

One script – three writing systems. Spelling German, French, and Portuguese in Grades 5-6

University of Luxembourg
Constanze Weth

✉ constanze.weth@uni.lu

Spelling in three languages

Due to the unique characteristics of writing systems, spelling is considered a language-specific skill (Arfé & Danzak, 2020; Chung, Chen, & Geva, 2019). Transfer between two spelling systems is considered positive when the features of the systems are similar and negative when the languages/spelling systems are more distant. Similar orthographic features may be facilitated by transfer (Kahn-Hewitt, Schwartz, & Share, 2011). Studies that focus on how multilingual and biliterate students use the resources of their language and spelling systems have shown influences at all levels of the writing system (Maas & Mehlem, 2003; Schroeder & Şimşek, 2010; Weth, 2015). Studies have also shown that good and poor spellers in the first language of literacy use different strategies in the second language of literacy (Treiman & Kessler, 2006; Weth & Wollschläger, 2015).

Background

All primary school students in Luxembourg learn to read and write in German and French. Students with a heritage language (HL) background in Portuguese may attend complementary courses to learn to read and write in Portuguese.

A corpus collected written data from 273 students with various family languages at the end of primary school, grades 5 and 6. This data set includes one written narrative in German, French, and a family language (MAIN, Gagarina et al., 2019); dictations in German (DRT 4) and French (Lobrot); and parental and student questionnaires about language and literacy biographies. Students who participated in HL Portuguese classes (n = 68) also took a Portuguese dictation test (Mesquita et al., 2020) and were tested on reading comprehension (ELFE), vocabulary (PPVT4), and sentence repetition (SRT) in the three languages.

Research Question & Method

The following analysis aims to answer the RQ:

What are the spelling patterns of using the letter h among bi- and trilliterate students of German, French, and Portuguese?

The presence of the letter h in the dictations is counted, and its function is identified in relation to the existing categories of the three languages/spelling systems.

Results

German, N=273

- G is the first language of literacy. 73.8% of the presented words were correctly spelled by the students of this sample.
- No word with an initial vowel was erroneously spelled with <h>.
- Most students spelled the words containing <h> with <h>, and always within <sch>.
- The placement of <h> is not always correct in case of syllable-final <h> ('Dehnungs-h').
- The test did not contain syllable-initial spellings.
- Some interference occurs from other languages in German: Few students use <ch> for /k/ or /ʃ/.
- The letter h is present in the <ph> in loan words such as *Telefon*. Some letter sequences that are typical in Portuguese or English are present in the German texts.

French, N=273

- F is the second language of literacy (starting in Grade 2).
- There is production of German patterns, mainly in word-final position, as well as some syllable-initial like features, and a few uses of <sch>.
- The word-final <h> is almost exclusively produced in pseudo-words and not in dictations of sentences or written narratives (not presented on the poster). The separation between the two spelling systems may be more applicable to real words, but there is no separation between spelling systems on pseudo words yet.

Portuguese, n=68

- Some students use the word-initial <h> in words that start with a vowel, which is uncommon in Portuguese.
- Some students transfer <sch> or <ch> into Portuguese for /ʃ/ or, in an overgeneralization, for /ʒ/.

English (not tested),

- Few transfers of typical English graphemes into German, French or Portuguese.

References

- Arciuli, J., & Simpson, I. C. (2011). Not all letters are created equal: Exploring letter name knowledge through spelling in school children and adults. *Writing Systems Research*, 3(2), 153–165. <https://doi.org/10.1093/wsr/wsr001>
- Arfé, B., & Danzak, R. L. (2020). The influence of first language spelling and response inhibition skills on English-as-an-additional-language spelling. *Cognitive Development*, 56, 1–14. <https://doi.org/10.1016/j.cogdev.2020.100952>
- Chung, S. C., Chen, X., & Geva, E. (2019). Deconstructing and reconstructing cross-language transfer in bilingual reading development: An interactive framework. *Journal of Neurolinguistics*, 50(January 2018), 149–161. <https://doi.org/10.1016/j.jneuroling.2018.01.003>
- Gagarina, N., Kunnari, S., Tantele, K., Välimaa, T., Bohnacker, U., & Walters, J. (2019). MAIN: Multilingual Assessment Instrument for Narratives—Revised version. MAIN German Version (revised). *ZAS Papers in Linguistics*, 62, 315–325.
- Heitner, R. M. (2024). *Icons of the Alphabet: Letter Names, Phonetic Notation and the Phonology and Orthography of English*. Springer International Publishing. <https://doi.org/10.1007/978-3-031-39307-5>
- Kahn-Hewitt, J., Schwartz, M., & Share, D. (2011). Acquiring the complex English orthography: A trilliterate advantage? *Journal of Research in Reading*, 34(1), 136–156. <https://doi.org/10.1111/j.1467-9817.2010.01485.x>

The letter h across four writing systems

In most languages, the letter h is non-iconic to the letter name, as in "Aitch" (Arciuli & Simpson, 2011; Heitner, 2024), and has almost no relation to phonology. Although the letter h is salient, spellers may be uncertain about its positioning, as seen in the spelling of the name "Gandhi" (Campbell & Coltheart, 1984).

