

Learning losses and recovery after the pandemic: results from twelve Chilean schools

Danilo Kuzmanic and Juan Pablo Valenzuela

11/01/2023

International Congress for School Effectiveness and Improvement 2023

Context

Uneven learning losses and recovery in the world

- Disruption of in-person instruction during the **COVID-19 pandemic led to significant losses in children's learning**, with more significant impacts in low- and middle-income countries (The World Bank, UNESCO, and UNICEF, 2021; Betthäuser et al., 2022).
 - Overall, losses across countries with measures in 2020-2021 represent **0.17 sd**. This figure rises up to **0.5 sd in middle-income countries** (Brazil, Mexico, and Sudáfrica).
- The pandemic's uneven impact **enlarged the socioeconomic gaps within countries**.
 - Socially disadvantaged students' households were less equipped and able to compensate for school closures and were hit harder by economic- and health-related shocks (Patrinos et al., 2022).
- No clear trend of **learning recovery** in the world:
 - Across many countries, losses arose early in the pandemic and remained stable in **2020-2021** (Betthäuser et al., 2022)
 - **India 2022**: Two-thirds of the learning loss found for 5-7-years old students in December 2021 (0.7 sd and 0.34 sd in mathematics and language, respectively) was compensated by May 2022 (Singh et al., 2022).



Context

Chile: Prolonged closure and low attendance in 2020-2021

- **Chile is one of the countries with the more prolonged school closure** during the pandemic worldwide (UNESCO, 2022; Claro et al., 2022).
- **Less than 10% of schools opened in 2020** after lockdown restrictions were lifted (August-December).
- The slow resumption of in-person instruction in **2021** implied that the average time spent by students in **in-person instruction represented about 10% of the time they spent before the pandemic** (Valenzuela et al., 2022).
- Little is known about the **effective learning losses in Chile** and how they have evolved throughout the pandemic as educational communities tried to adapt to this new context and students returned to their classrooms in 2021-2022.
 - We partially addressed this gap, focusing on the **reading domain of 7-11-years old students in Chile.**



Research questions

1. *How did students' reading ability start in 2021 compared to pre-pandemic years after a fully-remote 2020 in Chile?*
1. *How did these gaps evolve throughout 2021-2022 after the gradual reopening and return of students in Chile?*
1. *How was the socioeconomic and genre gap within schools affected by the disruption of in-person learning in Chile?*



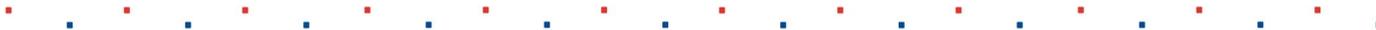
Data

- Data from **9,929 students in the first to sixth grade of 12 primary schools**, which belong to the ***Belén Educa* foundation** in the Metropolitan Region.
- Assessment of **students' reading domain**. Two dimensions:
 - **Reading quality**: Not reader, Syllabic, Word by word, Short units, Fluent.
 - **Reading speed**: Number of words read per minute.
- **Multiple measures over time**: at the start (March-April) and end (November-December) of 2018, 2019, 2021, and 2022 -> temporal comparability of their results.



Limitations

- **The sample is NOT representative nationwide.**
- These schools depict **academically successful experiences** with a relatively high share of in-person instructions within the Chilean context:
 - It comprises schools with low and medium-low socioeconomic status students who get medium-high academic performance.
 - **They opened a higher proportion of days** between October 2020 and December 2021 (48%) than the national average (34%) despite spending more days in government-enforced lockdowns.



Analysis strategy

- **Multivariate regression models** to compare students' results before, during, and after the pandemic while adjusting for **schools' fixed effects and student-level covariables**:
 - If they are priority students (lowest socioeconomic level according to the Chilean voucher system)
 - Parents' maximum educational level
 - Genre
 - Nationality
- We compare similar students in the same grade and school between 2018-2019 (pre-pandemic) and:
 - 2021: *gradual* reopening and *partial* return of students
 - and 2022: *massive* return to schools

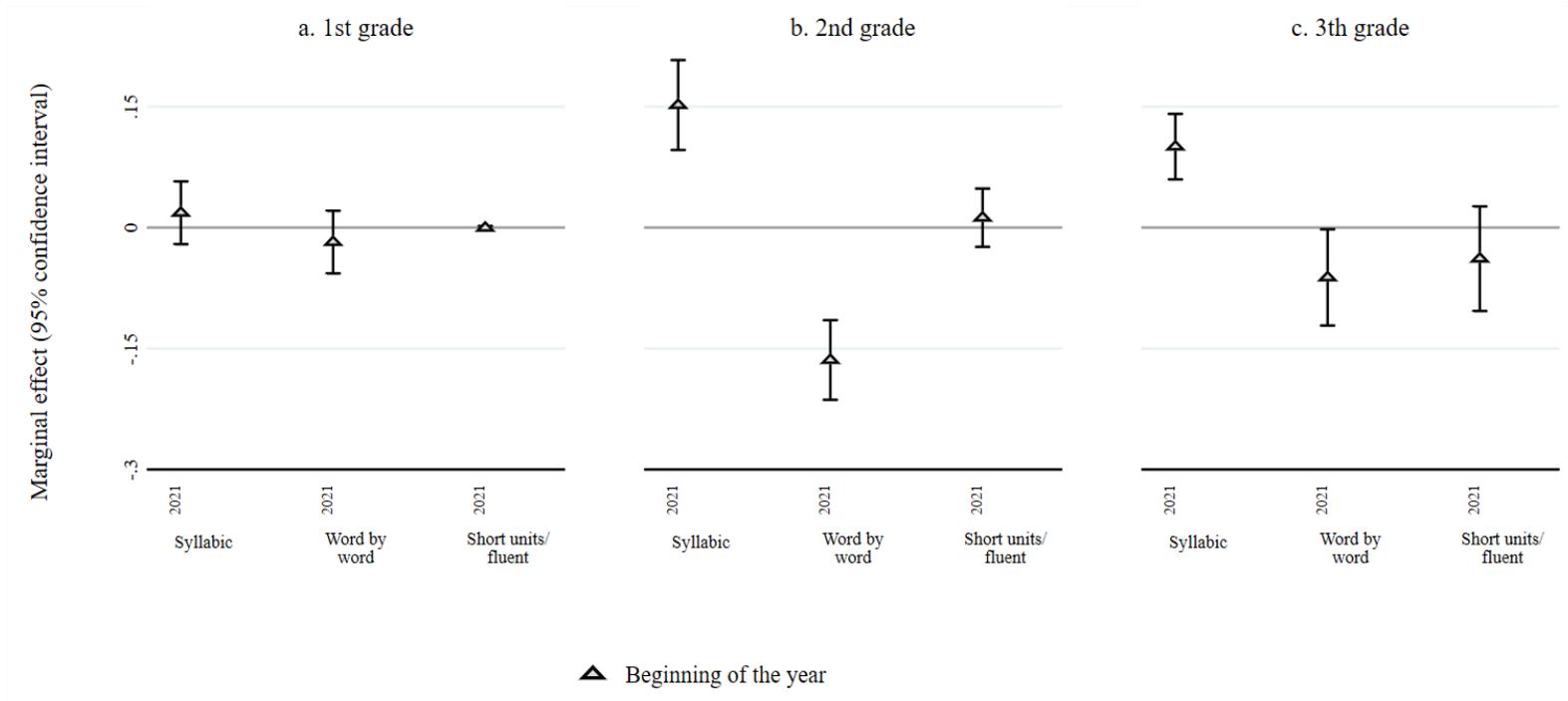


Results

Reading quality: 1st-3rd grade

Figure 1

*Gap between 2021 (2022) and 2018-2019 in **reading quality** classification (mlogit estimation)*

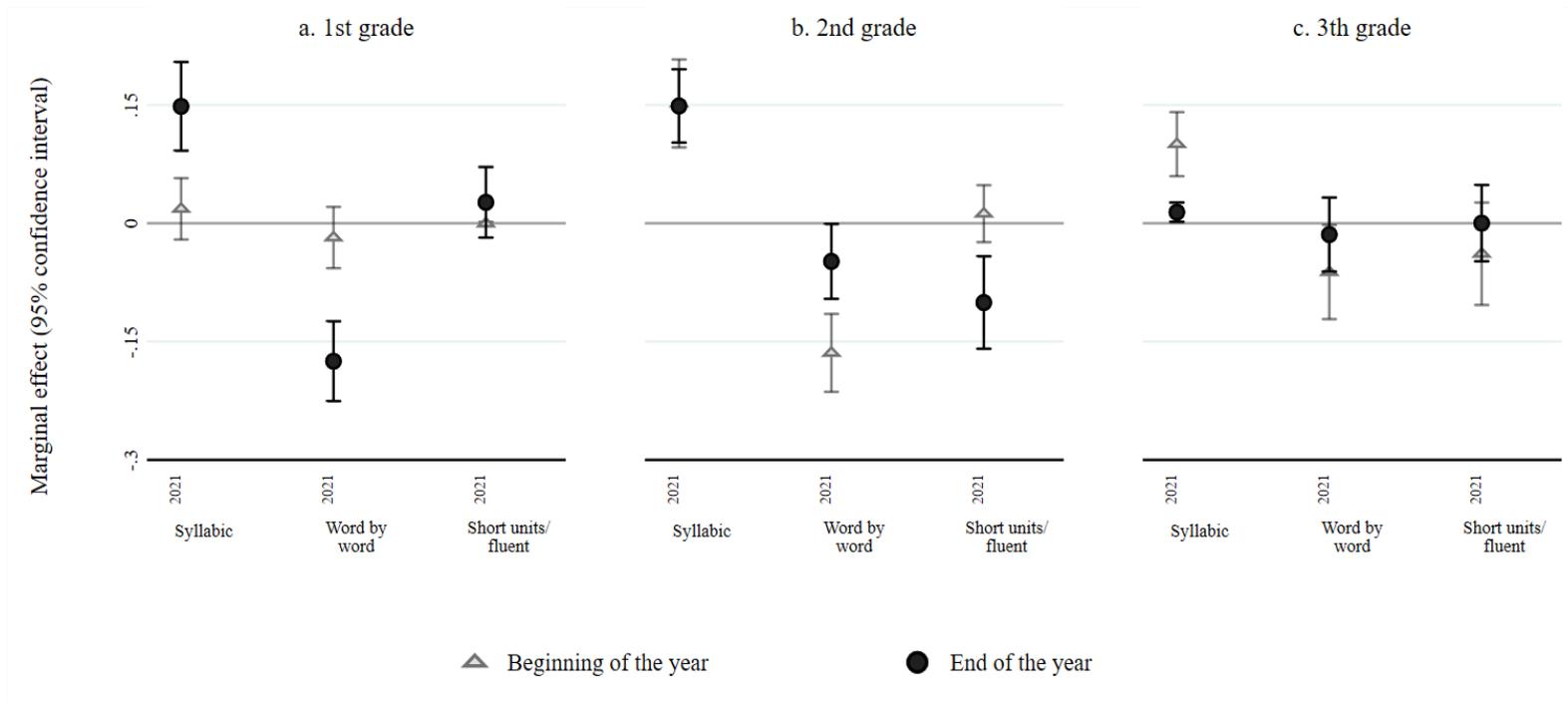


Results

Reading quality: 1st-3rd grade

Figure 1

*Gap between 2021 (2022) and 2018-2019 in **reading quality** classification (mlogit estimation)*

