The Effect Of Online Reading On Argumentative Essay Writing Quality

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Abstract

In tertiary education in Malaysia, essay-writing assignments are central to most English as a Second Language (ESL) courses. Often reading texts are used as a stimulus to better writing but it has not yet been extensively researched whether these texts should be presented on screen or on paper. This study examines which of these two presentation modes, viz., interactive online reading or print-based reading, help today's ICT-literate generation of Malaysian students write better argumentative essays. The rationale is that interactive online reading motivates these students more, and that this higher task motivation in its turn leads to more successful task performance. Using a quasi-experimental, between-subjects research design, we elicited a total of 90 essays (31,207 words), 44 of which written by students reading the input text online and 46 by students reading the same text on paper. The quality of argumentation was analysed, using a modified three-way version of Harrell's (2005) coding rubric: thesis, support and counter-arguments. Our comparative study shows that 61% of all essays are 'good', with 39% rated as 'average' to 'poor'. Results indicate that the interactive online reading condition yields superior task performance and that it also produces proportionately more essays with a 'good' thesis statement. Both findings are statistically significant. Essays with a 'good' thesis are more likely to contain 'good' support though not always 'good' counter-arguments. Counter-argumentation remains underdeveloped for both conditions. As a springboard to better argumentative content, ICT-enabled reading-based activities may not suffice, leaving room for other pedagogic interventions.

Keywords: interactive online reading, print reading, English as a Second Language, reading-based writing, argumentative essay.

Introduction

Argumentation can be defined as the informal reasoning skills that are involved in making claims and supporting these with evidence (Toulmin, 1958). It is a cognitive skill

central to someone's ability to think critically, solve problems, generate and justify solutions, formulate ideas and take decisions (Cho & Jonassen, 2002). Despite its importance, it is not (yet) a priority in the secondary-school curriculum (Kellogg & Whiteford, 2009). Many young adults thus enter tertiary education without the skills needed to think critically and to construct cogent arguments. The tendency, moreover, is to ignore alternative perspectives, making the argumentation one-sided, incomplete and potentially biased. For an overview of the main deficiencies in students' argumentative essay writing, see Gleason (1999, p. 85), and on the lack of advanced writing skills in general, see Kellogg and Whiteford (2009).

To illustrate, consider the following two excerpts written by students participating in our study. The topic was whether old prisons should be converted into tourist attractions rather than demolished and used for commercial property development. Data are shown in their original unedited form.

(1) I believe that prisons not only can be turned into tourist attractions [*thesis*] but a place that people can gain knowledge about histories in the past century [*support*]. There is no need to destroy these prisons and replace by a 5-star hotel or a new shopping mall [*restatement of the thesis*]. If all the prisons are destroyed, where can our generation still learn about the knowledge of prisons in the future [*restatement of the support*]?

(2) I recall when I was in my high school, will all visited the prisons just to have an ides of how it looks like, before that visit, I have no idea of what a prisons is all about, but after visited the prisons I have know now or what it does to people whose commit crime, every since I have fear in me so not to go into the prisons world.

Neither essay explores these issues further. Note that lack of substance often goes hand in hand with repetition (as in (1)) and off-topic narration (as in (2)).

To enhance students' argumentation skills, educators can use a wide range of pedagogic interventions: direct instruction, problem-solving assignments, competitive debate, computer-supported collaborative argumentation (CSCA) software, etc. (Cho & Jonassen, 2002). However, in the absence of a comprehensive course in argumentation, it is often left to academic writing courses to attempt to close the skills gap. One tried-and-tested method is so-called 'reading-based' or 'source-based writing' also known as 'read(ing)-to-write' (Asención-Delaney, 2008; Grabe & Stoller, 2009, pp. 453-454). Instead of leaving students to their own devices, instructors provide novice academic writers with information to help them develop ideas and content *prior to* answering the essay question.

