

Grammarly: Help or hindrance? Academic Learning Advisors' perceptions of an online grammar checker

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Online technology has been advocated as a means of providing students with the grammatical support needed to succeed in higher education without compromising the mission of university Academic Learning Centres (ALCs). Recent research into automated feedback technology in Australian tertiary institutions has focused on the grammar checker, Grammarly. This study builds on O'Neill and Russell's (2019) analysis of student perceptions' of Grammarly at one multi-campus Australian university by evaluating Academic Learning Advisors' (ALAs) perceptions of Grammarly and comparing its performance with the traditional feedback method using Word. A mixed method design was applied with three advisors surveyed on the perceived usefulness of incorporating Grammarly feedback into student assessments ($n = 51$), and another three advisors surveyed on providing grammar feedback on assignments using Word ($n = 25$). Statistical analysis showed that the advisors using Grammarly agreed with all 15 statements about the effectiveness of their grammar instruction, and for 13 of these statements, their mean scores were significantly higher than those of advisors not using Grammarly. The effect sizes for these comparisons indicated that the differences were quite large, suggesting that, while the advisors agreed that Grammarly and non-Grammarly feedback were useful to the students, Grammarly feedback was perceived to be more useful. Qualitative analysis explained the responses to Grammarly in terms of positive implications for student and ALA practice, whilst also identifying issues the advisors had with the program. As a result of these reservations, it is recommended that Grammarly be used as a feedback tool for assignments in conjunction with an ALA.

Key Words: Grammarly, grammar, advisor, perceptions, writing, feedback.

1. Introduction

As diversification in the Australian tertiary education system increases, more students have difficulties achieving academically because of issues with language proficiency. Grammar is an important component of language proficiency and students' academic performance is hindered if

they cannot adhere to appropriate grammatical conventions and communicate meaning using appropriate grammatical forms. Students and institutions are aware of the deficiency in students' grammar and assign responsibility to Academic Learning Centres (ALCs) to address it. This responsibility to grammar check, however, contradicts anti-proofreading policies adopted by ALCs and is often not possible due to time constraints and a prioritisation of higher order skills. As a result, dissonance can be created between the Academic Learning Advisor (ALA) and the student with ramifications for both. Student performance is affected in the short term as grammatical issues impede communication. It is also affected in the long term, as students do not receive the grammar input and instruction needed to develop language proficiency. ALAs are also left dissatisfied with their own performance for two reasons. Firstly, the ALAs have not provided the service students want and need and secondly, they have not realised the central aim of the ALC, which is to develop students' academic literacy skills.

Automated feedback programs (AFPs) have been championed as ways that ALAs can reconcile the above-mentioned dissonance by providing the grammar feedback students need to succeed at universities whilst enabling the ALA to focus on global writing concerns. Findings relating to AFPs are mixed and research into instructor perceptions of AFPs is limited. Recent research has, however, been undertaken into one particular grammar checker, Grammarly, with positive findings relating to student perceptions of the program (Cavaleri & Dianati, 2016; O'Neill & Russell, 2019). Research into instructor perceptions of the program has not, however, been conducted, so the aim of this paper is to critically analyse ALAs' perceptions of the feedback Grammarly provides in comparison with their perception of ALA-created feedback using Track Changes and comment annotations in Word. The research was conducted with ALAs from CQUniversity, a regional Australian university with campuses in several capital cities. As the ALAs involved work mainly with students from a non-English Speaking Background (NESB), the analysis is informed predominantly by literature relating to NESB students. The analysis is also based on key considerations in written corrective feedback and the degree to which automated feedback improves an instructor's performance in terms of timeliness and quality of feedback. It also considers issues that the ALAs identified in relation to the feedback given and suggestions to render the feedback more useful.

2. Literature review

2.1. The importance of grammatical accuracy at university

One of the four elements of English language proficiency is grammatical competence (Canale & Swain, 1980, as cited in Murray, 2010) and students must apply grammatical conventions at university (Cavaleri & Dianati, 2016) in order to construct academic texts and organise coherent written academic discourses. Failure to adhere to conventions results in marks being deducted as academic staff penalise transgressions in surface form, such as grammar, punctuation and spelling. Often the marks allocated to grammar in the assignment rubric do not significantly affect the outcome of an assignment, but the impact that grammatical accuracy has on clarity of expression, communication of meaning and development of arguments can negatively affect assessment performance. This is because language and subject knowledge are inextricably linked, so grammar plays a key role in successfully codifying and transmitting subject knowledge (Moon, 2014). Ultimately, therefore, students need to use appropriate grammar to produce the standard of writing needed to pass assignments and achieve academically (Dyson, 2014).

2.2. Grammar issues

Whilst students' work is expected to be grammatically accurate, diversification in the student population in Australian tertiary education has rendered it less likely to be so. Widening participation in the domestic cohort (Cleary, Clarkson, Pember, & Stokes, 2017) coupled with increasing

numbers of international students (O'Neill & Chapman, 2015) means that students entering university may not possess “the level of academic language proficiency required to participate effectively in their studies” (Department of Education, Employment and Workplace Relations [DEEWR], 2009, p. 2). There is a wealth of literature about international students and the language difficulties they experience in Australian universities (see Sawir, 2005; Son & Park, 2014), and it is clear that English language proficiency is an important factor in NESB international students' academic achievement (Li, Chen, & Duanmu, 2010). In relation to grammar, Tynan and Johns (2015) note that international students commit surface-level errors in grammar, punctuation and spelling, rendering their written work difficult to read and grade (Bretag, Horrocks, & Smith, 2002). Domestic students can also display problems with sentence structure and form (Cocks & Stokes, 2013) with domestic NESB students requiring language assistance relating to the use of standard English academic forms (Murray, 2010). Paton (2007) states that elevating language competence by addressing sentence-level issues is the most important issue for both domestic and international NESB students as academic writing cannot be undertaken successfully without the appropriate application of sentence level grammar.

