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Video-based instruction – using 1:1 devices

By [Jodie Torrington](#) - Year 3 teacher and Stage 2 coordinator at Broughton Anglican College in Menangle Park.

Teaching in today's mainstream classroom is a challenging task considering the myriad of academic and behavioural challenges that are present. Teachers are expected to successfully grow and nurture each student, which can seem like an impossible expectation when faced with a large class filled with varying needs and limited teacher-aide support.

When a 1:1 iPad program was introduced in my Year 3 class in 2016, I was inspired by the Masters study I was undertaking to fully utilise this ICT tool in the classroom. I had a very challenging class of 30 with an extreme range of both learning and behavioural needs, and I needed to find a way to engage every student effectively.

After much experimentation, I believe I have developed a successful, effective method to differentiate in a mainstream classroom, using the iPad as a tool to facilitate the delivery of specifically made instructional videos for both individuals and groups. Using the iPad in this way excites and engages students and has meant that all students are catered for in my classroom and are able to learn successfully.



What is video-based instruction?

Video-based instruction, in the context I use in my classroom, refers to the creation of videos that a teacher makes outside of class contact hours that specifically teach a concept or content. It differs from flipped or blended learning in that the video is viewed in the classroom during the lesson time, rather than at home. This means that the teacher is in control of the exact content to be presented in the videos, and different videos can be made at various levels, catering precisely to student needs. It also changes the teacher's role to that of facilitator or coach, able to roam around the classroom overseeing the various videos being used as students complete their work. Over the past 18 months, students have responded positively to the fact that it is my voice they hear on the videos and this promotes continuity moving from a traditional lesson to an ICT facilitated one. I can keep videos personal and relevant to my learners, including jokes or anecdotes, in the style that my students are accustomed to.

What does the research say about video-based learning?

There is limited research on using video-based instruction (VBI) to teach content in the regular classroom, however general advantages of VBI such as an individual learning focus, the ability for students to work at their own pace, increased engagement, more focused behaviour of students and the ease of creating videos using mobile technologies, have been identified. (Friel, 2000; Kuiper et. al, 2015; Pei-Lin, 2014; Plavnick et. al, 2013). Using VBI as a pedagogical approach can have limitations in terms of the ICT accessibility, competence and time required by teachers to successfully record, edit and upload videos for students. It is also a one-sided communication method, which could be potentially limiting if used as the sole method to teach a KLA such as Mathematics (Goos, 2013; Kellinger, 2012; Pei-Lin, 2014). Recent research in mathematical pedagogy however, advocates using technology in an integrated manner, including as a teaching method to impart content (Atweh & Goos, 2011; Goos, 2013).

Teacher-made or custom-made videos allow specifically chosen content to be presented to individuals or groups of students as needed, they also ensure the teacher is both planning and delivering appropriate content for the range of needs found in a classroom. This pedagogical method fits suitably within the broad NSW syllabus requirements that 'teachers require flexibility to develop programs, structures and pedagogical practices that meet the educational needs of their students.' ("NSW Syllabus: Differentiated programming", 2016). NSW teachers are therefore able to justify the use of 1:1 devices to cater for the diverse needs in a classroom and develop pedagogy that enables this, including VBI. Rayner, Denholm and Sigafoos (2009) found that

Implementing video-based instruction offers many advantages, such as increased student independence and decreased reliance on adult assistance, consistent instruction for students, and minimal training for adults who assist with video-based instruction.

Although Rayner et. al were advocating the use of VBI for autistic students, the notions of increased self-management as well as consistent instruction can be equally applied in the regular classroom, especially in mathematics. Students of all abilities can be presented with appropriate content to view and practice, accessed through their 1:1 device. In an integrated classroom, particularly with often limited additional human resources (Plavnick et. al, 2013), utilising VBI to provide differentiated content for mathematics ensures the range of learning abilities within the classroom is accommodated in an efficient and effective way.

Using video-based instruction allows students to have autonomy over their learning as they are able to pause, re-watch or review until mastery of the content is achieved. Kuiper, Carver, Posner and Everson (2015) identified that this approach means that students 'can dramatically impact the pace of the course' (p256) as it enables learners to proceed at their own rate. This has enormous implications for special needs students, who can view the video as many times as needed to ensure success (Plavnick, Sam, Hume, Odom; 2013). Conversely, gifted students are not restricted as to the pace of their learning.