Integrating output writing with input reading makes pedagogical sense but may also discourage learners for the following two reasons. First, according to Noorizah Mohd Noor (2006), most Malaysian school-leavers experience difficulty when entering tertiary education owing to inadequate reading skills, especially the kind of 'intensive reading' that is required for 'deep learning' (Reece & Walker, 2003, pp. 8, 300). Therefore,

writing instructors should carefully select topic and background material to make the reading itself more enjoyable and the reading-to-write activity more meaningful. Secondly, today's ICT-literate generation of students allegedly find most forms of print reading 'mundane'. Berk (2009, p. 3), for one, goes as far as to claim that 'about 50% of college students are unmotivated, disinterested, and disengaged from classroom instruction'. For many of these learners, even digital technology is routine, essential and unexciting. The solution may lie, therefore, in providing students with the ICT-driven interactivity that they are familiar with.

The assumption is that the integration of so-called 'new literacies' like on-screen and/or interactive online reading – together with attractive content and high task authenticity – will boost motivation for reading-based writing tasks, and that this, in turn, will lead to more successful task performance: better-argued and better-written essays. To find out whether this assumption is plausible or not, the present study will measure and compare the impact of presentation mode, i.e., interactive online reading (IOR) versus traditional print reading (TPR), on the quality of student essay writing.

Literature Review

The present study lies at the crossroads of 'reading-to-write' research and the impact of ICT on written task performance. To begin with the former, 'reading-to-write' ability is actually a unique construct independent of writing-only composition (Asención-Delaney, 2008). This could undermine their pedagogical and practical relevance if not for the fact that 'academic writing tasks are rarely done without using reference sources as a basis for writing' (Gebril, 2009, p. 508). So, reading-based writing remains a valuable academic skill. To quote Baba (2009), 'reading-based writing is vital in academic training across disciplines' and forms 'real-life challenges for L2 learners in academic contexts'.

The benefits of reading-based tasks as opposed to impromptu writing-only tasks are well documented. Reading-to-write activities enhance students' higher-order thinking (Grabe & Stoller, 2009), improving content, organization and language (Gebril, 2009). They also elicit a more authentic composition process with less initial pre-drafting and more flexible planning 'as you go along' (Plakans, 2008). This latter study also reveals that L2 [second-language] student writers prefer reading-based writing to writing-only essays. Boscolo et al. (2011), finally, found that reading-based essay questions generate more topic interest.

It is unclear, however, whether the reading materials should be presented on paper or on screen, and whether or not interactive browsing should be enabled. Arguably, the reading mode will affect students' psychomotor, metacognitive and affective engagement with the information, and may subsequently influence task performance. It is this relationship that the present study seeks to explore. In passing, the effect of presentation mode on argumentation has, to our knowledge, not been examined before.

A second field of enquiry that our article contributes to concerns the similarities and differences between IOR (interactive online reading) and TPR (traditional print reading) in the context of *reading-based writing*. Most comparative studies focus on (i) the different reading and thinking strategies involved in these literacies such as the non-linearity associated with IOR or (ii) their impact on reading comprehension.

However, results are mixed. IOR strategies are claimed to be critically different but Tan Kim Hua and Liaw Meng Lai (2009), for example, found that Malaysian students rely on TPR strategies like scanning and skimming, using typographical clues and visuals, to increase understanding of multimodal text regardless of presentation mode. As for reading comprehension, there is no conclusive evidence that IOR plays any positive role. Stakhnevich (2002), among many others, found that multimodal IOR resulted in markedly better reading comprehension. Baker (2003), however, recorded no significant differences in reading comprehension between paging (paper) and scrolling (on-screen) subjects. Similar negative findings have been reported by Usó-Juan and Ruiz-Madrid (2009). In fact, many researchers claim that digital text promotes a form of shallow, less focussed reading with weaker comprehension than in TPR (Mangen, 2008).

