

Beyond Traditional Correction: The Efficacy of Letter Sequencing in Spelling Instruction

Dr Kristian Kirkwood

Department of English

King Fahd University of Petroleum and Minerals, Saudi Arabia

E-mail: kristian.kirkwood@kfupm.edu

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Abstract

This research investigates the overlooked skill of spelling, with a focus on Arab learners facing challenges in English. It critically examines traditional spelling correction methods, such as Words Spelt Correctly (WSC), and introduces the Correct Letter Sequencing (CLS) approach as an innovative alternative. English spelling complexities, especially for Arab learners, prompt the exploration of alternative methods. The study's comparative analysis reveals significant differences in outcomes and implications between WSC and CLS correction. While WSC's binary model raises concerns about its impact on student psychology and pedagogy, CLS offers a nuanced evaluation, recognizing incremental success and fostering a positive learning environment. The study concludes by emphasizing the holistic nature of education and advocating for a more empathetic approach to spelling assessment. It calls for educators to recognize the transformative power of innovative methods like CLS and encourages a departure from rigid assessment models. The proposal for automating the CLS scoring process stands as a necessary step towards making this valuable tool more accessible and practical for modern educators, contributing to a positive and empowering educational landscape.

Keywords: Spelling instruction, Correct Letter Sequencing (CLS), Arab learners, ESL assessment, Educational motivation, Spelling pedagogy

1. Introduction

When considering the process of language acquisition, spelling is often an overlooked skill that does not receive as much attention as other components of language (Ortikova et al., 2022; Pan et al., 2021) such as reading and speaking (Al Jayousi, 2011). Spelling, though overlooked, is a vital component of the English language. Among many teachers in Gulf Arab school systems, there is a tendency to disregard the importance of spelling study, with English spelling

instruction often "given scant attention in the EFL context, especially at the secondary stage" (Al-Sobhi et al., 2018, p. 3).

Competence in spelling has been shown to have a significant effect on a student's ability to read (Georgiou et al., 2020; Gibree & Babu, 2018) and, in particular, comprehend the content (August, 2011; Bowers & Bowers, 2018). Spelling is one of the critical skills required to communicate via well-written texts (Abbott et al., 2010), therefore it has a major impact on a student's ability to write (Daffern et al., 2017; Silliman et al., 2017; Kreiner et al., 2002). If a student has difficulties with spelling, it can interfere with the composition process (Rønneberg et al., 2022), leading to a decline in overall essay quality (Graham et al., 2008).

For the young Emirati learner, the importance of spelling is compounded due to the impact spelling has on testing procedures such as the International English Language Testing System (IELTS) (Alhamss, 2019; Alharthy, 2019) that are used as a gatekeeper to the countries tuition free federal tertiary education institutions. Three components of the IELTS test – writing, reading, and listening – are all adversely affected by a lack of spelling skills, making a paucity of spelling skills a major obstacle in achieving this government-mandated requirement.

English spelling poses a significant challenge not only for native speakers but also for learners from various linguistic backgrounds. For Arab learners, the complexity of English spelling is particularly daunting due to interference from their first language (L1) (Alsaawi, 2015; Kazazoglu, 2020; Martin, 2017). These difficulties often lead to very low scores in classroom weekly spelling tests, a phenomenon that has observable consequences. The ongoing struggle with English spelling not only affects academic performance but also has emotional ramifications for students.

Continuous low scores can lead to feelings of demoralization, further resulting in a lack of motivation to learn and progress (Al-Sobhi et al., 2017). This troubling cycle necessitates a re-evaluation of the methods used to teach and correct English spelling.

Traditional spelling correction methods, focusing on entire words spelled correctly, may not be the most effective approach for all learners. This study investigates a promising alternative to traditional spelling correction: the Correct Letter Sequencing (CLS) approach. By examining whether correct letter sequencing can be an effective way to enhance spelling accuracy, this research seeks to contribute a new perspective to the field and possibly offer a solution that caters more specifically to the unique challenges faced by Arab learners of English.

With the research question clearly outlined and the problem framed, the subsequent sections of this paper will delve into the existing literature, outline the methodology employed, present the research findings, and discuss their implications.