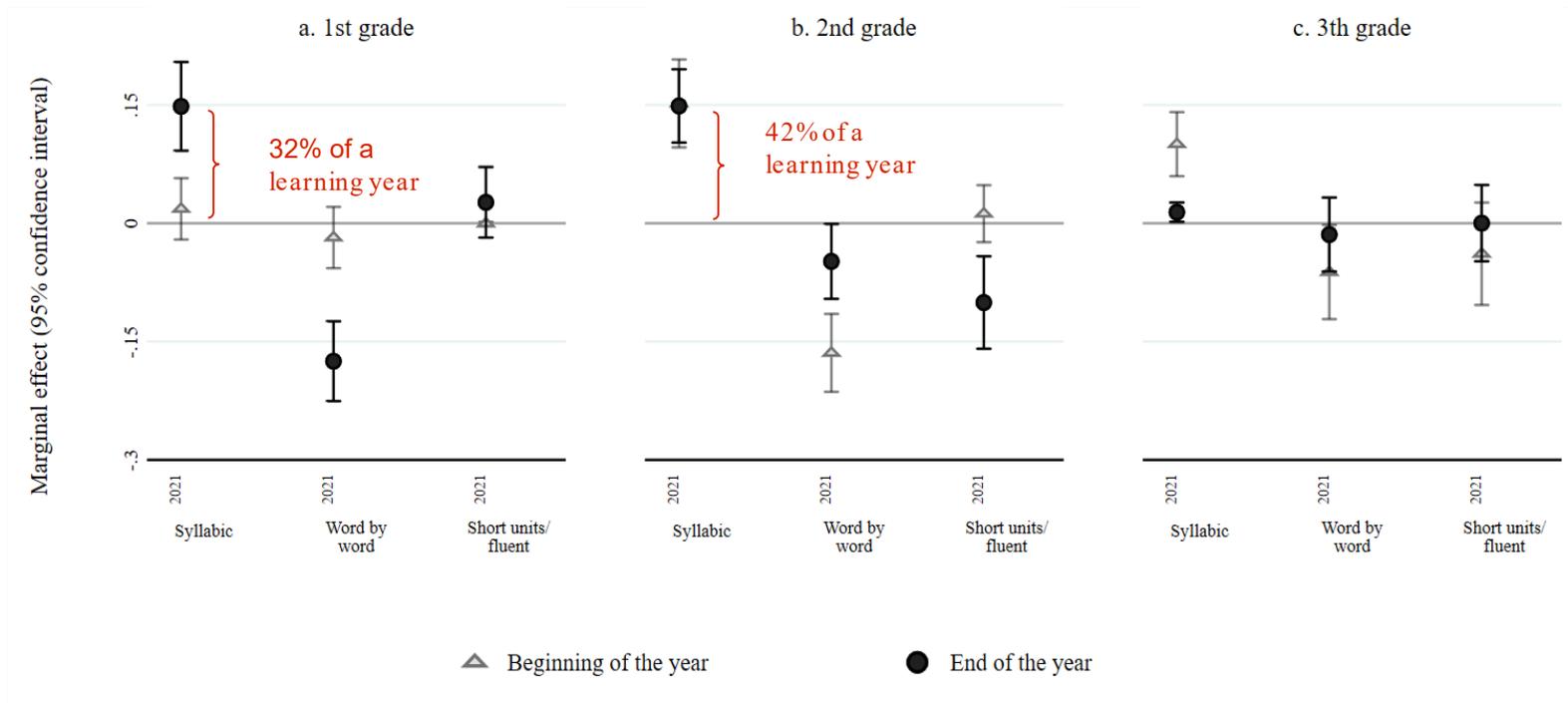


Results

Reading quality: 1st-3rd grade

Figure 1

Gap between 2021 (2022) and 2018-2019 in **reading quality** classification (mlogit estimation)

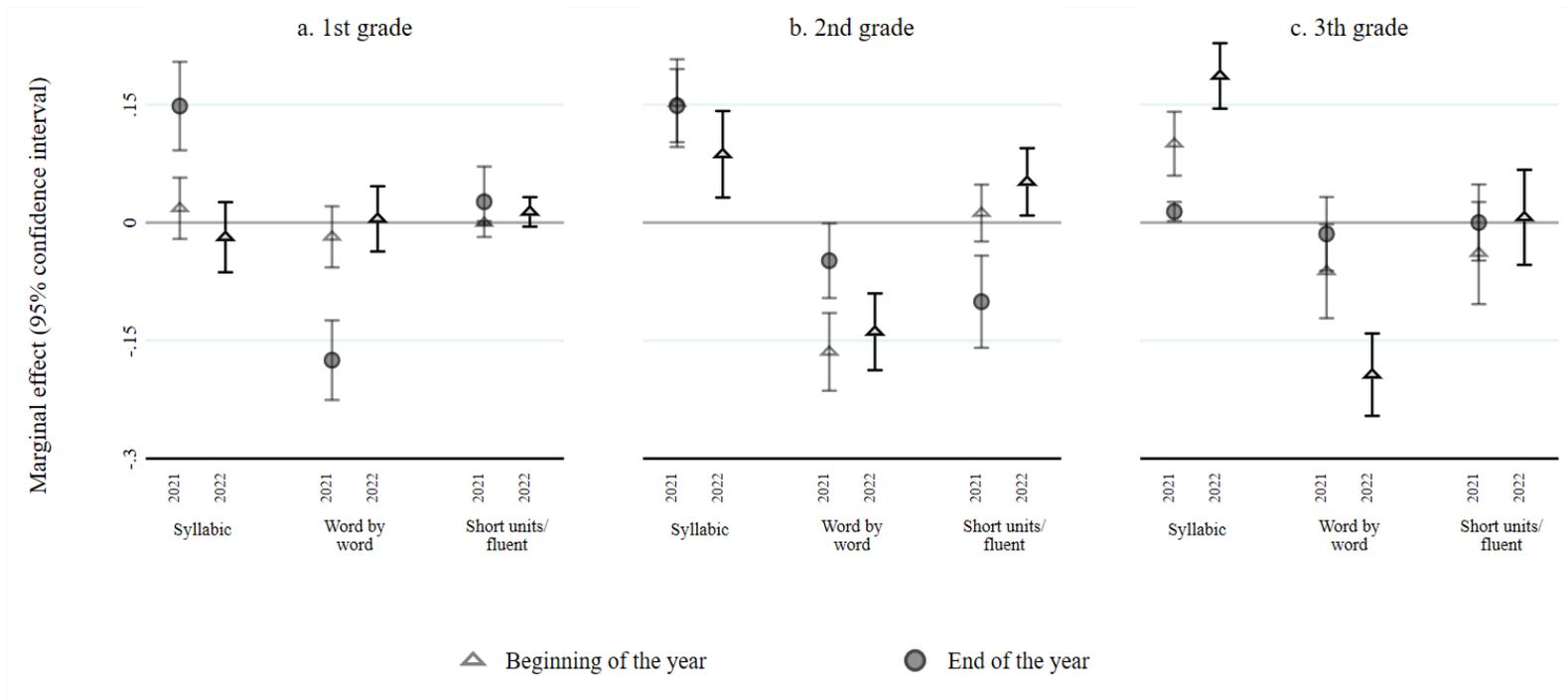


Results

Reading quality: 1st-3rd grade

Figure 1

*Gap between 2021 (2022) and 2018-2019 in **reading quality** classification (mlogit estimation)*

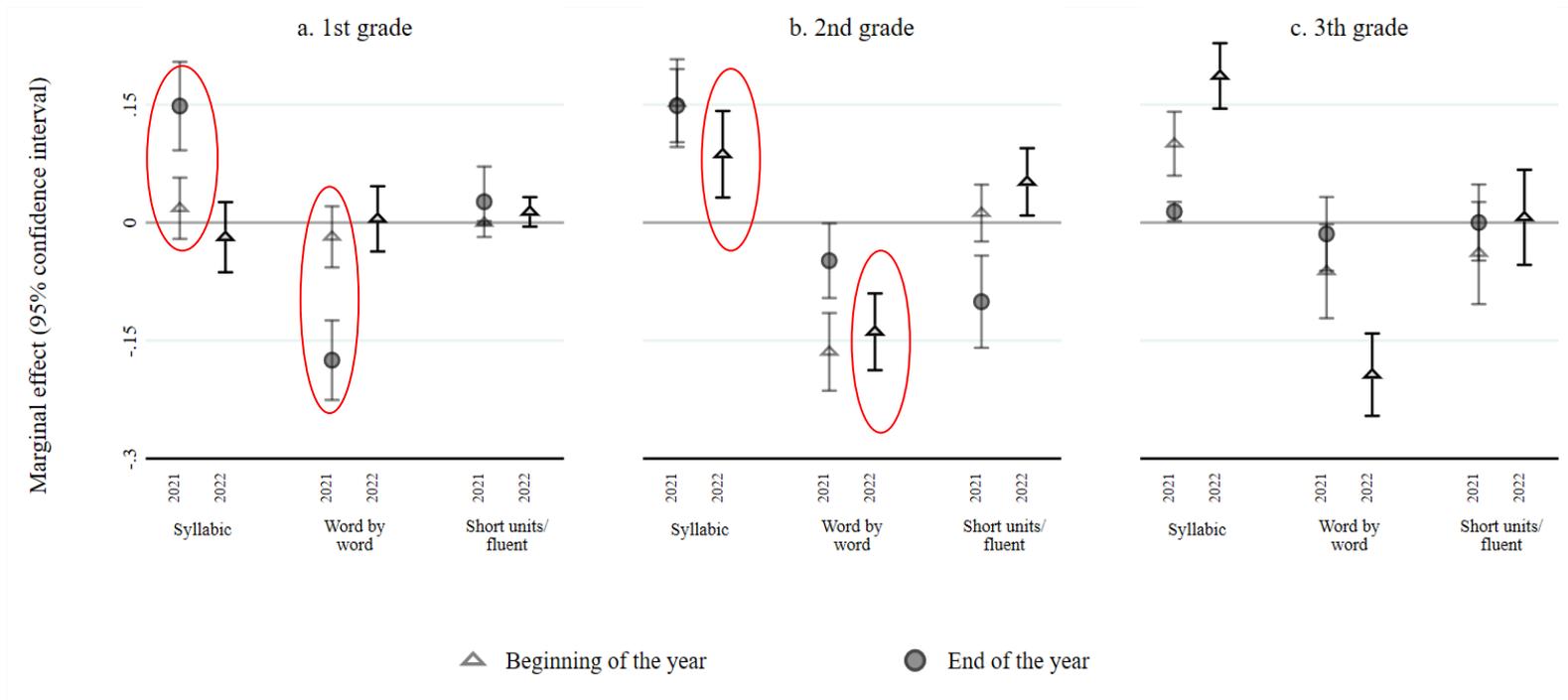


Results

Reading quality: 1st-3rd grade

Figure 1

*Gap between 2021 (2022) and 2018-2019 in **reading quality** classification (mlogit estimation)*

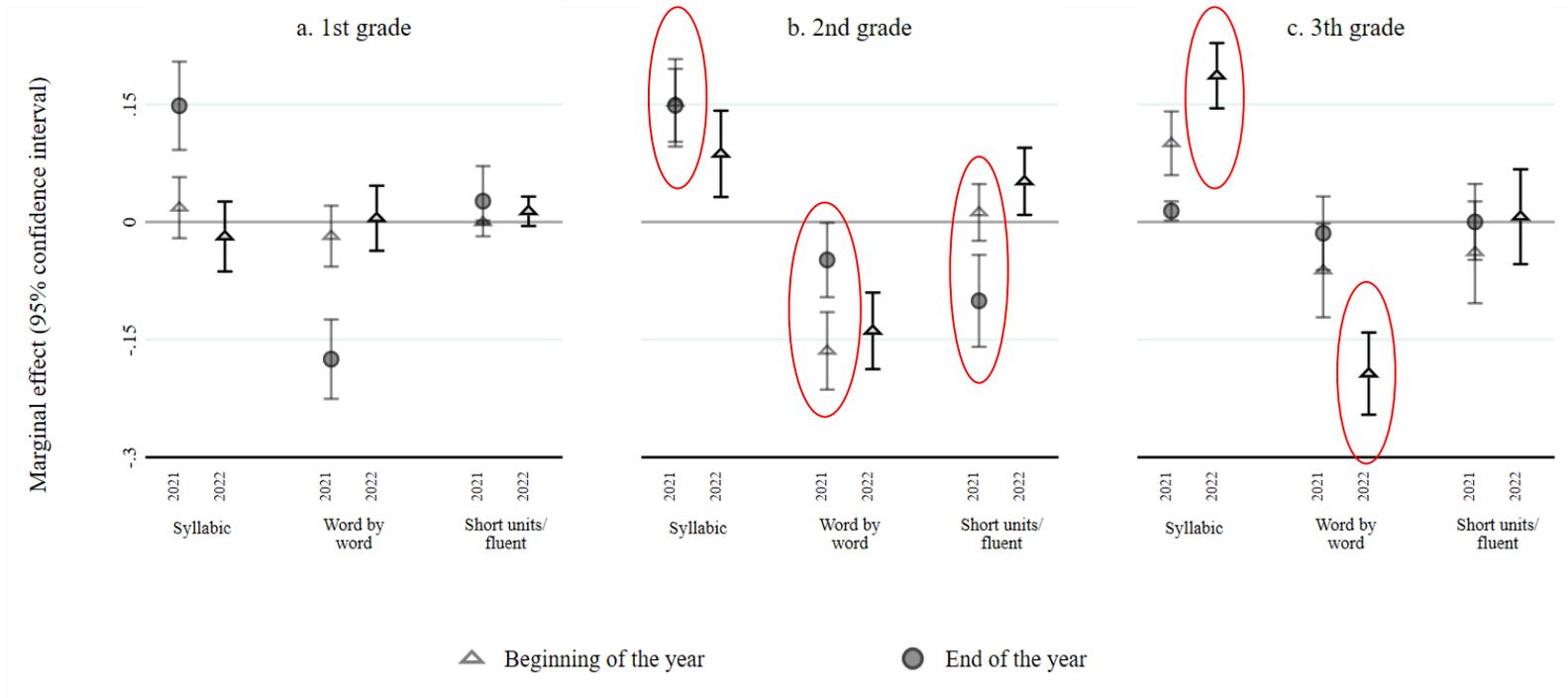


Results

Reading quality: 1st-3rd grade

Figure 1

*Gap between 2021 (2022) and 2018-2019 in **reading quality** classification (mlogit estimation)*

