INVESTIGATING THE PERCEIVED IMPACT OF DIGITAL SPELL-CHECKERS ON ESL LEARNERS' ACADEMIC WRITING SKILLS IN PAPER-BASED WRITING CONTEXTS

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ABSTRACT

This study seeks to examine teachers' perceptions of the impact of digital spell-checkers on academic writing skills of ESL learners in traditional paper-based writing contexts. Adoption of digital spell-checkers and writing assistants has incessantly enhanced in the ESL writing contexts. Consequently, the academic writing skills of learners may have been compromised. The study is qualitative in nature. Semi-structured interviews were conducted with a convenience sample of 10 ESL teachers from the district of Bahawalpur. Then, the researcher transcribed the interviews to enhance an in-depth understanding of the data. Furthermore, the qualitative datasets were subjected to inductive thematic analysis by following the six steps proposed by Braun and Clark (2004). The study is grounded in the theoretical framework proposed by Rimbar (2017) which outlines a mechanism for detection of spelling errors using spell-checkers. The results of the study showed that although digital spell-checkers offer various benefits such as increased writing fluency, save time, and provide immediate feedback, they also pose multiple challenges like over-dependence, weaker foundational skills, and diminished engagement in paper-based academic writing tasks.

Keywords: Academic Writing Skills, ESL Learners, ESL Teachers, Digital Spell-Checkers, Interviews, Paper-Based Writing Contexts, Thematic Analysis

INTRODUCTION

This study intends to investigate the perspectives of ESL teachers about the influence of digital spell-checkers on the academic writing skills of ESL learners in paper-based writing contexts. With the expansion of technology and digital writing tools, the adoption of new technologies has rapidly increased among the students. These digital tools are, on one hand, effective in strengthening social ties but they have also impacted the academic writing skills of students. Although such virtual assistants aim to enhance the writing quality and provide aid to the students, their influence on academic writing skills has grabbed the attention of many educators (Purcell et al., 2013).

Digital writing tools are equipped with autocorrect features that correct erroneous spellings and also suggest alternative word choices. Writing has become a less cumbersome activity because of this feature. According to Lin et al. (2017), the effectiveness of learning is declined if insufficient effort and time is put into completing a learning task. Digital spell-checkers are seemingly convenient tools that facilitate academic writing but their impact on the quality of student's writing is a matter of debate. Over-dependence on autocorrection might have devastating impact on ESL learners' spelling competence.

Background of the Study

Learners rely on autocorrect software while completing their academic writing tasks in ESL classrooms (Hussein, 2024). However, when they are exposed to examination settings, they might not have access to autocorrect software due to which they might encounter challenges in spelling, word choice, and overall quality of academic writing. Westwood (2014) was of the view that teachers often neglect teaching spelling

skills to learners explicitly. Autocorrect software provides immediate feedback and assistance to learners about their spelling errors but this software must be combined with direct instruction and practice to master academic writing skills in ESL contexts (Rimbar, 2017).

Despite of the increasing use of digital spell-checkers in academic settings, there is a limited research conducted in Pakistan about their impact on ESL learners' academic writing skills, particularly in contexts where writing is done on paper. ESL teachers often observe that dependence on digital tools may hinder the development of independent spelling abilities and other writing skills essential for academic achievement. This study aims to investigate the perceived impact of digital spell-checkers on ESL learners' writing proficiency by gathering teachers' insights on how these tools influence students' skill development in paper-based writing tasks.

Aims and Objectives

Keeping this background of the study in view, the researcher has specified the following aims and objectives of this research:

(i) To gain insights into teachers' perspectives on the impact of digital spell-checkers on academic writing skills of ESL learners in paper-based writing contexts.
(ii) To explore teachers' experiences regarding the spelling and grammar competence of ESL learners in digital age.

Research Questions

Similarly, the study primarily deals with the following research questions:

(i) What are teachers' perspectives on the impact of digital spell-checkers on academic writing skills of ESL learners in paper-based writing contexts?
(ii) How do teachers perceive the spelling and grammar competence of ESL learners in digital age?