In his study about videoing university lectures, Chandra (2007) expressed the benefits of students being able to review recorded presentations. He acknowledged factors such as tiredness of students and students needing more time to revisit complicated concepts, which justified the use of VBI and concluded 'We believe that the effort (of recording lectures) is well worth our time.' p280

Odhabi and Nicks-McCaleb (2009) drew the same positive conclusion in their similar study, especially regarding self-paced learning due to VBI.

... allows students to replay the video as many times as they need in order to understand its contents. (p 328)

In a primary school classroom, self-paced learning using VBI encourages independence and the ability to take the time needed for mastery of the content presented.

VBI has been a common pedagogical method used in special education to deliver instruction (Pei-Lin et. al, 2014). Plavnick et. al (2013) states that students with Autism Spectrum Disorder (ASD) are more likely to be engaged by the use of modern technology and therefore more likely to achieve success through VBI now that videos can be watched on mobile devices, rather than through traditional video cassette recorders (VCRs). They specifically identified a major benefit of VBI, through the use of a 1:1 device, as 'removing excess stimuli' for an ASD student, enabling them to remain focused on the video and not distracted by anyone or anything else. Their study documented significant improvements achieved in the acquisition of skills presented through their videos by ASD students.

See the video on [Differentiating Maths](#)  by Jodie Torrington (1 min 54 secs) from [Alinda Sheerman](#) .

How difficult is it to make your own instructional videos?

The improvement in technologies, both in program usability and affordances of devices, is making video recording, editing and sharing easier than ever before. Numerous technologies enable video making and there are many ways of sharing the video for students to use.

Video technology is increasingly available, and most computers now come with simple editing software. Flip cameras, cameras in laptops, family videos cameras, and cell phones can all be used to create digital files, which can be converted to a common file type and shared. A number of online video depositories now enable commenting on video. (Heintz et. al, 2010)

Pei-Lin et. al (2014) highlights that devices such as the iPad serve as an 'all-in-one' ICT that teachers can use to film, edit and watch videos, keeping the process simple and achievable. Odhabi et. al (2009) confirm the relative ease of video making and emphasize that the accessibility of quality internet has also contributed to the development of VBI as a viable pedagogical method. As outlined by the government Digital Education Revolution policy (2008), all Australian schools are entitled to quality Internet access, therefore having the ability to upload, share and view videos on multiple devices meets this requirement. In 2016, video making and sharing is not an overly complicated process.

How do you use video-based instruction in your classroom?

I use the interactive whiteboard app 'ShowMe' ([iOS device](#)) to make videos to teach number concepts each week, as part of the mathematics program. Generally, I make three videos for each lesson – core, extension and remediation, covering the concept to be explored. I upload the videos to my class [Edmodo](#) platform, into specific group folders. The students are then able to access the video relevant for them. The videos are one component of my mathematics program; hands-on experiences and oral discussions of mathematical concepts in class and group situations are also daily features.

After noting the success of this instructional approach, I also make videos for differentiated group activities, such as English 'Goal Time' where students are working towards improving specific skills such as handwriting, spelling, editing or creative writing techniques.

What has been the impact in the classroom since incorporating video-based instruction?

Interestingly, I have witnessed the advantages outlined in the above research. Students are excited and engaged to use the iPad and headphones and are always keen to log on to the video to start their work. I was impressed by this last year, after being exhausted by the constant unruly behaviour exhibited by numerous students. They were so engaged by the ICT device, they actually completed work with no disruption to the remainder of the class. All students were focused on the video, and I could easily see where each student was up to. Additionally, the room was silent during this time, which had been virtually impossible to achieve. This allowed the other students to complete their work without distraction, something all students commented appreciatively on when surveyed on the use of video-based instruction.

Another huge impact has been that there is no 'wait' time for various groups. Students know where and how to find their specific video and are able to start their work immediately, rather than wait for the teacher to give them instructions or clarifications about their task.

