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Contents

VotApedia for Student Engagement in Academic Integrity Education

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Abstract

VotApedia is a form of student response system (SRS) with features which make it highly applicable to the modern classroom. Instead of using 'clickers', *VotApedia* allows educators to pose multiple-choice questions (MCQs) via a website which students then respond to using their mobile phone. While SRSs have been used in a variety of disciplines so far (mostly natural and health sciences), their potential for student development activities such as academic skills is, as yet, untapped. In particular, academic integrity education is a low-assessment but high-stakes context which lends itself to information-transmission models focused on the definitions of and punishments for plagiarism, and conveying strategies for avoiding plagiarism or achieving academic writing. Therefore, *VotApedia* aims to increase student engagement in academic integrity learning and specifically allow for the correction of misconceptions. This article reports on the implementation of *VotApedia* in a lecture for international students entitled 'Plagiarism and Referencing'. The main finding is a positive observed effect on student engagement and specifically the potential for correcting misconceptions. Student responses to questions posed via *VotApedia* revealed misunderstandings of issues around plagiarism and referencing, especially regarding interpretation of *Turnitin* reports, and allowed for correction through discussion of these issues. Fifteen student reflections in the form of blogs also indicate high engagement, a high level of appreciation for the use of the technology and unexpected metacognitive activity among students. Strengths and weaknesses of *VotApedia* are discussed, as well as possibilities for future research.

Introduction: Student Response Systems and *VotApedia*

Student response systems (SRSs), sometimes known as audience response systems, are part of a widespread increase in the use of technology in educational contexts, such as the varied use of mobile phones in libraries (Walsh 2009). They are also part of a shift towards more interactive assessment in an electronic learning environment (Crisp 2009). SRSs involve handheld electronic devices (sometimes called 'clickers' or even 'zappers') linked to a management system allowing students to respond to multiple-choice questions posed by the lecturer. Such systems are claimed to be effective in an environment where large-group teaching is efficient and cost-effective, even though 'large enrolment courses in higher education are the bane of active learning pedagogy' (Trees & Jackson 2007: 21). As a response to this situation, SRSs certainly seem effective: the most commonly reported benefits are more interactivity and engagement in class, with higher student satisfaction in courses that employ SRSs (Fies & Marshall 2006). A more theoretically-informed approach sees SRSs as promoting a conversational or dialogic model of learning which challenges the didactic mindset of both teachers and learners, enabling teaching which is more thoroughly informed by formative, in-class assessment (Cutts et al. 2004).

However, empirical studies of the effectiveness of SRSs have produced mixed results. While students often report high satisfaction and enjoyment with using the technology (Wit 2003), there is also the potential for massive technical difficulties to get in the way of implementation and learning (Barnett 2006). Indeed, the application of SRSs has the potential to polarise opinion among both staff and students (d'Inverno, David & White 2003). Some students in particular may resist the adoption of active learning techniques (Trees & Jackson 2007). Palmer et al. (2005) and Duggan, Palmer and Devitt (2007) had contrasting findings among similar student groups in the same discipline at the same university: overall, the benefits of using clickers were modest and debatable given decreases in note-taking and interaction with the teacher. Morling et al. report a small but positive increase in exam results for psychology students in the 'clicker' classroom, but conclude that 'clickers are not, by themselves, sufficient to increase subjective reports of engagement' (2008: 49).

Clearly, student response systems are not a panacea which will solve all the problems of passive learning in large teaching situations. Proponents of such technologies need to remain circumspect and aware of the reservations of colleagues who are concerned at the reduction of content in curricula (Duggan, Palmer & Devitt 2007; d'Inverno, Davis & White 2003). One point that does seem to have broad agreement is that SRSs cannot be used in isolation: they must be combined with other pedagogical tools (Morling et al. 2008) and assessment practices (Crisp 2009). Put another way, simple technologies can be deployed to support rich social practices, and educators must keep in mind the two types of participation through informatics and social networks that such technologies enable (Roschelle 2003). Overall, SRSs must be deployed with due consideration to the context of learning and the needs of students and the relevant content.

