

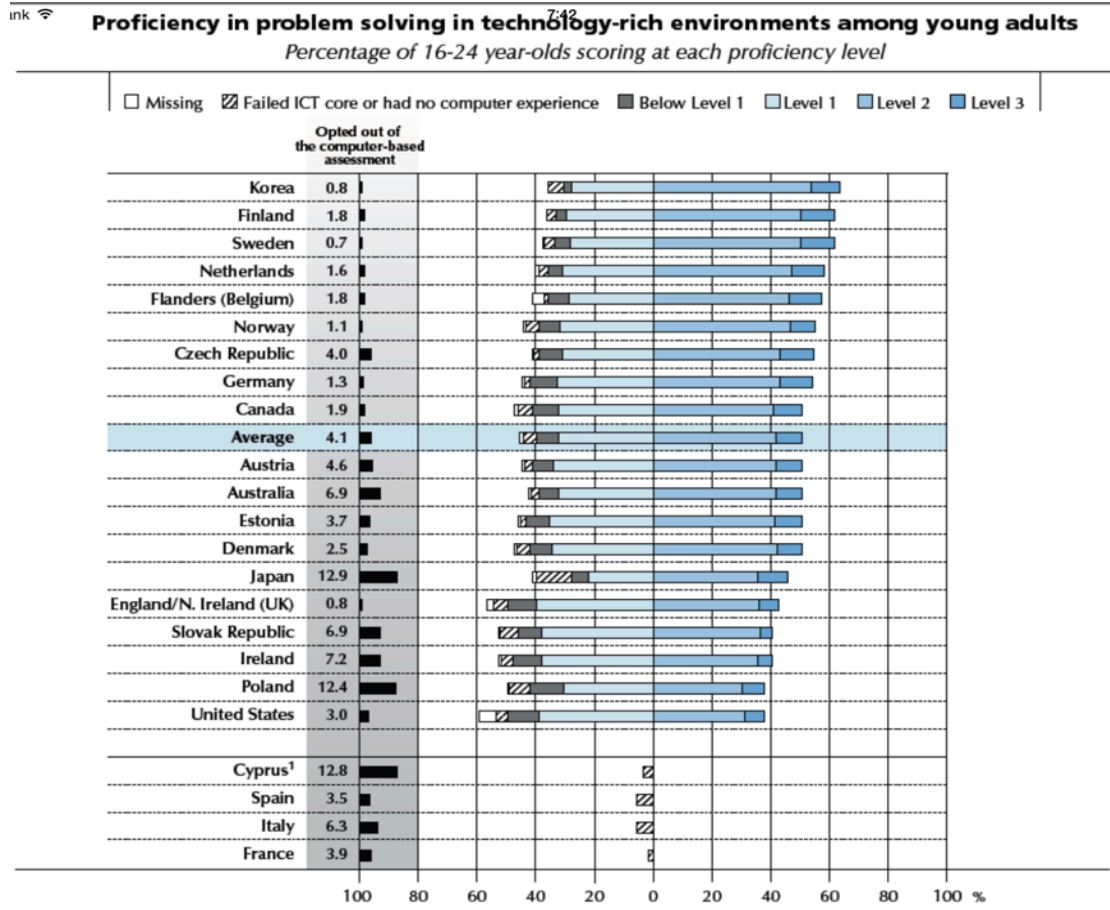
Digital Process Writing: An Apps Based Approach

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This paper will explain the apps and teaching approaches used in the Digital Process Writing: An Apps Based Approach workshop session. Initially it will provide a brief overview of the digital writing approach and the apps that underpin it. Next a short description of each app and how they are used will be given. These apps were taught to two classes of junior high school students at an International Baccalaureate school as part of their Language Acquisition course, and one Academic Writing class for undergraduates at a Super Global University, both in Tokyo. Next the paper will review the student's general feedback on the writing apps. Finally some reflections on issues that have come up will be provided. Therefore this paper will equip readers with a full digital age research and writing ecosystem blueprint that can easily be incorporated into any teaching workflow and used with students for efficient and easy academic writing.