Review of Literature

As per Kazmi (2023), academic writing focuses on formality, structure, objectivity, balance, precision, evidence, citations, critiques, and argumentation. In academic writing, ESL learners describe facts and figures in textual format to fulfil the purpose of learning, evaluation, introduction, knowledge seeking, theoretical explanations, and research. Learners show less awareness with the principles of academic writing when they enter universities (Oshima & Hogue, 2007). Moreover, thesis, research articles, and dissertations are a mandatory part of academic programs. Hence, it is necessary to master the art of academic writing skills.

Academic writing is such an activity that requires planning. It is a progressive activity as it keeps on transforming till the production of final draft. It has been observed through various studies that ESL learners have grammatical errors, weaker expressions, and structural aberrations in their writings and they are deficient in the art of rewriting and paraphrasing. Researchers like Fahmida (2010) and Kazmi (2023) pointed out some mistakes that are commonly found in academic write-ups of ESL learners:

(i) Poor syntactic structures
(ii) Weakly explained concepts
(iii) Subject-verb disagreement
(iv) Structural ambiguity
(v) Poor comprehension skills
(vi) Second object
(vii) Oblique object

However, the means of academic writing have undergone evolution due to the emergence of various Artificial Intelligence (AI) and digital writing tools. According to Reilly (2017), digital tools provide various services like grammar checks, content suggestions, spelling checks, and automatic writing services that are utilised by students in ESL classrooms. Shohnazarov (2024) was of the view that technology fosters academic writing skills. So, students nurture this misconception that AI and digital writing tools are sufficiently providing them assistance so there is no need to learn the art of academic writing skills. AI writing assistants, digital spell-checkers, and various other digital tools can serve as a supplementary aid in ESL writing contexts but they are not good enough to replace human writing.

Many researchers have advocated the inevitability of mastering the skill of academic writing in paper-based writing contexts. Park and Baron (2017) pointed out that when students are indulged in handwriting practices, they are able

to pay more focus and concentration on their writing tasks. They explained that in case of digital writing, cognitive abilities and critical thinking skills are affected. The study of Longcamp et al. (2008) indicated the advantages of paper-based writing scenarios that handwriting (and not digital writing) facilitates visual identification and letter recall. Hence, if less attention is paid to teaching academic writing skills for paper-based writing contexts then motor, conceptual, analytical, and critical skills of ESL learners will be affected.

The main function of autocorrect software is to assist the writers in producing grammatically correct write-ups without interrupting the writing process but it is mostly done without the user noticing it (Tønnesen, 2023). Since autocorrect software corrects unnoticed spelling mistakes automatically, this can sometimes lead to incorrect changes made to the target text. The study of Kaushik et al. (2020) concluded that grammar and spelling-checker software is very good at improving language, vocabulary, style, and clarity but they are deficient at the ability to improve grammatical features. Similarly, researchers like Vernon (2000) and Bizzell (1992) suggested that the digital software of grammar and spelling checking might be effective at assisting students but they can never be fully developed because of the technological limitations. These researchers have argued that such software, when applied to actual situations in which the discourse occurs, lacks the explanatory or comprehension power of the situational context.

Despite of the widespread use of digital spell-checkers, there is a notable research gap in Pakistani context regarding the impact of such tools on the academic writing skills of ESL learners in paper-based settings. Moreover, studying teachers' perceptions in this regard has been an underexplored area. Therefore, this paper strives to bridge this research gap.

Research Methodology

The study at hand is qualitative in nature. Semi-structured interviews have been used as a data collection method. Harrell and Bradley (2009) defined semi-structured interview as an interview that consists of a set of predetermined questions based on a predetermined framework but some of the questions emerge as the interview progresses. The population of the study consists of ESL teachers in Bahawalpur, teaching at the BS level at various universities and higher education departments. The researcher employed the technique of convenience sampling to reach teachers that were approachable for the researcher. The sample size of the study was 10 ESL teachers because, according to Morse (1994), atleast 5 to 25 interviews should be conducted to prevent data saturation.

According to Creswell (1998), the total number of interview questions should be between 6 and 10. So, the interview questions in this study were 6. However, the researcher did some cross-questioning with the interviewees to explore few interesting tangents that emerged from the data. The questions of the interview were theory-driven based on the conceptual framework presented by Rimbar (2017) and some items were also designed by the researcher, keeping in focus the goals and rationales of the study. The theoretical framework of the study is explained in the next section. The researcher had the interview guide vetted by a panel of subject-specialists and the modifications proposed by the experts were also incorporated in the interview guide.