2. Literature Review

Learning to spell in English is difficult for most learners such that even native English speakers often find it challenging (Valchuk & Yurko, 2020). For students learning English as an additional language, the phenomenon of L1 transfer or interference discussed above extends to the acquisition of proficiency in spelling (Farooq et al., 2020). Variations in phonological and

orthological patterns between languages lead to learners experiencing different types of difficulty with spelling in a second language (L2) depending on their native language (Jayousi & Thaher, 2011). Hameed (2016) reports that English spelling contains elements of “craziness” (p.203) that tend to perplex Arabic-speaking students. Specifically, the difficulties students from an Arabic language background have with English spelling are primarily associated with L1 interference arising from significant differences between English and Arabic orthographies, morphologies, and phonologies. English vowels are another problematic area for Arabic-speaking ESL students (Bowen, 2011; Nahari & Alfadda, 2016; Othman, 2018). Vowel blindness is the term commonly used for Arabic ESL/EFL learners’ difficulty in decoding English vowels caused by transferring their L1 habits of giving little attention to vowels while relying heavily on consonants (Alsadoon & Heift, 2015). These examples of two well-known types of L1 interference that can occur with Arabic-speaking ESL students demonstrate that any pedagogic approach to be effective for teaching Arabic speakers how to spell in English will need to consider areas of interference between Arabic and English.

During my tenure teaching at Dubai Women's College, I encountered a troubling trend that further illustrates the struggles with English spelling. Student motivation to revise for spelling tests appeared to be often low, a problem that seemed to stem from the students commonly receiving very low scores. This engendered a prevalent sentiment among students that engaging in revision for spelling tests was futile, given the anticipation of consistently low scores. Reflecting on this experience, I see it as indicative of an urgent need to address spelling education's unique challenges and find more effective and motivating methods tailored to the needs of Arab learners.

Recognizing the intricate challenges that Arab learners face in English spelling, educators and researchers have sought to devise methods that might alleviate these difficulties. Traditional methods, such as scoring based on words spelled correctly, have been commonplace, but as the following sections will demonstrate, they may not be sufficient or effective for all learners. Considering the specific nuances of English and Arabic linguistic structures, an exploration of alternative methods such as Correct Letter Sequencing (CLS) becomes crucial. This approach, along with an analysis of its application and comparison with the more conventional Words Spelt Correctly (WSC) method, offers a more nuanced perspective on spelling education, particularly for Arab learners. With an understanding of the unique spelling challenges faced by Arab learners and the importance of finding tailored solutions, we now turn our attention to an in-depth examination of two distinct correction methods: Words spelled correctly (WSC) and Correct Letter Sequencing (CLS). This next section will explore these methods in detail, assessing their strengths, weaknesses, and applicability in teaching English spelling to Arab students.

Traditional Spelling Correction Methods: Words Spelt Correctly (WSC):

"The conventional method of spelling correction in schools involves dictating previously studied words and scoring them based on the number of items spelled correctly, known as Words Spelt Correctly (WSC) (Deno, 1980; McCurdy et al., 2016). This scoring method assigns one point for each correctly spelled item and is valued for its simplicity in both

execution and understanding.

However, the WSC method has notable disadvantages. It does not consider the quality of spelling errors or provide insight into why a given error was made (Morris et al., 1986; Masterson & Apel, 2007; McCurdy et al., 2016). When used with developing spellers, WSC "provides little range in scores and may not be as sensitive to growth as a letter-by-letter approach" (McCurdy et al., 2016, p. 49). The binary scale of correct/incorrect represents a missed opportunity to explore the details of the error and gain insights into underlying word knowledge and student potential (Morris et al., 1986). Such a superficial approach can inadvertently overlook the progression of a learner's understanding of the specific areas where interventions are needed. It also potentially discourages students who repeatedly receive low scores without receiving detailed feedback on their performance. The lack of granularity in the WSC approach could, therefore, contribute to a loss of motivation and hinder the targeted teaching strategies that could otherwise guide learners to overcome their specific spelling challenges. These limitations have sparked interest in alternative methods like Correct Letter Sequencing (CLS), which offers a more nuanced evaluation of spelling accuracy and learner development."

