a test area are passed, we assume that the student or the student has the basic requirements for participation in the competence area.
>= 2/3 passed -> minimal requirements achieved
- Students who pass less than two thirds of the tasks in a test area, should practice specifically in this competence area – support is needed.
< 2/3 passed -> minimal requirements not achieved
-> The student needs support
- If **at least two thirds of the tasks** in a test area are passed **on level 2**, we assume that the student or the student has advanced requirements for participation in the competence area.
>= 2/3 level 2 passed -> minimal requirements exceeded

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MOBAK-LUX Feedback reports Student report

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LE MINISTRE DE LA CULTURE



Éducation Physique

Ergebnis bei den Motorischen Basiskompetenzen (MOBAK) 2018/2019
Regionalschoul Uewersauer, Cycle 3.1, Schüler Nr. 488

MOBAK evaluiert zu Anfang des Zyklus 3.1 rückblickend die Lernergebnisse des Zyklus 2.

Ergebnis

Kompetenzbereich	Ergebnis	Alle Schüler*		
Sich bewegen	Niveau Socle erreicht	8.1%	30.9%	61.0%
Etwas bewegen	Niveau Socle nicht erreicht	19.6%	42.9%	37.5%
Sich mit etwas fortbewegen	Niveau avancé erreicht	0.3%	15.3%	84.4%
Sich im Wasser bewegen	Niveau Socle erreicht	8.0%	28.0%	64.0%

* Anteil aller an MOBAK teilnehmenden Schüler, welche das Niveau Socle oder das Niveau Avancé erreicht bzw. nicht erreicht haben

Die Kompetenzbereiche umfassen die folgenden Aufgaben:

Sich bewegen: Balancieren, Rollen, Stützen, Variantenreich fortbewegen, Rhythmisch springen

Etwas bewegen: Werfen, Fangen, Prellen, mit den Füßen kontrollieren, mit einem Stock kontrollieren

Sich mit etwas bewegen: Spur wechseln, Bremsen und Anhalten, Stalom fahren mit einem Tretroller

Sich im Wasser bewegen: Fortbewegen, Tauchen, Schweben

Fällt das Ergebnis Ihres Kindes weniger gut aus als erwartet? Ein „schlechtes“ MOBAK-Ergebnis spiegelt nicht unbedingt die tatsächliche Kompetenz Ihres Kindes wider. Das Ergebnis ist vergleichbar mit einer Momentaufnahme der gemessenen Kompetenz. Verschiedene Faktoren wie z. B. Müdigkeit können die beobachteten Leistungen beeinflussen. Allerdings ist es eher unwahrscheinlich, dass Ihr Kind ein gutes Ergebnis erzielt, ohne die entsprechende Kompetenz erreicht zu haben.

An dieser Stelle ist es weiterhin wichtig zu betonen, dass MOBAK nicht alle Facetten der im Plan d'Études definierten Kompetenzen überprüfen. Zum einen, da mit standardisierten Aufgabenformaten nicht alle Kompetenzbereiche erfasst werden können, wie z. B. *fair zusammen spielen*. Zum anderen aufgrund der begrenzten Zeit, die zur Durchführung der Kompetenztests zur Verfügung steht. Aus diesen Gründen wird eine repräsentative Auswahl von möglichst ökonomisch und standardisiert erfassbaren Kompetenzen gewählt. MOBAK liefert somit eine standardisierte aber unvollständige Momentaufnahme, während die Bilans auf einer langfristigen und vollständigen Evaluation beruhen. Das Ergebnis von MOBAK ist ein *Evolution of basic motor competencies in primary school in Luxembourg Bilans*.