Such considerations are no less applicable to more specific forms of SRSs, such as *VotApedia*. Using *VotApedia* overcomes many of the technical and practical constraints of other SRSs, as students can use their own mobile phones (free of charge) to respond to questions, and there is no need to set up specific hardware or software (Maier 2009). Lecturers can visit the *VotApedia* website (www.urvoting.com), register and produce a simple survey or more complex questionnaire which can then be activated for students to respond to in a live lecture. Students' responses can be hidden until the survey is complete, or they can be updated as students vote for a certain choice. *VotApedia* is, therefore, accessible, simple, and easy to use for both lecturers and students, and the dangers of technical problems are minimised. An example of how *VotApedia* can be used to pose questions to students can be seen in Figure 1.

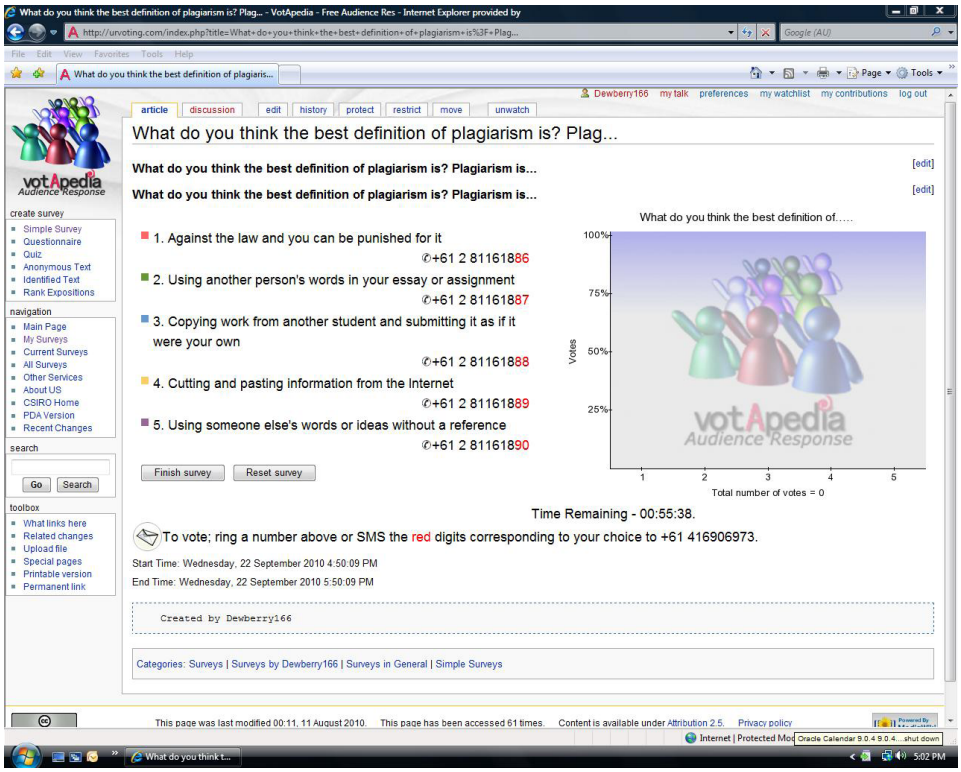

Figure 1: Example of VotApedia question

SRSs seem to have been used mostly in the natural and health sciences, although there are also examples of implementation in psychology, economics, engineering and education. So far, however, there are little to no examples of SRSs used in student development activities such as academic skills seminars. However, there is great potential for the use of *VotApedia* in such contexts, particular in the area of academic integrity education.

This article presents preliminary findings of an implementation of *VotApedia* in a 'Plagiarism and Referencing' lecture delivered to approximately 200 international students at the University of Adelaide. These students were studying in the Pre-Enrolment Program (PEP), a direct-entry program which develops the language and academic skills to succeed at university. Therefore, these students were experiencing major transitions on academic, cultural and social levels. In particular, 'the nature of the issues faced by international students in entering an Australian university degree is a cultural and linguistic one' (McGowan 2005: 7), which sometimes manifests in cases of plagiarism or other breaches of academic integrity. However, addressing these issues is not as simple as instructing students to 'use their own words' (McGowan 2005); rather, it involves a much more substantial effort to 'see student writing as being concerned with the processes of meaning-making and contestation around meaning rather than as skills or deficits' (Lea & Street 1998: 159). In this context, a 'chalk and talk' attitude is particularly unhelpful.