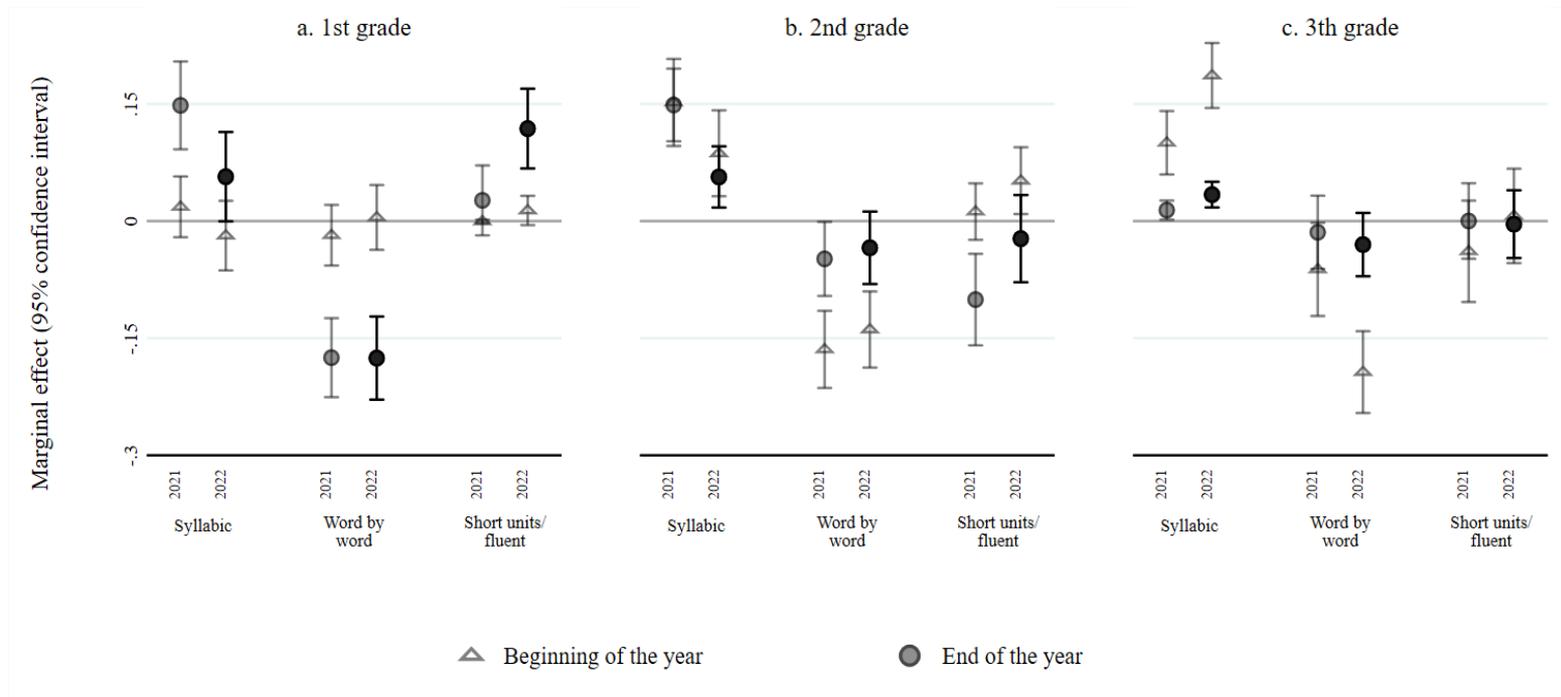


Results

Reading quality: 1st-3rd grade

Figure 1

Gap between 2021 (2022) and 2018-2019 in **reading quality** classification (mlogit estimation)

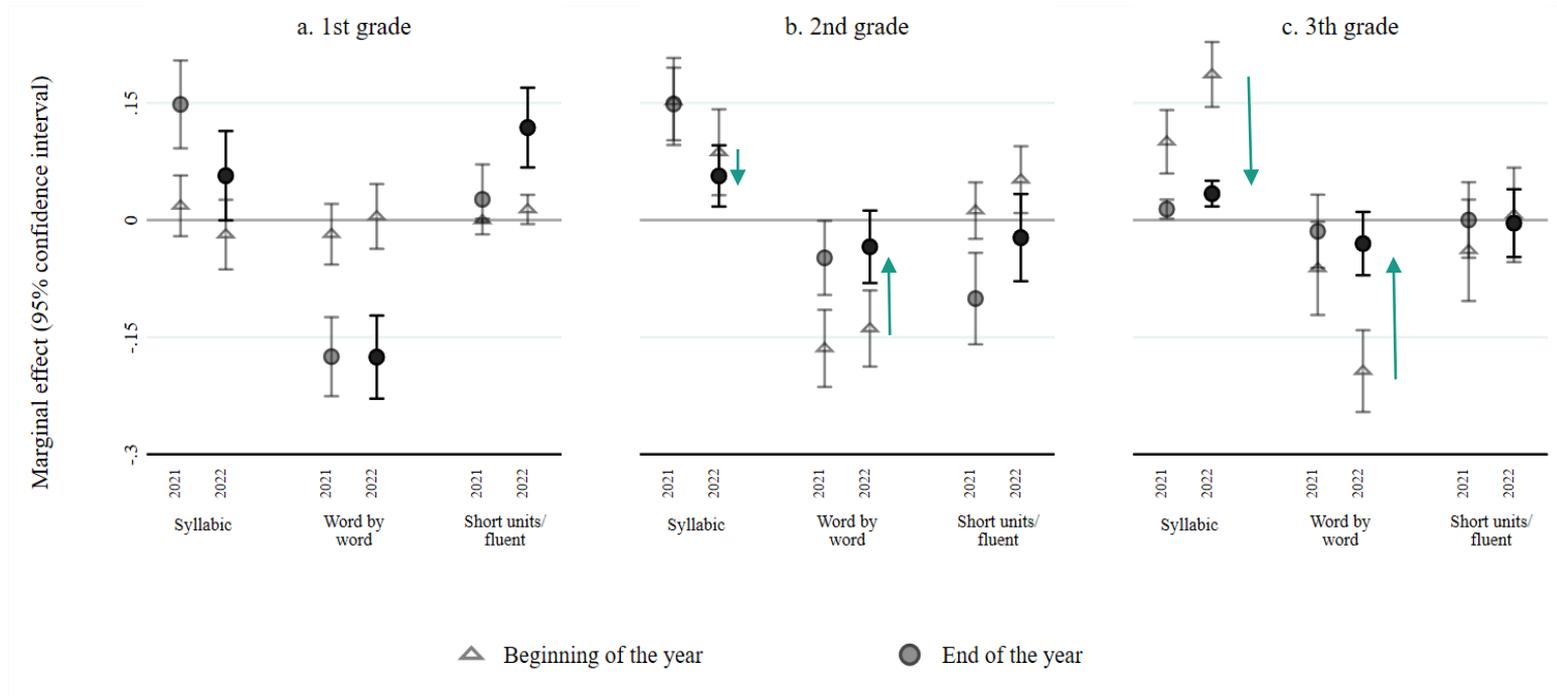


Results

Reading quality: 1st-3rd grade

Figure 1

*Gap between 2021 (2022) and 2018-2019 in **reading quality** classification (mlogit estimation)*

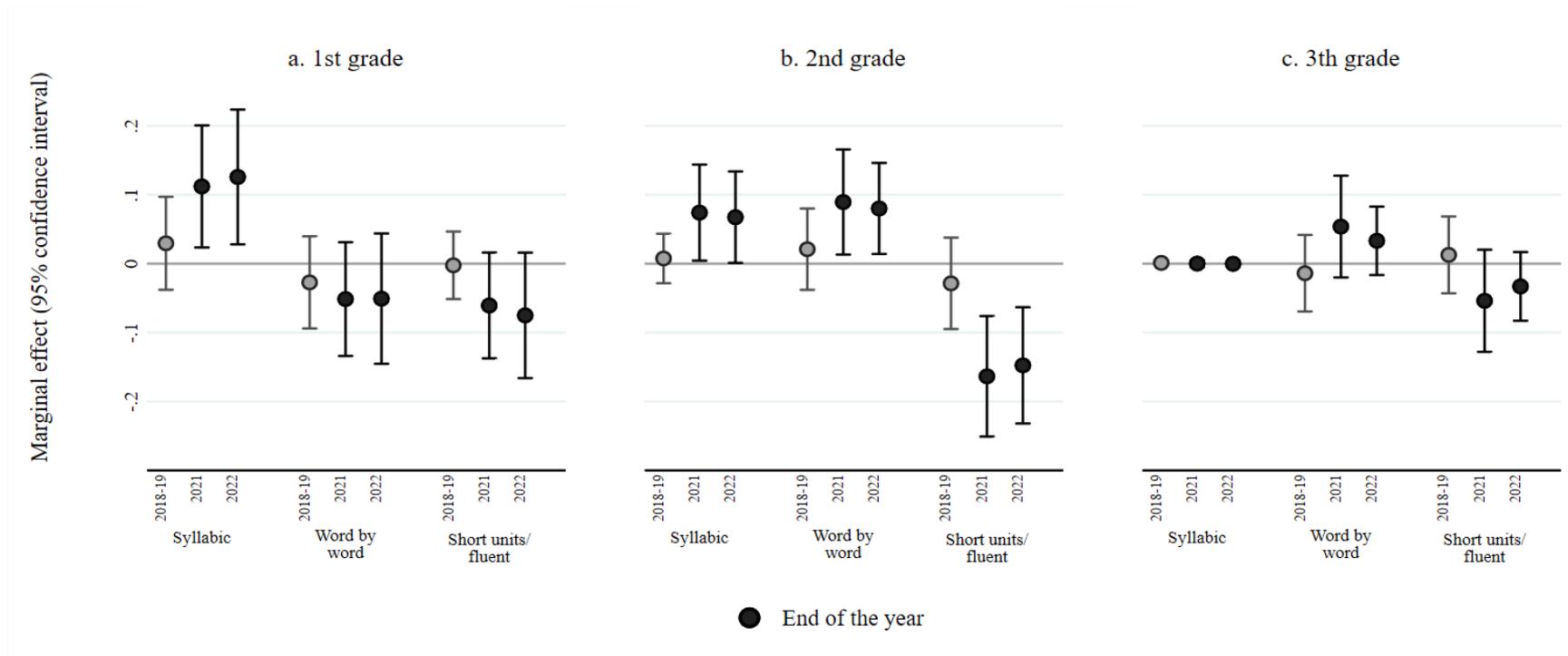


Results

Reading quality: 1st-3rd grade

Figure 2

Priority vs Non-priority students gap in 2018-2019, 2021, and 2022 in reading quality classification (mlogit estimation)

