

Lonely Heart Columns: A Novel and Entertaining Way of Teaching Students Abstract Writing Skills

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Abstract

ABSTRACT: Important skill, fun approach, uses lonely heart columns, students enjoy, gain transferable skills.

Abstract writing is a key skill for science graduates; they are a common feature in many of the standard forms of scientific dissemination such as scientific research articles. In this paper we present a novel and entertaining approach for teaching abstract writing using adverts from lonely heart columns (LHC). Student constructed full profiles of the authors of LHC and constructed LHC profiles of celebrities to illustrate the key skills in abstract construction. There was no significant difference between the grades achieved by student taught using LHC and a more traditional approach, suggesting there were no negative impacts from this delivery method. Student in LHC tutorial overwhelmingly enjoy the tutorial, 95% responded the question 'how would you rate the enjoyment of this tutorial' as 'much' or 'very much'. In addition to abstract writing two thirds of students in LHC tutorial believed they improved their ability to speak in front of others and their creative thinking skills. The LHC tutorial is a novel approach to teaching and learning that is both enjoyable and effective.

Keywords: Undergraduate, Abstract, Pedagogic, Writing Skills

Introduction

The writing of abstracts, a self-contained short piece of text that describes a larger piece of work, is an ancient tradition. It is believed that the Ancient Greeks were the first to produce abstracts for histories and works of non-fiction (Witty, 1973). Abstracts are now a standard feature in scientific literature and are found in scientific research articles and communications, theses and dissertations, and conference proceedings.

Abstracts are often short in length (typically 200-500 words) but are a fundamentally important part of all scientific communications. A reader will often read the abstract of an article as a basis of making an informed decision on whether they should read the full text of the document (Trawinski, 1989). Despite the importance of abstracts in scientific literature they are often poorly constructed and fail to convey the most pertinent information. In an editorial for the *Journal Library and Information Science Research* the editors comment on the number of abstracts they receive for review which do not meet standards based on either style (length, incorrect tense, poor readability) or content (lack key findings, repeat ideas, highlight structure rather than content). The authors continue to say that an abstract author needs to adopt the art of persuasion to convince a reader of the worth of reading the full article (Hernon & Schwartz, 2010).

A study by Hartley (1994) looked at the clarity of psychology journal abstracts. The author selected articles from a current issue of a subject-specific journal and presented students and academics with four different versions of the abstract. Version one was the original format, version two matched one but the type-size was increased, version three matched version two but subheadings were introduced into the abstract and version four was rewritten by the author to improve its clarity. The study showed that when asked to judge the abstracts for clarity, undergraduate students showed a significantly greater preference for each successive design change. The work also showed that revised abstracts were significantly more readable than the original (using the Flesch Readability score). This study shows that even published articles in well respected journals contain abstracts that would benefit from improved clarity.

Scholarly articles and textbooks exist on the writing of abstracts both in general terms (Cargill and O'Connor 2009; Cole & Koziol-McLain, 1997; Juhl & Norman, 1989; Swailes *et al.*, 2009; Trawinski, 1989) and for specific purposes, such as an application to submit at a conference (Beyea & Nicoll, 1998; Coad & Devitt, 2006). Many of the guides recommend the same basic principles such as careful proof reading of the abstract and taking note of the journal's specific instructions for authors. In guides, abstracts are often described as being either a 'traditional' standard single paragraph, or 'structured' paragraphs with short subheadings such as 'Method' and 'Results' (Taylor, 2010). The convention from guides (irrespective of

abstract type) is that abstracts should contain the following five elements (adapted from Cargill and O'Connor, 2009).

- Background Information
- The aim and scope of the study
- Information about the methods employed
- The most important results of the study
- Statements of conclusion or recommendation.

Some guides offer slightly different approaches such as a problem structured abstracts. Trawinski (1989) proposes a novel method in which abstracts do not have the form of a continuous text but have a modular structure consisting of 5 separate parts: document problem, problem solution, testing method, related problems (the information layer), and content elements (the formal structured layer). The content elements are presented using a series of three letter codes e.g. PRF *proof of thermos*. The aim of these abstracts is to generate transparent and short abstracts (the information layer parts) that are easily searchable by a scientist using the formal structured layer.