21st Century Learning in Japan

There are many studies showing that Japan is a very risk averse culture, (Aspinall, 2010; Peltokorpi et al., 2015) and this obviously affects the speed of incorporating ICT solutions to educational problems. This issue is a very pressing one (Hicks, Turner, & Fink, 2013) especially for Japan given the demographic pressures on its educational sector (Paterson, 2008, pp. 92–93) due to its well-known aging and declining population. The OECD has also commented on this in some of its studies as part of the PISA reports and TALIS studies as here Japan fares quite badly when examined in relation to other OECD nations (Peña-López & OECD, 2016, pp. 44, 72).



ICT in Education

% of lower secondary education teachers who report students use ICT for projects or in class work

Denmark	73.9
Norway	73.8
Australia	66.8
Chile	59.6
Mexico	56.2
Cyprus ^{2,3}	46.4
United States	45.9
Slovak Republic	44.7
Latvia	40.5
Spain	37.0
Czech Republic	36.5
Poland	36.4
Netherlands	34.7
Portugal	34.4
Sweden	33.8
Bulgaria	33.7
Iceland	31.8
Italy	30.9
Brazil	30.3
Singapore	30.0
Estonia	29.2
Korea	27.6
Romania	26.0
France	24.2
Croatia	23.5
Serbia	23.1
Malaysia	19.2
Israel	18.7
Finland	18.2
Japan	9.9
Average	37.5

TALIS 2013 Table 6.1

PENN STATE

Researchers have looked at how younger students use apps (Gardner & Davis, 2014) and this usage is viewed as an integral component of non-native English speakers' digital communications in the educational sector Korea (Meurant, 2010). Japan however trails far behind in its ICT incorporation in the educational sector and in general (Igari, 2014), and in schools specifically (OECD, 2015). Digital Literacy and ICT skills in the 21st century has also been very well researched (Jones & Hafner, 2012; Knobel & Lankshear, 2007; Kress, 2003; Lankshear & Knobel, 2008), although this has not resulted in any large scale or widespread ICT introduction in Japan (Peña-López & OECD, 2016). So with this in mind I set out to introduce a number of digital and online writing apps and approaches in my classes.

Background to Classes & Students

I was teaching four classes with a strong academic writing component at an International Baccalaureate school to *kikokushijo* (Japanese returnee students). These students are often bicultural and/or bilingual or even third culture kids (Useem, n.d.) - a term developed by Ruth Hill Useem to describe children who accompany their parents to a culture and / or society that is different from their parents' culture and society, and who develop a culture of their own that is a blend of their parents and host country's. Therefore they are very different from the majority of Japanese school students (Iino & Murata, 2012) and they are a very under-researched group in terms of their educational experiences in general, especially so with educational technology issues. So there is definitely a research gap with this group of students and they make up a substantial part of the student body at my school and the majority of the students in my classes for this research project.

I was also teaching an academic writing class at a Super Global University to international and Japanese freshmen undergraduate students. My university is a member of the UMAP (University Mobility Asia Pacific) group so it receives a higher number of non-Japanese students than most Japanese universities. This makes my academic writing classes at university a relatively unique group as more than half the students are non-Japanese. Working with this diverse (by Japanese standards) group also made for an interesting research gap for this research project.

Therefore I decided to try and address some of these issues with an action research study on digital / online writing tools. Therefore in both cases I utilised the seven step action research process (Sagor, 2000) suggested by the Association for Supervision and Curriculum Development (ASCD).