Alternative Approach to Spelling Correction: Correct Letter Sequencing (CLS):

A more fine-grained approach to spelling correction is the Correct Letter Sequencing (CLS) system. Spelling is the correct sequencing of letters into words for written communication, with correct arrangements determined according to accepted usage (Treiman et al., 2019). CLS is an individualized approach to spelling evaluation that involves analyzing and assigning a score to each word a student attempts to spell, even if the attempt has resulted in a misspelling (Hosp et al., 2007). This is accomplished by giving credit for any correctly sequenced letters. In contrast to WSC scoring which awards a score of zero to a word that has any error at all, CLS can be used to assign scores to erroneously spelled words. As Deno et al. (1980), Hosp, et al. (2007), and Morris et al. (1986) have determined, CLS is a useful approach to evaluation when collaborating with developmental spellers, including ESL students. CLS was used as an analytic tool in the present research to provide a more sensitive indicator of change in participants' ability to spell English words.

To compute a CLS word score, an instructor assumes a "phantom letter" at the beginning and end of the word, placing a caret (^) above each pair of letters that appear in the correct sequence. An example of the CLS system is illustrated as follows:

An example of the CLS system is illustrated as follows:

$\overset{\wedge}{1}t\overset{\wedge}{1}a\overset{\wedge}{1}r\overset{\wedge}{1}g\overset{\wedge}{1}e\overset{\wedge}{1}t\overset{\wedge}{1} = \text{correct: 7 points}$

$\overset{\wedge}{1}t\overset{\wedge}{1}a\overset{\wedge}{1}r\overset{\wedge}{0}r\overset{\wedge}{1}g\overset{\wedge}{1}e\overset{\wedge}{1}t\overset{\wedge}{0}e\overset{\wedge}{0} = 6 \text{ points}$

$\overset{\wedge}{1}t\overset{\wedge}{1}a\overset{\wedge}{1}r\overset{\wedge}{0}r\overset{\wedge}{0}k\overset{\wedge}{0}e\overset{\wedge}{1}t\overset{\wedge}{1} = 5 \text{ points}$

The example shows variations in spelling correctness and points awarded, with students closer to the target spelling receiving higher scores. This method suggests that certain students may need less guidance and may have a greater likelihood of spelling the item correctly in

subsequent tests.

Despite its potential benefits in analyzing the details of spelling errors, the CLS method is rarely used by teachers in the classroom. The tedious and time-consuming nature of this method of assessment often discourages its implementation. Its lack of prevalence in the educational setting underscores the importance of investigating its efficacy further and potentially devising strategies to make it more accessible and practical for instructors. The challenges inherent to the CLS approach demand attention to ensure that the nuances of spelling are not lost, particularly among learners who would benefit most from this detailed analysis."

In the context of the present study, the adoption of the Correct Letter Sequencing (CLS) approach was not merely an alternative marking strategy. Rather, it represented a deliberate pedagogical shift aimed at fostering a more nuanced understanding of student spelling errors. In contrast to the binary judgment used in the Words Spelt Correctly (WSC) approach, the CLS method emphasizes the partial competencies of students by awarding credit for individual letters sequenced correctly. This approach sought to shift the instructional focus from mere error identification to an exploration of what students were able to achieve, thereby enhancing a more formative assessment process.

The underlying rationale for this shift was twofold. First, it was intended to provide educators with a more granular insight into the specific areas where students were excelling or struggling, enabling targeted interventions tailored to individual learning needs. This increased specificity in feedback could illuminate pathways for instructional support that might be obscured by the all-or-nothing approach inherent to WSC.

Second, and perhaps more fundamentally, the CLS approach was designed to improve morale and motivation within the classroom. By emphasizing what students got right rather than exclusively highlighting errors, the CLS scoring system sought to foster a more positive learning environment. By recognizing and celebrating partial successes, students could be encouraged to view their mistakes as opportunities for growth rather than as definitive failures. Such a perspective has the potential to alleviate anxiety around spelling tests and to nurture a more resilient and growth-oriented mindset among learners.

In essence, the implementation of CLS in this study was not merely an assessment technique but a strategic educational decision aimed at promoting a deeper, more constructive engagement with the complex task of spelling. By accentuating progress and potential rather than merely cataloging errors, the CLS method may offer a more humane and effective approach to spelling education, particularly for those learners for whom traditional methods have proven demoralizing or ineffective."