2.3. The responsibility for grammar intervention

Attaining this appropriate language level will not occur through processes Van de Poel and Gasiorek (2012) call “educational osmosis” (p. 296). These include the assumption that grammatical accuracy will improve simply because students write assignments (Bacon & Anderson, 2004) or are exposed to appropriate exemplars (Van de Poel & Gasiorek, 2012). Improvements in students' grammatical accuracy can be made, but this requires intervention and explicit input (Muller, Gregoric, & Rowland, 2017). Akanwa (2015) recommends that lecturers provide this intervention to international students through strategies such as feedback on language in multiple drafts and incorporating language-focused assignments into the curriculum. Lecturers, however, are unlikely to offer such language support as, despite concerns about international students' limited English ability and the impact this has on their academic progress (Bretag, 2007), lecturers do not believe it is their responsibility or area of expertise (Murray, 2010). As a result, students are often sent to learning support units, such as the ALC at CQUniversity, to improve their grammar skills. Indeed, a number of units at CQUniversity explicitly state in their assessment task details that: “It is highly recommended that you seek the help of the Academic Learning Centre at least one week before the due date so that your report can be checked for spelling and grammatical errors.”

2.4. Academic Learning Centre attitudes to grammar

This assumption that the ALC will proofread assignments to check for grammatical accuracy is contrary to CQUniversity's ALC's policy on grammar feedback which states that grammar and language use will be reviewed on a few sections of work only. This reluctance to grammar check is typical of many academic learning institutions (McNally & Kooyman, 2017) and is largely attributable to the fact that grammar correction is time consuming (Dikli & Bleyle, 2014) and adds to workload (Dikli, 2010). A further reason for ALAs' reluctance to grammar check is grammar's perceived status as a lower order concern, one that is not as integral to written feedback as higher order concerns, such as the organisation of ideas and the development of arguments (Winder, Kathpalia, & Koo, 2016). As a result, whilst the “jury is still out” on whether local or global feedback is more effective in improving students' writing (Underwood & Tredigo, 2006, p. 90), many ALAs still adhere to the sentiment expressed by Simpson (2006) that, although accurate grammar production is important to students, feedback on it should not be prioritised.

2.5. Implications for students

For many students visiting the ALC, however, grammar feedback is a priority as it has both short and long-term implications for their academic performance. International students often believe

that their communication problems hinge on grammatical inaccuracies (Williams, 2004); addressing these inaccuracies is important to students, as they believe it will improve their immediate assessment performance and grade. Students also assign longer-term significance to grammar input with many English as a Second Language (ESL) students wanting explicit grammar feedback to improve their future understanding and accuracy (Dikli & Bleyle, 2014). If the students do not receive this feedback, their short-term assessment goals and their longer-term language development can be adversely affected, leaving the students frustrated with the service the learning centre provides (O'Neill & Russell, 2019).

2.6. Implications for ALAs

The reluctance or inability of ALAs to address grammatical issues has implications on the ALC in terms of credibility with students and lecturers, job performance and job satisfaction. Students are increasingly viewing themselves as customers (Khawaja & Dempsey, 2008) and by refusing or diminishing the customers' requests, in this case for grammar feedback, ALAs risk diminishing the credibility of the service (Radecki & Swales, 1988). Inadequate grammar feedback also means that the ALA does not do their job fully. A random online review of Australian learning centre websites revealed that many of these centres shared the same aim as the ALC at CQUniversity, to develop and improve students' academic literacy skills. Part of this literacy skill development relates to students' ability to produce accurate grammar commensurate with expected university standards. If ALAs do not deal with grammatical errors in students' assignments, they do not assist with this development or perform a fundamental part of their role, leaving them more likely to believe they are not doing their job effectively (Dikli & Bleyle, 2014).

2.7. Automated feedback programs

Automated feedback programs (AFPs) have been promoted as potential reconciliation tools, by providing students with grammatical input and correction whilst enabling ALAs to prioritise higher order skills development. Much of the research into AFPs relates to Automated Writing Evaluation tools (AWEs), such as My Access and Criterion. These programs contain essay scoring engines used to grade assignments and writing assistance features, one of which is a grammar checker. Research into these tools largely focuses on their validity and reliability as assessment scoring systems (see summary in Dikli & Bleyle, 2014), with the literature relating to grammar feedback typically focusing on three things: students' perceptions of the tools, the accuracy of the tools, and a comparison of their performance with human raters. Students' perceptions of AWEs are mixed, with some studies reporting positive responses to the programs as they are perceived to improve grammatical accuracy (Fang, 2010; Hoon, 2006; Wang, Shang, & Briody, 2013). Other studies, however, reveal students to be less than impressed with the grammar feedback they receive (Chen & Cheng, 2006; Chen & Cheng, 2008). Reservations are also expressed with regards to the grammatical accuracy of the tools which is considered unsatisfactory in some studies (Hoang & Kunnan, 2016), and particularly when relating to summative assessment tasks (Perelman, 2017). They can also perform poorly in comparison with human raters (Cheng, 2017; Dikli & Bleyle, 2014). As a result, the literature suggests that instructors should overcome the limitations of the AWEs by acting as intermediaries between the student and the feedback (Chen & Cheng, 2008; Dikli & Bleyle, 2014; Hoang & Kunnan, 2016; Liao, 2016).