I feel that this pedagogy allows me to effectively 'split' myself, so that I am actually teaching 3 or 4 groups simultaneously. I see my extension students excited as they can move at a fast pace and be specifically guided at all times. The self-paced nature of the pedagogy ensures that all students can explore the content at their own rate, and have the control to re-watch or review when necessary to ensure mastery.

I have been mindful to create videos that require interaction from students, so that they are actively viewing the videos while completing tasks.

I have noticed a positive impact with outcome results in mathematics. I believe the increased focus due to the headphones has aided the academic results.


Another benefit of this pedagogy is that I am able to plan and deliver comprehensive lessons that are exempt from the inevitable interruptions experienced in a primary classroom. Regardless of announcements, messengers, behavioural incidents or illness, 'I' am not interrupted as the videos are already made.

The implementation of 1:1 devices in the classroom facilitates an innovative modification of traditional video learning. Research of teacher-created video-based learning in the regular classroom is limited, however special education studies show:


- that VBI reduces distractions for the student,
- engages them through the use of technology,
- allows mastery of skills through self-paced learning and
- is a simple, effective method of instruction.

The links to VBI in the mainstream classroom as a pedagogical method are common sense. Teacher-created videos ensures content is differentiated as needed, engaging for students both academically and behaviourally through the use of a 1:1 device and self-paced activities, offering students autonomy and self-control of learning. In the integrated, mixed-ability and behaviourally challenging classrooms of today, VBI offers an exciting pedagogical option for teaching and learning that encourages success for all students.


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Beyond the plebiscite – a legal studies update

By [Basil Capizzi](#) - Legal Studies teacher and Assistant Mathematics Coordinator at St Patrick's College, Strathfield.

Following the postal plebiscite result, parliament has implemented some dramatic legal changes, with implications for students of Legal Studies. To this end, this article summarises the recently enacted amendments to marriage contained in the Marriage Amendment (Definition and Religious Freedoms) Act 2017 (Cth) – hereafter the amending Act.

For HSC students investigating 'contemporary issues concerning family law', the inability to marry was an obvious and major difference in the legal recognition of same-sex and heterosexual relationships. Accordingly, the first part of this article details the nature of the legislative changes that will impact this family option. Additionally, discussion about the conflicting nature of rights highlighted by this amending Act, and the legal basis for the plebiscite, will extend the relevance of these amendments beyond the Year 12 course and into some of the fundamental concepts discussed in Year 11.

Impact on family law – 'recognition of same-sex relationships'

The most significant amendment obviously is the alteration of s 5 of the Marriage Act 1961 (Cth) – hereafter the Marriage Act – to replace the words 'a man and a woman' with '2 people'. This redefines marriage as 'a union of **2 people**, to the exclusion of all others, voluntarily entered into for life' (emphasis added). In terms of the Year 12 Legal Studies Family option, this has fundamentally altered the content of the statutory definition of marriage, and the parallels between the statutory definition and the common law origins taken from Lord Penzance's comment in *Hyde v Hyde and Woodmansee* (1866) have diminished.

The very title of the amending Act alludes to more wide ranging amendments. Significant concessions were included, providing clarification about the application of various religious rights and existing exemptions from some forms of anti-discrimination law afforded to religious organisations. Section 47 of the amending Act guarantees that ministers of religion may refuse to conduct a same-sex marriage on certain grounds. Moreover, and perhaps surprisingly, this exemption also applies to religious marriage celebrants (s 47A), and therefore allows the possibility

for current 'civil' marriage celebrants to refuse to conduct a same sex marriage on religious grounds. In the Revised Explanatory Memorandum (2017, p. 10), the point is made that ministers of religion already enjoyed the freedom to refuse to conduct (heterosexual) marriages on religious grounds. Furthermore, while it goes on to state that the Marriage Act does not require a marriage celebrant to celebrate any marriage, the potential controversy here is that it would appear an express right to refuse is a significant step beyond the status quo. Later consideration will be given to whether such a right might have possibly been extended from s 116 of the Constitution in any case.

A summary of the major amendments to the Marriage Act from Schedule 1 of the amending Act follows below.