Research Intervention Process

All students in both educational establishments were in need of digital literacy training. However the choice of which app and pedagogical approaches was a very important one. To start with I used the SAMR model (Puentedura, 2013), an educational technology approach used by many educators to evaluate the pedagogical utility of apps before adoption decisions are made. I also wanted the apps to combine cohesively and become part of the students' Personal Learning Environments and for them to collaborate online and face to face when using these apps to become a community of practice (Lewis & Allan, 2004; Lave & Wenger, 1991). In addition I used all the above in an overarching way as part of a TPACK methodology approach (Marino et al., 2009; Mishra et al., 2007) which was designed to help teachers that utilise information technology / information communication technology improvements in their teaching. Full details of these and how to blend them in my type of approach can be found elsewhere (Paterson, 2014).

In class a selection of apps (chosen according to how well they fitted with the approaches mentioned above) were taught to students in class. Each student either had a school / university pc or their own and everything was taught using students prior work as models so they could understand fully how the apps worked. The online writing apps were:

1 – **Lextutor** - <http://www.lex tutor.ca/vp/eng/>

this app gives:

- a word count of the total words in any text sample
- percentage of the K1000 words (the 1000 most frequently used words in the English language) used in the text,
- percentage of the K2000 words (the next 1000 - 2000 of the most frequently used words in the English language) used in the text,
- percentage of the AWL words (Academic Word List) used in the text

- a color-coded identification of exactly which words are used and which list they are on,

- a sorted used word list organized by AWL sub-lists.

Students were told they should aim for 7-10% AWL content in their high school / university academic writing

2 - **Academic Word List** - <http://www.uefap.com/vocab/select/awl.htm>

this app gives:

- a list of the words used in the AWL,

- a breakdown of the headword and associated family words,

- a link to the Cambridge University online dictionary with definitions and pronunciation guides for US and UK English.

3 - **AnalyzeMyWriting** – <http://www.analyzemywriting.com/>

this app gives a very detailed set of metrics on many aspects of writing

including:

- basic text statistics like word counts, sentence counts, punctuation mark counts,

- commonly used words and phrases and counts for them based on frequency of usage,

- five different scales for the readability of text including Gunning-fog, Flesch-Kincaid, SMOG, Coleman-Liau, and Automated Readability Indices,

- a passive voice check,

- a cloze test,

- a lexical density check.

4 – **PaperRater** - <http://www.paperrater.com/>

this app is the free part of the Grammarly suite of services and provides a number of services including:

- a spelling / grammar / word choice check,

- a style check for academic vocabulary usage (linked to the AWL mentioned above), transitional phrase usage,

- a passive voice check and word / sentence counts.

Students were encouraged to check every piece of writing they produced for these courses using these tools above. This was to be done at least twice before submission – once while the writing process was taking place as the end of their first drafts of texts, and again as a final check.

Ethical & Research Design Considerations

Students in the four IB classes and the university class were surveyed for this study. Near the end of their courses a short six-question voluntary survey on the writing tools covered in class was given to all the students and 24 responded out of 30 in the university writing class, and 71 out of 120 for the IB school classes. The students in the classes were told the survey was voluntary and anonymous and they were all informed prior to the survey that the results would be used for this paper and the accompanying workshop presentation at the HICE Conference in 2020. In addition they were informed that the survey would have no effect on their grades and that it could be done outside of class, as it was an online survey.

The survey design was kept fairly simple as 1 - these were mainly high school students and freshmen university students and relatively inexperienced in taking part in educational research, and 2 – this was an exploratory research project to see if it warranted a deeper study later. Therefore there were only six questions and most were of a simple numerical value scale type for easy of student completion.

My actual research plan followed Bassey's model (Halsall, 1998) and involved four class groups (of around 25-35 students), and one university class (around 30 students) with all classes receiving the same instruction (to avoid any ethical problems with differences in control groups in course content and delivery), as my research project was focused only on particular writing objectives classes from a specific English language / cultural group only (Japanese educational setting with international / returnee students) , The study involved a great deal of authentic in-class participation (McTaggart, 1989) as there was frequent in-class discussions of various aspects of writing.