2.8. Instructors' responses to AFPs

Despite the above recommendation, research into instructors' responses to AFPs is limited (Debusse, Lawley & Shibl, 2008) and not directly applicable to the Australian higher education context. One such study into AWEs in American middle schools found that instructors responded positively to the programs, claiming they made writing instruction easier, made teaching more enjoyable, and saved time (Grimes & Warschauer, 2010). Time effectiveness was also cited as a

positive by instructors in Warschauer and Grimes' (2008) study with findings reporting that students made more revisions if they used an AWE. In line with Fang (2010), these revisions were more likely to be surface-level revisions relating to form, suggesting that automated tools are more appropriate for grammar or spelling reviews than for higher level language issues.

2.9. Grammar checkers

Research into feedback programs which focus exclusively on grammar is also limited (Cavaleri & Dianati, 2016). Vernon (2000) and Radi (2015) published comprehensive reviews of grammar checkers with both synopses recommending teacher intervention to supplement feedback and overcome the programs' limitations. Both of these summaries, however, dealt almost exclusively with word processing applications, so there is a gap in academic research on currently available grammar checkers, such as Ginger, Whitesmoke and ProWriting Aid. In addition, whilst some of the research was undertaken in tertiary education environments, very little was from Australia.

2.10. Grammarly

Whilst research into grammar checkers is limited, a number of articles have investigated the performance of one particular program: Grammarly (Cavaleri & Dianati, 2016; Japos, 2013; O'Neill & Russell, 2019; Qassemzadeh & Soleimani, 2016; Reis & Huijser, 2016). Grammarly claims to have 15 million daily users (Grammarly, 2018), and offers a free online text editor and a paid upgrade, Grammarly Premium. Both versions use algorithms to identify problems in an uploaded text with Grammarly Premium providing feedback on errors based on six criteria: contextual spelling, grammar, punctuation, sentence structure, style and vocabulary enhancement.

In feedback provided using the classic Editor platform, errors are underlined on the left-hand of the screen with the suggested correction on the right-hand side (see Figure 1).

<p>1. An overview of the pathophysiology, causes and risk factors of COPD Smoking <u>are</u> the most common cause of chronic obstructive pulmonary disease (COPD). Long-term exposure to other lung irritants is also a risk <u>factors</u> of COPD. Smoke in the air from other people smoking, air pollution and chemical fumes and dust from the environment or workplace are additional causes of COPD. The risk factors <u>of</u> chronic obstructive pulmonary disease are long-term cigarette smoking, people with asthma who smoke work exposure to <u>dusts</u> and chemicals. In addition, age and genetics (heredity in living organisms) are <u>a big risk factors</u> of chronic obstructive pulmonary. <u>Long term</u> cigarette smoking has a direct effect on the respiratory tract.</p>	<p><u>are</u> → is</p> <p><u>factors</u> → factor</p> <p><u>factors of</u> → factors for</p> <p><u>dusts</u> → dust</p> <p><u>a big risk factors</u> → big risk factors</p> <p><u>Long term</u> → Long-term</p>
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Figure 1. Grammarly feedback using the classic Editor.

Errors can be corrected by clicking on the suggested change. The decision to accept or ignore the suggestion can be informed by expanding the information card which provides additional explanations and examples relating to the grammatical rule (see Figure 2).

Grammarly then tallies the errors and organises them according to the six criteria, so the student can receive a synopsis of their high frequency errors and an overall score relating to their grammatical performance (see Figure 3).

^ x

are → **is**

The plural verb **are** does not appear to agree with the singular subject **Smoking**. Consider changing the verb form for subject-verb agreement.

A singular subject of a sentence or clause requires a singular verb.

Incorrect: **James are** coming to the picnic.

Correct: **James is** coming to the picnic.

Incorrect: When **my aunt cook** the meal, it is always delicious!

Correct: When **my aunt cooks** the meal, it is always delicious!

^ LESS
x IGNORE

Figure 2. Explanations and examples relating to a student error.

DOCUMENT	SCORE
	72 of 100
	ISSUES FOUND IN THIS TEXT
	80
	PLAGIARISM
	Checking disabled
Contextual Spelling	9
Confused Words	6 —
Misspelled Words	2 =
Commonly Confused Words	1 •
Grammar	20
Determiner Use (a/an/the/this, etc.)	7 —
Wrong or Missing Prepositions	4 —
Incorrect Verb Forms	3 =
Misuse of Modifiers	2 =
Pronoun Use	1 •
Modal Verbs	1 •
Conjunction Use	1 •
Faulty Subject-Verb Agreement	1 •
Punctuation	25
Comma Misuse within Clauses	17 —
Punctuation in Compound/Complex Sentences	8 —
Sentence Structure	1
Misplaced Words or Phrases	1 •
Style	20
Wordy Sentences	18 —
Improper Formatting	1 •
Outdated Language	1 •
Vocabulary enhancement	5
Word Choice	5 —

Figure 3. Grammarly error explanation.

2.11. Research into Grammarly

Research into Grammarly has identified some positive facets to the program. Japos (2013) concluded that Grammarly improved the written accuracy of undergraduate students. Qassemzadeh and Soleimani (2016) focused on its performance in relation to passive voice errors and found that students retained passive rules for longer if they received Grammarly feedback rather than teacher input. Students in Reis and Huijser's (2016) study compared Grammarly with an alternative system, Marking Mate, and believed that Grammarly provided more in-depth feedback and more useful functionality. Both Cavaleri and Dianati (2016) and O'Neill and Russell (2019) analysed students' perceptions of the program, with students in both studies generally reacting positively to the Grammarly feedback because they found it easy to use and useful.