- Section 2A: Inserts an objects clause into the Marriage Act reflecting the altered definition of marriage between 2 people, and protecting religious freedoms regarding marriage.
- Section 5(1): Replaces the words 'man and woman' with '2 people'. As a result, it permits same-sex marriage, as well as marriages involving a person, or people, of undefined gender.

Introduces the category of 'religious marriage celebrant' as distinct from a 'civil' or non-religious marriage celebrant – this distinction allows for an extension to the religious exemption previously only applicable to ministers of religion.

- Sections 39DA-DE: Clarify the definition of a 'religious marriage celebrant', and outline how this classification is conferred. The transitional provisions permit classification as a 'religious marriage celebrant' for:
 - ministers of religion from non-recognised denominations
 - ministers of religion of recognised denominations who wish to solemnise marriages outside the rituals and observances of their religion
 - existing 'civil' marriage celebrants, who wish to become 'religious marriage celebrants' on the basis of their religious beliefs.

Classification under the first 2 categories continues to be available to eligible individuals seeking to become 'religious marriage celebrants' after 9 December 2017.

- Section 47: Makes it clear that a minister of religion may refuse to solemnise a marriage or impose further conditions on the solemnisation than required in the Act (such as longer notice periods). Particular reasons for refusal include: not conforming to the beliefs of the religious body or organisation; avoiding injury to adherents of that religion; and the minister's personal religious beliefs. It should be noted that the reasons listed are expressly stated as not being intended to limit the grounds of refusal.
- Section 47A: Extends the ability to refuse to solemnise a marriage beyond a minister of religion to a 'religious marriage celebrant'. Hence, given the abovementioned amendments involving 'religious marriage celebrants', this exemption can apply to existing 'civil' marriage celebrants.
- Section 47B: This section allows any body established for religious purposes (as defined in the Sex Discrimination Act 1984 (Cth) – hereafter the Sex Discrimination Act) to refuse to provide goods, services or facilities for solemnising a marriage, if that refusal is in keeping with the beliefs of the religion or might injure the religious susceptibilities of adherents to that religion. Also included is any purpose reasonably incidental to that solemnisation. Again, the section does not seek to limit the grounds for such a refusal. Furthermore, the term 'reasonably incidental' is taken to mean intrinsic to, or directly associated with, the solemnisation of a

marriage. The Revised Explanatory Memorandum (2017, p. 12) clarifies that this exemption would be intended to extend to things like reception events.

- Section 81(2): Extends the same religious exemption to an authorised celebrant (including a chaplain or an officer authorised to solemnise marriages) when conducting marriages of members of the Australian Defence Force overseas.

One of the most immediate changes the amending Act has produced is to give legal recognition to same-sex marriages legitimately conducted outside Australia. Item 70(2) of the amending Act provides that marriages conducted in accordance with Part VA of the Marriage Act, prior to that part commencing, will be recognised as valid from the date of commencement (9 December 2017). Furthermore, item 71 of the amending Act provides legal recognition for situations where 2 people (marrying other than as a man and a woman) married in Australia in the presence of foreign diplomatic or consular officials from a country where such a marriage would have been legally recognised.

In schedules 1 and 2, additional amendments are made to the Sex Discrimination Act to prevent discrimination on the basis of gender in issues relating to marriage. Later schedules contain a number of [consequential amendments](#) to various Acts, including the Family Law Act 1975 (Cth). These are necessary to give effect to the Marriage Act changes, particularly where other legislation made specific gendered reference to the parties to a marriage.

Competing rights

There is debate in the second reading speeches regarding the fact that the amending Act evidenced significant compromise when compared to the aims of various interested parties. If we were to simplify for the purpose of discussion with students, we could point out that those groups not in favour of marriage reform were offered clear religious exemptions to performing same-sex marriages. Thus, while ultimately unsuccessful in their attempts to prevent this reform, some of the minority concerns were addressed in the legislation. Conversely, while those parties pushing for the reform were able to achieve their main goal, the amending Act does not confer an unfettered right to same-sex marriage in any chosen forum. It is open to suggest that the law is an example of utilitarianism – trying to best reflect the views of the majority (on the basis of the plebiscite) without, so far as possible, ignoring the minority.