3. Study Setting

3.1 Location

The research was carried out at Dubai Women's College, an institution located in Dubai, United Arab Emirates. As a progressive college focusing on women's education, Dubai

Women's College provides an array of academic programs aimed at empowering women and preparing them for professional careers. The academic environment reflects the broader vision and strategic foresight of the UAE government, whose comprehensive planning and commitment to national development have played a pivotal role in shaping the country's educational success. The UAE leadership's emphasis on human capital, innovation, and inclusive advancement has not only elevated the nation's global standing but also created fertile ground for academic excellence. Their policies and initiatives have transformed the education sector, ensuring that institutions like Dubai Women's College are equipped to foster capable, confident, and future-ready graduates. The success of such institutions is a direct reflection of the UAE's dedication to thoughtful governance and forward-looking leadership.

3.2 Participants

The participants of this study were Arab learners of English, which as mentioned are a group that has been identified as facing specific difficulties with English spelling. The students involved were enrolled in various programs at the college, reflecting diverse educational backgrounds and aspirations.

3.3 Language Environment

English is used as a medium of instruction at Dubai Women's College, and the students are expected to acquire proficiency in all aspects of the English language, including spelling. This study's focus on spelling is particularly relevant in this context, as the college emphasizes the importance of strong written communication skills across all academic disciplines.

3.4 Challenges and Motivation

Given the difficulties Arab learners face in English spelling, as previously outlined, the setting provided an ideal opportunity to explore new methodologies for spelling instruction. The complex linguistic environment at the college, coupled with the students' prior struggles with traditional spelling tests, created a compelling need for this research.

The insights and potential solutions gained from this study are aimed not only at improving spelling instruction within Dubai Women's College but also at contributing to the broader educational discourse around effective language learning strategies for Arab learners of English.

4. Methodology

4.1 Participants

The participants for this study were recruited from a single educational institution, comprising a total of 33 students enrolled at the College. The sample was drawn from a diverse cross-section of learners to ensure a representative mix of abilities and backgrounds.

4.2 Instrumentation and Materials

The instrument utilized for this study was a specially designed spelling test, containing a set of 25 predetermined words. These words were selected to represent a balanced array of spelling

challenges, taking into consideration various levels of complexity and common pitfalls for English learners.

4.3 Procedure

Upon receiving the list of spelling words, the participants were asked to spell them. Contrary to traditional spelling tests where students might revise the words beforehand, in this study, the students were not allowed to study the words before the test. This decision was made to assess their raw spelling abilities, free from the potential biases introduced by memorization or rehearsal.

The test was administered using pen and paper to preclude the use of electronic aids such as spell check, thereby ensuring an authentic assessment of the student's spelling proficiency.

4.4 Scoring and Analysis

Upon completion of the test, the scores were meticulously calculated using two distinct scoring methods to allow for a comprehensive analysis of the student's spelling abilities.

1. **Words Spelt Correctly (WSC) Method:** Initially, the traditional scoring method was applied, wherein each correctly spelled word was awarded one point. This approach, while simple and commonly used, emphasizes only the absolute correctness of the spelling without considering partial competencies.

2. **Correct Letter Sequencing (CLS) Method:** Subsequently, the CLS method was employed to calculate the scores, allowing for a more nuanced evaluation. It allocates points for letters arranged in the correct order, acknowledging partial accuracy even in misspelled words. Such a granular analysis offers insights into specific areas of strength and weakness in the participants' spelling abilities, emphasizing what was correct in their attempts rather than solely focusing on errors.

The application of these two scoring methods facilitated a robust and multifaceted examination of the spelling capabilities of the participants, providing both a conventional assessment and a more detailed understanding of the intricacies of their spelling performance.

5. Results

The results of the study are presented and analyzed in the subsequent sections, where the findings derived from the two scoring methods are compared and contrasted. This dual-analysis approach allows for an enriched interpretation of the data, illuminating potential pathways for pedagogical intervention and further research.

The ensuing table delineates the spelling evaluation scores for the cohort of 33 students, as ascertained through the application of both the Words Spelt Correctly (WSC) and Correct Letter Sequencing (CLS) methodologies. An inspection of these results, elucidated below, affords an analytical comparison between these two distinct approaches to spelling assessment.

