L1's Role in ISLA: A Case Study on Principled L1 Use in Belgium's Beginner Classrooms

1Maximilian Leclercq, 2Felicienne Eloise Dubois & 3Sebastien R. Moreau

1Department of Linguistics, University of Namur, Belgium.
2Language and Literature Institute, Hasselt University, Belgium.
3Linguistic Research Institute, University of Mons, Belgium.

Abstract—This research, grounded in the evolving pedagogical history of L2 instruction, explored the impact of the utilization of first language (L1) on second language (L2) proficiency in beginner foreign language classrooms in Belgium. Historically, the use of L1 in L2 learning environments has swung between opposition and acceptance. Using a quantitative research design, this study involved 40 students aged 12-14 from Belgium. Standardized L2 proficiency tests, paired with comprehensive questionnaires, were employed to gather data. Students' L2 proficiency was assessed at the beginning and end of an academic year that incorporated specific L1 utilization strategies. The results, analyzed using the paired t-test, shed light on the potential implications of strategic L1 integration in L2 instruction.

Keywords—second language acquisition, first language, foreign language classroom, Belgium, principled approach.

1. Introduction

The multifaceted world of second language acquisition (SLA) is rife with debates and investigations, but few areas have attracted as much scrutiny and passionate discourse as the role of the first language (L1) in instructed second language acquisition (ISLA). For educators and linguists, the question is not just academic; it has profound implications for millions of learners who embark on the journey of acquiring a new language, hoping to navigate the sea of linguistic intricacies, cultural nuances, and the psychological intricacies intertwined with the process.

Belgium, a nation uniquely positioned in the crossroads of linguistic diversity, presents an invaluable case study in this regard. As a country where multilingualism is not just a phenomenon but also a way of life, its educational system grapples with the challenges and opportunities posed by multiple languages daily. Whether it is a student in Flanders transitioning from Dutch to French or a learner in Wallonia delving into German, the interplay between their native tongue and the new linguistic frontier is a matter of keen interest. This backdrop offers a rich tapestry of linguistic interactions and pedagogical strategies, making Belgium's beginner foreign language classrooms a microcosm of global language learning scenarios. Beyond the geographical and linguistic uniqueness of Belgium, the debate over L1's role in ISLA is further intensified by the profound cognitive and affective implications it carries. The L1 is not just a tool for communication; it is an intrinsic part of a learner's identity, a repository of their cultural experiences, and a framework through which they perceive the world. Introducing a second language (L2) into this matrix is not merely a matter of vocabulary and grammar acquisition. It touches upon deep-seated cognitive processes, socio-cultural adaptations, and emotional dynamics. For many, the L2 classroom is a space of vulnerability, where they are stripped of their linguistic comfort zone. In this context, the L1 can either be a crutch, hindering genuine immersion in the L2, or a bridge, facilitating a smoother transition into the new language terrain. Furthermore, the educational implications of L1 use in ISLA are profound. How does the judicious use or omission of L1 influence classroom dynamics? Does it foster a more inclusive environment or inadvertently create barriers? How do teachers, many of whom are bilingual themselves, navigate this delicate balance, especially in beginner
classrooms where students are just dipping their toes into the vast ocean of a new language?

This study, set against the vibrant backdrop of Belgium's linguistic landscape, seeks to unravel these threads, delving deep into the intricate dance between L1 and L2 in the realm of instructed language acquisition. Through rigorous investigation, it aspires to shed light on long-standing questions, offering insights that could shape the future of language pedagogy not just in Belgium, but globally. Moreover, the growing complexity of globalisation and the ever-increasing migration patterns further underscore the need to understand the dynamics of language acquisition. In our interconnected world, multilingualism is no longer an exception but is rapidly becoming the norm. As a result, the classrooms of today are more diverse than ever, with students bringing a myriad of linguistic backgrounds and experiences into the learning environment. This diversity, while a rich source of cultural exchange and mutual learning, also presents unique challenges, especially when it comes to the role of the L1 in the acquisition of a new language.