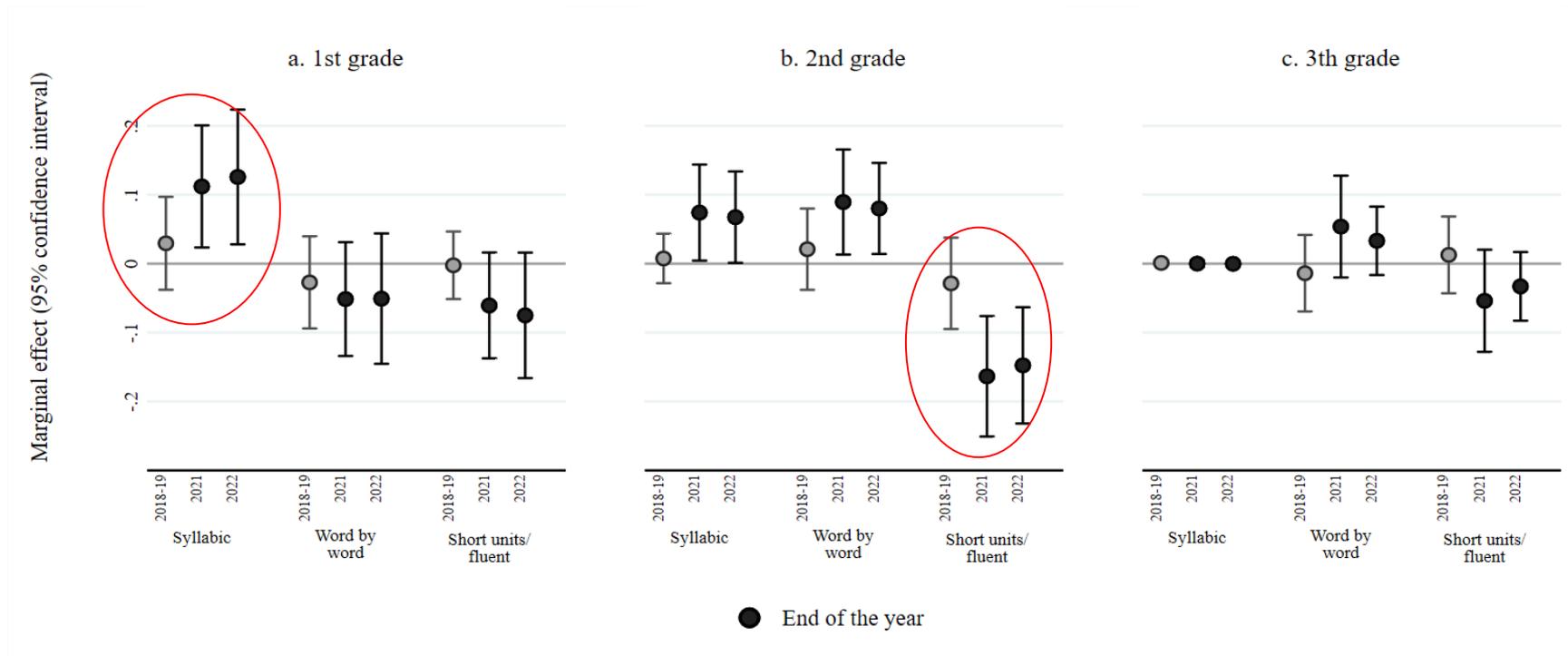


Results

Reading quality: 1st-3rd grade

Figure 2

Priority vs Non-priority students gap in 2018-2019, 2021, and 2022 in reading quality classification (mlogit estimation)

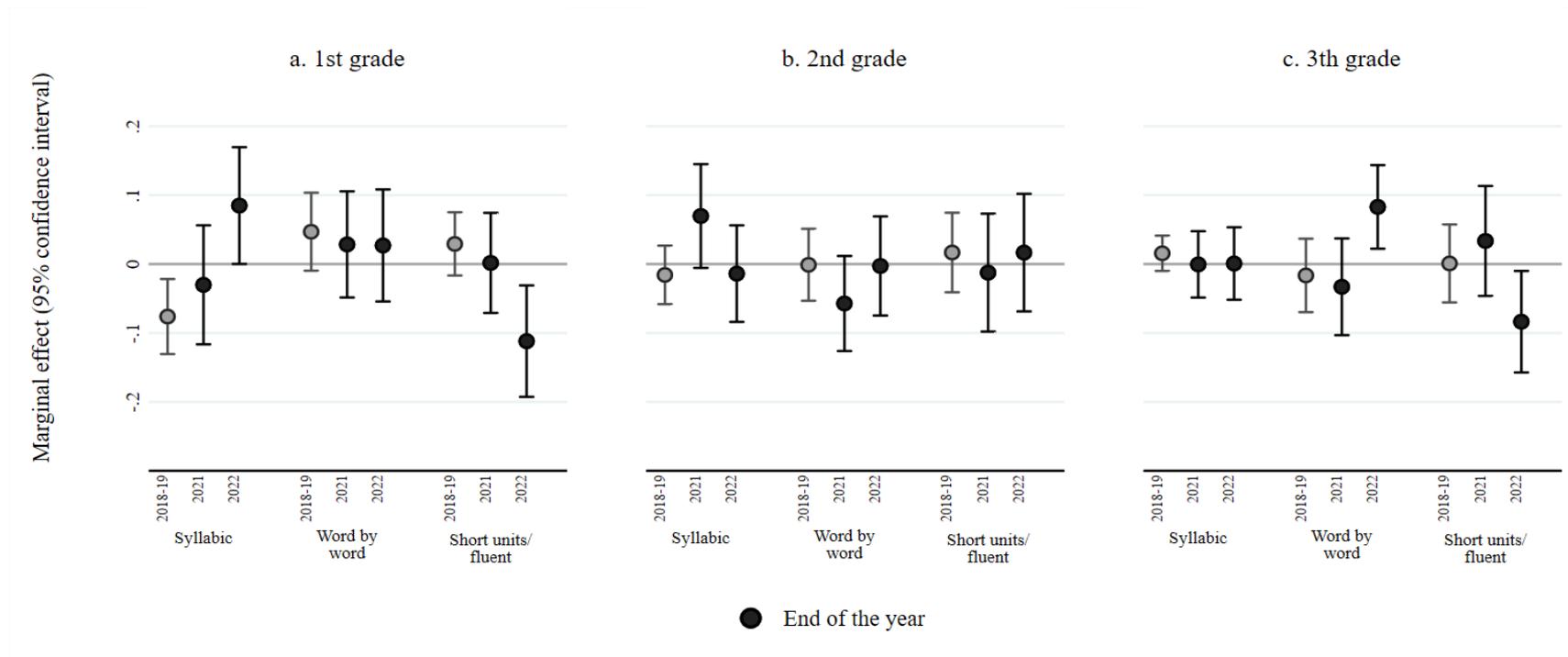


Results

Reading quality: 1st-3rd grade

Figure 3

Genre gap in 2018-2019, 2021, and 2022 in **reading quality** classification (mlogit estimation)

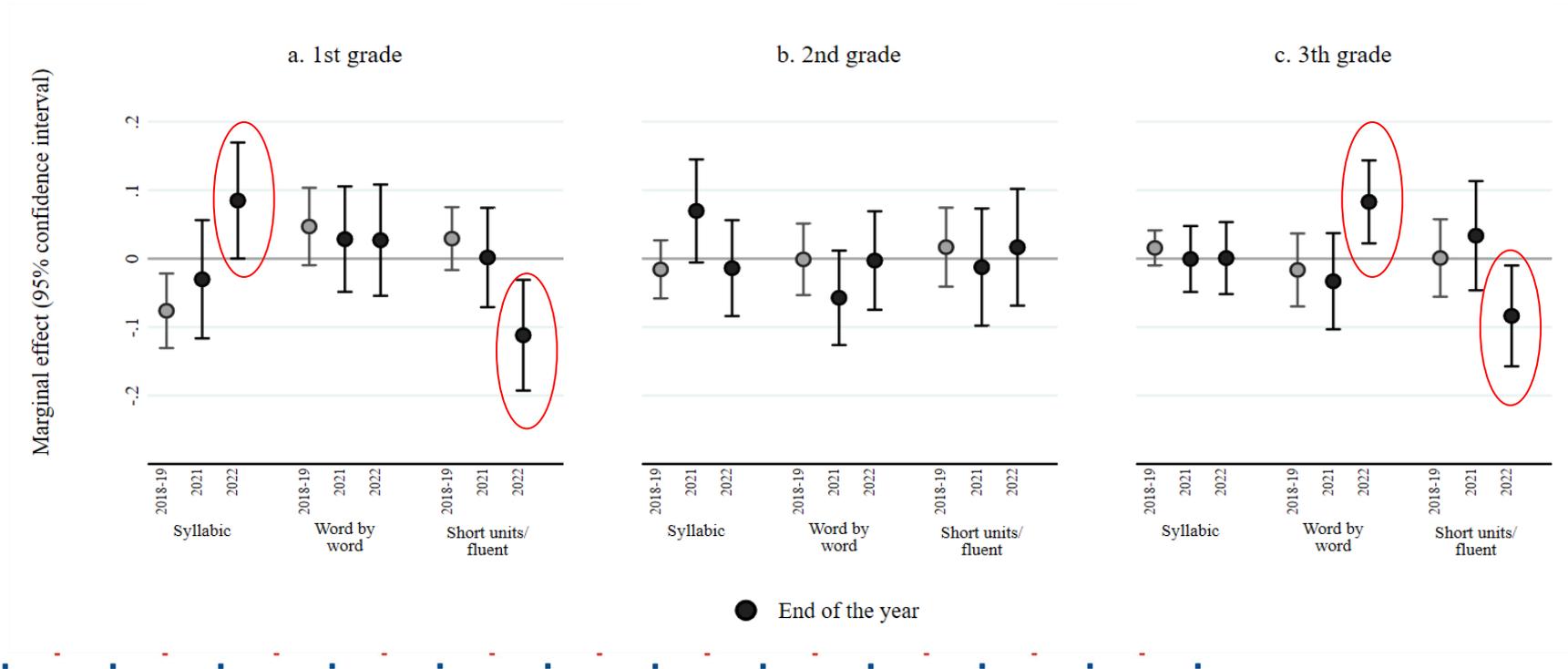


Results

Reading quality: 1st-3rd grade

Figure 3

Genre gap in 2018-2019, 2021, and 2022 in **reading quality** classification (mlogit estimation)



Results

Reading quality: 4th-6th grade

- Trend are not equally clear at higher grades:
 - 4th grade: better results in 2022 compared to 2018-2019
 - 5th grade: worst results in 2021 compared to 2018-2019
 - 6th grade: no differences found
- Socioeconomic differences remained unchanged in these grades, and there is no genre gaps either.