Abstract writing is traditionally taught in an academic setting using tutorials. Novel approaches to teaching abstracts have been discussed by other authors; Cox et al (2003) describe a writing initiative used to teach first-year business students how to abstract what they have read. The authors developed a course that includes a pre-test and post-test article exercise structured around a series of three smaller abstract writing exercises and taught sessions. The authors found that students significantly improved their ability to write abstracts and represent the views of the author accurately over the initiative. However the authors noticed a decline in the student's ability to write using their own words across the initiative and no improvement in spelling and grammar. In another exercise Habeshaw and Steede (1987) describe an abstract writing tutorial in which students (in groups) are provided with a selection of articles containing abstracts and asked to criticise them and suggest improvements. Once students understand of the composition of abstracts they are presented with a research paper minus its abstract and asked to compose one.

In this study we describe a novel and entertaining tutorial-based approach for teaching the basic principles of writing scientific abstracts as described by Cargill & O'Connor (2009). The approach uses short adverts from lonely heart columns (LHC), written by people seeking companionship or romance, as a vehicle for a wider discussion on what makes a good abstract. It is the aim of the authors to enthuse and engage students using a colourful analogy from the real world. Analogy is a powerful tool for explaining complicated concepts and has been shown to good effect in medical education for example Nayak and Kramer (2007) describe a way of teaching the structure of the midgut using rope and paper.

It is also the view of the authors that the LHC tutorial will aid students in the development of key transferable skills such as communication alongside abstract writing. Clarkeburn *et al* (2000) used role-play in large classes to teach students important conservation concepts, they found that students improved in their confidence in key transferable skills such as group work and speaking in public.

Method

As part of a core second year (level five) undergraduate module, students registered on Biological Sciences programmes were taught the principles of abstract writing and undertook a summative abstract writing assignment. A component of this module is a tutorial (linked to a formative assignment) on abstract writing. Twenty-four students in two separate tutorial groups (in place of a traditional tutorial) were part of a lonely hearts column tutorial described below. The two tutors had previously agreed the structure of the LHC tutorial to maintain parity between the two sessions. At end of the tutorial students were asked to fill out an optional ethically approved questionnaire about the tutorial. Student grades for both the formative and summative assignment were anonymously recorded from both LHC tutorial groups and another traditional tutorial from the same cohort. The University alphanumeric grading system was used for marking both the formative and summative assignments, the scale ranges from A+ to D- (pass) and FM, F and Z (fail). For simplicity in the analysis grade changes were viewed numerically e.g. if a student scored C in the formative assignment and B- in the summative assignment they increased their grade by 2 steps on the grade scale (+2).

Formative Assignment – Two weeks prior to the tutorial session students received a formal taught session on abstract writing and were handed a discipline specific research article which has had the abstract removed. Students were required to read the article and write their own abstract. This formative piece of work was handed into the tutorial tutor one week prior to the tutorial session.

Traditional Tutorial

Exercise One - Students had their formative work returned to them and were led through a discussion of common mistakes by their tutor. Students were then handed the real abstract from the paper and asked to reflect on their own work as compared to the original. After time for reflection the tutor lead a brief discussion on the real abstract.

Exercise Two – Students were handed another subject-specific research paper which had its abstract removed. Students in small groups were encouraged to read the paper and construct a group abstract. After time for the exercise the groups read out their abstracts, the real abstract was then provided by the tutor who led a discussion of the student constructions compared to the real abstract.

Lonely Hearts Tutorial

Exercise One - Students were handed a photocopy of a LHC from a newspaper (see Figure 1). In pairs the students were instructed to invent a short biography for self-selected adverts. After time for the exercise, students were encouraged to read out loud the advert they selected then the biography they constructed. The tutor then made the link that a LHC entry is an abstract of a person's personality and interests and the way they are constructed can lead to different interpretations.