2.12. Grammarly and written corrective feedback practices

O'Neill and Russell (2019) explain students' largely positive responses to the program by relating them to best practice in written corrective feedback (CF). Firstly, the study showed how Grammarly provided direct, indirect and meta-linguistic feedback. Direct feedback provides a correction, indirect feedback locates but does not correct the error, and meta-linguistic feedback provides explanations, rules and examples of correct usage to assist the student in correcting the error (Bitchener & Storch, 2016). As Grammarly offers all three types of CF, the O'Neill and Russell (2019) study found the program to be an effective tool as student need could determine the preferred feedback strategy. Another contentious CF issue surrounds how much feedback an instructor should provide, with some studies advocating a "correct all" approach (Jamalinesari, Rahimi, Gowhary, & Azizifar, 2015) and others championing more focused feedback (Linville, 2009). The O'Neill and Russell (2019) study suggests that Grammarly is useful because it can provide both unfocused feedback, through its identification of errors across the assignment, and more focused feedback by enabling users to choose to receive feedback only on errors within a particular category.

O'Neill and Russell (2019) also identified additional ways in which Grammarly conformed to best practices in written CF. Timely feedback is one such feature (McGregor, Merchant, & Butler, 2008) and the O'Neill and Russell (2019) cohort liked that the Grammarly feedback was immediate. A further feature of good written CF is personalisation (Hyland & Hyland, 2006) and students in the O'Neill and Russell (2019) study appreciated the focus on their work and their high frequency errors. Some students made the connection between the Grammarly feedback and an improvement in their assessment grade: a necessary link if students' grammar is to develop (Bacon & Anderson, 2004). Students in both the Cavaleri and Dianati (2016) and the O'Neill and Russell (2019) cohort also recognised more long-term benefits through a better understanding of grammatical rules, which developed their confidence and long-term language skills beyond the assignment. Overall, students who received feedback from Grammarly in conjunction with an ALA were satisfied that the ALA had spent enough time on the grammar feedback and provided a suitable amount of feedback (O'Neill & Russell, 2019).

However, whilst students were generally satisfied with the feedback, they acknowledged Grammarly's limitations. In the O'Neill and Russell (2019) analysis, students' principal issues were with the accuracy of the Grammarly feedback, its tendency to miss errors and correct accurate constructions. Students in both the Cavaleri and Dianati (2016) and the O'Neill and Russell (2019) studies had technical issues and problems understanding explanations. Cavaleri and Dianati (2016) attributed the difficulty understanding the suggestions to the fact that some students did not have the metalanguage necessary to understand them or the level of conceptual thinking to interpret them. As a result, it was recommended that an advisor should work with the student, at least initially, to help them understand the feedback. This positioning of the advisor as an intermediary between the student and the advisor prompted Cavaleri and Dianati (2016) to recommend research into ALAs' perceptions of Grammarly.

2.13. Academic Learning Advisors responses to Grammarly

O'Neill and Russell (2019) acted on this suggestion by providing Grammarly feedback to a group of students in conjunction with ALA advice. By doing this, the students' expectations about Grammarly were managed, and incorrect or missed errors were dealt with by the advisor. This study reports on the ALAs' responses to those consultations and their perceptions of Grammarly as a feedback tool compared with the traditional feedback approach using Word with a view to answering the following research question.

2.14. Research Question

What are ALAs' perceptions of Grammarly and how do these compare to ALAs' perceptions of the traditional ALC grammar feedback approach?

3. Method

3.1. Setting

Data were collected from February–June 2016 at CQUniversity, Australia.

3.2. Participants

Six academic learning advisors completed a survey about their perceptions of the grammar feedback they provided to 76 students. Thirty-seven students were undergraduate, 24 students were postgraduate and 15 were Direct Entry students. All students had voluntary consultations with the ALC. All advisors held qualifications in teaching English as a second language and had a minimum of seven years teaching experience. Three advisors formed an experimental group and provided feedback to 51 students using Grammarly, with 27 students receiving Grammarly feedback on campus and 24 online. Three advisors formed a control group and provided grammar feedback to 25 students using the traditional method of Track Changes and comment annotations in Word, with 21 students receiving feedback on campus and four online. The students involved were international ($n = 47$), domestic NESB ($n = 16$) and local ($n = 13$).

3.3. Instruments

A mixed methods design was applied. This consisted of two distinct phases: quantitative followed by qualitative (Ivankova, Creswell, & Stick, 2006). The quantitative data analysis provided an overview and the qualitative data illuminated these results through examples or explanations.

Data were collected using a survey. To reduce hindsight bias, ALAs were encouraged to record their thoughts about their grammar feedback immediately after each student consultation. To make it easier for the ALAs and, therefore, more likely that they would complete the survey, paper versions were used. These paper surveys were then collected weekly and inputted into Survey-Monkey by the principal researcher.

The survey consisted of 15 statements about the grammar feedback. Responses for these variables were “disagree” (1), “somewhat disagree” (2), “neutral” (3), “somewhat agree” (4) and “agree” (5). The survey built on previous research by adapting the one used in O'Neill and Russell's (2019) investigation into student perceptions of Grammarly. This had in turn been informed by Cavaleri and Dianati's (2016) survey based on “performance expectancy” which is the first construct of the Unified Theory of Acceptance and Use of Technology (UTAUT) model (Venkatesh, Morris, Davis, & Davis, 2003). According to Debus, Lawley, and Shibl (2008), “performance expectancy” reveals the degree to which automated feedback improves an instructor's performance and can be measured in terms of time and quality of feedback. The survey statements for this study, therefore, related to the ALAs' perception of time spent and the following measures of feedback quality:

1. amount;

2. whether the feedback was targeted with easy to understand explanations and helpful suggestions;
3. whether the advisors thought the feedback was easy for the student to integrate into the assignment;
4. whether they believed it improved the assignment, the assessment grade, the student's long term language development, the student's confidence in the assignment and long term, and
5. whether they believed it motivated the student to make corrections.

Qualitative data was elicited in the survey using three questions:

Q1. What additional positives can you identify about the grammar feedback you provided?

Q2. What additional drawbacks can you identify about the grammar feedback you provided?