However, the variable mediating between ICT and argumentative writing is not so much reading comprehension as motivation. It is generally accepted that ICT motivates students in their learning (Andrew, 2004). There are numerous studies, e.g., Hsieh and Dwyer (2009), reporting the popularity and positive perception of ICT and IOR. Their impact on student achievement is, however, much less firmly established. For present purposes, it is sufficient to work from the assumption that IOR indeed enhances motivation – and that by making reading more enjoyable, ICT will help ICT-literate students engage more actively with their reading-based writing assignments.

Method

Our causal-comparative study is based on two quasi-experiments in which 45 students wrote argumentative essays in response to two different reading-to-write tasks. It aims to compare performance across the two groups relative to how the background reading text was presented: online (IOR) or in print (TPR). Each student was tested twice but under one condition only. Note that this is not a classical within-subjects research design with a pre-test and post-test but a between-subjects one in which two writing tasks were used to collect a large enough set of data.

Setting

The study took place in a computer lab in a college in Malaysia. Participants had their own desks and computer terminals to word-process their essays.

Participants

The cohort consisted of 45 students, aged 17 to 19 years, taking a compulsory course in academic writing as part of their American Degree Transfer programme (January 2010 intake). Assignment to experimental condition was random, with 22 students in the IOR group and 23 in the TPR one. All participants had comparable ESL proficiency levels, based on their SPM English results (A1 or A2), IELTS (Band 5.5–6) and TOEFL iBT (85 and above). In the weeks prior to the writing tasks, students received instruction on the content and organization of argumentative essays, using a standard 'present-practice-produce' methodology. In this way, we could control for knowledge of the essay format.

Stimuli

Two essay topics were selected from the syllabus:

A.   Should prisons be turned into tourist attractions?
B.   Does imprisonment deter crime?

Their respective stimulus texts were *Overview and history of Alcatraz* (771 words) and *Federal prison, inmates, food and medicine, work and recreation, and equipment and procedures* (995 words), available from the 'National Park Service U.S. Department of the Interior' website (http://www.nps.gov/history/museum/exhibits/alca/overview.html). This website was chosen because of its high-quality information and interactive approach to online education. Both IOR and TPR students received the exact same information (e.g., content, font size, images, etc.) except that IOR students accessed the texts online while TPR students used a hard-copy handout.

Procedure

Each writing test consisted of the following steps.

1. Participants were given 20 minutes to read the stimulus text. This was more than adequate given an average reading speed of 200–350 words per minute (Harley, 2008, p. 219).
2. Next, there was 10 minutes to reflect on the information, analyse the essay question and outline the answer.
3. Participants had 60 minutes to compose and word-process an argumentative essay of 280–300 words. On-screen composition and word-processing software was used, enabling participants to spend more time planning and proofreading.
4. Finally, participants were asked to save their essays in a network folder created by the researchers.

Time elapsed between the two writing tests was one week.

Coding

The essays were analysed, using a rating matrix derived from Harrell (2005). Harrell's rubric was preferred over rivals because of its focus on argumentation and ease of use. Harrell (2005) distinguishes seven dimensions (e.g., argumentative content, understanding, synthesis, creation, etc.). Given the more limited objectives of our research, only the 'content' dimension was examined, using three of the key parameters, viz., thesis, support and counter-arguments.

Harrell (2005, p. 8) offers the following definitions:

1. Thesis can be defined as a 'clear statement of the main conclusion' of the essay.
2. Support refers to the evidence or reasons given in support of the thesis.
3. Counter-arguments are (i) arguments rejecting or qualifying the thesis and/or supporting statements ('concessions') and (ii) the author's responses to them (e.g., refutation).

Harrell's original rating scale consists of the following categories: 'excellent', 'good', 'needs improvement' and 'unacceptable'. These labels are, however, less suitable as the current study is about determining differences in argumentative content rather than grading essay assignments. The two outer categories were renamed as 'good' and 'poor'. In addition, the two middle categories 'good' and 'needs improvement' were collapsed into one 'average' category. By substituting Harrell's four-tier rating scale with a three-tier one, analytical complexity could be reduced without compromising accuracy.