Table 1: Presentation of the letter h in German, French, Portuguese and English

	Initial	Final	Sil-final	Sil-initial	ch-/ʃ/	ch-/x/	ch-/ç/	sch	ph	nh	lh	gh	wh
G	Haus /h/	geh sieh	nehmen wohnen	gehen sehen		Buch Dach	Bücher ich	schön Asche	Physik				
F	l'homme le haricot				chemise chercher			téléphone					
P	haste hipico									ninho /nj/ talher /j/			
E	house heart							telephone				ghost enough	what

Table 2: Erroneous spelling containing the letter h in German, French, Portuguese. Number of spellers in German and French N=273, in Portuguese n=68.

	Corr.	*h*	Initial	Final	Sil-final	Sil-initial	ch-/ʃ/	ch-/x/	sch	ph	other
belohnt	91	*h*: 116			blohnt behloht						belhont
Belohnung	41	*h*: 129			behonnung behlonung	behonnung					belhonung
nehmen	170	*h*: 178			nehmmen wuht						what
Wut	119	*h*: 8			wuht						what
D geweckt	138	*ch*: 5						geweckt			gewehgt
schwierig	146	*chi*: 5						schwichick			
aufgeregt	170	*h*: 8			aufgerehgt						aufgeright
telefonieren	147	*h*: 35							telephon* téléphon*		telefon* telehon* téléphon*
/pɛy/	162	*h*: 51		pruh prüh prüh		pruhe pruche				phruh	pruhs
/flō/	59	*h*: 21		floh					phlo ploou phlon		flho filhon
/oɪd/	211	h*: 4	horde								
/gɔa/	182	*h*: 9		grah (7) garah							grha, ghara
/ʃɔɛ/	176	*h*: 248	hua	chuah swah			schuha	choix (227) chois chua choie chouat		schua schoi schouar schoie	shua shoit
/ɛij/	150	*h*: 7		rieh			rihe rihio		chie		
/stɛu/	88	*h*: 12		strouh struh verleh ferlh	fehle					pherle phairle	jheur
/zɔɛ/	175	*h*: 5				jehour	chour		scheor		
teclado	46	*h*: 1						teclado			
hino	23	*h*: 33	hino (24)								ninho
último	13	*h*: 0									
humana	49	h*: 55	humana			umhana					
hipico	0	h*: 4	hipico himpico hippico								
P haste	0	*h*: 19				ahate	achte (17) ascht aschte ache-te				
tigela	24	*h*: 3							tischela		
lojista	26	*h*: 13							logeschta		

Discussion

The students made various errors in each language. These errors demonstrate that they relied more on syllabic and morphographic strategies in German and French and more on phonographic transparency in Portuguese. This reflects the graphematic structure of the writing systems. It may also reflect the reduced literacy instruction in Portuguese HL courses. Although interference exists between the writing systems, it remains at an observational level. Qualitative analyses taking into account all measures in the corpus data could identify and describe in more detail students who frequently use grapheme sequences from other languages. Variance analyses would be necessary to determine whether a spelling factor, such as word-final <h> in French, contributes significantly to the produced patterns in each language.

- Maas, U., & Mehlem, U. (2003). *Schriftkulturelle Ressourcen und Barrieren bei marokkanischen Kindern in Deutschland*. IMIS Universität Osnabrück.
- Mesquita, A., Carvalhais, L., Limpo, T., & Castro, S. L. (2020). Portuguese spelling in primary grades: Complexity, length and lexicality effects. *Reading and Writing*, 33(5), 1325–1349. <https://doi.org/10.1007/s11145-019-10012-5>
- Schroeder, C., & Şimşek, Y. (2010). Die Entwicklung der Kategorie Wort im Türkisch-Deutsch bilingualen Schrifterwerb in Deutschland. *IMIS Beiträge*, 37, 55–79.
- Treiman, R., & Kessler, B. (2006). Spelling as statistical learning: Using consonantal context to spell vowels. *Journal of Educational Psychology*, 98(3), 642–652. <https://doi.org/10.1037/0022-0663.98.3.642>
- Weth, C. (2015). Orthographic competence among multilingual school children: Writing Moroccan Arabic in France. *International Journal of Multilingualism*, 12(2), 196–209. <https://doi.org/10.1080/14790718.2015.1009374>
- Weth, C., & Wollschläger, R. (2020). Spelling patterns of German 4th graders in French vowels: Insights into spelling solutions within and across two alphabetic writing systems. *Writing Systems Research*, 11(2), 124–141. <https://doi.org/10.1080/17586801.2020.1754997>