Table 1. WSC and CLS spelling score data

Participant	WSC Score (out of 25)	CLS Percentage
1	10 (40%)	85.33%
2	6 (24%)	87.85%
3	11 (44%)	84.54%
4	7 (28%)	71.80%
5	10 (40%)	80.28%
6	11 (44%)	70.14%
7	5 (20%)	71.57%
8	4 (16%)	65.89%
9	7 (28%)	69.06%
10	6 (24%)	74.74%
11	7 (28%)	71.30%
12	9 (36%)	79.65%
13	8 (32%)	70.84%
14	11 (44%)	83.15%
15	9 (36%)	76.25%
16	8 (32%)	65.77%
17	8 (32%)	74.93%
18	8 (32%)	65.23%
19	2 (8%)	57.00%
20	7 (28%)	63.97%
21	7 (28%)	63.19%
22	8 (32%)	76.92%
23	5 (20%)	67.35%
24	11 (44%)	79.39%
25	8 (32%)	77.11%
26	2 (8%)	50.34%

27	4 (16%)	57.95%
28	8 (32%)	66.83%
29	10 (40%)	77.17%
30	7 (28%)	66.34%
31	3 (12%)	56.54%
32	4 (16%)	57.53%
33	10 (40%)	79.22%

6. Results

6.1 WSC Scoring Method

The application of the Words Spelt Correctly (WSC) method yielded results that were both concerning and indicative of a broader issue within the conventional spelling assessment. With a traditional pass grade threshold of 50%, the WSC scores revealed a disheartening outcome where not a single student among the 33 participants passed the spelling test. More alarming was the distribution of these scores, with 23 students, or approximately 70% of the participants falling significantly below the passing mark, scoring 32% or lower. This overwhelming majority of sub-par performances are indicative of a pervasive issue that extends beyond individual variations in ability or effort. The notably low scores serve as a clear illustration of the challenges faced by these learners in acquiring English spelling competencies.

The starkness of the binary right-or-wrong assessment method, as vividly portrayed in Table 1, extends beyond mere quantitative evaluation and delves into the realm of student psychology and educational pedagogy. By rigidly adhering to a dichotomous correctness framework, this approach inadvertently disregards the nuanced incremental progress, individual effort, and underlying understanding of linguistic rules and orthographic patterns that are inherent in the complex process of spelling.

This oversight can manifest in multifaceted consequences. On the surface level, the failure to recognize partial competencies can contribute to feelings of demoralization and disengagement. The lack of acknowledgment for partial success may lead students to perceive their efforts as futile, fostering a classroom environment where spelling becomes a daunting task associated with failure and inadequacy.

On a deeper level, this binary approach may inadvertently undermine the very pedagogical goals it aims to assess. By failing to provide insights into the specific nature of spelling errors and the strategies students may employ in their spelling attempts, educators are deprived of vital information that could guide targeted instruction and personalized support.

Moreover, the absence of an analytical lens through which to view spelling efforts may engender a lack of interest in improvement. When students are confronted with an unyielding

standard that fails to recognize their growth and learning trajectory, they may be less inclined to invest in the diligent practice and reflective self-assessment necessary for true mastery. Furthermore, this method may diminish belief in one's ability to excel in spelling, leading to a self-fulfilling prophecy where low expectations result in reduced effort and engagement, ultimately culminating in decreased performance.

In light of these multifaceted concerns, a broader exploration of alternative approaches, such as the Correct Letter Sequencing (CLS) method, may prove essential in fostering an educational environment where spelling is not merely a task to be assessed but a skill to be nurtured, appreciated, and understood in all its complexity. By adopting a more holistic and empathetic approach, educators can promote a classroom culture where spelling becomes an engaging and enriching journey, and where errors are viewed not as failures but as opportunities for growth, understanding, and continual refinement of skills.