In the context of Belgium, this global trend finds a distinct echo. With its history of linguistic diversity and its strategic position in Europe, Belgium has always been at the crossroads of cultures and languages. Yet, even here, as in other parts of the world, there is a pressing need to refine teaching methodologies to better serve a new generation of learners. These learners, often navigating multiple languages in their daily lives, require approaches that acknowledge their linguistic heritage while equipping them with the skills to thrive in new linguistic terrains. Moreover, the pedagogical implications of this discourse extend beyond the mere question of whether or not to use L1 in the classroom. It is also about how L1 is integrated. Is it used sporadically as a last resort, or is it woven systematically into the fabric of the lesson? Does it serve as a momentary crutch or as a strategic tool that empowers learners to draw connections, enhance comprehension, and foster deeper linguistic insights? In addition, crucially, how do learners themselves perceive the role of their native language in their L2 journey? Is it a source of comfort and confidence, or does its presence in the classroom inadvertently hinder full immersion and engagement with the target language? Besides, while the psychological and cognitive dimensions of this debate are crucial, there's also a socio-cultural layer that warrants exploration. Languages are not merely neutral codes; they are laden with cultural values, histories, and worldviews. Therefore, the interplay between L1 and L2 is not just a linguistic interaction but also a meeting of cultures. How does the incorporation or exclusion of L1 influence students' cultural identities, their sense of belonging, and their engagement with the broader cultural milieu of the target language?

In light of these multifaceted considerations, this study, rooted in the rich linguistic landscape of Belgium, strives to offer more than just empirical observations. It aims to delve into the deeper layers of the L1-L2 dynamic, unravelling the intricate web of cognitive, psychological, pedagogical, and socio-cultural factors at play. By doing so, it hopes to provide educators, researchers, and policy-makers with nuanced insights, guiding principles, and practical recommendations that can shape the future of foreign language instruction in Belgium and beyond.

2. Literature Review

The pedagogical history of L2 instruction has been characterised by shifts in stance towards the usage of L1. Early methods, such as the Direct and Audiolingual methods, were staunchly against the integration of L1 in the classroom, viewing it as a potential impediment to the pure acquisition of the L2 (Richards & Rodgers, 2014). This 'English-only' edict stemmed from concerns about interference, and the potential for learners to become overly reliant on translations, rather than cultivating an intuitive grasp of the L2. However, as SLA research advanced, the rigid dichotomy of L1 as detrimental began to erode. Studies have consistently shown that learners' previous linguistic knowledge does not vanish in L2 learning scenarios but remains active and influential. This cross-linguistic influence (CLI), as highlighted by Odlin (1989), can manifest both as transfer of beneficial features and interference, dependent on various factors, including proficiency level and the structural similarities between the
languages in question. One of the pivotal works informing the present study is that of Hall and Cook (2012). They advocate for a more nuanced, "principled" use of L1. Such an approach does not blindly promote L1 integration but encourages its strategic use, recognising the cognitive reality of learners' bilingualism and harnessing it to benefit instruction. This perspective acknowledges that learners are not tabula rasa but come with a rich tapestry of linguistic experiences that can be leveraged to foster L2 learning. The more recent wave of research, echoing the views of scholars like Turnbull and Dailey-O’Cain (2009), proposes that L1 can serve as a scaffold in the L2 learning process. They argue that, rather than hindering L2 acquisition, the L1 can be employed judiciously to clarify concepts, solidify understanding, and even alleviate learner anxiety. This is especially pertinent in beginner foreign language classrooms where students may grapple with foundational concepts and require a bridge to access the new linguistic territory. In the Belgian context, the question of L1 in L2 learning is further complicated by the nation's intricate linguistic tapestry. With regions like Flanders, Wallonia, and Brussels possessing distinct linguistic profiles, the interplay between L1 and L2 becomes all the more intricate. Recent studies in Belgium, such as those by Simons and Everaert (2018), have begun to hint at the myriad ways L1 can be beneficially integrated into the foreign language classroom, setting the stage for the current investigation. A shift in pedagogical perspectives concerning the role of L1 in L2 learning environments emerged largely due to the changing landscapes of classrooms and the growing appreciation of the socio-cultural dimensions of language learning. Vygotsky's socio-cultural theory (1978) posited that learning is deeply embedded within social interactions and cultural contexts. This theoretical framework brought to light the idea that language is not learned in isolation but within a web of interpersonal dynamics and cultural exchanges. In this light, the absolute exclusion of L1, which is inherently tied to a learner's identity and cultural background, appeared increasingly incongruous. Swain and Lapkin (2000) furthered this line of thought by delving into the concept of collaborative dialogue. They demonstrated that when students articulate their thoughts, grapple with complex ideas, and negotiate meaning – all within the familiar territory of their L1 – they can attain deeper cognitive understanding. This underpins the idea that L1 can play a constructive role in comprehension, problem-solving, and facilitating metalinguistic awareness. Moreover, the 'Dynamic Systems Theory' in SLA, as outlined by de Bot, Lowie, and Verspoor (2007), offers another perspective that resonates with the strategic use of L1. The theory suggests that language learning is a non-linear process influenced by a multitude of variable factors. In such a dynamic system, the L1 is not just a static background but an actively interacting component that can both support and hinder L2 acquisition, depending on its application.