Q3. Do you have any additional comments about the grammar feedback you provided?

3.4. Procedure

A maximum of 15 minutes out of the one-hour consultation was accorded to grammar feedback. This procedure has been outlined in O'Neill and Russell (2019) and varied depending on whether the student received grammar feedback using Grammarly or the conventional non-Grammarly approach using Track Changes in Word. It also differed depending on whether the student received advice online or on campus. Acting on Hoang and Kunnan's (2016) suggestion, the students received grammar feedback first, allowing the ALA to focus on global issues after. It was anticipated that by differentiating the two, the students would not be cognitively overloaded (Liao, 2016).

3.5. Grammarly feedback given on campus

For the duration of this study, all students involved in this experimental group received access to their own Grammarly Premium account. At the start of the consultation, the ALA uploaded the student's assignment using the student's personal Grammarly Premium account. Feedback from all six categories (contextual spelling, grammar, punctuation, sentence structure, style and vocabulary enhancement) was then downloaded using the Grammarly report. This report counts the number of errors in each category, so the top five most frequently occurring errors were identified. Examples of these errors were then located in the assignment starting with the most frequently occurring. Students were asked, by the ALA, to correct these errors. If the student was unable to do so, the ALA showed the correction suggested by Grammarly and asked the student if they accepted or rejected that change. If their answer was correct, the ALA moved to another example of that error and if the student was again able to make an appropriate correction, the ALA moved to the next language point. If, however, the student was unsure whether the Grammarly suggestion was correct, then the ALA opened the Grammarly help card, showing and discussing the grammatical explanation and examples. If the student was then able to make the appropriate correction, the ALA moved to the next language item. If, however, the students were still unsure about the error, the ALA applied error correction techniques of their own. This approach was followed until the 15 minutes lapsed or all of the five error types had been covered. Modelling this approach provided a systematic way for the student to use Grammarly, showed students that they had to be vigilant against misrepresentations made by the program, and enabled the ALA to identify any glaring grammar issues that the program had not identified. The changes to the student's assignment were saved in Grammarly and the student was told to independently correct errors not covered in the consultation that related to their top five most frequently committed. They were also encouraged to correct any additional errors the program identified that would make their final draft more accurate. They could do this by logging into their Grammarly account at home and re-reading the feedback and metalinguistic explanations in the help cards.

3.6. Grammarly feedback given to online students

Twenty-four students received Grammarly feedback online. A Grammarly Premium account was set up for the student and their assignment was uploaded into Grammarly. The ALA identified the students' five most frequently committed errors using the Grammarly report. They checked the assignment for any misrepresentations that Grammarly had made relating to these errors and removed some of them. They also removed some examples of unnecessary advice. Finally, they scanned for standout errors that Grammarly had missed and made a note of these in Grammarly. This amended feedback was saved and a PDF version sent to the student via email. A link to their Grammarly Premium account was included in the email, so students could continue to make changes online and access the explanation cards. Students were again advised to focus on the top five frequency errors, but could make any other amendments they thought would improve their assignment. If applicable, students were also advised to exercise caution against misrepresentations and unnecessary advice and an example of these was provided.

3.7. Non-Grammarly approach: On campus and online

Twenty-one students received grammar feedback from the ALA on campus and four received grammar feedback from the advisor online. In both cases the student's assignment was not seen by the ALAs until the consultation. During the face-to-face consultation, the student's assignment was first reviewed for grammar issues before the assignment was revisited for structural, referencing and other issues. A maximum of 15 minutes was accorded to the grammar feedback which was initially unfocused as the advisor highlighted errors and asked the student to self-correct. If the student was unable to do so, direct feedback was applied with the advisor providing a metalinguistic explanation of the error. The error was then corrected using Track Changes in Word or the issue was recorded for the student to correct at home using comment annotations in Word (see Figure 4). A similar approach was adapted for online feedback with the advisor highlighting errors, correcting errors and providing commentary about the errors using Track Changes and comment annotations in Word.

3. Brief Methodology

The aim of this project will be investigated effectively with the help of following methodologies.

- Literature Review:** A detailed research and scrutinizing of appropriate literature accessed from diverse sources like Google Scholar, newspaper articles, social networking websites, and journal articles by various researchers. A thematic comprehensive analysis of the information obtained from these sources will provide a springboard for exploring the current state of social marketing (Dibb & Carrigan, 2013).
- Survey and Framework:** A survey will be conducted on a sample size of the ALDI customers to build a framework of for the project. The data will be collected in the art form of questionnaires distributed on weekdays when the customer flow would be minimal so that we get accurate responses. This survey will help us receive results from the respondents and deduce a conclusion. The data series obtained from this survey will help to analyse the problem and recommend future social marketing techniques that ALDI Australia shall adapt to increase its sales.
- Data Analysis:** The data obtained from the survey will be analysed based on quality and quantity. The quality of data will be improved by involving the marketing team

ALC
Are you going to investigate the aims or the campaign? Always check your writing for logic/consequence

ALC
Font change

ALC
Incomplete sentence (this is a noun and, thus, needs Verb + Object)

ALC
This reference seems a little strange here. It sounds like Dibb & co has mentioned YOUR research in their text. I think you mean you will use their technique? This is unclear.

ALC
Always try to be specific

ALC
No 'we/you' 'I' in academic writing. Use passive voice

ALC April 07, 2016
Isn't this the next section? Look at the heading and only include what is needed for it – don't mix up sections!
Also consider consent and ethics in your research.

ALC
Do you mean quantitative/qualitative?

Reply Resolve

Figure 4. Non-Grammarly feedback given by advisors during a campus consultation.

3.8. Data analysis

3.8.1. Statistical analysis

The advisors completed the 15 items for all 76 students, with no missing data for these questions.