All in all, these decisions give a three-by-three rating rubric with descriptors for each combination of argument component and quality rating (see Appendix). The argument components were rated for each essay, giving us various quality profiles. Essays with at least two 'good' ratings and no 'poor' rating – regardless of argument component – were considered to be 'good' as a whole; those that did not meet this cut-off condition were referred to as 'average' to 'poor'. We will refer to this below as the 'overall quality rating'.

To illustrate some of the ratings for Topic B, Example (1) given above combines 'good' ratings for both thesis and support while Example (2) lacks a thesis statement, justifying a 'poor' rating on this criterion. We can also compare the following two unedited excerpts from essays on Topic B, the first one 'good', and the second one 'poor':

(3)   Thesis defended in the essay: *Imprisonment is not a deterrent to crime*

   A majority of individuals believe that the government should dedicate more money in building more correctional facilities [*counter-argument*]. However, the government would only end up spending hundreds of millions of tax-payers dollars in a futile hope to correct or re-educate the criminal [*refutation = sub-thesis*].

(4)   Thesis defended in the essay: *Imprisonment is a deterrent to crime*

Although many will think that imprisonment is wasting public money [*counter-argument*], but the educational work and work opportunity can deter some of the crime as well [*refutation = sub-thesis*].

NOTE: *The essay elaborates on how rehabilitation and education in prison may reduce re-offending. However, it does not address the public expenditure involved.*

Two notes are important at this point. First, the excerpts show that argumentative essays are made up of multiple claims in which supporting statements, examples, qualifications, counter-arguments, rebuttals, etc. become sub-theses in their own right, often requiring further evidence and reasons (Toulmin, 1958). Secondly, the rating descriptors are essentially qualitative in nature, e.g., the presence or absence of certain argument components combined with features such as clarity, strength, relevance or obviousness. As such, coding requires detailed analysis of the data based on interpreting parts of the essays (phrases, sentences and paragraphs) in terms of the matrix discussed above and placing them into one of the nine cells – see Examples (3) and (4) above. Once quality ratings have been obtained for all of the data, they can next be subjected to quantitative analysis, using simple statistics to discover regularities.

Inevitably, coding is a matter of interpretation, which is why a coding rubric was used. The descriptors were defined in such a way as to ensure consistent classification of the argument components in each of the essays. Moreover, two suitably qualified and experienced judges analysed each essay independently, reconciling the occasional discrepancies through discussion. Finally, reliability of coding was also enhanced by revising Harrell's (2005) rubric and joining two of the original categories, thus guaranteeing a higher degree of descriptive accuracy.

Results

The following results can be reported. Where appropriate, chi-square independence tests were conducted.

First, the average essay length is 347 words (total number of words 31,207 divided by 90), with 338 words for IOR and 355 for TPR. The difference is too small to be statistically significant, meaning that *ceteris paribus* presentation mode did not affect essay length.

Secondly, the overall assessment of the essays can be summarized as follows.

Table 1: Essays (N = 90) by presentation mode and overall quality rating

	IOR	TPR	TOTAL	%
'good'	33	22	55	61.1%
'average' to 'poor'	11	24	35	38.9%
TOTAL	44	46	90	100.0%

Clearly, a majority of all essays are 'good', most of these having been written under the IOR mode. Likewise, there are considerably more 'average' to 'poor' essays in TPR. The observed superiority of IOR over TPR is significant at the 1 per cent level [$\chi^2 = 6.99$, $df = 1$, N = 90, $p < .01*$]. Statistically, it is safe to conclude that argumentative content quality varies as a function of presentation mode.

A third finding is that 77 essays have a 'good' thesis, i.e., they unambiguously state their position, accounting for nearly 86% of the total. As Table 2 shows, their overall quality can still be 'average' or 'poor' depending on the other argument components.