The concept of 'translanguaging', a term popularised by Garcia (2009), further challenges traditional notions of strict linguistic boundaries. Translanguaging embraces the fluidity of bilingualism, allowing learners to draw from their entire linguistic repertoire without compartmentalising languages. This perspective not only validates the spontaneous mixing of L1 and L2 but also views it as a valuable cognitive and pedagogical strategy.

From a practical viewpoint, Macaro (2001) discussed the advantages of 'judicious' use of L1 in the classroom, especially in the explanation of difficult concepts, classroom management, and providing affective support. This strategic approach to L1 mirrors the sentiments of many contemporary educators, suggesting that a blanket approach to language use in the classroom may be overly reductive. Returning to the Belgian context, its diverse linguistic milieu offers a rich ground for exploring these evolving perspectives. The country's unique tri-lingual framework magnifies the complexities of L1 and L2 interactions, as many students often navigate between multiple L1s before even entering the foreign language classroom. The work of Dupont and Rosen (2019) in Belgian classrooms illustrates that while the strategic use of L1 can be advantageous, it requires careful calibration to the specific linguistic and cultural contexts of the learners. The trajectory of SLA research on the role of L1 in the L2 learning environment reveals a journey from strict compartmentalisation to a more integrated and nuanced understanding.
While early methodologies might have viewed L1 as an impediment, contemporary research increasingly recognises its potential as a facilitative tool, albeit one that requires judicious and context-sensitive application.

**Research questions**

*Q1: How does strategic L1 integration affect L2 proficiency among beginner learners in Belgium?*

*Q2: How do learners' attitudes towards L1 use correlate with L2 proficiency gains across different linguistic regions in Belgium?*

3. **Methods**

The study was conducted using a quantitative research design with the intention of examining the impact of L1 utilization on L2 proficiency in beginner foreign language classrooms situated in Belgium.

3.1. **Participants**

Drawn from a beginner foreign language classroom in Belgium, the study encompassed a total of 40 students as its core participants. These students belonged to the crucial developmental age group of 12 to 14 years, a period often characterized by rapid cognitive and linguistic growth. Their inclusion in this age bracket signifies their transition from early adolescence, where foundational language skills are generally solidified, to the brink of mid-adolescence, a phase known for the honing and refinement of acquired linguistic skills.

The gender distribution within this participant group was commendably balanced. Such an equitable representation ensures that the study's findings are not skewed or biased towards any one gender, thereby enhancing the validity and generalizability of the results. This balance also allows for a more comprehensive understanding of the potential effects of L1 utilization across different genders, an aspect that can be crucial given the myriad factors that can influence language acquisition and proficiency during these formative years. The diversity and balanced composition of the participant group stand as a testament to the study's commitment to capturing a holistic view of beginner foreign language learners in Belgium.

3.2. **Materials and Tools**

For the meticulous collection of data, the study harnessed the strengths of standardised L2 proficiency tests along with insightful questionnaires. The L2 proficiency tests, tailored to evaluate the participants' adeptness in their second language, encompassed diverse linguistic areas from vocabulary and grammar to reading comprehension, speaking, and listening skills. Such an encompassing assessment allowed for a robust and all-rounded appraisal of students' linguistic capabilities. In tandem with these tests, the research incorporated questionnaires post-study to probe into the more intangible aspects of students' learning experiences. These questionnaires, aiming to unearth the students' attitudes and perceptions regarding L1's classroom integration, comprised a balanced blend of Likert-scale items for quantifiable insights and open-ended queries for a deeper qualitative understanding. It is worth noting that to discern the difference between pre and post-instruction scores, we specifically employed the paired t-test, eschewing other statistical tests, to ensure precision in our analysis.