The conflicting nature of rights is an area ripe for classroom debate. The individual right to marry has been widened, but guaranteed religious freedoms have also been expanded. The competing interests advanced by these amendments demonstrate the tension that can arise in society when rights conflict. It is a great reminder to our students that rights do not always sit side-by-side as some sort of shield or protection – which is sometimes how it appears when students discuss the Universal Declaration of Human Rights. At various times, rights clash, require compromise, are ignored, or coexist uncomfortably.

Teachers wishing to examine in detail the nature of the conflicting rights in the amending Act are advised to read the Statement of Compatibility with Human Rights in the [Revised Explanatory Memorandum](#). This component outlines the legislative view on how the legal changes comply with internationally recognised human rights documents, such as the International Covenant on Civil and Political Rights (ICCPR). In terms of balancing competing rights, the drafters of the amending Act feel it is ‘compatible with human rights because it advances the protection of human rights, particularly the rights to equality and non-discrimination, while protecting the right

to freedom of thought, conscience and religion or belief. To the extent that it may also limit these rights, those limitations are reasonable, necessary and proportionate' (Revised Explanatory Memorandum, 2017, p. 55).

What about existing domestic rights? Are the amendments (particularly s 47A) introducing novel rights? Or were these religious freedoms already open to argument on the basis of the Constitutional protection in s 116? This section states: 'The Commonwealth shall not make any law for establishing any religion, or for imposing any religious observance, **or for prohibiting the free exercise of any religion**, and no religious test shall be required as a qualification for any office or public trust under the Commonwealth' (emphasis added). An interesting legal question then arises as to whether the judicial interpretation of this section may include situations such as those contemplated in sections 47, 47A and 47B.

As it happens, s 116 of the Constitution has not been the subject of overly significant judicial examination. Recent commentators have suggested that while the text of the section might be interpreted widely so as to support a general right to the free practice of religion, the current interpretation really focuses more on what the Australian Government can't do in relation to religion ('The Commonwealth shall not...'). However, Beck (2016) suggests that the previous narrow approach to Constitutional interpretation is no longer the way in which s 116 might be interpreted; the more likely approach is to basically give the words their widest general meaning. Also, Babie (2016) argues judicial activism would be needed in a re-examination of the prevailing understanding of the section to provide this protection or rights, rather than the current situation where courts protect religious rights in less satisfactory ways without recourse to the Constitution.

Hence, it would appear that the Constitutional protection, based on current judicial interpretation, is not so strong, though there might be potential for this to change in the future. It could be opportune to convey to students that this particular Constitutional right, as currently understood, is not a general freedom of religion. Rather, it might be better characterised as a freedom from the imposition of religion by the Australian Government.

What then can we conclude in relation to the competition between the rights contained in the marriage amendments? The religious exemptions certainly constitute a slight strengthening of previously available rights and represent a minor compromise in relation to the newly-broadened right to marriage.

Legal standing of a plebiscite

An interesting question that could be posed to students studying the Constitution in the Year 11 course is where does the Australian Government obtain the legal authority to hold a plebiscite? Of course, if an adequate legal basis for any law is not successfully identified in a High Court challenge, the law (in this case the plebiscite) will be declared as 'beyond power' and invalid.

Students might initially assume that the plebiscite could find legal basis in the referendum power. Hence, this provides teachers with an opportunity to discuss the differences between the non-binding plebiscite and a referendum that alters the Constitution itself. Given that the Australian Government must find authority for the plebiscite elsewhere in the Constitution, this allows students to explore the text and suggest some alternatives. One of the enumerated powers could be suggested as a logical head, and specifically for this particular plebiscite, the marriage power in s 51 (xxi). However, Kildea (2016) argues that there might be some preferable authority in other subsections, such as the executive power to undertake inquiries or the executive 'nationhood' power.

Regardless of which authority the Australian Government sought to characterise the law under, their legislative attempt to achieve a plebiscite – Plebiscite (Same-Sex Marriage) Bill 2016 (Cth) – failed to progress beyond the second reading in the Senate on 7 November 2016. This could be an opportune moment for teachers to introduce students to Hansard (or to revisit it). Have students examine the text of the debate in the Senate, and remind them of the purpose of our bicameral system of parliament. Arguably, in this case, the Senate was reflecting the views of society in rejecting the bill, as some polls indicated that a majority of Australians were not in favour of a plebiscite at that time (Karp, 2016).