Having examined the implications and limitations of the Words Spelt Correctly (WSC) method, the focus of this analysis will now shift to the Correct Letter Sequencing (CLS) approach. The subsequent section delves into the CLS data, offering a nuanced and compassionate alternative to the binary assessment model previously discussed. By assessing the spelling abilities of students through a more complex lens that appreciates incremental progress and individualized effort, the CLS method presents itself as a potentially more enlightening and humane approach to spelling evaluation. This shift in perspective emphasizes the importance of understanding the underlying processes involved in spelling and recognizes the value of partial competencies. The analysis of the CLS data, therefore, serves as an exploration of a method that may contribute to more engaging and effective spelling education, a pursuit that acknowledges the multifaceted nature of language learning and the diverse capabilities of students.

6.2 CLS Scoring Method

The Correct Letter Sequencing (CLS) method offers a profound departure from traditional scoring systems, marking a progressive step in educational assessment. Unlike the WSC method, which emphasizes binary right-or-wrong results, CLS provides a more nuanced evaluation that recognizes incremental success in spelling. As illustrated in Table X, this method not only led to a universal passing grade among the participants but also revitalized the learning experience for those who performed weakly in the WSC method.

By acknowledging the subtleties of spelling and awarding points for correctly sequenced letters, even within misspelled words, CLS validates the diverse abilities and competencies within language learning. This approach underscores the fact that spelling is not a monolithic skill but rather a complex interplay of phonological, morphological, and orthographic understanding. In doing so, it aligns with the intricate and multifaceted nature of language itself.

The adoption of CLS has far-reaching effects beyond mere grading. The focus on individual growth, the recognition of effort, and the acknowledgment of partial successes cultivate a more positive and supportive learning environment. Students are not just assessed on their results but are appreciated for their journey, their process, and their improvement. This nurturing

perspective may significantly mitigate feelings of frustration, anxiety, and demoralization that are often associated with traditional assessments. Moreover, the CLS method fosters a growth mindset by encouraging students to view their mistakes as opportunities for learning and growth. This shift in perspective can lead to a more engaged and motivated learner, one who is willing to take risks, explore, and develop. Instead of a punitive approach that might stifle creativity and deter effort, CLS nurtures resilience, perseverance, and intellectual curiosity. Importantly, the CLS method's inclusiveness can also make learning more equitable, accommodating learners with diverse backgrounds and varying levels of proficiency. By shifting the focus from mere correctness to understanding, progress, and effort, CLS paves the way for a more humanized and compassionate educational landscape.

The juxtaposition of the WSC and CLS methods in this study illuminates a critical aspect of pedagogical practice: the profound impact that assessment methods exert on students' perceptions, motivation, and overall learning experience. The contrast between these two methods is not merely a statistical variation but a philosophical divergence that challenges the traditional paradigms of educational assessment.

In comparing the WSC's rigidity with the CLS's more nuanced approach, the study emphasizes a paradigm shift towards a more human-centric model of education. This new perspective moves beyond the conventional focus on mere correctness to engage with the learners' developmental journey, recognizing the complexity and diversity of individual growth in spelling.

The results of this research underscore the urgent need for adaptive, compassionate, and intelligent evaluation methods that resonate with the evolving pedagogical paradigms. It invites educators and policymakers to question long-held assumptions about learning and assessment and to explore innovative ways to nurture intellectual curiosity, resilience, and growth.

While the implementation of the CLS method may require further exploration, refinement, and adaptation to various educational contexts, its potential benefits in enhancing morale, motivation, and an authentic understanding of spelling are palpable. It goes beyond merely grading spelling; it offers a transformative perspective that connects with the learners on a deeper level, acknowledging their efforts, struggles, and incremental achievements.

By moving away from punitive measures and embracing an inclusive and affirmative approach, the CLS method has the potential to revolutionize the way educators approach spelling assessment. It transforms it from a source of anxiety and demoralization into a platform for growth, reflection, empowerment, and inspiration.

7. Conclusion

This study serves as a timely reminder that education is not a mere transmission of information but a complex interplay of cognitive, emotional, and social dynamics. The findings provide a compelling argument for a more empathetic and holistic approach to spelling assessment, one that aligns with the core values of education in fostering lifelong learning, critical thinking, and personal development. It is a call to action for educators to recognize and harness the

transformative power of innovative assessment methods like CLS, and to continually strive towards a more responsive and humane educational landscape that cherishes the unique journey of each learner. The call for innovation in automating the CLS scoring process stands as a necessary next step in the journey toward making this valuable tool more accessible and practical for modern educators.

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