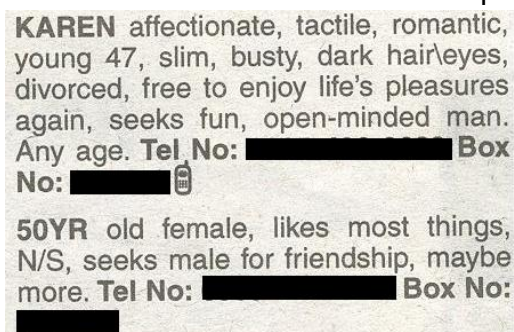


Figure 1: A example of two lonely heart column entries from among those used in the tutorial exercise.

Exercise Two - Students were handed a collection of 'celebrity' profiles constructed from an online encyclopaedia (see Table 1). Students were divided into two teams and instructed to construct abstracts of the celebrities based on the information provided. The abstract were no more than three words and contain no proper nouns. After ten minutes for the exercise, students read out their profiles and the opposing group had to guess the name of the celebrity. This exercise illustrates the difficulty of writing abstracts and conveying lots of information in a concise way.

<p>a) JLS Hulk Hogan Jane Fonda Audrey Hepburn Tiger Woods JK Rowling Po (Tellytubby) Ne-Yo Harrison Ford Willy Wonka Elijah Wood Sir Elton John HRH Elizabeth</p>	<p>b) "<i>Willy Wonka is a fictional character in the 1964 Roald Dahl novel <i>Charlie and the Chocolate Factory</i> and the film adaptations that followed. The book and the 1971 film adaption both vividly depict an eccentric Wonka — a feature arising from his creative genius. He annoys the other characters with his antics, though Charlie sees Wonka's behavior as a positive trait. In the 2005 film adaption, Willy Wonka's eccentricity is viewed more as a sympathetic character flaw. These aspects of Wonka's personality are explained in Burton's version by a strained, conflicted relationship with his father,</i></p>
<p>II Albert Einstein Sophia Loren John Terry</p>	

Lady Gaga Gordon Brown Ricky Gervais Michael Jackson	<i>the dentist Wilbur Wonka"</i> c) "Golden, Ticket, Chocolate" "Sweets, Chocolate, Eccentric"
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Table 1: Exercise two in the LHC abstract tutorial a) list of celebrity profiles selected for the exercise b) an example celebrity profile (Wikipedia. 2011) c) two example abstracts designed by student groups to represent the profile shown in b).

Exercise Three - Students were handed the real abstract from the research paper used in the formative exercise. The tutor then led a discussion of the abstract's construction, its merits, and its flaws, highlighting common mistakes made by students in the formative work. The session was concluded by a discussion on the common elements of abstracts (adapted from Cargill and O'Connor, 2009) and the return of the formative assignment to the students with personal written feedback and an indicative grade.

Summative Assignment - One week after the tutorial, students wrote an abstract for a different discipline-specific article, from which the abstract was removed, under examination conditions. The article was unseen until the day of the exercise. Students had a maximum of two hours to complete the exercise.

Results

The students who attended the LHC tutorial improved their abstract writing skills as seen by the grade change between the formative and summative assignment (Figure 2). The mean grade for students in the LHC tutorial, B grade (n=24) is comparable to the class average for the exercise (B- grade). A comparison between the LHC tutorial (mean grade step change +3.2) and a more traditional tutorial delivery (mean grade step change +2) shows that LHC students have a slightly greater numerical grade improvement (non-statistically significant, (p=0.1198) between the formative and summative assignments. Grades were compared between the two tutorial tutors who marked the abstracts in this exercise, and no significant difference between the groups was found (p= 0.1059).