Table 2: Essays with a 'good' thesis (N = 77) by presentation mode
and overall quality rating

	IOR	TPR	TOTAL	%
'good'	33	21	54	70.1%
'average' to 'poor'	8	15	23	29.9%
TOTAL	41	36	77	100.0%

Further analysis reveals that IOR is significantly more likely to lead to essays with a 'good' thesis than TPR [$\chi^2 = 4.49$, $df = 1$, N = 77, $p < .05*$].

We can also report that essays with a 'good' thesis are around 70% more likely to come with 'good' supporting arguments (not shown in any table). If the thesis is only 'average' to 'poor', the likelihood drops to less than 50%. However, the differences between IOR and TPR are not significant. Moreover, essays with 'good' support and 'good' counter-arguments respectively (not shown in any table) account for 79% (71 out of 90) and 54% of all essays (49 out of 90). The differences in terms of presentation mode are only modestly significant for the former [$\chi^2 = 2.02$, $df = 1$, N = 71, $p < .20*$].

Fourthly, it is striking that for both experimental conditions together, the argument component with the lowest quality ratings is counter-argumentation. Consider the following tabulation of the data.

Table 3: Argument components by quality rating (absolute frequencies and percentages out of total essays, N = 90)

	Thesis		**Support**		**Counter-argument**	
'good'	77	85.6%	71	78.9%	49	54%
'average'	9	10.0%	12	13.3%	14	16%
'poor'	4	4.4%	7	7.8%	27	30%
TOTAL	90	100%	90	100%	90	100%

Only 49 essays out of 90 have 'good' counter-arguments as opposed to 41 that score 'average' or 'poor'. Within-row comparisons reveal that 'good' counter-arguments are less frequent than 'good' thesis-and-support structures whereas considerably more counter-arguments rate 'poor' than either theses or supporting details. Apparently, many students present only their own viewpoint and/or offer counter-arguments that are oversimplified or irrelevant (see also below).

As a fifth and final observation, if we separate out the argument components by their respective ratings for the two presentation modes, the following picture emerges.

Table 4: Quality ratings by presentation mode and argument component (absolute frequencies and rounded percentages)

		IOR		**TPR**		**TOTAL**	
'good'	Thesis	41	53%	36	47%	77	100%
	Support	39	55%	32	45%	71	100%
	Counter-argument	29	59%	20	41%	49	100%
'average'	Thesis	3	33%	6	67%	9	100%
	Support	5	42%	7	58%	12	100%
	Counter-argument	6	43%	8	57%	14	100%
'poor'	Thesis	0	0%	4	100%	4	100%
	Support	0	0%	7	100%	7	100%
	Counter-argument	9	33%	18	67%	27	100%

The column categories in Table 4 are not mutually exclusive so chi-square values could not be calculated to establish significance. Even so, the consistently higher percentages in

the 'good' row suggest that more IOR essays have 'good' ratings than TPR ones. The low frequencies in the other two rows do not warrant meaningful generalisations. Speculatively, the findings indicate, however, that 'average' and 'poor' ratings are especially found among the TPR writers. The main conclusion seems to be that weak content is especially due to non-existent or poor counter-argumentation, irrespective of presentation mode.

Discussion

The main objective of this study was to compare two presentation modes (IOR and TPR) and their effect on argumentative content in a controlled reading-based essay-writing task. The statistical and qualitative findings support the following claims.

Quality of argumentation

First, presentation mode influences the way student writers develop and formulate their thesis statements, support them and/or challenge them with counter-arguments. When considering all essays (N = 90), more IOR essays were rated as 'good' and considerably fewer as 'average' or 'poor'. The pattern repeats itself for essays with a 'good' thesis statement (N = 77) and essays with 'good' support (N = 71). For all of these, the superiority of IOR over TPR is statistically significant. Taking only the argument components with 'good' ratings, again, IOR outperforms TPR though here no statistically significant differences could be established. In passing, the higher quality in the IOR condition is unrelated to writing volume: average essay length is 338 words for IOR and 355 for TPR. So, more does not mean better.