As I work at the school and university with these students I was and still am an insider researcher, with the benefits and challenges this brings (Floyd & Linet, 2010). The first challenge was power distance. In this case the

students had been in my class for almost a year before this project started. So they had the time to get used to my teaching style as I try to minimise the power distance as much as possible in my teaching as a matter of course. Second is the effect of grade boosting on survey answers. Here I planned for the final surveys to be conducted only after I had given out final grades after my class, so there would be no grade incentive influencing their comments. Finally these students would only ever be in my class again if they signed up to take one of my elective courses, so creating a positive (in their eyes) relationship with me for future classes is not an influencing factor either. Therefore I feel these points adequately address any negative issues arising from insider research in this instance.

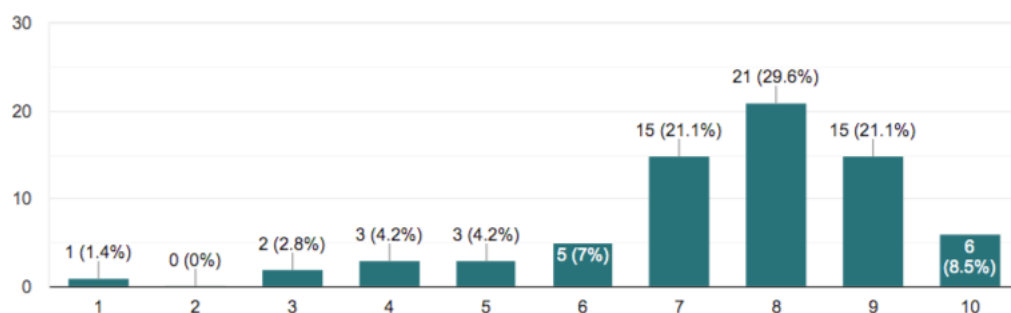
Student Reactions & Results and Discussions

The first optional question (for internal use only) was to see which department students were from for the university class, and to see which class they were from for the school classes as they were all given the same survey. The other five questions were concerned with their evaluation of the online tools and the results are as follows with the school class results first, then the university ones:

Question 2 - How useful are you finding the Writing Tools to be in general?

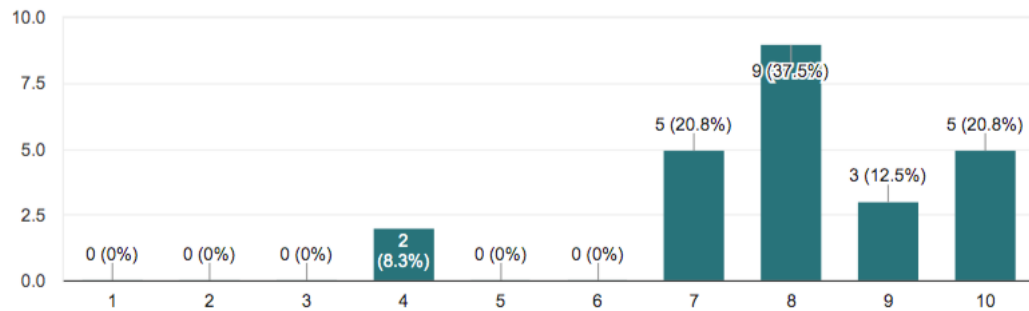
2 - How useful are you finding the Writing Tools to be in general?

71 responses



2 - How useful are you finding the Writing Tools to be in general?