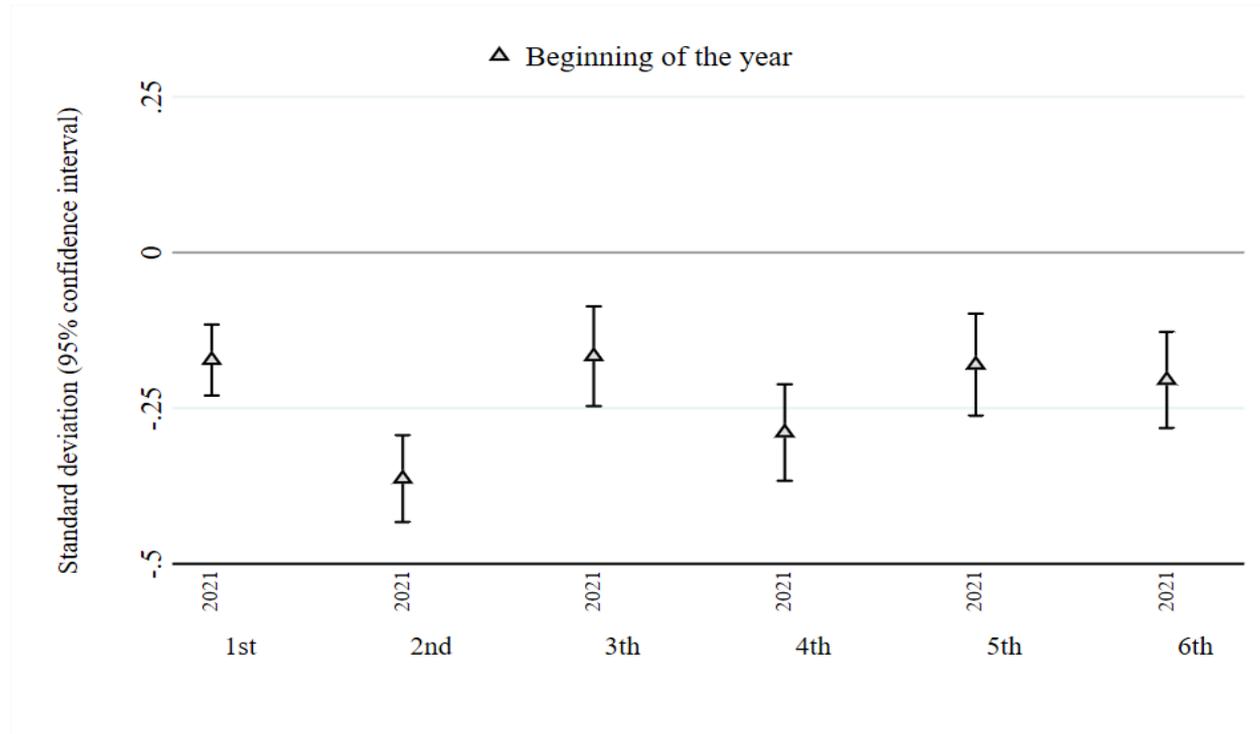


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

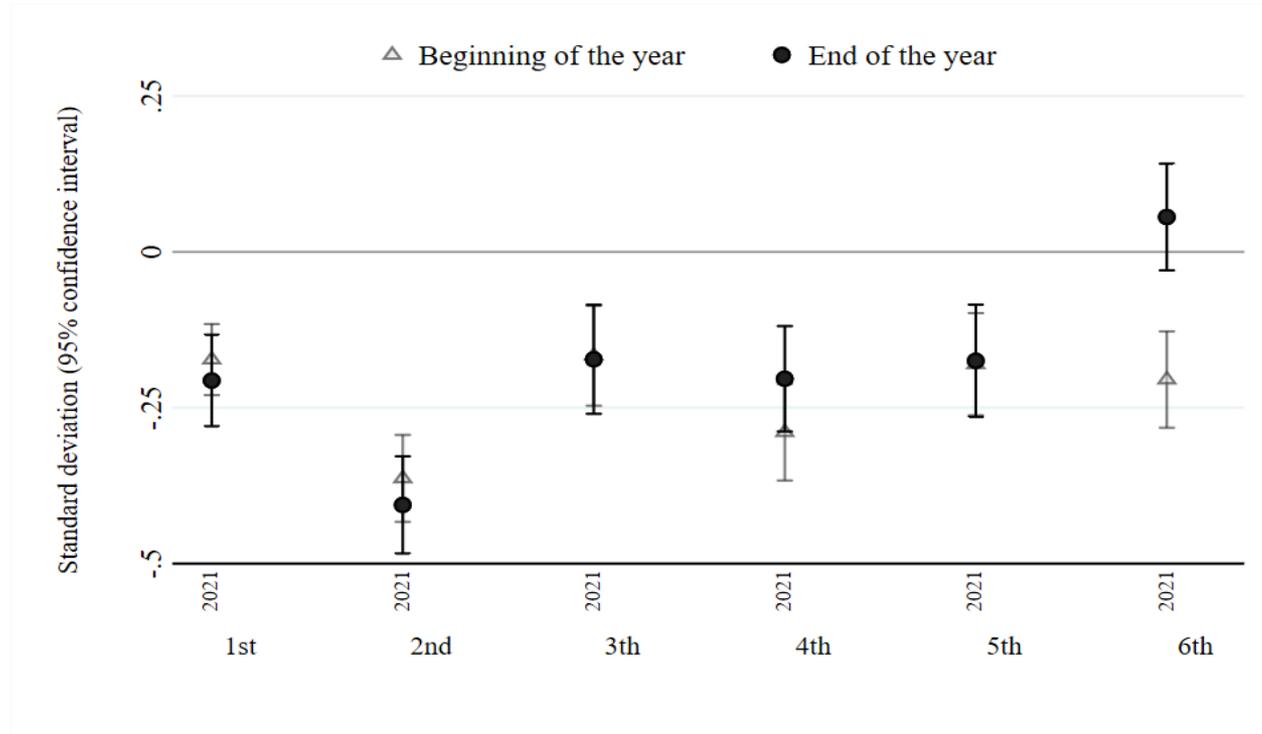


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

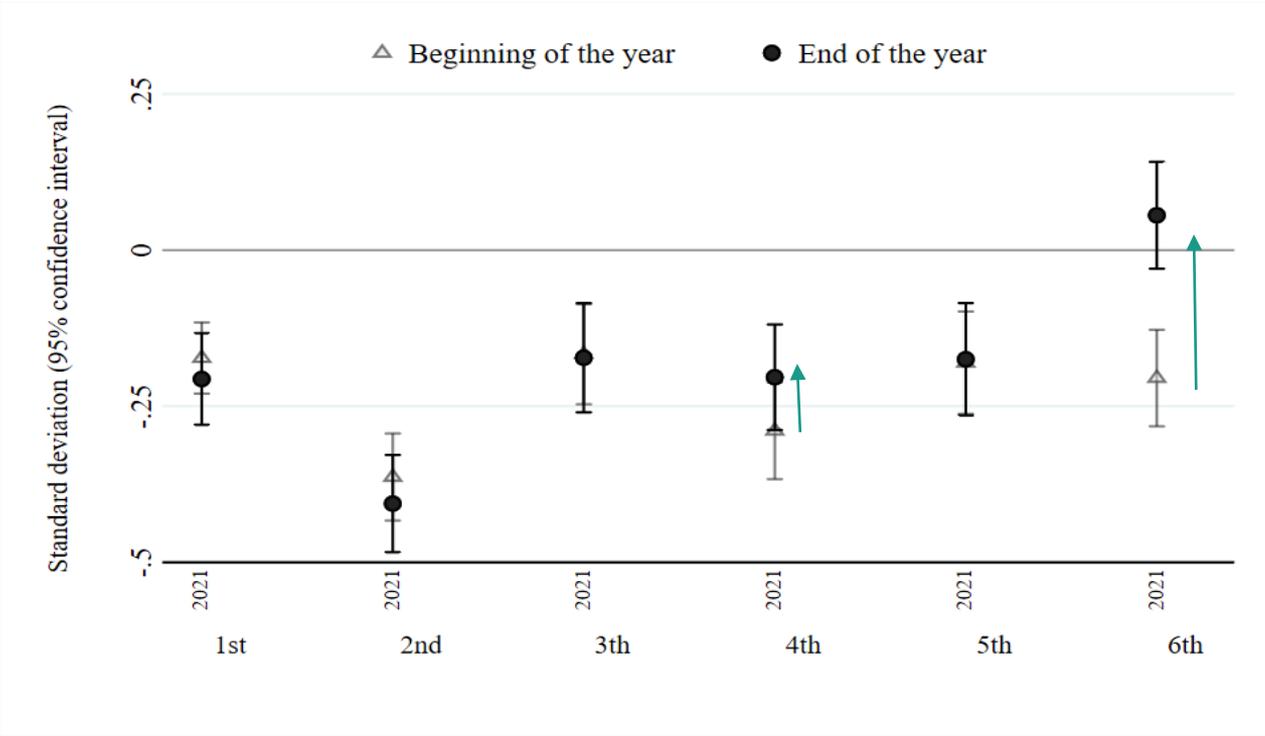


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

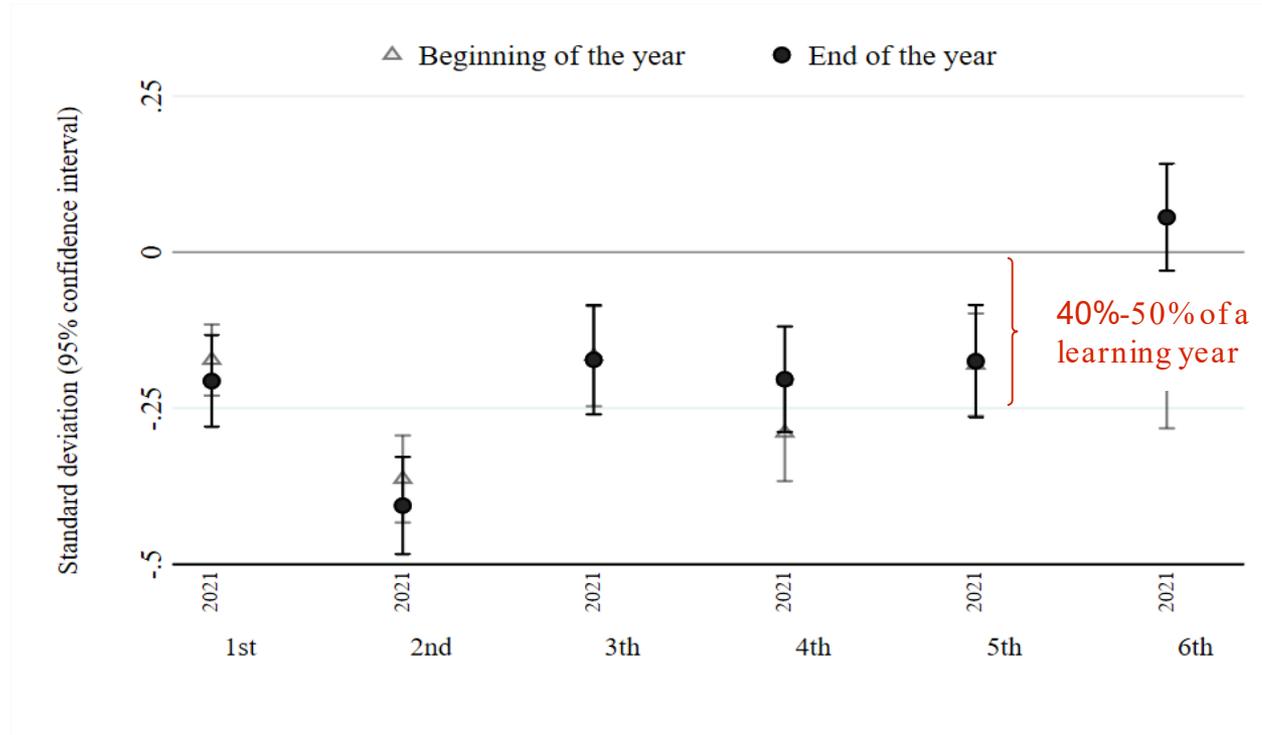


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

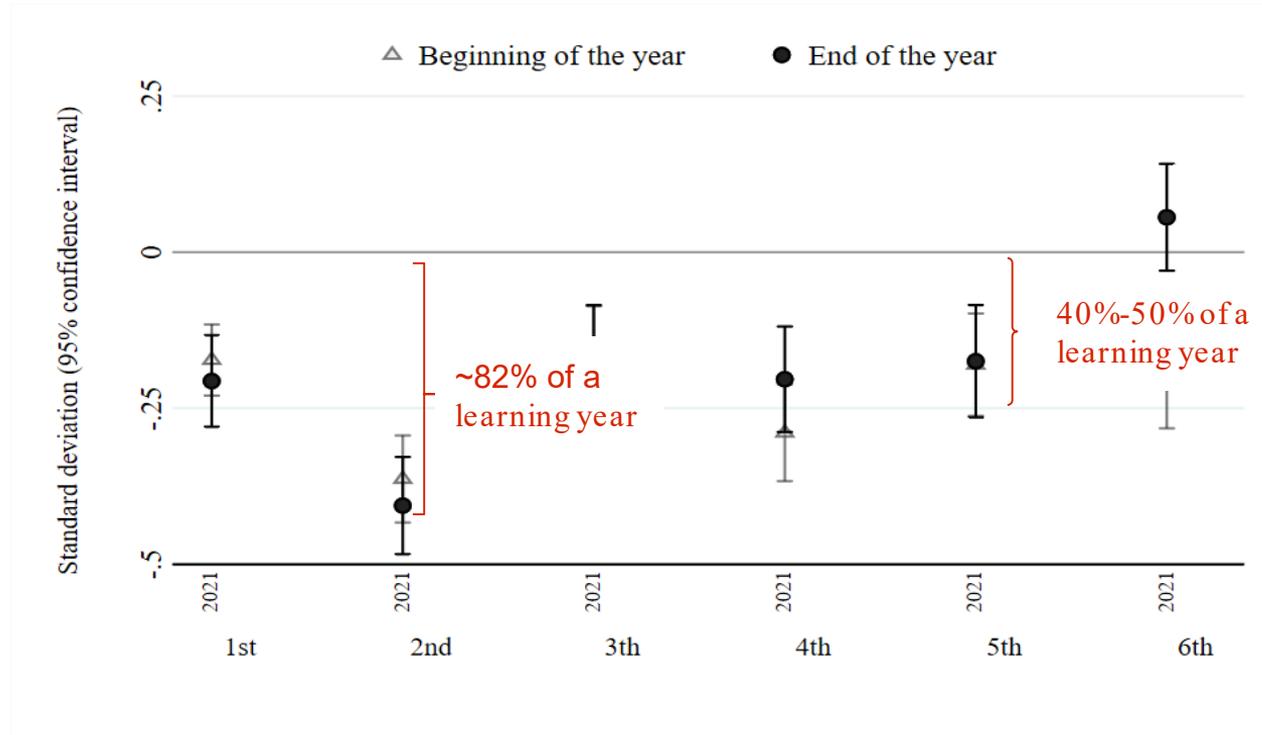