The semi-structured interviews were conducted in the offices of the concerned teachers and lasted from 20-25 minutes. The researcher obtained the consent of the interviewees for interview conduction and recording. Moreover, the confidentiality and anonymity of the chosen sample was maintained. However, as far as the transcription of the interviews is concerned, the researcher listened to and re-listened to the interview recordings. The researcher herself transcribed the data because, according to Bird (2005), when the researchers transcribe the data themselves, familiarity and immersion with the data is enhanced, leading to an in-depth understanding of the data.

After gathering the data, the researcher did the coding of qualitative datasets by following the framework of Reflexive Thematic Analysis proposed by Braun and Clark (2006). Inductive thematic analysis has been used in this study as the codes and themes emerged from the data directly and were not based on any existing theory or pre-conceived notions of the researcher. The

said framework is based on 6 steps which are as follows:

(i)   Knowing the data
(ii)   Creation of codes
(iii)   Finding of themes
(iv)   Reviewing of themes
(v)   Refining of themes
(vi)   Producing the report and findings

When the researcher completed her coding process, she went to the panel of subject-specialist again and had her coding checked and validated. After the validation of codes, she continued with her process of report writing.

Theoretical and Conceptual Frameworks

The theoretical foundations of the study are based upon the framework presented by Rimbar (2017) in her article The Influence of Spell-Checkers on Students' Ability to Generate Repairs of Spelling Errors. Her conceptual framework served as a theoretical guide for the study. Moreover, many question items of the interview are based on the insights provided in this framework.
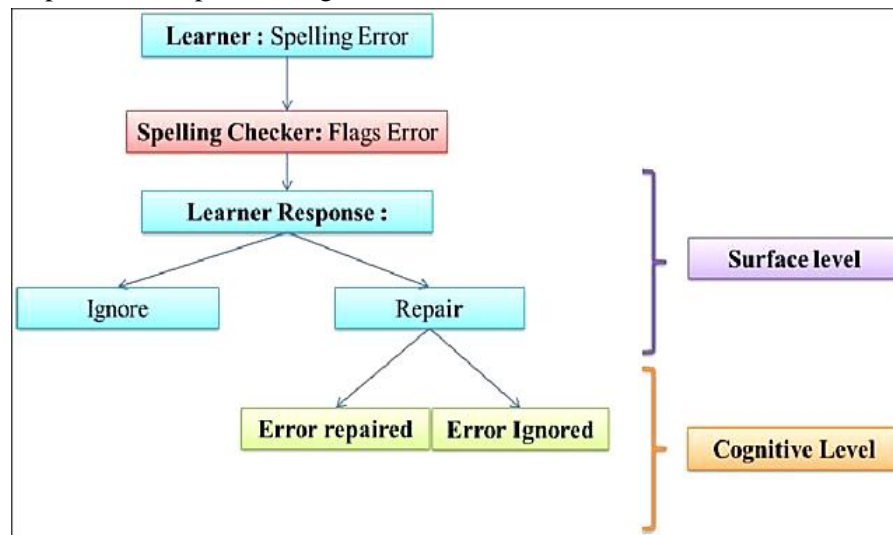
Figure 1: Mechanism of Spelling Error Detection & Learners' Response, Adopted from Rimbar (2017)

Figure 1 represents the mechanism for detection of spelling errors using spell-checkers and how ESL learners respond to that error. When an ESL learner makes an error in his or her academic writing task, digital spell checkers spontaneously flag the error with a red, zigzag line. When the learner notices the error, he either decides to repair or ignore it. If the learner intends to repair the error, he will click on the red underline and choose one of the words from the suggested spellings provided by the spell-checker. The spellings might not be the correct spellings. This repair is only considered as a surface-level repair because the teachers will observe that the document is error-free but, on cognitive level, the error can either be ignored or repaired. Users of digital software sometimes subconsciously select suggested spellings given by spell-checkers without registering the correction into their second language system.

This theoretical framework has provided the foundation for understanding the rationale of the study. However, the researcher has extended Rimbar's (2017) framework by adding her own insights into it, thereby, presenting the conceptual framework of the study.

The researcher is of the view that even if the learner repairs the error, he might or might not acquire the correct form cognitively which can lead to a confusion when writing in paper-based contexts without the aid of digital tools. The reliance on digital-spell checkers can undermine the learners' grammatical and spelling competence because they might not internalize the correct form, rules, and spellings. Consequently, this can lead to a decline in their

academic writing skills in contemporary writing contexts.