24 responses

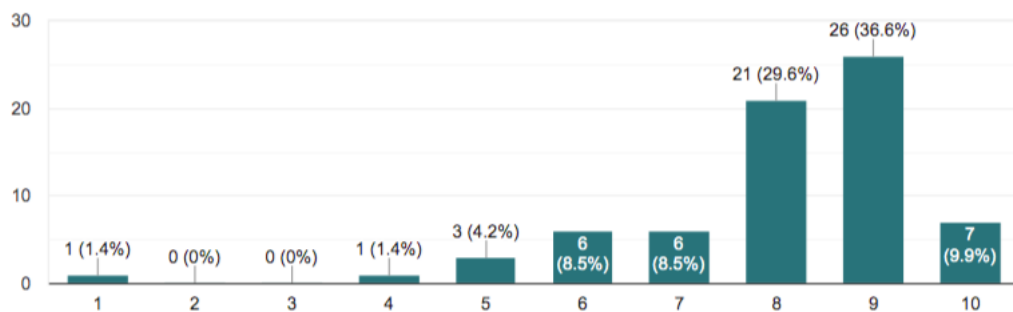


Here the contrast is slight as both groups have a very high overall rating while the school group has a very few students giving low rating. Generally though the two groups seem to be concurring in their positive evaluation given the numerical breakdowns.

Question 3 - How useful do you find the Writing Tools you learned in helping you with specific writing tasks?

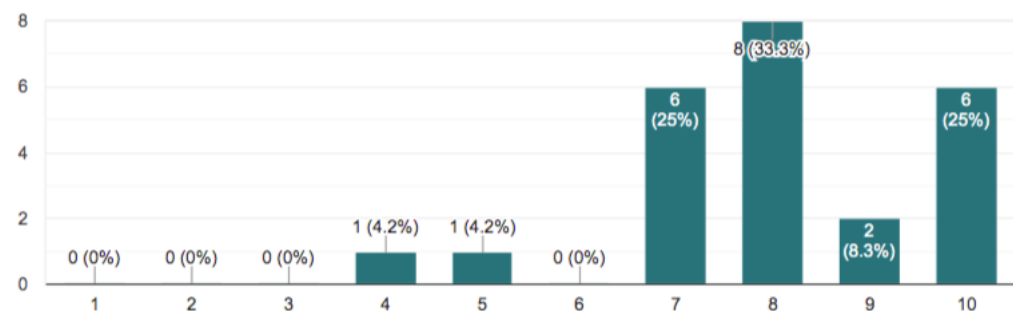
3 - How useful do you find the Writing Tools you learned in helping you with specific writing tasks?

71 responses



3 - How useful do you find the Writing Tools you learned in helping you with specific writing tasks?

24 responses

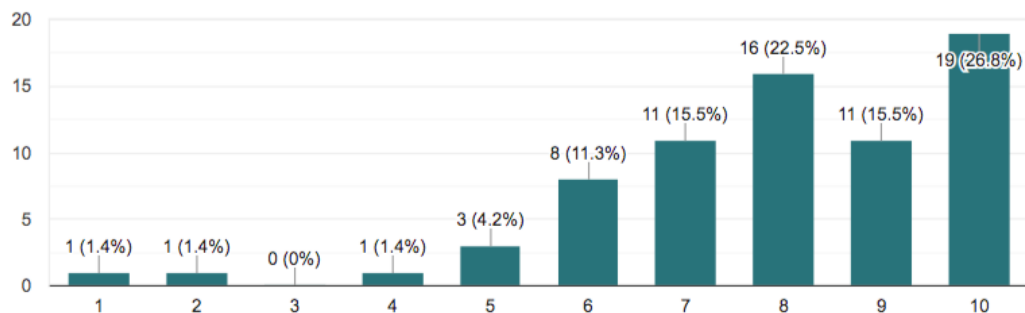


Like with question 2 above the same general results seem to hold true even for specific writing issues with the ratios of the numerical breakdowns more or less mirroring that for question 1 above.

Question 4 - How much would you recommend the Writing Tools to other students for helping them in writing in their academic work?