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

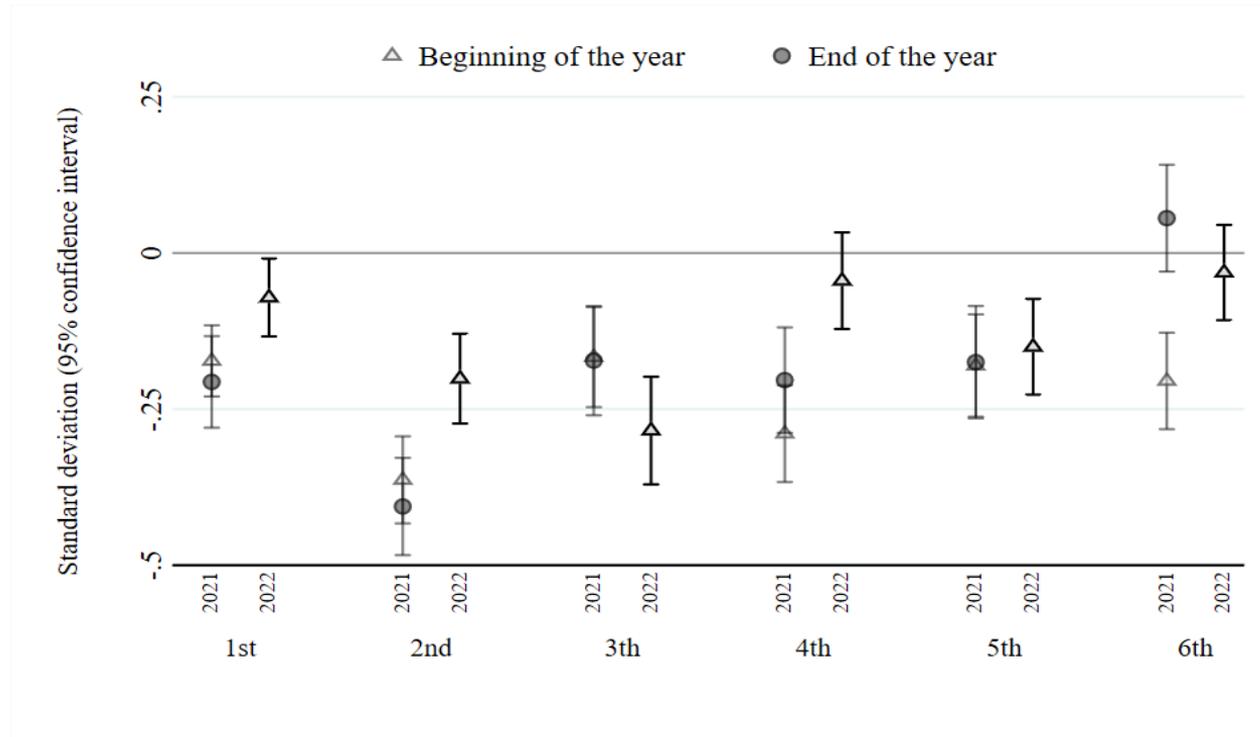


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

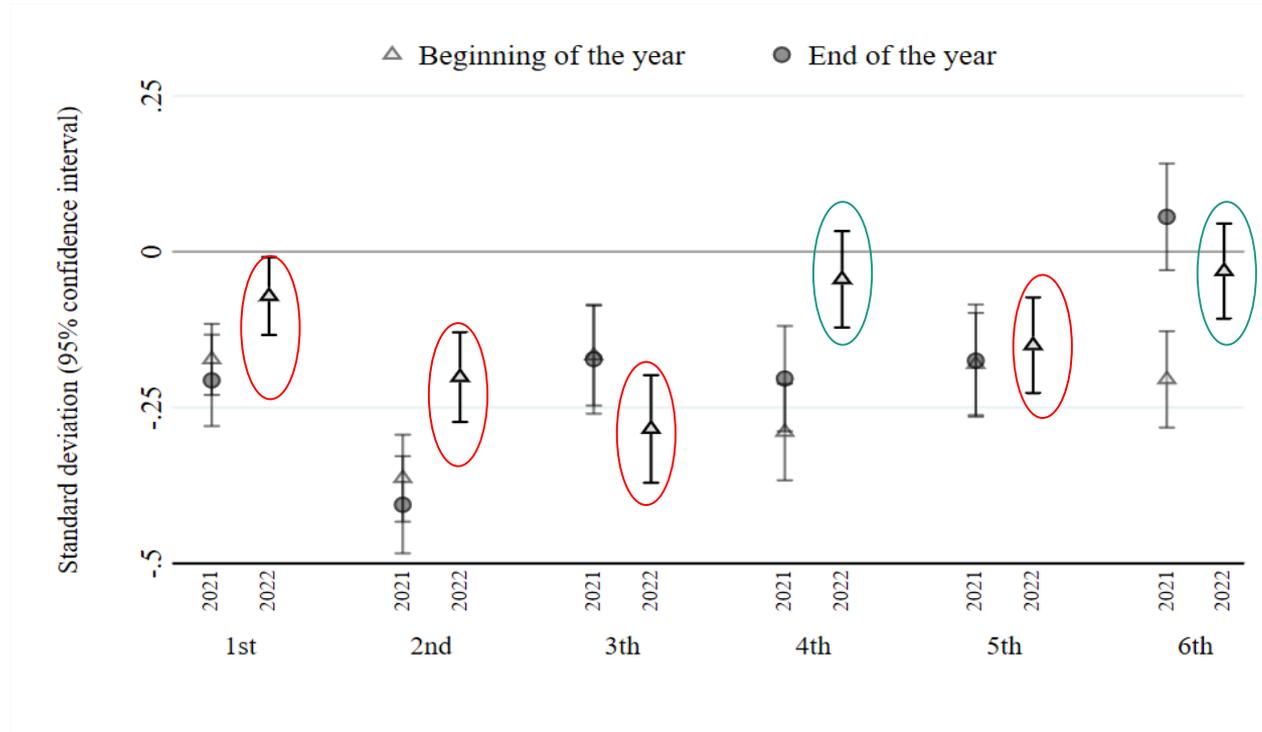


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

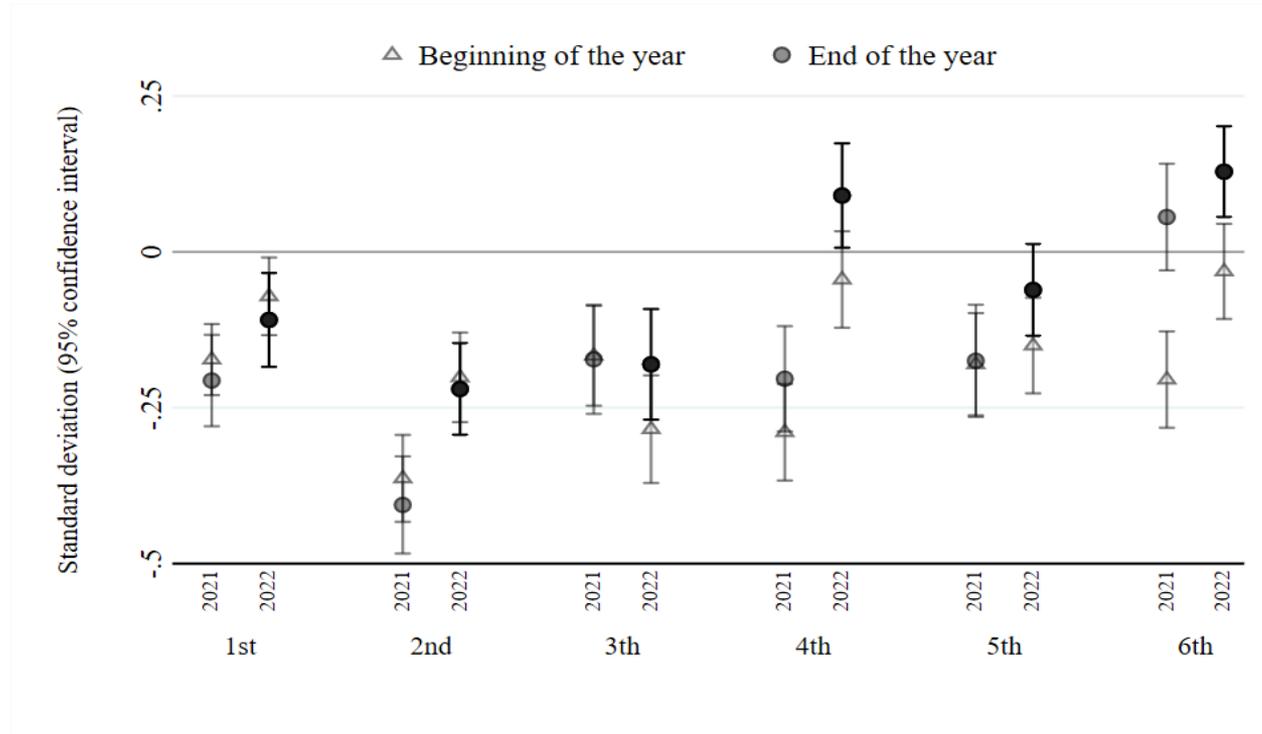


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

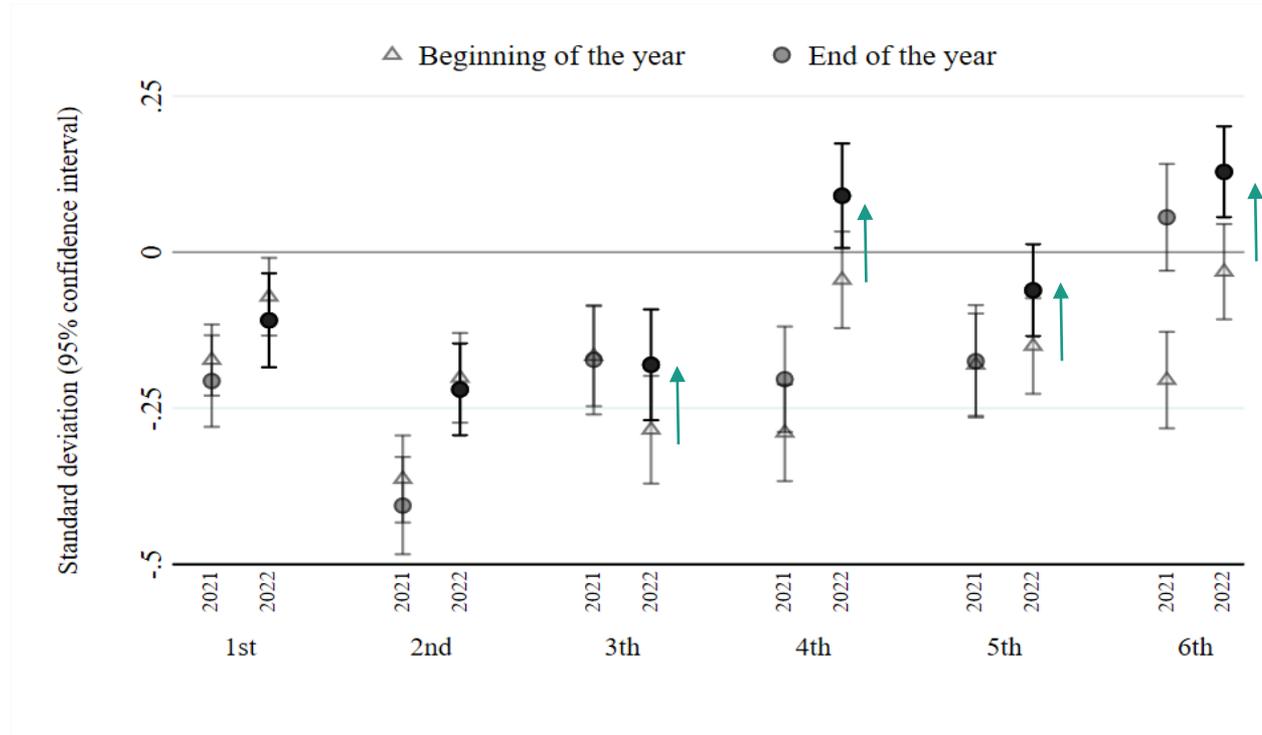


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