As such, academic integrity education poses particular challenges from a pedagogical standpoint. To begin with it is relatively content-free, meaning that it is difficult to discuss the issues without reference to specific examples or disciplinary content, since the students

have a variety of disciplinary destinations. Issues surrounding plagiarism are usually not explicitly addressed within assessment or course design, although it is a very high-stakes context. Furthermore, the 'content', such as it is, lends itself heavily to a 'transmission' style of instruction. Lecturers can very easily fall into the trap of providing a definition of plagiarism followed by examples of referencing to be used to avoid it. Activities and interaction are difficult to build into lectures, especially with large classes. An alternative is to approach the topic with a view to opening discussion about it, to see it as more of a 'discursive and contentious' subject than many others which have implemented student response systems (Elliot 2003: 83). Therefore, *VotApedia* was used to raise some main issues related to academic integrity and encourage students to think through these issues and discuss them with each other and the lecturer.

Implementation

VotApedia was used in the lecture 'Plagiarism and Referencing' delivered on the 25th of May, 2010. Seven questions were posed to the 200 students, and the most successful questions garnered 122 and 135 responses, which is a blunt but encouraging measure of student engagement. Students were not given a set time within which to respond; rather, the mood and dynamic of the lecture was observed and students were advised when the voting was about to close, which was usually when around 100 or more votes were counted. Not all questions are reported here due to low response rates or the lack of useful findings, and students' responses are approximations since *VotApedia* only reports responses as percentages on a histogram.

Definition of Plagiarism

The first question posed through *VotApedia* was, 'What do you think the best definition of plagiarism is? Plagiarism is…' The responses (N=87) were as follows:

1. Against the law and you can be punished for it: 9%
2. Using another person's words or essays in your assignment: 5%
3. Copying work from another student and submitting it as if it were your own: 3%
4. Cutting and pasting information from the Internet: 7%
5. Using someone else's words or ideas without a reference: 76%

This question was designed to open the lecture in a fairly generic way, with a topic that was highly relevant yet would open enough space for discussion. It was introduced with a focus on the 'best definition', indicating that others could also be correct. However, it was perhaps slightly too sudden to introduce such a complex question, as students were slow to respond and under half of the students responded in the time allotted. The slow response may also be due to the lack of familiarity with *VotApedia* in combination with the complexity of the question. It may be worth beginning with a more lighthearted question, as recommended by Maier (2009). Nonetheless, students took to the use of technology very quickly, taking up the offer of discussing in pairs or small groups and using their phones to respond to the question. This provided the opportunity for immediately identifying and addressing misconceptions. Clearly, nearly 10% of students have been heavily influenced by the fiercely punitive discourse surrounding plagiarism, and this was a good opportunity to emphasise that while plagiarism is a serious issue, it is only defined as a criminal act in the most extreme of circumstances. This then opened the space for students and lecturer to discuss the various other definitions of plagiarism before confirming that most people had the correct answer.

'What Plagiarism Looks Like'

The second question used an Internet resource (*What Plagiarism Looks Like*) as a 'trigger' for learning in an informal problem-based learning situation. Students were shown the poster (see Figure 2) and asked: 'Look at the 'Plagiarism' poster: Is this Plagiarism?'

Figure 2: What Plagiarism Looks Like
(Source: http://boingboing.net/2009/06/01/what-plagiarism-look.html)

The responses (N=109) were as follows:

1. Yes: 40%
2. No: 15%
3. Maybe: 45%

This question was distinctly more challenging than the last one, because there was clearly no 'correct' answer, and this is how it was presented to the students. It enabled an open discussion about the definition of plagiarism discussed previously and whether or not it applied in this case. Already the students' learning was being scaffolded beyond 'remembering' and 'understanding' to the higher-order cognitive activities of Bloom's taxonomy: in this case, application of theory to practice. This was important in order to explore the fact that issues surrounding academic integrity are always contextually bound and somewhat open to interpretation.