In general, comparisons between the Grammarly and non-Grammarly groups were conducted using independent samples *t*-tests, or Welch *t*-tests where the groups did not have equal variances (as assessed by Levene's tests). Unless stated otherwise, an alpha of .05 was used throughout. Analyses were conducted in SPSS v24.

3.8.2. Qualitative analysis

Thematic and inductive analysis were used to organise and interpret the qualitative data. Firstly, themes from the qualitative data analysis were listed, coded and placed into categories according to whether they agreed with the quantitative findings or not. Additional themes not evident from the statistical results were then categorised and coded.

4. Results and Discussion

4.1. Statistical analysis

4.1.1. Academic Learning Advisors' perceptions of Grammarly and non-Grammarly feedback

Advisors' perceptions of both types of feedback were assessed by examining mean agreement with each of the 15 statements for feedback via Grammarly (Table 1). In general, the three advisors agreed strongly with each of the 15 statements for Grammarly. The only statement with a mean score under 4 (somewhat agree) was, "I believe the grammar feedback will develop their confidence in their language use long term (not just for this assignment) as they could better understand the grammatical rules". However, in general, the advisors still agreed with this statement. Furthermore, the mean scores for each of the items were significantly higher for feedback given by ALAs via Grammarly compared to that not given via Grammarly, with the exception of, "I believe the student will be motivated to make the corrections recommended during the consultation" ($p = .051$) and "I believe the grammar feedback will develop their confidence in their language use long term (not just for this assignment) as they could better understand the grammatical rules" ($p = .133$). The effect sizes for all significant comparisons indicate that the differences are quite large, suggesting that, while the advisors agree that both Grammarly and non-Grammarly feedback are useful to the students, Grammarly feedback is seen as much more useful.

4.2. Time

One of the reasons advisors were more satisfied with Grammarly assisted feedback relates to the amount of time spent giving grammar feedback. Time, or more specifically lack of time, was identified in the literature review as one of the main reasons ALAs do not provide the amount of grammar feedback students request. In this study, advisors were statistically more likely to believe that they had spent enough time providing grammar feedback if they had used Grammarly. Qualitative analysis supports this supposition with Grammarly advisors identifying time effectiveness as a positive facet of the program on 15 occasions. Ten of these responses referred to it as being "quick", with the rest explaining that Grammarly use enabled advisors to get through "more than [they] could have alone within the time limits." None of the non-Grammarly advisors referred to time in a positive way after their consultations.

Grammarly advisors did identify some issues relating to time, with five comments (9%) expressing a wish for more time and five stating that it can "take time to set up" because of technical glitches uploading files. Non-Grammarly advisors, however, were much more likely to post negative responses in relation to time, with advisors in nine consultations (36%), identifying it as an issue. Three of these responses conveyed how "tedious" the advisors found giving grammar feedback, with two advisors referring to it as a bit of a "slog." The overarching message, however,

was that these advisors “*could not give the amount of grammar feedback [they wanted] in the time allocated.*” These findings are in line with O’Neill and Russell (2019) in which students were significantly more likely to state that an ALA spent enough time reviewing the grammar in the assignment if the advisor had used Grammarly. They also support the idea advocated by Liao (2016) that non-automated grammar feedback is burdensome and that teaching with automated programs is, therefore, less laborious (Grimes & Warschauer, 2010).

Table 1. Mean and SD ratings for statements about grammar feedback, comparing students who received feedback via Grammarly and not via Grammarly.

Statement	Grammarly (<i>n</i> = 51)		Non-Grammarly (<i>n</i> = 25)		Inferential statistics			
	M	SD	M	SD	t	df	p	d
It was important for the student to get grammar feedback on their assignment.	4.88	.38	4.44	1.04	2.05	27.20	.050	.79
I spent enough time delivering the grammar feedback necessary to improve the student’s assignment.	4.78	.42	3.88	1.20	3.66	26.85	.001	1.41
I was satisfied with the amount of grammar feedback I provided.	4.80	.40	4.16	1.14	2.74	26.94	.011	1.06
The grammar feedback targeted the students most pressing needs i.e. high frequency errors.	4.78	.46	4.04	1.02	3.48	28.91	.002	1.29
The explanations about the student’s errors were clear and easy for the student to understand.	4.57	.70	4.08	.91	2.59	74	.012	.60
I gave a lot of helpful suggestions about how the student could improve their grammar in the assignment.	4.76	.43	4.08	1.22	2.72	26.93	.011	1.05
The grammar feedback was easy for the student to integrate into their assignment i.e. to make corrections.	4.47	.73	3.68	1.03	3.44	36.26	.001	1.14
I believe the student will be motivated to make the corrections recommended during the consultation.	4.71	.58	4.36	.76	2.02	38.08	.051	-
I believe the student will be motivated to make additional grammar corrections not discussed during the consultation.	4.22	.99	3.20	1.38	3.28	36.35	.002	1.09
The grammar feedback improved the student’s assignment.	4.73	.45	3.88	1.01	3.98	28.75	<.001	1.49
I believe the grammar feedback improved the student’s confidence in the assignment.	4.49	.67	4.00	1.04	2.47	74	.016	.58
If used, the grammar feedback will improve the student’s grade.	4.53	.58	3.72	1.10	3.45	30.67	.002	1.25
The grammar feedback helped develop their language long term (not just for this assignment) as they could better understand the grammatical rules.	4.04	.60	3.64	.86	2.09	35.78	.044	.70
I believe the grammar feedback will develop their confidence in their language use long term (not just for this assignment) as they could better understand the grammatical rules.	3.96	.63	3.68	.80	1.53	39.06	.133	-
I was satisfied with the grammar advice I gave in the consultation.	4.80	.45	3.92	1.08	3.94	28.15	.001	1.49

Note: Inferential statistics are independent samples t-tests. For some statements, variances between the groups were significantly different, violating an assumption of independent samples t-tests. In those cases, the more robust Welch t-test was used, indicated by degrees of freedom with decimal places. Effect sizes are reported for significant results using Cohen’s *d*. Scores for each statement ranged from a possible 1 (disagree) to 5 (agree).