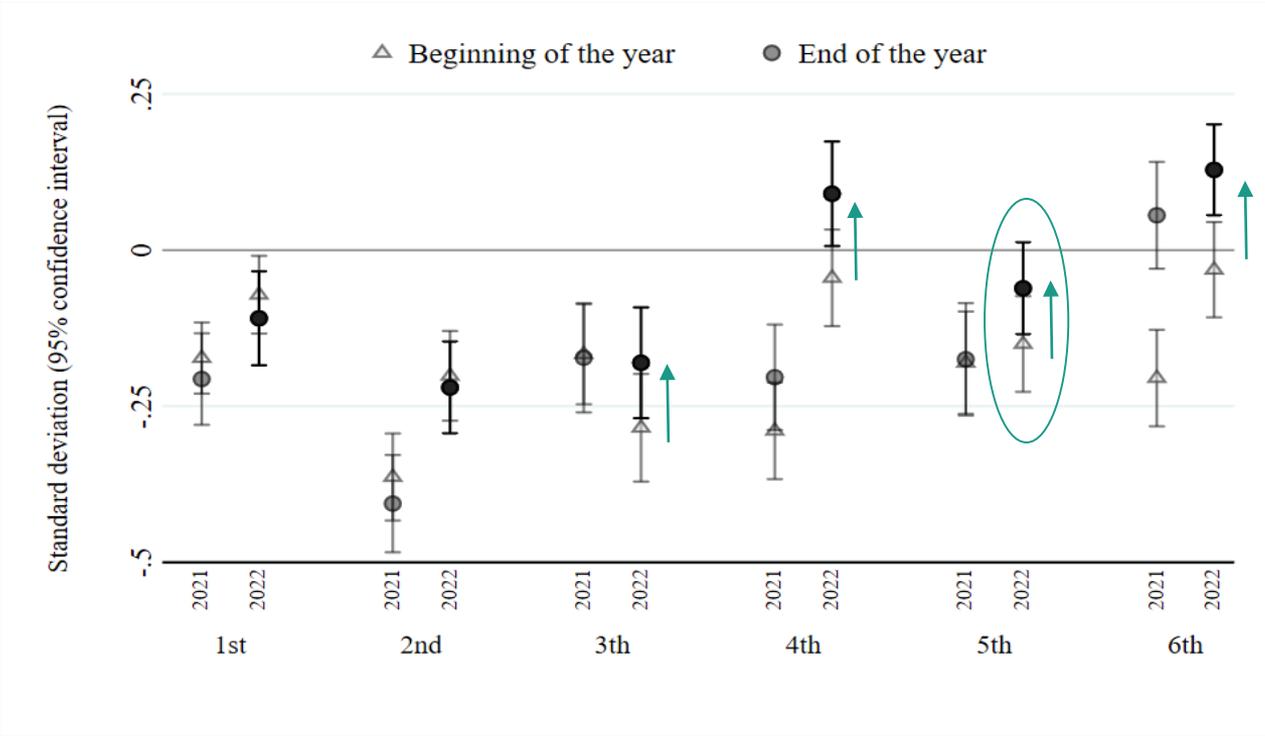


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

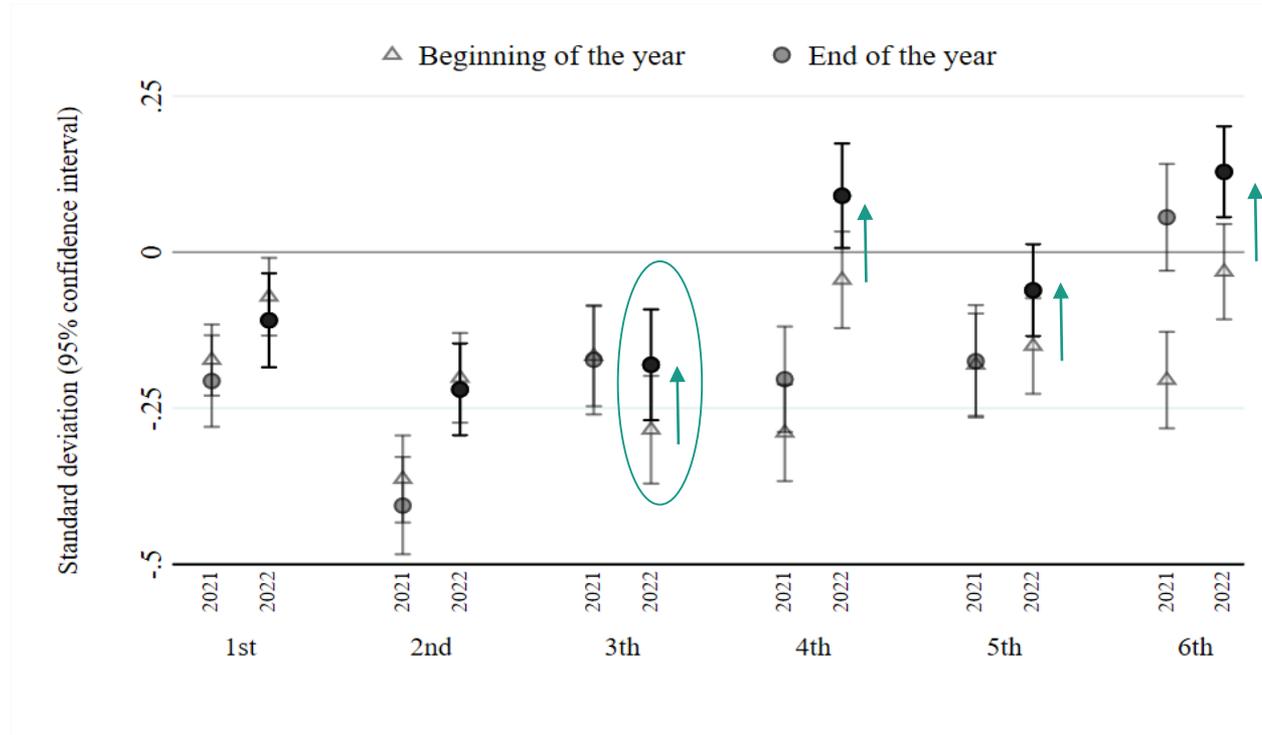


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

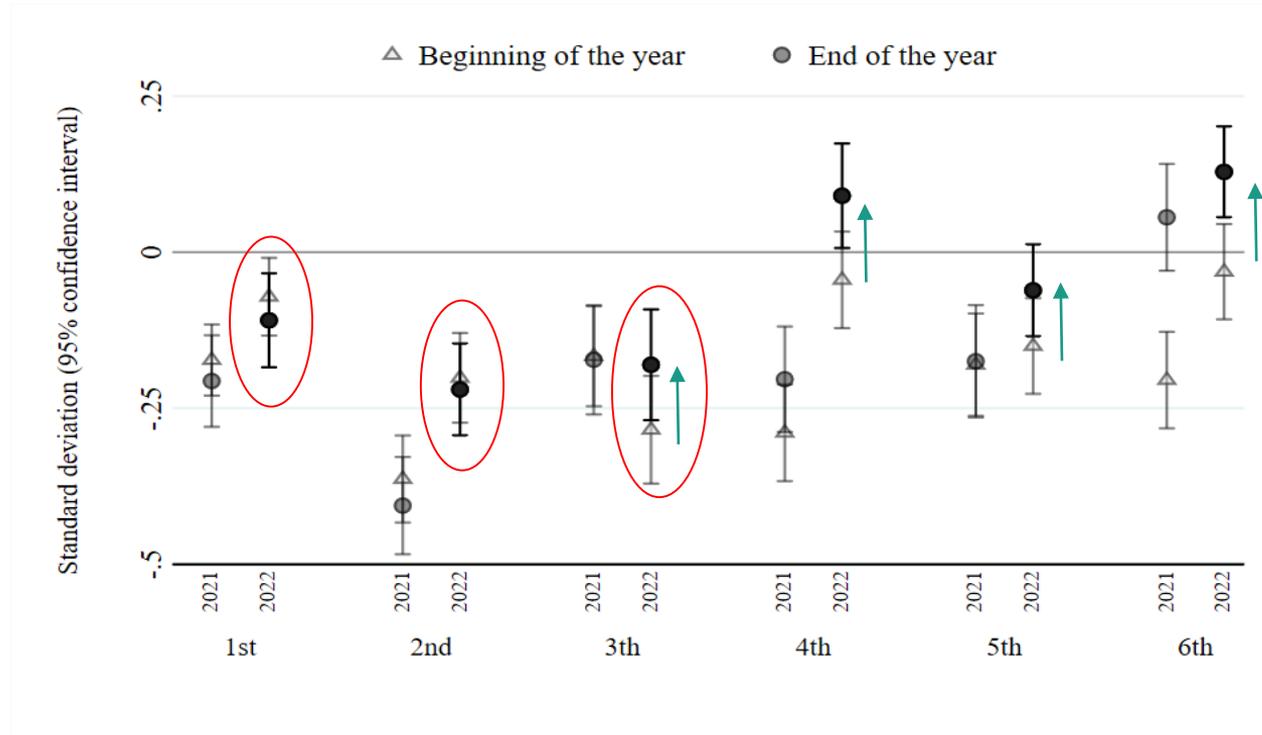


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

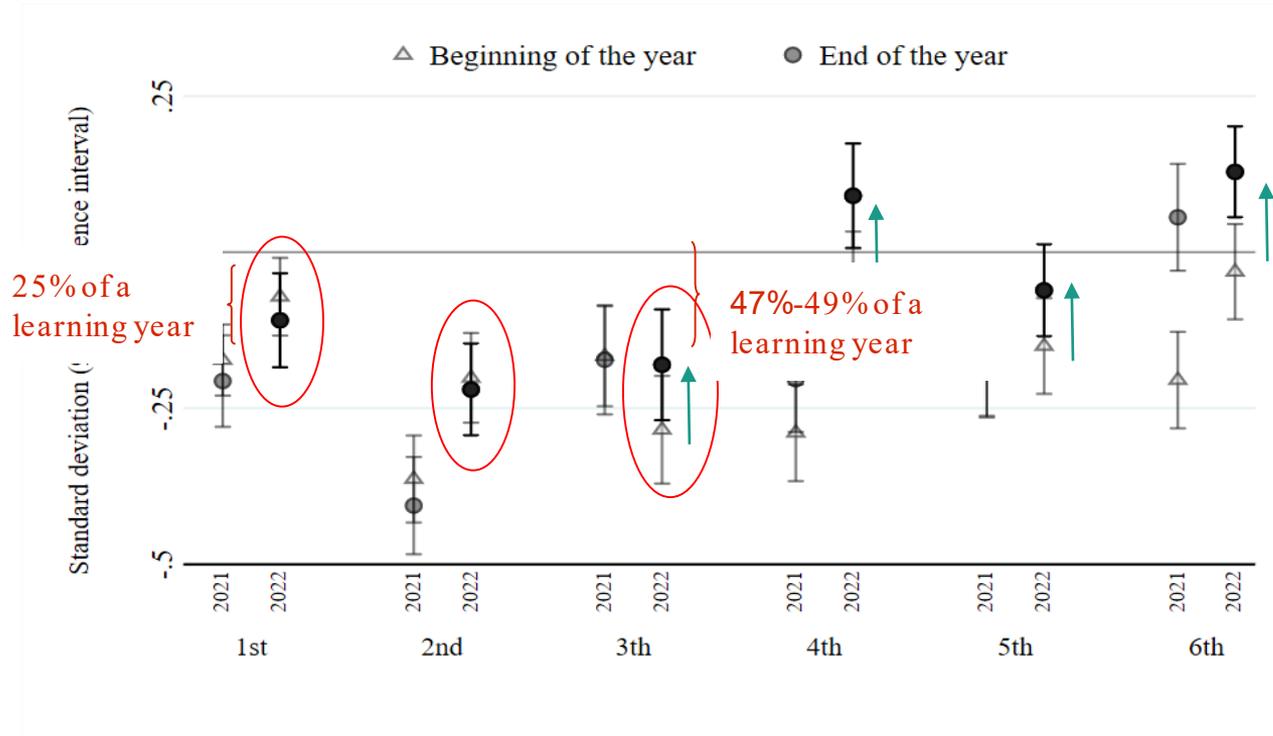


Results

Reading speed

Figure 3

Gap between 2021 (2022) and 2018-2019 in **reading speed** (words per minute) (linear estimation)