A student's ability to argue a particular position (and write it down in an essay) is a higher-order cognitive activity. Argumentation involves complex processes to do with language, problem solving, expert and novice reasoning, creativity and decision making (Reed, 2010, Part 3). It does not explicitly depend on factors like a student's proficiency in ESL (including reading comprehension), his/her knowledge of argumentative essay writing or the provision of background information on the essay topic (the stimulus text, its length and attractiveness). Rather, an explanation for the better argumentative content in IOR essays must be looked for in the use of ICT, its familiarity and acceptance among today's generation of students, its online reading/browsing convenience and its proven positive effect on motivation (Andrew, 2004).

How enhanced motivation (task motivation) affects achievement (task performance) is as yet not clearly understood. Motivation, interest, perceived needs, attitudes, enjoyment, aspirations, etc. – all of these interact in complex ways (Reece & Walker, 2003, p. 78). The reading-to-write task in our study was part of the students' coursework. It is not unlikely that extrinsic motivation may have affected the results. Another explanation for the findings may have to do with the mixing of paper-based and digital environments in the TPR condition. The TPR writers may have been disadvantaged by the higher cognitive demands involved in having to switch from printed document to screen. Note that the study of 'reading during writing' processes is still in its infancy.

An interesting observation concerns the percentage of 'good' essays: 61%, or 55 out of the total of 90. Despite the frequently reported inability of first-year students to build coherent arguments, the present study suggests that a small majority are competent or manage to learn a lot within the first few months in higher education. On the other hand, analysis of the content and organization of their essays shows that 'good' theses/sub-theses, 'good' supporting statements and 'good' counter-argumentation alone may not be enough to create a good essay. Triple 'good' ratings could be attested in just under half of all essays (47% or 42/90) but these same essays often remained inadequate due to the kind of repetitiveness and narrative style observed above and other deficiencies like extreme case formulations. In this respect, our results are in agreement with earlier work done by, for example, Gleason (1999). Clearly, IOR-based writing is only helpful up to a point.

One-sided argumentation

A second finding is that a majority of our cohort ignored all so-called 'other-side information' (Wolfe et al., 2009, p. 188), presenting only their side of the argument. As observed above, 61% of all essays are 'good'. The remaining 39% are of 'average' to 'poor' argumentative quality, predominantly because they fail to examine more than one perspective or only do so cursorily and inadequately. Counter-arguments account for 71% of all 'poor' ratings (27/38) and nearly 40% of all 'average' ratings (14/35) (Table 4).

Apparently, first-year students find it hard to adopt other points of view, think of likely counter-arguments and rebuttals, and remember to include them in their essays where relevant. This 'one-sidedness' is considered a logical fallacy as only the reasons supporting a position are supplied while the reasons undermining it are omitted (Ramage et al., 2009). One-sided arguments are neither inherently invalid nor unsound; however, by leaving out the other-side information, they are less effective and less convincing. Empirical research shows that two-sided arguments are more likely to meet with agreement, lead to higher ratings of argumentative strength and also make the arguer look more credible (Wolfe et al., 2009).

By the way, Malaysian higher-education students are no different from their ESL peers around the world. Our results cannot be explained in the light of cultural factors. In all likelihood, people's tendency to produce one-sided arguments is universal. There are obvious cultural differences in what counts as argumentation and academic reporting (Kachru, 2006). However, one-sided argumentation results from such general phenomena as 'cognitive laziness', 'economy of effort', insufficient 'perspective taking' and the fact that the brain often prefers associative reasoning and 'mental shortcuts' over logical analysis and careful deliberation of alternatives (Reed, 2010, pp. 346-347). This is especially so when we have to make decisions and solve problems under time pressure (Reed, 2010, p. 373).