4.3. Global vs local concerns

One of the main reasons non-Grammarly advisors believed there was not enough time for grammar feedback was their belief that other issues such as “structure”, “response to the question” and “referencing” took precedence. For advisors who did not use Grammarly, grammar was more likely to be seen as a “cursory” or “non-critical” problem. This attitude was not articulated by Grammarly advisors with only two comments (4%) relegating grammar to a lesser role, compared to seven made by non-Grammarly advisors (28%). The belief that advisors should focus on higher order skills was presented in the literature review (Winder, Kathpalia, & Koo, 2016) and is consistent with most learning centres’ policies (McNally & Kooyman, 2017). As with Liao (2016) and Grimes and Warschauer (2010), this study found that feedback on global issues and lower order skills do not have to be mutually exclusive; also, because the Grammarly feedback is quicker, it can help address both global and surface level concerns as the ALA has more time to provide feedback on both.

4.4. Detailed feedback and dissonance

The statistical analysis also revealed that advisors using Grammarly were more likely to believe that they had given students enough grammar feedback. The qualitative analysis supports this belief and the most frequently cited theme from advisors using Grammarly was that the feedback was “detailed” or “thorough”. This finding is in line with previous studies (Debus, Lawley, & Shibl, 2008) in which educators agreed that AFPs provide more feedback and help to remove the dissonance between what students expect and what advisors provide.

Advisors who did not use Grammarly, however, were more likely to articulate dissonance, with one writing that the student “*seemed a bit disappointed not to have more grammatical input/proof-reading. She wanted grammar correction, but just not the time to give it.*” The awareness of this discrepancy between student expectations and the grammar advice provided created a stronger sense of “frustration” amongst the non-Grammarly advisors, with one declaring, “the feedback was not really a job well done.” This is again in line with Grimes and Warschauer (2010), who claimed that feedback provided using automated tools was more satisfying.

4.5. Targeted feedback

Additional positives relating to the Grammarly feedback was that it located and “focused” more on the students’ high frequency errors. Thirteen comments from advisors using Grammarly stated that the feedback was “targeted” compared to only one non-Grammarly comment. The ability to target errors was attributed by Grammarly advisors to the Grammarly categorisation tool; for example, “*There were lots of errors in this assignment that would have taken me a lot longer to categorise. Grammarly did that for me so it targeted f/b in a much quicker amount of time.*” Conversely, non-Grammarly advisors had to rely on themselves to target and categorise errors and felt unable to do so:

There was such a range of grammatical errors impacting on clarity of communication that it was difficult to address them and identify high frequency ones. Really we just got bogged down in one paragraph.

Providing specific feedback improves the ALA’s consultation because it has positive implications for the student’s work. Students will complain if the automated feedback they receive is not personalised enough (Chen & Cheng, 2006). This can be attributed to the fact that feedback that is vague and non-specific has limited impact (Crisp, 2007), whereas specific comments increase its effectiveness as students respond to the written cues (Leacock & Chodorow, 2003). Thus, personalised feedback, such as that issued by Grammarly, is perceived by students to be more useful and is more likely to be assimilated into the student’s work (Hyland & Hyland, 2006).

4.6. Motivation to make corrections

The belief that students will incorporate feedback into their assessment was much more strongly shared by the ALAs who used Grammarly. Statistical data shows a greater inclination for those ALAs to believe that students would make corrections from the consultation, and a much stronger belief that they would make additional corrections. This belief is corroborated by Potter and Fuller (2008) who claim that students who use grammar checkers are more motivated to make corrections and apply feedback. It is also borne out in the O'Neill and Russell (2019) study in which students who received Grammarly feedback were more likely than those who only received ALA-generated feedback to make corrections recommended in the ALC session and in subsequent independent reviews of the assignment using Grammarly.

4.7. Independence

The underlying mission of the ALC at CQUniversity is for students to be able to work independently. Twelve comments from advisors using Grammarly cited promotion of independence as a positive facet of the feedback; for example, “[Grammarly] really appealed to this student’s sense of independent learning” with some students expressing satisfaction that they could “make additional changes” and receive “additional grammar support at home.” Studies on AFPs show that this facilitation of independence has positive implications for students’ learning. Potter and Fuller (2008) claim that it gives students greater control of their learning and allows them to formatively assess their grammatical progress – what they are doing well and areas they need to improve. Grammar checkers can also help to develop active analysis, a process that results in more critical learning and autonomy (Liao, 2016). Advisors who did not use Grammarly referred twice to independence, but both times expressed concern that the feedback they were providing could actually lead to a dependence on the ALC; for example, “It would be good for him to more closely proofread independently and not become reliant on ALC,” an outcome which is contrary to the mission of the ALC at CQUniversity and other learning centres.

4.8. Problematic aspects of Grammarly

Qualitative data is also illuminating when it comes to considering aspects of Grammarly that the ALAs perceived to be problematic. The main issue was that it “missed a lot.” These omissions were at times seen as “oversights” but also related to “main issues.” The exclusions were also not connected to particular errors as a range of missed issues were cited, including verb tense errors, articles, plurals, sentence structure, word choice and pronouns.