Discussion and Findings

As explained in the methodology section, after having the themes and codes validated, the researcher endeavoured to elaborate the themes and codes in detail by following the steps of Reflexive Thematic Analysis presented by Braun and Clark (2004). After wading through the datasets meticulously, the researcher identified 6 main themes that were further divided into various sub-themes or codes. The themes, codes, and their explanations are described below:

(i) **Incorporation of Paper-Based Writing Activities in ESL Classrooms** (Theme 1)

This theme explores the rationale behind incorporating paper-based writing activities in ESL classrooms.

a) **Understanding the Language Mechanics**

When teachers were inquired about how often they incorporate paper-based writing activities in their ESL classes, they came across with various perceptions. One of the teachers opined that they keep on incorporating paper-based writing activities in their classrooms as this helps the students practice traditional writing skills and develop a deeper understanding of language mechanics.

Hence, increased proficiency in academic writing ensures a better language proficiency, reflective writing, creativity, and critical thinking.

b) **Boring and Time-Taking**

ESL teachers were of the view that they embed paper-based writing tasks in the form of homework assignments and in-class quizzes but the students mostly avoid these activities as "they find them boring and time-taking."

So, with the passage of time, students' interest in academic writing activities is diminishing.

(ii) **Academic Writing Skills of ESL Learners in Digital Age** (Theme 2)

The said theme discusses the differences observed in the write-ups of students who use digital spell-checkers and those who do not use them.

a) **Spelling and Grammatical Mistakes**

When the teachers were asked about the differences they observe in the academic writing abilities of students who frequently use digital spell checkers compared to those who do not, one of the ESL teachers commented, "The writings of students who use digital spell-checker are free of spelling and grammatical mistakes, on the other hand, the students who don't use spell-checkers make a lot of spelling and grammatical mistakes." Another teacher remarked, "Students now a days rely heavily on auto-correction on their mobile phones because the built-in or add-on keyboard has default auto-correct features."

Hence, the students who frequently use digital spell-checkers have better accuracy in spelling and grammar in typed work but they may struggle with spelling and grammar when writing by hand.

b) **Weaker Self-Correction and Self-Editing**

According to the perspective of ESL teachers, students who frequently used digital spell checkers tend to have fewer spelling errors but often exhibit weaker self-correction skills and lesser awareness of grammar rules. Conversely, students who do not use digital spell checkers are generally more adept at self-editing and demonstrate a stronger grasp over spelling and grammatical concepts, although their work may contain more initial errors.

(iii) **Benefits of Digital Spell-Checkers for ESL Learners** (Theme 3)

This theme elucidates the perceived benefits of digital spell-checkers for ESL learners as observed by teachers.

a) **Time-Saving**

While mentioning the benefits of using digital spell-checkers by ESL learners, one of the teachers remarked, "As the spell-checkers are automated in function so they save a lot of time of students and make the learners' academic writing error-free."

In conclusion, the time-economical and effort-saving features of digital-spell checkers grab the attention of learners and they cannot help using it.

b) Increased Writing Fluency

Furthermore, the main benefit of using such software for ESL learners include increased writing fluency and the ability to focus on content and ideas rather than mechanical correctness. This can boost their confidence, self-esteem, and motivation to write.

c) Immediate Feedback

ESL teachers commented that digital spell-checkers help students identify and correct errors they might not notice otherwise and provide immediate feedback. However, one of the teachers commented that such software also assists in expanding the vocabulary of students by suggesting alternatives "by allowing students to focus more on content and less on technical(v) aspects." So, digital spell-checkers might perform the role of personal guide and assistant.

(iv) Drawbacks of Digital Spell-Checkers for ESL Learners (Theme 4)

This theme highlights the perceived disadvantages of digital spell-checkers for students as identified by ESL teachers.

a) Limited Database

When the respondents were questioned about the potential drawbacks of digital spell-checkers, one of the teachers was of the view, "The main problem with the digital spell-checkers is that they have a limited database." She quoted the example of Microsoft Word that sometimes while writing field-based terminologies in Microsoft word, the program marks it incorrect by underlining those words. In this way, the users add them in the database by clicking the icon of add to dictionary.