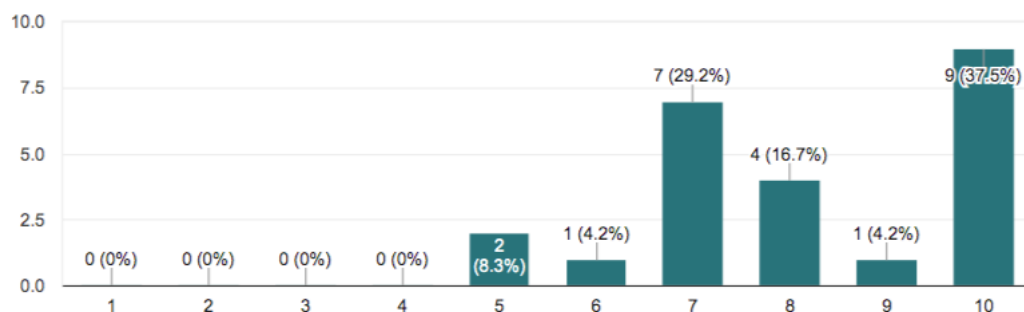
4 - How much would you recommend the Writing Tools to other students for helping them in writing in their academic work?

71 responses



4 - How much would you recommend the Writing Tools to other students for helping them in writing in their academic work?

24 responses

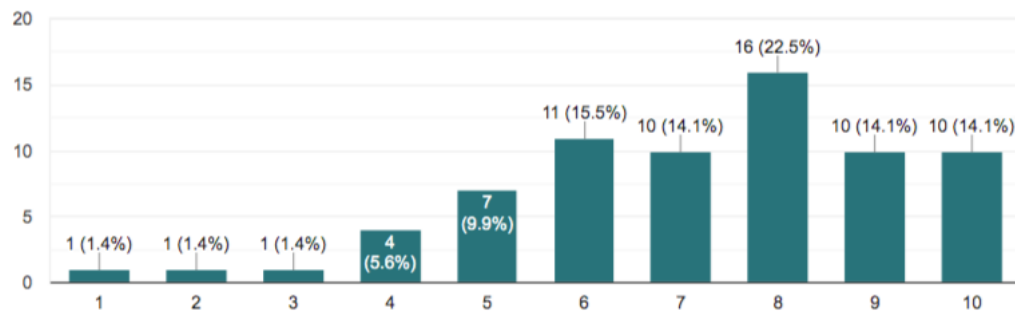


Once again there is a broad consensus although there are a few more outliers saying they would not recommend the tools to others in the school group with low scores of 1 and 2. My assumption here is they are thinking about students from other school classes with lower English levels as all my students are in the advanced class.

Question 5 - How easy to use and understand do you find the Writing Tools?

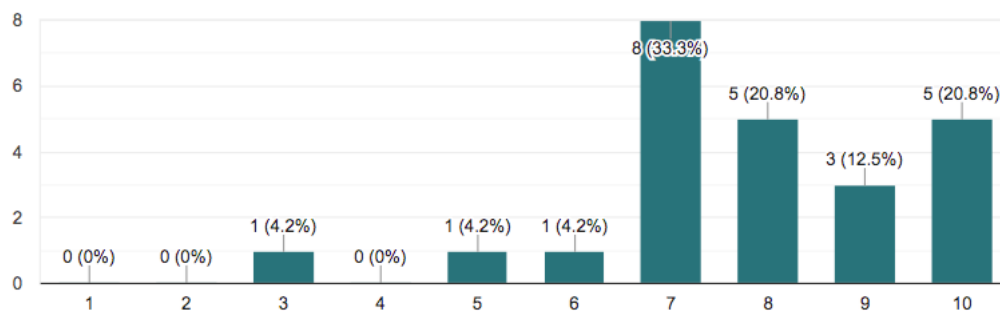
5 - How easy to use and understand do you find the Writing Tools?

71 responses



5 - How easy to use and understand do you find the Writing Tools?

24 responses



Here once again there is a broad consensus overall although there is one student from the university class giving a low score or 3 for ease of use. My assumption here is that this was from one of the students who was absent for a few weeks at the beginning of term. Those students were taught the tools by their writing group teammates so possibly the instruction was not as clear as it could be. I told those students to come and see me if they had any questions but none of them did. So it is likely that the ease of use low score was from one of those students.