Inaccurate suggestions were the second most cited problem with the program. This is consistent with the literature review, which acknowledged that inaccuracies are an issue with AFPs (Hoang & Kunnan, 2016; Perelman, 2007). Many of the inaccuracies in this instance, however, were connected to Grammarly’s advice relating to the use of the passive voice. This style choice is common in AFPs in an attempt to make writing simpler (Radi, 2015), but it does not consider the academic context in which the students are writing (and passive voice is appropriate), so ALAs found this advice “unnecessary because it related to style and not accuracy.” Similarly, the Grammarly feedback on repeated words was often thought to be “not needed” or “not really relevant” as these words were not actually repeated in the students’ assignment, but in writing generally. Advisors often felt that these issues were being highlighted at the expense of more significant issues which the program did not address. These findings are in line with the students in Cavaleri and Dianati’s (2016) study who voiced concerns about Grammarly’s “flawed recommendations” and O'Neill and Russell (2019) who categorised these flaws.

Because the unnecessary feedback increased the number of errors, some advisors felt that the amount of feedback could be “too much” for students. Brockbank and McGill (1998) explain that a large amount of feedback may overwhelm students and render it redundant, as they cannot take it all in. Advisors in this study also felt that the feedback volume could affect students’ confidence

as they found it “embarrassing” to have so many errors. This finding, however, conflicts with Cavaleri and Dianati (2016) in which 14 out of 18 students believed that the Grammarly feedback improved their confidence.

To reduce the amount of feedback from Grammarly and minimise its other shortcomings, ALAs re-iterated the importance of “advisor input.” Thirteen entries (30% of statements) in the additional comments section of the survey recorded a recommendation for ALA intervention or supplementation. Advisors believed that this was necessary for two reasons. Firstly, and particularly in relation to the online students, they felt that their input would “*clean the feedback up*” by removing some inaccurate or unnecessary suggestions. Secondly, they wanted to provide feedback on issues the program had missed, and “*more instruction/explanation on the grammar points*” that the program had identified but had not sufficiently clarified. They also felt that a dialogical approach or being able to “*talk through the issue*” was important. This attitude connects to Swain’s (2006) *linguaging* concept, whereby discussion helps learners to process and internalise feedback.

In light of these issues and the clear articulation of the need for ALA support, many advisors referred to Grammarly as a “starting point” or “platform” from which to begin a consultation. They did not see it as a definitive solution to students’ grammatical needs. However, once the ALAs had interacted with the program, the consensus was that, as one ALA put it, “*between us, [the student] got a thorough and more useful grammar review.*”

5. Conclusion

A need for better grammar error identification and instruction, for both student and ALA practice, led to the trial of the automated software program Grammarly. The purpose of this study was to critically evaluate ALAs’ responses to incorporating the program as part of a feedback approach in a writing consultation and compare these responses with the traditional feedback approach of using Track Changes in Word. The findings from this study corroborate the students’ responses in O’Neill and Russell (2019) as both ALAs and students agreed that the feedback from both approaches was useful, but the Grammarly feedback (in conjunction with an ALA) was more useful. As with the O’Neill and Russell (2019) findings, the mean satisfaction scores for most of the items were also significantly higher for feedback given via Grammarly compared to that not given via Grammarly.

The reasons ALAs identified for Grammarly’s positive performance are consistent with the literature in that they primarily related to the concept of time effectiveness, specifically that Grammarly could provide more feedback and do so faster than the traditional method. The speed of the Grammarly feedback reduced the laboriousness of grammar feedback, rendering the feedback process less onerous for the ALA. The fact that they could provide detailed feedback on grammar and higher order concerns meant that dissonance was reduced, providing the ALAs who used Grammarly with a greater sense of job satisfaction than those who did not. ALAs also felt that the Grammarly feedback had more positive implications for the students’ work. Firstly, Grammarly’s categorisation system produced personalised, targeted feedback, which ALAs felt students were more likely to assimilate into their work. Secondly, ALAs believed the students using Grammarly would be more motivated to make the corrections. Finally, they thought that Grammarly would promote greater autonomy in students. Student independence and the development of students’ academic literacy skills are the central tenets of the ALC and the positive performance of Grammarly compared to the traditional feedback method suggested the ALAs using Grammarly were closer to realising this aim than those who did not. In contrast to this positive feedback, ALAs identified a number of issues with Grammarly. This is again in line with the feedback on AFPs, which tends to be multifarious and contentious. More specifically, the feedback in this study reflects that of O’Neill and Russell (2019) as both students and ALAs had problems with the fact Grammarly missed errors, misrepresented errors, gave inaccurate advice and generated too much

feedback, which had a negative effect on students' confidence. Overall, however, and in line with the findings in O'Neill and Russell (2019), it was felt that the program merited use with students in conjunction with ALA feedback.

6. Limitations

This was an exploratory study into ALAs' attitudes to Grammarly. Because of the small sample size, statistical power is reduced, so the findings are not meant to be conclusive. Any future studies into ALAs' perceptions of Grammarly should utilise a larger sample. In addition, the study did not consider Grammarly in the context of the ALAs' pedagogic perspectives on feedback, previous beliefs and practices. Their pre-existing opinions, familiarity and previous use of automated technology, including Grammarly, were also not ascertained and these factors may have influenced responses.

7. Future studies

To provide a more comprehensive account of ALAs' perceptions of Grammarly, future studies into ALAs' responses should include a larger sample size and socio-technical thinking in their design. Studies which mirror the variables in O'Neill and Russell (2019) would also be useful, as they would reveal if ALAs thought Grammarly worked better in certain circumstances. These variables include student cohort (Domestic, Domestic NESB and International), language level and delivery mode (on campus or online) but could also extend to variables such as previous performance in assignments and assignment length.

As both ALAs in this study and students in O'Neill and Russell (2019) identified issues with accuracy, it is paramount for studies to determine how accurate Grammarly is in comparison to a human rater. Finally, no longitudinal studies into Grammarly have been undertaken and it would be insightful to see what effect Grammarly has on student and ALA perception and performance over a longer period.

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