Having said that, argumentation is as much a cognitive as a social-discursive activity, and a good deal depends on the audience that a writer is trying to accommodate. Ramage et al. (2009) quite rightly emphasize that when appealing to a supportive – rather than a

resistant – audience, one-sided argumentation may be quite effective. Perhaps, our students' reliance on one-sided arguments has to be attributed to the friendly educational setting and the fact that their audience only consists of their writing instructor.

As a final observation, argumentation strategies may also have been influenced by the reading-based writing assignment itself. We can ask ourselves whether the task used in our study promotes 'genuine communication', i.e., the primary focus is on meaning and meaningful interaction, whether it has a clearly defined 'real world target' and whether it really engages and stimulates the students. All of these elements together determine the degree of task authenticity. Arguably, tasks with higher 'situational' and 'interactional authenticity' (Ellis, 2003, p. 6) will elicit more reliable data. It is clear that methodological plurality will make our findings more robust, but this brings us to the next section.

Conclusion

The main objective of technology-supported education is to motivate students through meaningful and active learning. The gains in terms of effectiveness, performance or achievement are not always clear-cut, however. There is evidence that ICT has a positive effect on educational achievement, also in the context of formal education (Punie et al., 2006, p. 20). So, our study shows that interactive online engagement with words and images caters to the needs of young students in Malaysia and leads to desirable outcomes.

However, the reality is that traditional paper-based environments often prove equally effective: the so-called 'transformative potential' of using the online presentation mode should not be overestimated. Paper-based reading is especially suited for comprehending cognitively more demanding texts (Mangen, 2008), and as long as there are texts of that nature and assignments based on them, there will be a place for printed materials. If anything, our findings show that educators need to adopt a 'blended learning' approach: selecting those instructional methods and resources that most enhance life-long learning and learner independence in today's digital society.

Given the relatively small number of essays, it is clear that further research is required. As observed above, alternative methodologies may have to be used to elicit data that more closely approximate 'real world' argumentative writing. Secondly, follow-up research may want to gauge the impact of participants' comprehension skills. Asención-Delaney (2008), for one, reports a weak relationship between reading-for-comprehension and reading-to-write ability in essays and summaries. Baba (2009) has similarly discovered that it is reading comprehension – rather than, for example, lexical proficiency – that affects summarizing performance. Perhaps a similar relationship holds for reading comprehension and essay writing.

Finally, it would also be useful to assess Malaysian students' perceptions of online reading and on-screen writing activities. These perceptions can help us develop more successful strategies in encouraging intensive reading, critical thinking and

argumentation and in teaching essay-writing skills. More generally, they can help us determine the right mix of ICT-based and traditional pedagogies. As Kellogg and Whiteford (2009) argue, one of the challenges will be to provide regular writing practice and meaningful feedback without overburdening already time-strapped instructors. There is every reason to believe that this also applies to our Malaysian context.

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Appendix

Rubric for rating argumentative content

quality / argument component	'good'	'average'	'poor'
Thesis	The main conclusion is present and is obvious, i.e., takes the form of a clear statement.	The main conclusion is present but not obvious or clearly stated: it must be reconstructed from the essay.	There is no main conclusion. The author does not state his or her position on the essay topic.
Support	There are strong arguments to support the thesis. Where relevant, there is further evidence and reasons to support these arguments.	There are some arguments to support the thesis and/or arguments that support the thesis weakly. There is limited or no further evidence and reasons to support these arguments.	There are no arguments to support the thesis.
Counter-argument	The essay includes obvious and not so obvious arguments, examples or positions that undermine or qualify the thesis and/or the supporting statements. The essay also includes effective responses to them.	The essay includes some or only the more obvious arguments, examples or positions that undermine or qualify the thesis and/or the supporting statements. The essay does not include any responses to them or only ineffective ones.	There are no counter-arguments, counter-examples or opposing positions.

About the authors

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