Despite this failure, the Australian Government eventually conducted the plebiscite through the Australian Bureau of Statistics (ABS). Kildea (2017) explains that the Australian Electoral Commission (AEC) was the expected choice, despite constitutional issues around that potential engagement. (He also notes that the use of the ABS, interestingly, was not without different legitimacy questions.) In any case, with 61.6% of respondents voting in favour of legalising same-sex marriage, the plebiscite result was the final catalyst for the amending Act.

Final thoughts

At the time of writing, the very first newly conducted same-sex marriages have been celebrated. Thus the amending Act has had an immediate impact on the landscape of family law. The extent to which the religious exemptions now provided for in the Marriage Act will be taken or challenged is yet to be seen. It is obvious that these legal changes provide much material for teachers of Legal Studies. Teachers could also examine the events leading up to these amendments and highlight the importance of non-legal responses, including the media and lobby groups, in achieving law reform.

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Shared practice and resource kits (SPaRKs) – Aquatica


By [Dr Cathy Sly](#) - author and consultant.



Resource overview

Aquatica: A Beginner's Field Guide by Lance Balchin, The Five Mile Press, Vic. Australia, 2017.

Syllabus links – English Stage 3. Years 5-6 and English Stage 4. Years 7-8.

Conceptually similar to an earlier publication, titled 'Mechanica', this new picture book by the same author is equally exquisite. 'Aquatica' is presented as a scientific field guide of creatures to be discovered in the oceans of the Earth in the year 2250. Introductory information explains the existence of these hybrid aquatic creatures. They are 'the seaborne relatives of the wider species of Mechanica' which have evolved since the destruction of biological species during the 21st century. This illustrated scientific guide to Aquatica provides written and pictorial information on a range of amazing creatures documented by a young scientist and explorer, Liberty Crisp. Her research has led to the discovery that some species of Mechanica have developed a means of communication which manifests as a 'global hum'. In addition, several of the ocean creatures are forging symbiotic relationships in order to help one another survive in a dangerous world. While Liberty fears that the rapidly evolving Mechanica will eventually defeat the small enclaves of remaining humans, she also speculates on a hopeful resolution whereby humans may learn from these creatures that are learning to communicate, share information and work collaboratively.

Although it could be used for teaching various [English Textual Concepts](#) , this text is especially useful for focusing attention on the concepts of representation, authority and code and convention. In addition, this compelling resource addresses general capabilities such as literacy, critical and creative thinking, ethical understanding and information and communication technology capability as well as the cross curricular priority of sustainability.

It is supported by the author's informative [Mechanica website](#) , which provides details about the history of his fantastic creatures, an explanation of how the images were created, and (after creating a login) access to online tutorials on how to [Make Your Own Mechanica](#) , using Adobe Photoshop.

Tutorials are delivered via video clips and include an introduction to Photoshop, how to set up the program for use, how to use layers within the program, selecting and erasing sections of an image, using the transform tool to manipulate images, using shadows, colouring, putting it all together, and general design tips including finding rights free digital images that are labelled for reuse. This series of tutorials offers students (and teachers) a very clear introduction to working with Photoshop.

Educational significance

There are many different learning and teaching experiences that can be triggered by using 'Aquatica' as a focus text. For example, it provides opportunities for students to explore the English Textual Concept of representation and authority and for the investigation of different codes and conventions used by the creator to engage readers in the meaning making process.

'Aquatica' simulates the authority often associated with scientific texts while presenting an imaginative futuristic world. It also problematises the notion of authority and implores readers to investigate aspects that appear to provide textual authority and to consider how the sense of authority is negotiated between the author and the responder. 'Aquatica' uses established codes and conventions of non-fiction while presenting fictional content. Through critical engagement with this text students should become aware of how an author can creatively subvert expected codes and conventions of a genre to convey important ideas.

Suggestions for using this text

Initially, students should read the book. This can be done either individually, in small groups, or as a class. Teachers should explain that usually a 'field guide' is an illustrated manual for identifying natural objects, flora, or fauna in nature. The explanation could be supported with examples of non-fiction field guides from a library. Students can then be asked to suggest reasons why the author would have included the subtitle 'a beginner's field guide'.