Additionally, the spell-checkers do not primarily recognise the errors in grammatical constructions. This is one of the major limitations of this kind of digital writing tool.

b) Weaker Foundational Skills

According to ESL teachers, the primary drawback of digital spell-checkers was the development of a dependency on digital tools, leading to a decreased proficiency in manual spelling and grammar correction. This reliance can result in weaker foundational skills and difficulties in environments where digital writing tools are not available, such as exams or paper-based writing tasks.

c) Over-Dependence on Spell-Checkers

Similarly, one of the respondents explained that the students might miss learning opportunities by not fully engaging with the rules of grammar of the target language. Another teacher pointed out that the significant drawback is the potential over-dependence on digital writing tools, "leading to a weaker spelling and grammar skills when the tool is unavailable."

In conclusion, students exhibit low performance in academic writing tasks without the access of virtual aids.

Academic Writing Skills of ESL Learners Without Access to Digital Aids (Theme 5)

This theme investigates how students respond to academic writing tasks when digital spell-checkers are not available.

a) Anxiety and Frustration

One of the questions in the interview was about students' reaction to academic writing tasks without the access to digital spell-checkers. In this case, one of the teachers said, "Students often exhibit initial anxiety and frustration when asked to complete writing tasks without digital spell-checkers."

However, this can be a possibility that many students adapt and develop improved self-editing skills and a better understanding of language mechanics over time.

b) Unwillingness to Write

Students, now a days, find writing activities boring as per the perceptions of ESL teachers and they do not like writing activities. They exhibit unwillingness and reluctance to write. One of the teachers remarked, "Most of the students do not take notes during the lectures."

Furthermore, students are not able to perform well in impromptu quizzes during classes. The availability of numerous digital tools and platforms has decreased their interest in academic writing tasks.

(vi) Strategies to Improve Spelling and Grammatical Competence of ESL Learners (Theme 6)

This particular theme explores various techniques and methods used by teachers in ESL classrooms to foster academic writing proficiency of students.

a) Use of Dictionary and Writing Drills

Towards the end of the interview, the researcher asked ESL teachers about the strategies they use to improve learners' spelling and grammatical competence in an era dominated by digital tools. One of the respondents remarked, "Most of the time, I use Oxford Advanced learners dictionary in the classroom because it presents not only the correct spelling of words but also provide the knowledge of how one word can be used as an adjective, noun, or adverb etc. that helps ESL learners in the improvement of spellings and grammatical constructions."

Teachers also talked about incorporation of various writing drills for improving academic writing abilities of their students.

b) Blended Teaching

The teachers preferred using a mix of digital and traditional teaching methods in ESL classes. One of the teachers commented, "I assign them different subject-related topics for hand-written homework assignments. I sometimes check their previous knowledge by impromptu tests. I also promote the use of digital tools."

Teachers believed that the feedback they provide on the handwritten assignments and tests also helps the students identify their mistakes in spelling and grammar. Many teachers agreed on assigning writing assignments to students through Google Forms.

c) Miscellaneous Strategies

Apart from blended teaching, dictionary usage, incorporating writing drills, and task-based writing activities, respondents also talked about various other strategies that help balance the benefits of digital tools with the development of essential language skills. Some of these strategies that the sample of the study mentioned are described below:

- Regular paper-based writing exercises
- Explicit instruction of spelling and grammar rules
- Peer review sessions
- Incorporating dictation exercises
- Encouraging the use of memory aids and mnemonic devices for tricky spelling rules
- Providing immediate and constructive feedback to reinforce learning

Conclusion

In conclusion, digital spell-checkers offer advantages like error reduction, time efficiency, and enhanced writing fluency. On the other hand, they also pose various challenges like over-reliance, diminished engagement in traditional paper-based writing tasks, and weaker self-correction skills among ESL learners. The findings of the study suggest that these digital writing tools can support contemporary writing tasks by making content creation faster and more accurate. Conversely, they may also hinder the development of essential spelling and grammar skills that are required for success in paper-based academic writing contexts. ESL teachers have observed that the students who heavily depend upon these tools often struggle with manual writing tasks which can lead to anxiety and frustration when digital and virtual aids are unavailable. This highlights the need for balanced instructional strategies that blend digital and traditional methods to ensure that students develop both the technological proficiency needed in the digital age and the fundamental linguistic skills essential for academic and professional endeavours.

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