Similarity Report

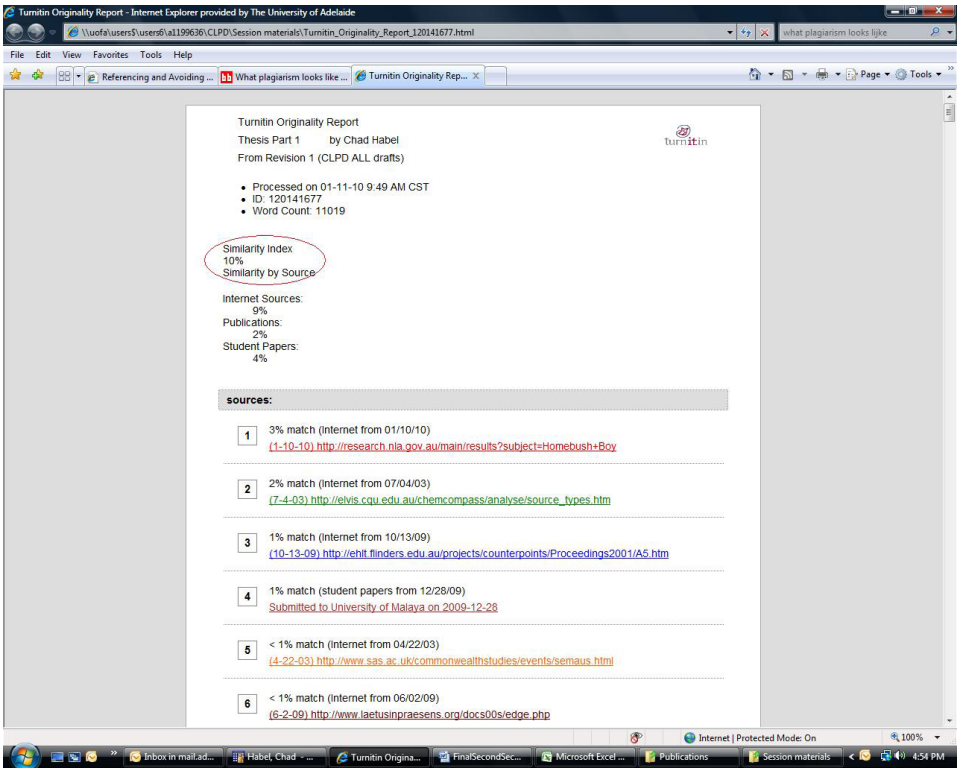

Figure 3: Sample Turnitin Similarity Report

The next question followed a similar loose problem-based learning technique, presenting a typical similarity report from *Turnitin* (see Figure 3) and asking, 'Look at the Originality Report from *Turnitin*, and notice the 'Similarity Index' which is a percentage of text matched. What percentage of matched text is acceptable for an assignment for it to avoid plagiarism?'

The responses (N= 122) were as follows:

1. None at all: 1%
2. Under 5%: 3%
3. 5-15%: 41%
4. 15-25%: 26%
5. 25-50%: 12%
6. None of the above: 17%

This question took the conceptual complexity of the lecture several steps further, by raising the issue of text-matching software and the limits of acceptable matching of text, which is an area of the most widespread misconceptions in all of academic integrity education. Before proceeding with the question it was necessary to ascertain that students were familiar with software such as *Turnitin* and with the notion of 'text-matching' as performed by this software. The vast majority indicated that they had no problem with the concepts and were prepared to move on.

This led to a very enlightening example of misconceptions being spread within student circles. Earlier in the lecture one student had actually defined plagiarism in direct connection with '10% of text matched', and I was able to evade this and suggest that this definition would be open for discussion later. It is therefore possible that the 41% of students who believed that 5%-15% of text matched was acceptable had been influenced by his comment and his air of confidence. Alternatively it may simply be that this range seems quite within the bounds of reason and most students calculated this to be acceptable.

In fact, the correct answer was '6. None of the above', which only 17% of students selected. When asked to explain why they made their choice, some students articulated the case more clearly than any lecturer could have: that the 'text matched' was less relevant than the citation conventions used within the document, and that it was therefore impossible to identify any boundary for acceptable text matching. This enabled the lecture theatre to become a place of genuine peer instruction, where students corrected each others' misconceptions rather than having them corrected by an 'authority figure'. Nonetheless, it was useful to openly and fully support these students' comments, but this was an activity that was broadly interactive rather than instructional. This part of the lecture perhaps best exemplifies the potential for *VotApedia* to encourage interaction, engagement and activity among students who are otherwise reticent to be involved.