3.3. **Procedure**

At the outset of the academic year, prior to the introduction of any specialized instructional methods or interventions, all participating students were administered the standardised L2 proficiency test. This initial assessment acted as a benchmark, capturing the students' existing proficiency levels and setting the stage for any subsequent comparisons. As the academic year progressed, instructional methods, which were presumably rooted in specific L1 utilization strategies, were systematically integrated into the curriculum. Throughout this period, regular
classroom observations were conducted to ensure the consistent and accurate application of the chosen instructional methodologies. These observations also offered a chance to note any immediate classroom dynamics, student reactions, and teacher strategies related to L1 utilization. Upon the conclusion of the academic year, students were once again subjected to the same L2 proficiency test, now serving as a post-test. This was instrumental in measuring the net progression or change in language proficiency after the year-long intervention.

Following the post-test, the previously mentioned questionnaires were distributed among the students. These were designed to be comprehensive yet student-friendly, allowing participants to express their views, feelings, and perceptions about the use of L1 in their learning process. Once all data was collected, the pre-test and post-test scores of each student were statistically analysed using the paired t-test to determine the efficacy of the L1-based instructional methods employed during the academic year.

3.4. Design
The research design was structured to compare the difference between pre-test and post-test scores, aiming to determine the effect of the instructional methods employed throughout the academic year. Given that each student took both the pre-test and post-test, the design was inherently a within-subjects or repeated measures design. The primary statistical method used to evaluate the difference in scores was the paired samples t-test. This was complemented by descriptive statistics and visual aids, such as box plots and violin plots, to offer a comprehensive view of the data distribution and the effect size.

4. Results
Table 1 presents the results of the paired samples t-test, examining the difference between post-test and pre-test scores.

<table>
<thead>
<tr>
<th>Paired Samples T-Test</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure 1</td>
<td>Measure 2</td>
<td>t</td>
<td>df</td>
<td>p</td>
<td>Mean Difference</td>
<td>SE Difference</td>
<td>95% CI for Mean Difference</td>
<td>Lowere</td>
<td>Upper</td>
<td>Cohen's d</td>
<td>SE Cohen's d</td>
<td>95% CI for Cohen's d</td>
<td>Lower</td>
<td>Upper</td>
<td></td>
</tr>
<tr>
<td>post test</td>
<td>pre test</td>
<td>105.143</td>
<td>39</td>
<td>&lt; .001</td>
<td>27.200</td>
<td>0.259</td>
<td>26.67</td>
<td>27.70</td>
<td>16.62</td>
<td>1.03</td>
<td>9</td>
<td>12.8</td>
<td>20.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Student's t-test.

The paired samples t-test was conducted to determine if there was a statistically significant difference between the scores of the post-test and pre-test. Based on the results provided in Table 1, there appears to be a statistically significant difference in the scores between the two tests, with the t-value recorded at a notably high 105.143 and a degrees of freedom (df) of 39. The probability value (p-value) was less than the standard significance level of 0.05, being recorded as < .001. This indicates that the observed differences are highly unlikely to have occurred by chance alone. The mean difference between the post-test and pre-test scores was found to be 27.200. The standard error for this difference was relatively low, at 0.259. The confidence interval (CI) provides an estimated range where the true population mean difference is likely to lie, 95% of the time. For the mean difference between these scores, the 95% CI ranged from 26.67 to 27.72. This range does not contain the value of zero, further supporting the presence of a significant difference between the post-test and pre-test scores.
In terms of effect size, Cohen's d is used to describe the size of the difference between the two groups, independent of sample size. An effect size of 0.2 is typically deemed small, 0.5 is medium, and 0.8 or higher is considered large. In this study, Cohen's d was found to be a staggering 16.625, which is exceptionally high. The standard error for Cohen's d was recorded as 1.039, and the 95% CI for Cohen's d ranged from 12.816 to 20.220. This substantial effect size implies not just a statistically significant difference, but a difference of considerable practical or educational significance as well. The results indicate a substantial and statistically significant improvement in scores from the pre-test to the post-test. The considerable mean difference, coupled with the large effect size, suggests that the observed differences in scores are not only statistically meaningful but also of educational importance. Whether this improvement is attributed to the intervention, teaching methodology, or any other factor, further in-depth analysis and discussion are required.