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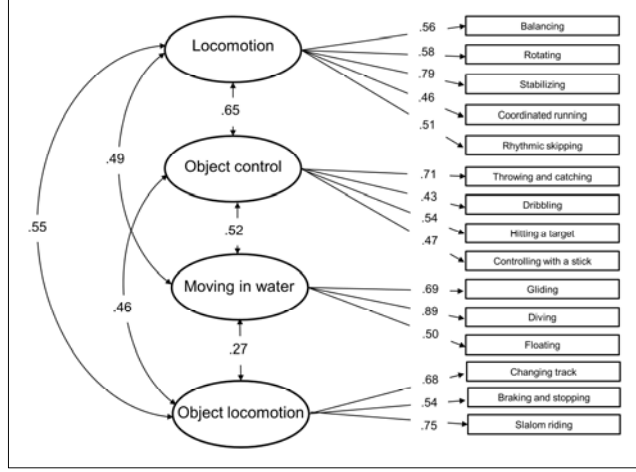


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MOBAK-LUX-3 for third graders

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Confirmatory factor analysis MOBAK-LUX-3 (2015)

Analysis	CFI	TLI	RMSEA [CI]	WRMR
CFA (15 Items) 4 Factors	.94	.92	.036 [.024-.046]	.89

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MOBAK-LUX MOBAK-LUX-3 results

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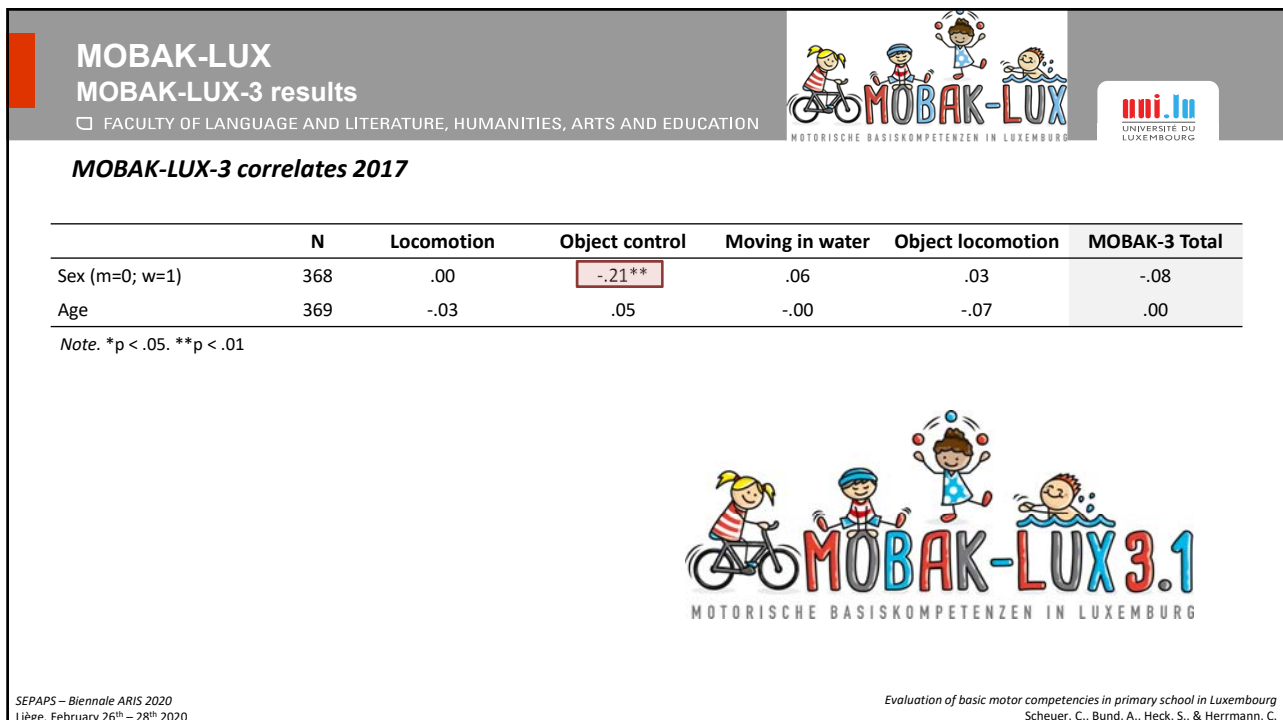
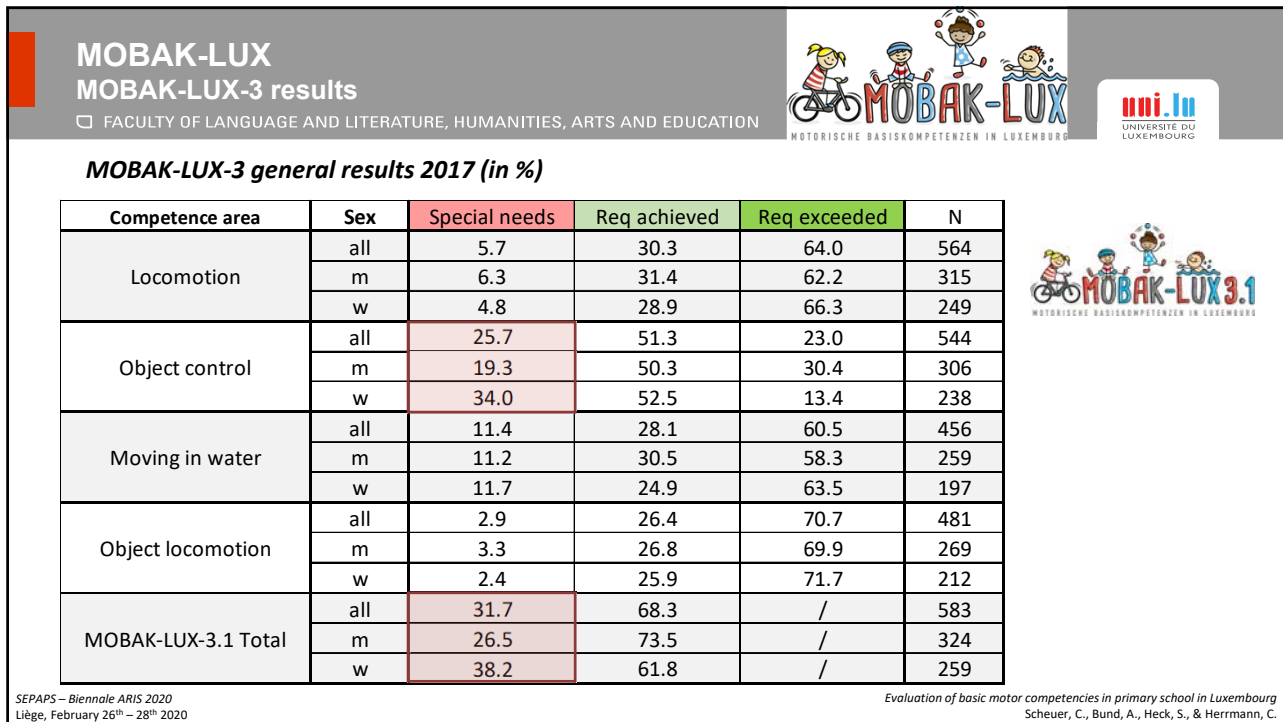
MOBAK-LUX-3 general results 2015-2018 (in %)