VotApedia ***usefulness***

The next question was, 'How useful have you found learning by voting and discussion in comparison to listening to a traditional lecture?' The responses (N=135) were as follows:

1. Very useful: I have learnt much more about plagiarism and referencing than I would have listening to a traditional lecture: 68%
2. Partly useful: Voting and discussion should be used in conjunction with a lecture which provides information: 32%
3. Not useful at all: I would much prefer listening to a lecture which delivers a lot of information: 0%

This question was designed to evaluate the perceived effectiveness of *VotApedia*. Firstly it had the highest response rate of any of the questions (135), indicating that students felt strongly about voicing their opinions on the effectiveness of the format. The result was quite gratifying, with over two thirds of respondents finding it 'very useful', and zero saying it was 'not useful at all'. The third who would have preferred some traditional lecture format are a significant cohort, and their concerns were also raised in the student reflections of the lecture. This suggests a limitation to the use of the technology that cannot be ignored.

Student Reflections

After the lecture, students wrote blog entries as part of their regular course activity, and fifteen students chose to write a reflection on the perceived usefulness of *VotApedia* in this lecture. Analysis of the blog entries indicated some common features which were probably central to the teaching of academic writing in the course. For instance, nine of the fifteen students made some attempt to address both the positives and negatives of the format—several of these attempts were somewhat contrived, which suggests that this is a writing technique which has been taught in the course. There was also the explicit use of mini-essay structure and transitional phrases which are a hallmark of academic writing training. However, many of the entries were very insightful, and a thematic analysis demonstrates some common patterns and remarkable divergences: these reflections, although not generalisable, are far more valuable than a single lecturer's reflections.

The single most common trend was for students to identify the positive engagement engendered by the use of *VotApedia*: twelve students commented explicitly on this. In the words of student 1, 'Honestly, students usually feel bored or sleepy during the lecture, because lack enjoyment at most of time. Students may pay more attention for the interaction between educators and them. Further, they can understand the topic more clearly and deeply.' Two other students highlighted that it encourages 'shy students who feel embarrassed to raise their hands' (Student 13): this is direct example of overcoming the 'Identified Responder' impediment discussed by Cutts et al. (2004). More generally, comments focused around improved concentration and enjoyment in the lecture.

Despite the trend towards balancing the positives and negatives of the format, four students identified the use of *VotApedia* as an unmitigated good, with only the barest acknowledgement of any disadvantages. One student went far enough as to rebut the notion that *VotApedia* could cause distractions from the true focus of the lecture. One the other hand, two blog authors were concerned that students may be distracted by their mobile phones, and five others suggested that the very process of voting and introducing a new lecturing format could distract from the important content under consideration. This echoes the concerns of educators at the lack of content focus in the SRS classroom (Duggan, Palmer & Devitt 2007; d'Inverno, Davis & White 2003). One student was quite strident in opposing the technology, suggesting that it trivialised what should be treated as a very important area:

> First of all, the plagiarism is serious issue and it maybe destroys the future of student who found guilty in plagiarism in case separation from the university. In addition, the commission which appoint to investigation may decide to fine student who was guilty. It is therefore, plagiarism has a significant influence on student life. The lecturer focused on the types of plagiarism. However, the lecturer did not present plagiarism as serious issue and did not focus on the punishments which are very important to know about. (Student 5).

This is a serious criticism which must be considered carefully. It must be acknowledged that this was more of a comment on the content of the lecture (especially the lack of addressing punishments) rather than the use of *VotApedia* itself. However, the message is difficult to separate from the medium, and in the overall blog entry this student clearly connected the lack of important content with the distracting effect of having voting during the lecture rather than at the end.

Despite the fact that it actually reflects one of the misconceptions that the lecture was designed to dispel (regarding the overly punitive nature of plagiarism policies), the students' perception of being shortchanged in the learning experience is real and problematic. Four students discussed the general positive aspects of traditional learning. The particularly positive aspect of this traditional learning was reflected by two students, who indicated that they felt the need to take notes to have a genuinely useful learning experience. Note-taking is one of the key academic skills taught to students in transition to Australian university study, and they may have felt that the lack of clear 'main points' which could be transcribed meant that their opportunities for learning were decreased. Two students indicated specifically that *VotApedia* should be integrated with a more traditional lecture format, which reinforces responses to the evaluative question on using *VotApedia*. To be fair, this probably reflects their training in preparation for university study, as well as most of the learning environments they could expect to encounter.