Figure 1: Comparative Analysis of Pre-test and Post-test Scores

In Figure 1, we are presented with a visual comparison between the pre-test and post-test scores of the students. The individual data points, represented by circles for each test, provide a direct juxtaposition of scores, with the transition lines connecting each student's progression from pre-test to post-test. The green circles denote the pre-test scores, primarily clustered between the 30 and 50 score range. In contrast, the orange circles represent the post-test scores, predominantly occupying the higher 60 to 80 score range. Additionally, the box plots adjacent to the individual data points show the distribution of scores for both tests. For the pre-test (green), the median score (as indicated by the line inside the box) lies around 40, while for the post-test (orange), the median rises significantly to approximately 70. The length of the boxes indicates the interquartile range (IQR), representing the middle 50% of scores. The violin plots (shaped like triangles) surrounding the box plots provide a density estimation, visualising the probable distribution of scores. The width of each plot indicates the concentration of data. The post-test's wider upper section indicates a higher density of students achieving scores in the 60-80 range, affirming an overall improvement from the pre-test.
Figure 2: Mean Score Decline from Post-test to Pre-test

Figure 2 illustrates the mean score decline from the post-test to the pre-test. The horizontal lines represent the mean scores for each test, while the vertical lines attached to them (error bars) indicate the variability around the mean (potentially representing standard errors or confidence intervals).

The circle on the post-test line is noticeably higher than the pre-test, positioned approximately at a score of 75. Conversely, the circle on the pre-test line is considerably lower, situated around the score of 40. The connecting diagonal line emphasizes the decline from the post-test to the pre-test scores, further highlighting the discrepancy between the two assessments. The significant decline from the post-test to the pre-test underscores a potential issue in the study's design or a fundamental oversight in the teaching methodology. Generally, in studies that assess the effectiveness of an intervention, the post-test scores are expected to be higher or at least similar to the pre-test scores. However, Figure 2 suggests an inverse relationship, where students performed significantly better in the pre-test than in the post-test. In-depth analysis and subsequent discussions are essential to understand and explain this counterintuitive result. Possible factors to consider include the difficulty level of the post-test compared to the pre-test, external influences affecting the post-test scores, or even potential data recording errors.

5. Discussion

The progression of second language acquisition (SLA) research over the years has intricately mapped the ebb and flow of perspectives towards the inclusion of the first language (L1) in L2 learning scenarios. Historically, the landscape of L2 instruction was firmly entrenched in methodologies like the Direct and Audiolingual methods, which passionately advocated for an 'English-only' stance in the classroom environment (Richards & Rodgers, 2014). Such an approach was deeply rooted in concerns about linguistic interference, apprehensions about learners getting excessively dependent on translations, and an overarching aspiration for cultivating a pure and intuitive grasp of the L2. However, this viewpoint, dominant as it was during its epoch, began to face scrutiny and reevaluation as SLA research delved deeper into the intricacies of language learning. Emerging studies spotlighted the ever-present and influential role of learners' prior linguistic knowledge in L2 scenarios. Odlin's (1989) exploration into cross-linguistic influence (CLI) provided valuable insights into how the L1 could act as both a boon and a bane in L2 acquisition. Depending on an array of factors, including the learner's proficiency and the innate structural affinities between the languages involved, L1 could either facilitate transfer of beneficial linguistic elements or become a source of interference. As research narratives evolved, the nuanced and 'principled' use of L1, as championed by Hall and Cook (2012), emerged as a robust counter-narrative to the traditional 'English-only' paradigm. This fresh perspective, grounded in the cognitive realities of bilingualism, sought to harness the linguistic
reservoirs of learners for more effective L2 instruction. Echoing these sentiments, Turnbull and Dailey-O’Cain (2009) presented compelling arguments in favour of employing the L1 as a scaffold in the L2 learning continuum, especially for elucidating complex concepts and alleviating student anxieties. The Belgian context, with its intricate linguistic fabric, adds another layer of complexity to this discourse. Given Belgium's unique linguistic milieu with regions such as Flanders, Wallonia, and Brussels, the interplay of multiple languages makes the dynamics of L1 use in L2 instruction particularly fascinating. The recent endeavours of researchers like Simons and Everaert (2018) have underscored the potential benefits of incorporating L1 into the foreign language classroom, reaffirming the pertinence of the current investigation.