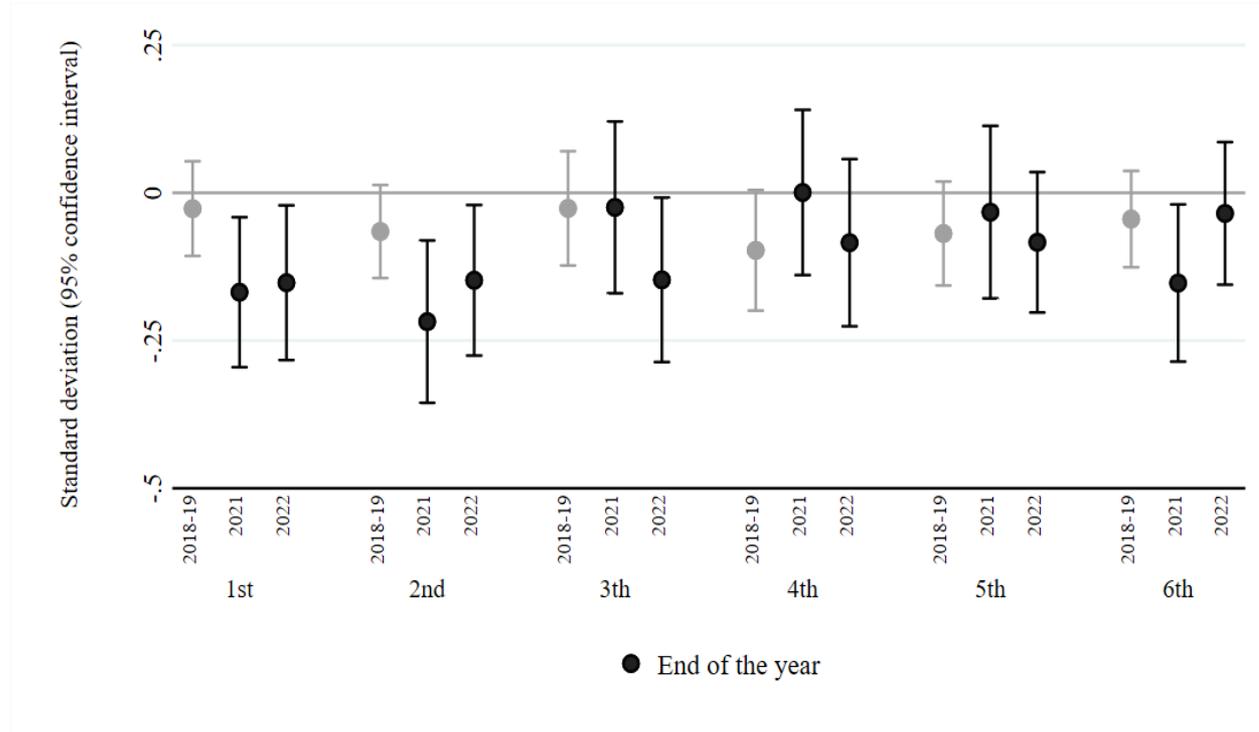


Results

Reading speed

Figure 4

Priority vs Non-priority students gap in 2018-2019, 2021, and 2022 in reading speed (words per minute) (linear estimation)

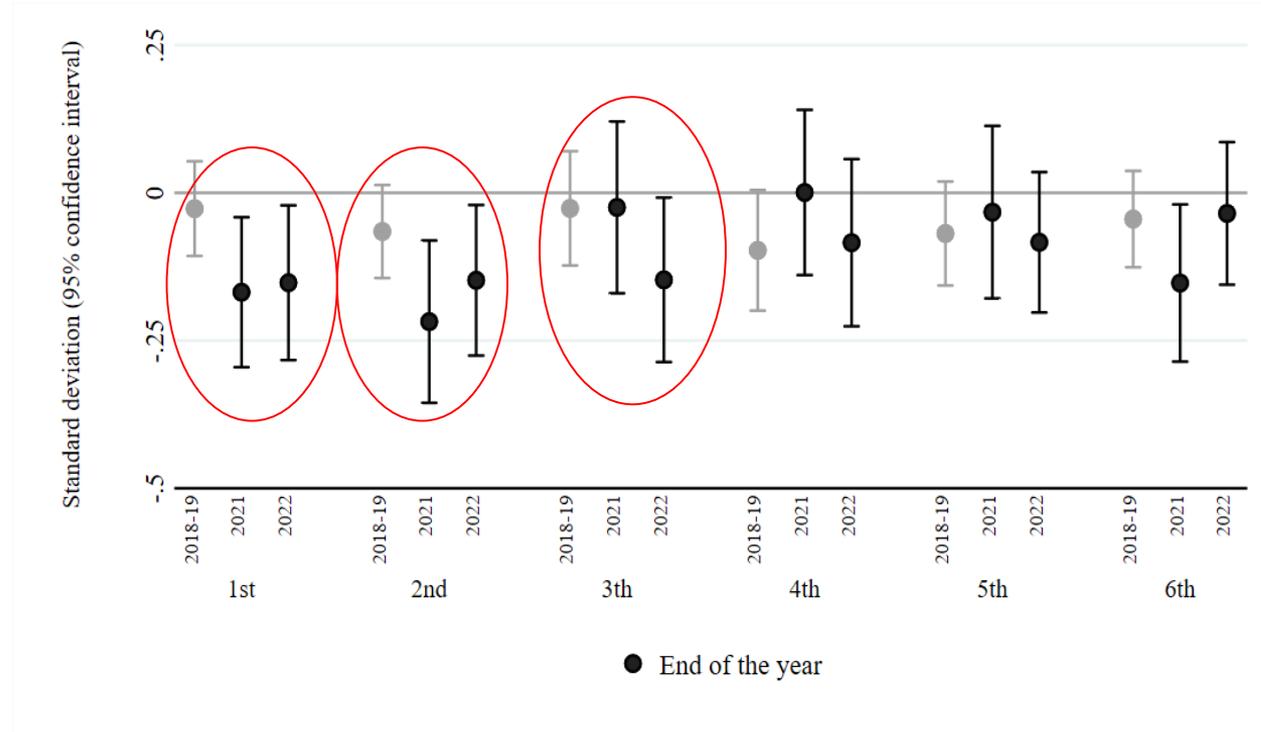


Results

Reading speed

Figure 4

Priority vs Non-priority students gap in 2018-2019, 2021, and 2022 in reading speed (words per minute) (linear estimation)

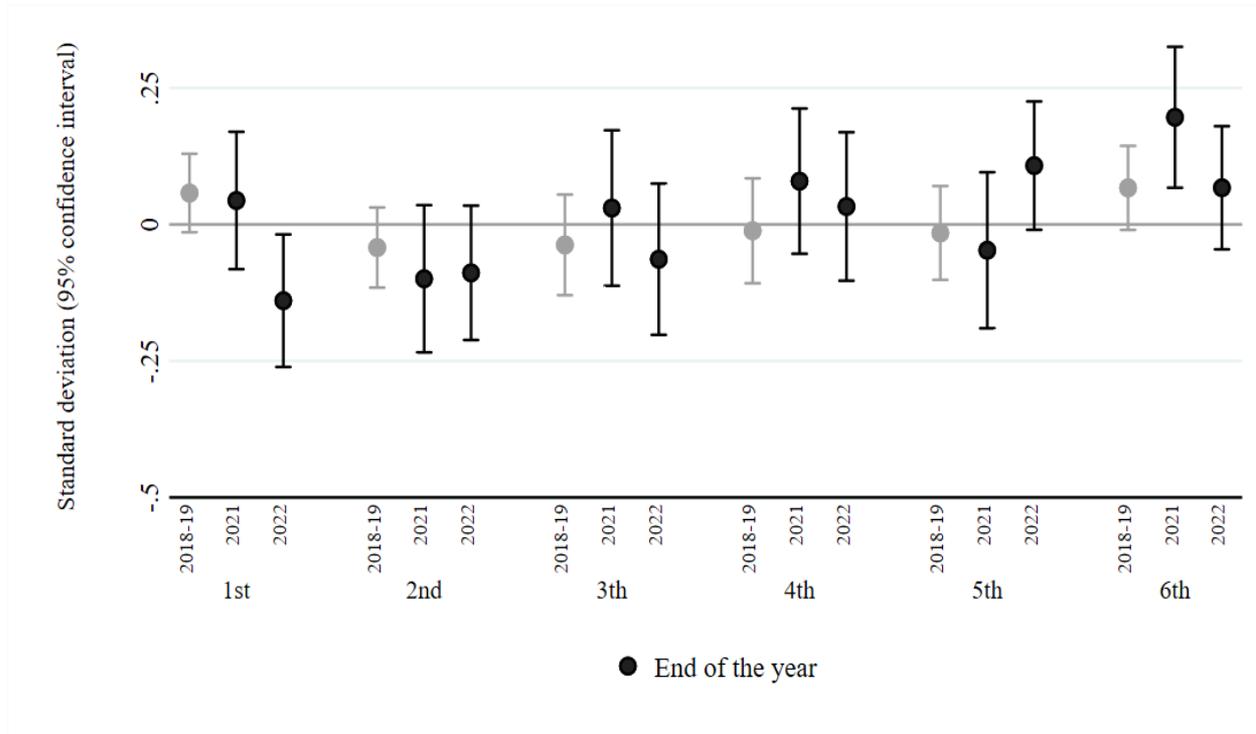


Results

Reading speed

Figure 4

Genre gap in 2018-2019, 2021, and 2022 in reading speed (words per minute) (linear estimation)

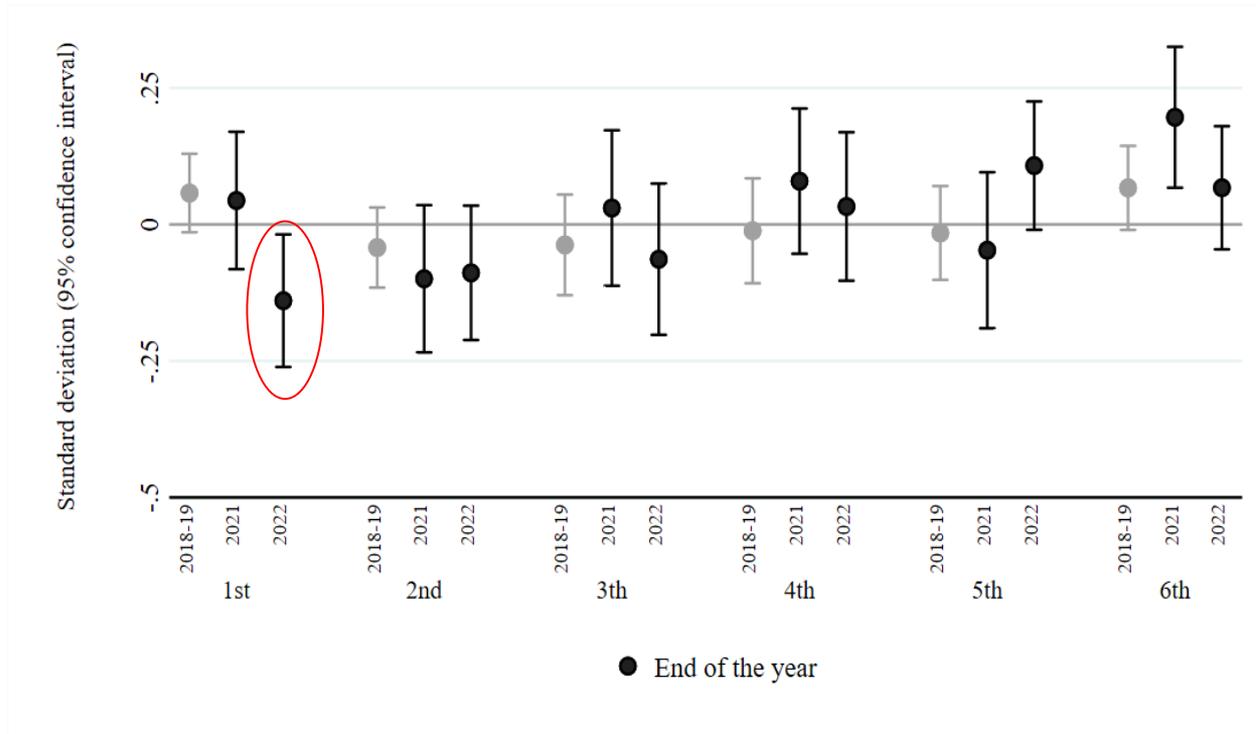


Results

Reading speed

Figure 4

Genre gap in 2018-2019, 2021, and 2022 in reading speed (words per minute) (linear estimation)



Conclusion

Reading domain in 1st to 6th grade

- **These schools replicated the global trends in 2020-2021:** the reading of younger students (those entering the school system in 2020 and 2021) was hit harder by the pandemic: 40%-50% of a learning year at the end of 2021.
 - Within them, more disadvantaged (in an already vulnerable setting) and female pupils were more affected.
 - Reading speed showed a larger and more persistent deterioration.
- **Remarkable recovery in 2022:** The most affected cohorts (first graders in 2020 and 2021) experienced a significant boost in their reading quality, closing the gap with previous ones. They also shrunk the gap in reading speed, together with students in 4th-6th grade.
- **Some significant challenges remain:**
 - Closing the gaps in the **reading speed** of first to third-grade students (2022).
 - Special focus on more **disadvantaged students and female pupils**.

Remember the gaps generated in the context of students entering first year in 2022

Conclusion

¿What can we learn from these experiences?

1. These experiences depict **potential sources of good practices** in recovering lost learning
 - Future research on the strategies and actions applied during 2022
2. Support to the contribution of continuously monitoring students' learning -> **improvement based on evidence**