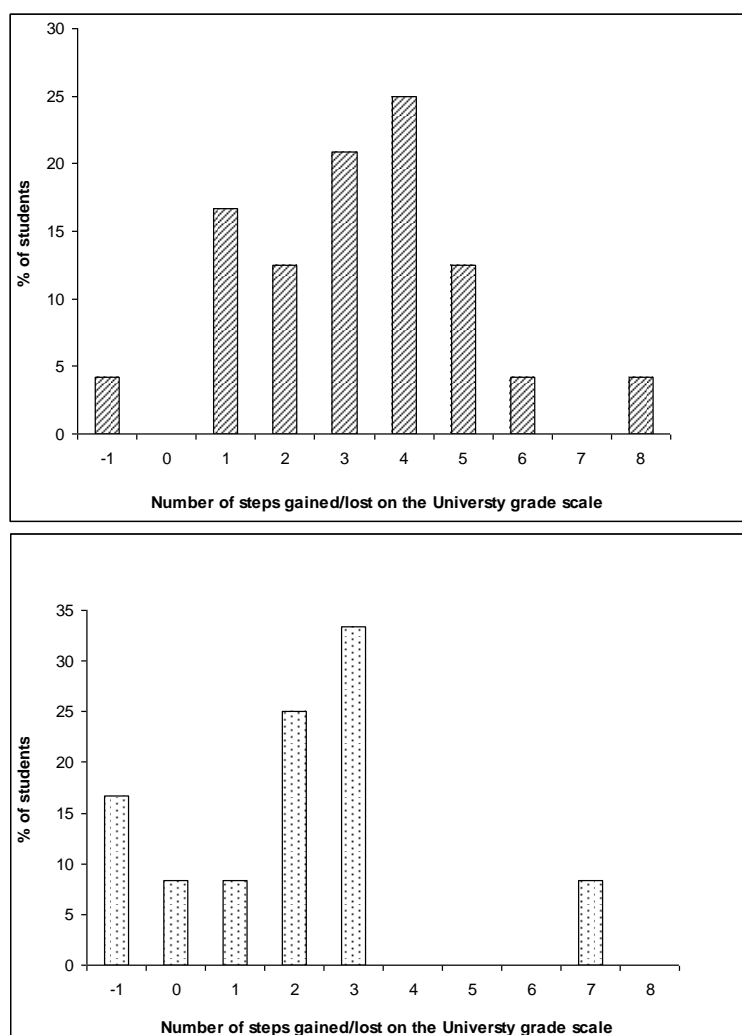


Figure 2: The difference in grades between the formative and summative assignment in the a) Lonely Heart Column tutorial (n=24) b) traditional tutorial (n=12). X axis is the number of steps +/- on the University grade scale.

Students who took part in the LHC tutorial found the session entertaining 'please rate your enjoyment of this tutorial on a scale of one to five' with 95% of students rating the session as either four or five out of five (with five rated as 'very good' and one rated as 'not at all') on the evaluation questionnaire. As well as being entertaining, all students reported that they found the tutorial helpful in abstract writing (100%). In addition 68% of students thought the tutorial helped to improve their speaking in front of others and 63% their creative thinking (Figure 3).

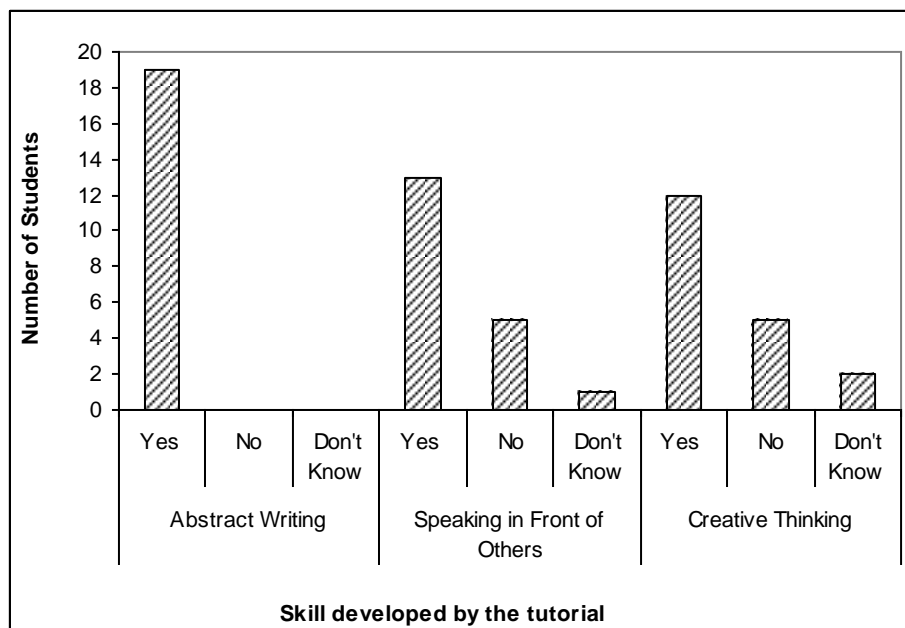


Figure 3: Student perceptions on the skills that were developed by the LHC tutorial