The results of this study, presented meticulously through the paired t-test, underscore a notable difference in the post-test and pre-test scores of the participants. Such a profound mean difference, buttressed by an exceptionally high effect size, underscores not just a statistically significant divergence but also a transformation of considerable pedagogical relevance. The evident enhancement in scores from the pre-test phase to the post-test juncture attests to the potential benefits of the integrated instructional strategies employed throughout the academic year. While the results are undeniably promising, it is paramount to tread with caution. Correlation does not necessarily imply causation. Thus, attributing the observed improvements solely to the L1-based instructional methodologies might be premature. Other extraneous variables, be it the inherent motivation of the students, the effectiveness of the teaching staff, or any other instructional aids used during the year, could also have played a pivotal role in the observed progression. Future research could delve deeper into isolating these variables and determining the precise contribution of each factor to the overall learning outcomes. Nevertheless, the findings of this study, set against the backdrop of historical and contemporary SLA research, make a compelling case for a more integrated, context-sensitive, and nuanced approach to L1 use in L2 instruction. The pedagogical implications of the results stretch far beyond just incorporating L1; they shed light on the value of learner-centric, individualized approaches that are adaptive to students' unique linguistic backgrounds and needs. As the current globalized world increasingly moves towards multilingualism and transcultural communication, such methods pave the way for developing global citizens who are adept not only in linguistic prowess but also in understanding and navigating linguistic diversities.

Interestingly, the notion of "translanguaging" - a pedagogical approach that fluidly draws from students' entire linguistic repertoires (García & Li Wei, 2014) - seems to be in alignment with the findings of this study. Translanguaging emphasizes the dynamic interplay of languages, recognizing that bilingual individuals do not compartmentalize their languages but rather see them as integrated systems. It advocates for natural, organic use of all languages available to the learner, breaking the boundaries of conventional L2 teaching. The educational implications also stretch to teacher training. If, as this study suggests, there is significant merit in employing L1 in L2 scenarios, then pre-service and in-service teacher training programs must equip educators with the necessary skills and knowledge to judiciously employ such strategies. These programs could offer insights into when and how to incorporate L1, and importantly, how to manage potential challenges that arise from its inclusion. The world of second language acquisition is vast and complex, with myriad factors influencing outcomes. While the role of L1 in L2 scenarios has been a topic of contention for years, current research seems to lean towards its judicious inclusion. However, as with all instructional strategies, context is king. What works well in one environment may not yield the same results in another. Thus, it is up to educators, researchers, and policymakers to constantly re-evaluate and adapt their methods, ensuring they align with both empirical evidence and the ever-evolving needs of learners.
6. Conclusion

The trajectory of second language acquisition (SLA) research underscores a historical oscillation between L1 exclusion and its strategic incorporation in the L2 learning environment. This research, based in the linguistically diverse context of Belgium, sought to examine the tangible effects of L1 integration strategies on L2 proficiency. With a judicious combination of standardized tests and personal perceptions, a layered understanding of L1’s role in the L2 scenario emerged. While the quantifiable gains in L2 proficiency serve as a testament to L1's potential, the study also acknowledges the myriad intrinsic and extrinsic factors influencing SLA. Thus, while the results endorse a more integrated and nuanced approach to L1 use in L2 instruction, they call for continuous pedagogical evolution, reflecting the unique needs and contexts of learners. The intersection of history, theory, and empirical evidence in this research underscores the intricate dance between languages in a bilingual brain, reminding educators of the dynamic, fluid, and deeply personal nature of the language-learning journey.

References


Copyrights
Copyright for this article is retained by the author(s), with first publication rights granted to the journal. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/4.0/).