Question 6 - Please comment on anything you particularly liked or disliked about the Writing Tools (exact comments where given are listed below).

School Classes Comments:

Grammarly

It was easy to make my writing become more improved by using the AWL list, because it provides all of the words and has the definition and way the word it can be used, being easier to implement in my writing.

The UI for lextutor could be improved

lextutor had some awl words that don't work. meaning that they don't count them in the score.

I think the writing tools are great

I didn't like the paper rater website because it forced us to use AWL words and sometimes ended up overusing some of these words in a sentence to get the numbers up.

Some were hard to understand how to use.

difficult to understand

The AWL words corrector was very useful when doing my document. It helped me to make a good one

I liked how the website shows us the reading levels etc. clearly.

The AWL list and other AWL check sites were very useful when writing the essay, since I was able to check my vocabulary and insert many varieties of vocabulary in the essay.

I think there are so many colors, and sometime, it is difficult to read and understand

AWL Lists and the AWL lextutor

If I write "chapter chapter chapter", I can get 100% score. So sometimes it is meaningless.

Checking the level of words

I like how they works and tells as hints to improve our writings, but I do not like that it works very slowly in our school's WiFi. I also want them to have some suggestions to us.

I never experienced writing same page with several people. Therefor by using drive, I realized how convenient and useful the tools were. Thank you for teaching!

I am using Grammarly in everyday writing, and it is very useful because I can also notice my common mistakes. Lextetuter is very useful to make my writing the same level with my teammates, and easy to know my quality of my writing, to compare with my past essays. I felt that I don't have advanced technique to use difficult vocabulary words, but these tools very helped me.

Looking forward to next semester.

That I could analyze my writing from multiple perspectives that I couldn't do on my own.(in first person perspective)

Having a list of vocabularies that will make my writing more professional and academic was very convenient and helpful.

I think it was good overall because I could know specific place to fix in the documents.

It was useful but searching academic words on another site took time and I didn't like this point.

They don't give us any hints in where the writing should be improved.

It was simple and easy to use, and I thought my vocabulary skill can be improved. they're really useful in improving our works but some are a little hard to use/understand

I liked how the tools gave me advice to make my writing better, which really helped me to write an essay which was good.

I liked how the writing tools had a number showing where I'm at. Also, I like how we can always go back to the word list to improve our paragraphs

I like how it helps to check the grammars.

I like the part that it helps us utilize more professional words.

It helps to get all the ideas out and later tells you the mistakes that needs to be fixed in order to improve the writing

The tools that gives us specific figures is helpful for critically analyzing my writings.

I liked the tool that calculates what kind of words and how much of it that you typed.

They were mostly useful

i liked Writing Tools

I liked that it helps us notice mistakes that we can't find on our own

It is unclear what specifically which tool is measuring and how that can help improve our skills

The structure was difficult but yet helpful.

I liked the readability checker website

I liked the AWL

They are simple enough to understand.

I found them very useful since it enables students to check their own writing and make improvements.

I liked that it gives me an opportunity to check the level of my vocabulary

I liked the writing tools for analyzing my writings because it is easier to help me understand what should i do to make the writings better.

it is very tiring to think of all those AWL things, however, it will be useful for the future, so i believe it's very good

Liked(vocabulary tool) - it uses different colors on the words to specifically divide the vocabulary words so it's easy to understand

writing tools are helpful for writing but it is a bit annoying to use each and every time we write things and as a result, I don't really use much of it.

I often forgot which tool does what.

I especially liked the AWL and the AGL checkers, as I could clearly see the level that I am on, and I could also spot a clear difference on my improvements.

I recognized what word is in academic word list.

I disliked some writing tools that required premium features.

It displays the reading ability

It was very useful in terms of checking the overall writing levels and raising them so that they would look professional and mature. Moreover, I recommended some of the tools to my sister, who is currently at a different school.

I don't know how to make the readability go up.

I like the tool that can analysis, distinguish the words we used in the writing were high level words or general words.