Some consideration of the 'pure' *VotApedia* format versus the 'pure' *PowerPoint* format is worthwhile. Admittedly, this lecture attempted a quite radical departure from the traditional *PowerPoint* delivery mode for the purpose of the exercise, and this may well establish a false dilemma. It is quite possible that some students may have difficulty taking down notes from a more informal discussion, and that *PowerPoint* gives them visual markers in their assimilation of material, as well as a useful record of the presentation for review purposes. Hybrid models using both *PowerPoint* and *VotApedia* should certainly be explored, and one possibility may be to use *PowerPoint* as a method of recording the main points of discussion among the larger group.

Aside from these negative points, students were generally very positive about the use of *VotApedia*, and there were some surprisingly insightful comments regarding its relevance to their learning and even their metalearning. Student 2 commented, 'Because most of PEP students' age are from 20-25 years old, these students live in the technology period, most of the times they communicate with mobile phones and computers, the traditional teaching style is boring for them.' This suggests that *VotApedia* is ideal for the incoming generation of 'Digital Natives', as Prensky (2001) describes them. Even more significantly, four students suggested that using *VotApedia* had enabled metacognition beyond simple engagement or concentration, in the form of critical or independent thinking (Barnett 2006). One student even identified the potential for the application of *VotApedia* to both individual and collaborative learning, as also discussed by Fies and Marshall (2006).

Ultimately, the results of student reflection on the use of *VotApedia* are mixed but generally positive, echoing the literature around SRSs more generally. Ultimately, these results suggest that *VotApedia* should be continued in this type of academic integrity education, but it should be combined with *PowerPoint* and a slightly more traditional instructional model which does ample justice to the seriousness of the content and allows students the opportunity to take notes for revision and future engagement with the material.

VotApedia Evaluation

From a lecturer's perspective, *VotApedia* provides an excellent opportunity to engage students in a lecture using technology which is cheap, accessible and relatively easy to use. Admittedly, the issue of the cost of such technology can be a fiercely contested topic (sciencegeekgirl 2009), but clearly for individual academics looking to employ such technologies, even a cost of $20-$40 is prohibitive. Aside from cost, the accessibility of the technology for both teachers and students is very important. For instance, it does not require 'clickers' (an unfamiliar and extra piece of technology), nor a receiver, nor the technical knowledge required to embed a system such as *Respondus* within *PowerPoint* or a learning management system such as *Blackboard*.

In particular, *VotApedia* was very useful in identifying and quantifying misconceptions, allowing 'an increased understanding of the precise places where students were failing to understand' (d'Inverno, Davis & White 2003: 167). This immediate formative feedback vastly improves the effectiveness of the lecture. However, it must be said that the lecturer needs to see the value in the technology and be prepared to invest the time and effort in such active learning pedagogies, otherwise the lack of such 'buy-in' can be problematic (Duggan, Palmer & Devitt 2007). Top-down implementation approaches are unlikely to work.

Despite these advantages, *VotApedia* also has some problems, as identified by students in this study as well as Maier (2009). As Maier points out, the anonymity of the technology means it can only be used for formative purposes; only multiple choice questions are possible;

internet access for lecturers and mobile phones for students are essential, and there is no functionality to use *VotApedia* from within *PowerPoint* (2009: 46). Before deciding on whether to implement the technology it may be worth developing a framework of advantages and disadvantages as Barnett does with SRSs more generally (2006). Another disadvantage is that student responses are only given as percentages and so precise quantification for the purposes of research is impossible. Reliable internet access can also be a problem, as experienced when a second *VotApedia* lecture was attempted but aborted due to a network malfunction on the 25th May, 2010.

Future Research

Since this action research project is only a pilot study, it is necessary to propose directions for future research which may more rigorously evaluate the effectiveness of *VotApedia*. In particular, there is a clear need for empirical research which goes beyond the enthusiasm of pundits and the scepticism of detractors, as recommended by Fies and Marshall (2006). The results here suggest that a focus on engagement and the exploration of content knowledge and misconceptions would be relevant. In particular, research should explore the effectiveness of combining *VotApedia* with other, established pedagogical tools (Morling et al. 2008), especially potential interactions between individual and group applications (Fies & Marshall 2006). In any case, *VotApedia* is clearly a useful tool for academic integrity education as long as it is integrated with some more traditional instructional methodologies, such as *PowerPoint* or some other delivery method which supports note-taking. It should also be implemented with substantial forethought regarding common misconceptions and the best way to explore them through complex multiple choice questions, as well as being guided by a rigorous and empirical research orientation.

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