Students were invited on the questionnaire to leave any comments about the sessions. From the comments left (n=10) students found the session both entertaining and enjoyable (Table 2). One student described how the informal nature of the tutorial aided their learning. Some students found the LHC link to explain abstracts useful as a way of relating a scientific concept to something they come across in everyday life. Students also found the tutorial useful for developing other skills such as team work and thought processing.

- "It was really helpful and enjoyable"
- "Enjoy informality of tutorial and everyone participating in the tutorial"
- "Thought it was funny and because of this it was interesting and memorable"
- "Good method of relating abstract writing to real life"
- "It provided a point which I would not have considered"
- "...Worked really well and highlighted some new areas of thought processing - a definite benefit. Thanks"
- "Very fun and encouraged team work. Really helped with learning how to condense info into short sentences"

Table 2: Students responses in the open comments section of the evaluation questionnaire

Discussion

Abstract Writing - The LHC tutorial has aided students in their ability to write a scientific abstract. The grades students received for the summative abstract writing exercise have increased (on average) by three grades from the formative exercise prior to the tutorial (Figure 2). This rise is to be expected however, by submitting formative work students performance should improve irrespective of the tutorial mechanism.

It was important to the authors to show that by adopting this new tutorial approach there was no 'negative effects' on the students' performance in the summative assignment compared to their peers. Comparison of the LHC tutorial with a traditional tutorial shows that both approaches do increase the students abstract grade, and there is no statistical difference between the two methods of tutorial delivery. Viewing the students performance individually rather than as a group shows that some students dramatically improved their performance after the LHC tutorial.

A higher proportion of the students in the LHC tutorial (45%) raised their grade by more than four steps compared to the traditional tutorial (8%). One explanation for this rise could be that multiple individual learning styles are incorporated in the LHC tutorial. The tutorial helps students learn by incorporating elements of visual (biographies, LHC), auditory (verbal feedback and tutor explanations) and kinaesthetic (creative abstract writing) learning.

It could be argued that the LHC tutorials are more akin to a précis than a scientific abstract. Although the two are not analogous the skills necessary in reading and condensing the important elements of a large body of knowledge are comparable. This is reinforced by the student performance in the summative exercise.

Additional benefits – Students themselves highlighted several additional benefits such as the development of creative processes and thinking, and communication skills in adopting this tutorial approach (Figure 3). It is likely that some students in a more traditional tutorial would also rate these skills as have been being developed. These two skills were suggested as options on the student self-evaluation questionnaire which may have led to some bias (based on the skills the tutors thought should be improved). There could be other skills that have improved which were not captured in this feedback mechanism. It is also the opinion of the authors that this tutorial with its real world links and higher level of entertainment was appreciated by the students and help foster good lecturer-student relations that lasted beyond the tutorial.

Entertainment – All the students who submitted questionnaires enjoyed the tutorial session. The tutors observed that LHC delivery leads to a good sense of camaraderie amongst the students. The enjoyment of this sessions does depend largely on the group dynamics and the tutors involved (having run this for two consecutive years) have had slightly varied experiences in engaging the class. Students seem to appreciate the association of a critical but 'dry' scientific technique to everyday life situations (such as the lonely heart columns and celebrity profiles). The element of humour and the relaxed attitude to this tutorial were key to its successful implementation.

The writing of scientific abstracts is a skill that improves with practice; it is the opinions of the authors that the enjoyment of this tutorial increased the amount of times students attempted to abstract information both in the tutorial and between the tutorial and the summative assessment. An interesting tutor observation from the 'rough' notes section in the summative abstract writing exercise shows how one student used the LHC to frame their abstract "remember, can I tell who this paper is and what he did ... from my abstract".

Summary – The LHC tutorial is a novel and fun way to teach abstract writing skills. Students enjoyed the session and improved their abstract writing skills to the same extent as students in traditional tutorials.

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