I liked how they can find how advanced my writing is, but I don't like where they put high rate on just having a lot of advanced words

I think Writing tools are very useful to make my writing better.

I liked how the writing tools showed me how I should edit my writing to exceed the certain expectations. Without the writing tools, I think that it would be very confusing to know how good my writing should be.

It is hard to get a high score on the AWL

The AWL didn't recognize few advanced vocabulary, which made the score low despite the high level vocabulary.

What is not useful and disliked is the academic words are all written in English. I want that their meaning written in Japanese.

Grammarly is the most useful tool for me. I like it because it even can make me notice that I have two spaces between two words.

I think Writing Tools definitely made my writing better.

Grammarly is good

I was able to know what the Academic Word from Academic Word List, so I liked that.

I found them useful but I could not understand how to raise the level of the Reading Level.

I like how the writing tools promote us to use difficult vocabularies.

Although the content of what you're teaching us is really advanced and useful it's the way you say that makes everyone lose their motivation.

I can notice the mistakes that I didn't noticed.

Sometimes I get confused when the teacher asks us to check the readability because I don't know which checker is accurate than which one.

These writing tools were sometimes difficult to understand at first, yet once I got used to them I found new ways to improve my work. Word counter was especially helpful since I tend to repeat the same words in an essay.

University Class Comments:

It's very useful to check spells

I like academic word list rating and readability part

I like the Writing Tools because it helps me to find out my mistakes in vocabulary and grammar and also very useful in helping me improve my writing skill

This is very helpful to my essay.

Nothing really

It was good that everything was done on the internet.

Charge-free to use The Writing Tools, and I like it.

It was so helpful to write essays. Before if I had some help to write paper I asked teacher but now I don't need to go to the teacher.

They're generally pretty useful for most people.

level of details

nothing special

You can't really notice your own mistake in grammar, these writing tools have been useful to give you a different perspective.

It is a convenient way to check written text.

I like that it is easy to use

I like tool which can count my academic words in my writing.

i'm glad to know about it.

liked

convenient

Good tool everything.

I liked AWL because it is useful when I write academic sentences and drafts of presentation.

nothing

useful

Nothing special

Really helpful

Overall these seem fairly positive in tone although there were a few complaints about certain issues. Some of these were related to the GUI of some of the apps as they were developed by individual educators rather than the more polished and professional looking smartphones and PC apps developed by IT companies. Additionally one student from the school group said that if they just used the one academic word endlessly they would get a high score for the AWL % rating. Here their lack of maturity seems to have contributed to their misunderstanding the purpose of writing, as they seemed to think getting a high AWL score was the aim.

These small comments aside I think it is clear that the vast majority were happy with the tools and found them very useful. Here Grammarly came in for frequent positive comments from the school group. Given they have lower language levels than the university group this is hardly surprising. Both groups had commenters making the point that the apps raised the academic style of their writing overall. As this was the main purpose of my teaching these apps to the students I am fairly happy with this outcome.

Conclusions

The results from this study showed that teaching these digital and online writing tools to EAP students (whether at the high school or university level) as part of an academic writing focused course had a very beneficial effect on their academic writing. This effect was commented on by many students from both groups. However while there was a very large percentage citing the benefits of these apps there were still a few outliers giving an opposite opinion. Further work should be done to explore why a few had such a negative reaction to the apps. This in no way detracts from the overall utility of the apps for the vast majority of students though.

This being the case I will continue to teach these apps to my writing focused classes and will look to expand the range of apps covered, as more new apps with a writing flavor are being developed and released. Given the advances in IT / ICT this is to be expected and teachers should do their best to keep pace with these changes and indeed use these changes to change and further improve their praxis.

Limitations

This was a relatively small study with four high school classes and one university class. In addition it was only conducted over one semester of these classes. So a longer and more comprehensive study would definitely help glean deeper insights. However I was limited by the access factor as I could only work with the classes I had and the time frame duration I had the students for.

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