Word processor – friend or foe?

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Over the last decade and more, ELT has embraced technology for a whole range of teaching and learning purposes and is constantly looking at new developments, seeking ways to integrate them into classroom practice. While many of these advances are exciting and have allowed teachers to be highly creative in and out of the classroom, there is a potential danger that some practices may be driven by the technologies they wish to use, rather than the technology being created or modified to suit a pedagogical purpose. Does the technology in fact enhance teaching and learning processes? Or are there in fact some hidden dangers behind the 'wow factor'? It seems important to step back and look at one's own context and analyse whether the technology benefits the learners and the learning process.

Kemmis and McTaggart (in Cohen et al 2000:227) suggest action research helps improve rationality and justify educational practices; others, Wallace (1998) for example, emphasize it as a tool to inform future practice. Bearing this in mind, and considering one of perhaps the most common uses for technology in the classroom, I carried out a small scale action research project comprising a comparative study of computerized and paper-based media in writing with young learners. This article is adapted from a paper first published by the University of York (2006) and describes the design and findings of a study carried out in 2004 as part of the MA in TEYL programme from the University of York.

In the investigation, I aimed to look into some effects of word-processing on written production, evaluating it as a tool in the YL classroom. In order to narrow the focus to allow for objective, quantitative analysis, I decided to looked specifically at the range and accuracy of verb form as a way of measuring and describing 'good writing'. I used other qualitative data techniques to triangulate the study and to gain a broader impression of issues surrounding the main focus.

Background

The research was carried out over a 10-week period with 12-13 year old EFL learners at the British Council Hong Kong. English is fairly widely spoken here, and is held as an important skill in the community by many educators and employers. Some of the students speak English at home with domestic helpers, or attend English medium instruction schools. Others, however, have more limited exposure to English in the environment, which results in mixed level and ability classes. Each class was held in a classroom equipped with eight student workstations and an interactive whiteboard.

Design

I collected data using a number of techniques from several sources; written work from a sample of ten groups of two or three students was taken from a population consisting of two classes of 24 learners, as well as two learner questionnaires to all 48 learners and informal interviews. British Council teachers were also surveyed locally and globally to gather views and experiences. I made further use of field notes, journal entries, and interactive whiteboard flipchart files.

I designed the research specifically to complement the syllabus, and, to encourage representative performance, students were not told the details of the research focus, simply that the questionnaires would inform a study. I collected baseline data in the first lesson where learners interviewed their partner and then wrote about him or her. Although the students were guided towards using a range of verb form, it was not explicitly required to complete the task. I then analsyed the scripts looking at incidence of verb form students attempted.

All students completed a questionnaire to reveal computer experience at home and school, in particular word-processing, their feelings towards perceived knowledge and skill at using computers and keyboards in particular. This allowed for depth and breadth of analysis, reducing the risk of making assumptions when analyzing data, and for triangulation of the study.

The main investigation was conducted in two cycles. Over a series of lessons, I extended the 'space' theme from the coursebook into a project in which groups of students worked together to devise a story where an astronaut flies to another planet and meets an alien. To this end, learners were required to 'create' their astronauts and aliens – the topic of the descriptive writing tasks in each respective cycle.
In the first cycle, students created and wrote about their astronaut having read about and made guided notes about genuine astronauts on the NASA website. I designed the tasks to guide and encourage use of a range of verb forms, the same as at the baseline stage. The first class wrote their description on paper, the second using Microsoft Word. I helped where necessary, but gave no guidance on grammatical accuracy. The second cycle varied in design of the initial task, but similar guidelines and support were given for the written production stage to try to keep verb forms constant. At this stage, students created their aliens, but the medium was reversed so the first class wrote on paper, the second using Microsoft Word. I kept the tasks as similar as possible to increase reliability and validity, but modified them slightly to keep interest and motivation. No writing tasks were set in the period between the two cycles as it could have corrupted the study.

	Baseline		Cycle 1		Cycle 2
Topic	My partner	→	Astronauts	→	Aliens
Class 'A'	Pen & paper	→	Pen & paper	→	Microsoft Word
Class 'B'	Pen & paper	→	Microsoft Word	→	Pen & paper

In the following lesson, all students completed a brief reaction questionnaire, in an attempt to find out whether any motivational factors were important, such as preference of medium, topic or any issues with working in groups. I also conducted informal interviews. Several factors seemed important when I selected the sample of learners, including gender, size of group and attendance. Once selected, I analysed the scripts number of verb forms attempted and their accuracy. I took field notes to give subjective, impressionistic data to triangulate the study. Finally, all data was cross-referenced to produce a second set of results, to try to uncover possible causes for trends or variances.