Competence area	Year	Special needs	Req achieved	Req exceeded	N
Locomotion	2015	5.3	23.1	71.6	468
	2016	7.4	25.8	66.8	446
	2017	5.7	30.4	64.0	566
	2018	8.1	30.9	61.0	431
Object control	2015	19.6	38.8	41.6	449
	2016	23.2	32.9	43.9	410
	2017	25.8	51.3	22.9	546
	2018	19.6	42.9	37.5	357
Object locomotion	2015	5.7	25.7	68.6	405
	2016	3.7	16.7	79.6	348
	2017	2.9	26.3	70.7	482
	2018	0.3	15.3	84.4	353
Moving in water	2015	7.9	31.2	61.0	420
	2016	13.3	33.7	53.1	377
	2017	11.4	28.0	60.6	457
	2018	8.0	28.0	64.0	289
MOBAK-Total	2015	29.5	70.5	/	448
	2016	31.1	68.9	/	473
	2017	31.8	68.2	/	585
	2018	24.5	46.2	29.3	437



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MOBAK-LUX MOBAK-LUX-1 results

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MOBAK-LUX-1 general results 2016-2018 (in %)

Competence area	Year	Special needs	Req achieved	Req exceeded	N
Locomotion	2016	6.1	16.5	77.4	624
	2017	12.6	35.0	52.4	468
	2018	12.1	41.8	46.0	354
Object control	2016	23.3	38.3	38.4	588
	2017	27.2	46.8	25.4	465
	2018	38.9	48.9	12.1	321
Object locomotion	2016	/	/	/	/
	2017	/	/	/	/
	2018	13.7	38.7	47.5	204
Moving in water	2016	15.1	30.0	54.9	510
	2017	14.6	33.3	52.1	426
	2018	11.8	35.4	52.8	305
MOBAK-Total	2016	31.3	68.7	/	633
	2017	38.9	61.1	/	473
	2018	48.4	42.9	8.8	364



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MOBAK-LUX MOBAK-LUX-1 results

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MOBAK-LUX-1 general results 2017 (in %)

Competence area	Sex	Special needs	Req achieved	Req exceeded	N
Locomotion	all	12.6	35.3	52.2	462
	m	12.9	32.5	54.6	240
	w	12.2	38.3	49.5	222
Object control	all	27.9	46.5	25.5	458
	m	21.7	39.6	38.8	240
	w	34.9	54.1	11.0	218
Moving in water	all	14.5	33.5	52.0	421
	m	10.5	33.2	56.4	220
	w	18.9	33.8	47.3	201
MOBAK-LUX-2.1 Total	all	39.1	60.9	/	465
	m	34.3	65.7	/	242
	w	44.4	55.6	/	223



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MOBAK-LUX MOBAK-LUX-1 results

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MOBAK-LUX-1 correlates 2017

	N	Locomotion	Object control	Moving in water	MOBAK-1 Total
Sex (m=0; w=1)	412	-.05	-.31**	-.11*	-.13**
Age	411	.09	.08	.12*	.01

Note. *p < .05. **p < .01



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MOBAK-LUX MOBAK-LUX-PS results

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MOBAK-LUX-PS general results 2018 (in %)



Competence area	Year	Special needs	Req achieved	Req exceeded	N
Locomotion	2018	25.9	43.3	30.8	626
Object control	2018	54.9	38.1	7.0	586
Object locomotion	2018	7.7	38.3	54.0	428
Moving in water	2018	23.7	33.9	42.4	245
MOBAK-Total	2018	41.8	55.4	2.8	570

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MOBAK-LUX MOBAK-LUX-5 results

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MOBAK-LUX-5 general results 2018 (in %)



Competence area	Year	Special needs	Req achieved	Req exceeded	N
Locomotion	2018	11.1	45.6	43.3	443
Object control	2018	18.9	45.5	35.6	334
Object locomotion	2018	9.9	37.7	52.3	151
Moving in water	2018	4.4	24.4	71.2	295
MOBAK-Total	2018	22.0	66.3	11.7	486

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Conclusion

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Results

- About one third of students in the different class levels have support needs in at least one area of basic motor competence
- The support needs are prevalent mostly in the area object control
- Girls have lower results than boys, especially in object control

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Conclusion

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Acceptance by teachers

In recent years, many school classes in Luxembourg have participated on a voluntary base in the MOBAK-LUX surveys. The increasing interest shows that the implementation of competence-oriented test tasks has found acceptance amongst teachers and helps them to identify students with support needs in certain areas of motor competence.

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Implications

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Development and implementation of a support framework

based on support measures on school and classroom level for students with low motor competence levels

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Thank you for listening! Questions?

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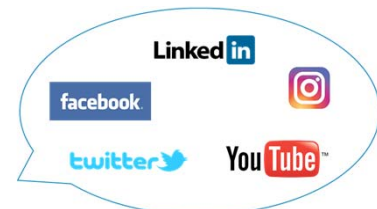
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