Findings

The range of findings reflected that of data collection techniques and sources. Some I found most relevant and interesting are as follows:

- All students had computers at home, which is fairly typical in Hong Kong, and used, mostly, basic applications, such as Email, Internet, Microsoft Word and, of course, games. Most also used computers regularly at school.
- Learners' self-perceived competence and skills varied, but confidence in keyboard skills seemed generally high. Although most learners felt positive towards using computers, there were some mixed reactions and a small number of learners expressed a dislike.

- Teachers expressed very mixed views towards using computers in the YL classroom, although were generally positive. Word-processing packages were used frequently, and teachers mostly felt syntax and grammatical accuracy, spelling, quality, motivation and involvement benefited, but that range of verb form remained unchanged.

- Overall, word-processed writing produced more accurate verb form than pen-and-paper: 65%:54% and 82%:70% for the two classes respectively.
- The range of verb form attempted remained constant for the first class at 13 per script on average. It increased dramatically on paper in the second class from 10 to 14, although some statistical anomalies may have caused this, a potential danger with small studies.

- Students mostly preferred writing about astronauts, regardless of medium, and they felt they performed better in this task.

- Students said using word-processors was quicker, neater and more fun, although there were three who specifically disliked writing on computers. These were, incidentally, the only learners who achieved 100% accuracy on word-processor!

When cross-referencing the data, I discovered some further interesting results. All baseline averages were lower than cycle averages. It seems task or topic may have influenced this, as the investigation occurred over a relatively short period, so increase in general level was unlikely. In the main cycles, there was a slight correlation between confidence in word-processing, including keyboard skills, and higher accuracy levels on word processor. Two groups attained 100% word-processed accuracy, yet their members differed in confidence and preference. Groups showing similar or increased accuracy on paper seemed to have less home exposure, experience and/or lower confidence with computers.

An interesting area which would warrant a separate study was differences between genders. Data analysis showed male groups produced substantially shorter texts, with low range, yet they mostly showed strong preference for using computers. Variation in range was particularly limited for boys. Only females expressed dislike of using computers, yet only female groups achieved 100% accuracy word-processed. Jurich (2000) suggests males may be less intimidated by computers; furthermore Fontaine (2000) mentions perception of technology as a male domain can cause psychological barriers and technophobia in females, possibly reflected here in the qualitative rather than quantitative aspect of the study.

Comparison with other studies

Results of the investigation suggested improved accuracy of verb form when writing on word-processor; effect of medium on range of verb form attempted was somewhat inconclusive however. Little difference in range was evident between cycles, although some evidence that topic affects production seemed apparent from learner questionnaires; motivation and experience also seemed influential.

Improvements in accuracy would suggest learners made use of grammar check functions, although this was not observed or commented on by learners. Teachers also commented negatively about grammar check functions. Neu and Scarcella (in Slaouti 2000) mention improved concentration when using computers, especially regarding grammatical accuracy, and it was observed that learners identified mistakes and corrected each others' mistakes more readily on the computer, as Daiute (1985) and James (2000) have also noted. It seems likely that a complex interplay of medium, task situation, audience, language proficiency and familiarity affect grammatical accuracy. In addition, a study by Haas (in Levy 1997) found less conceptual planning when word-processing, which could be reflected in shorter texts with lower verb range in this investigation.

Results also showed motivation and experience may be influential. Piper (1987) suggests learners view word-processing as a useful skill, therefore motivating, which was specifically commented on by two learners here. He also suggests that higher commitment levels and enthusiasm lead to increased accuracy using computers, and that

there is more concentration and desire for perfection, especially concerning grammar and syntax. Daiute (1985) mentions pre-adolescents find hand-writing tedious, computer-based writing more fun, which was reflected in learners' comments.

Action Research as a tool for professional development in the IT classroom.

The process of conducting the research allowed me to feel the potential power of action research first hand. It also confirmed a belief that investigation into the pedagogical issues surrounding the use of technology in the classroom is vital as assumptions, however basic, do not always hold true. In the case of more recent technological developments and equipment, such as interactive whiteboards, blogging or podcasting, it seems vital that research is carried out into real effects on teaching and learning processes, as well as into whether value is really added, in an attempt to prevent technology-driven practice. This can be done at a local level through tools such as action research, whether conducted by individuals or collaboratively.

The process of researching the topic, planning, conducting and reflecting on the study was beneficial not only in terms of the potential consequences on classroom practice, but was also a highly valuable experience on both a personal and professional level. We are able to share our experiences in the workplace and the broader TEYL community, through INSET sessions, discussion forums and publications, to develop a broader knowledge base in the profession. It has also allowed a shift in my own attitude towards the use of all forms of technology in the YL classroom, encouraging me to think beyond the possibly somewhat superficial motivational effects technology may have with YLs, to consider pedagogical issues more deeply and to question my assumptions more seriously.

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