Teachers could also explain the two-fold nature of authority in relation to texts – that is the intent and information communicated by the author and the extent to which a reader can trust the authority of the text. Further discussion may be prompted by questions such as:

- Does calling the book a 'field guide' give it more authority? Why or why not?
- How does 'Aquatica' differ from our expectations of a field guide?
- What aspects of 'Aquatica' suggest authority?

(Consider the layout, the language used and the style of the illustrations.)

Teaching activities

Focus on Authority

Students can create a table on textual devices that convey authority, [Word doc 14kb] to record notes about how the layout, language and illustrations presented in 'Aquatica' achieve a sense of authority and authenticity. Working individually or in groups, students should make reference to specific examples that give the book the appearance of a scientific journal. Individuals or groups may then present their findings to the class.

Other devices that may be seen as conveying authority in this text include:

- The simulated pen and ink hand written labelling of the specimen. In what ways may handwriting imply authenticity?
- The use of a quotation by Werner Herzog as an epigram. Who was Werner Herzog? Does quoting him enhance or undermine the authority of this work?
- The use of pseudo Latin names for the types of wild life that feature in the book. What is the origin of Latin usage in the scientific context? How and why does the use of Latin confer authority?

Information provided in the contextual setting outlined in 'A Brief History' and 'Symbiosis' pp.2-5. What aspects of language and design in this preamble suggest that this is an authentic text? What elements of these texts convey a sense of authority? After looking for and discussing various examples of authority relating to 'Aquatica', student groups can be asked to review their examples and look for clues that indicate the book is not actually a scientific field guide, but rather a fictional representation offering a futuristic perspective of the Earth and its creatures. Following a discussion about clues that undermine the text's factual authority, students could be asked to consider why the author would choose to present his ideas in this manner and whether or not it is effective. Does it suggest a different kind of 'authority' such as implying that the way humans are living now will affect the future? Is it a cautionary tale?

Syllabus links

- Stage 3
 - EN3-5B – identify and explain characteristic text structures and language features used in imaginative, informative and persuasive texts to meet the purpose of the text (ACELY1701)
 - EN3-7C
 - recognise and explain creative language features in imaginative, informative and persuasive texts that contribute to engagement and meaning
 - identify, describe, and discuss similarities and differences between texts, including those by the same author or illustrator, and evaluate characteristics that define an author's individual style (ACELT1616)
- Stage 4
 - EN4-5C – critically consider the ways in which meaning is shaped by context, purpose, form, structure, style, content, language choices and their own personal perspective
 - EN4-3B – analyse and evaluate the ways that text structures and language features vary according to the purpose of the text and the ways that referenced sources add authority to a text (ACELY1721, ACELY1732)

Focusing on investigating codes and conventions

While a type of text is usually identifiable from its arrangement of codes and conventions, authors can elect to use codes and conventions in a more flexible manner. For instance, in 'Aquatica' Lance Balchin draws on the codes and conventions of different genres and combines them to create a new and original product. He fuses scientific journal writing style of a field guide with photorealistic images, which are digitally manipulated and capture a futuristic, steampunk or cyberpunk style, and he embeds these in a science fiction narrative that presents a dystopian future for humanity and the planet Earth.

Through individual or group research students can create detailed definitions for:

- field guide
- steampunk and cyberpunk
- dystopian fiction

Along with the definitions students should list the codes and conventions that are usually associated with each of these genres. A table for [codes and conventions](#) [Word doc 13kb] may be used to record information.


Students can then reread 'Aquatica' and look for instances where the publication either uses or deviates from expected codes and conventions of the genre or style in question. For instance, if a scientific field guide is normally a pocket book that is taken into the field to help identify natural phenomena, does the large size of 'Aquatica' undermine its subtitle? Does this matter? Why or why not? Should this book have a different subtitle? What might that be? There are many aspects of this book that could be the focus of discussion in relation to the application of or subversion of customary codes and conventions. It also opens options for creativity that can be derived through manipulating codes and conventions for effect.

Syllabus links

- Stage 3
 - EN3-5B
 - analyse strategies authors use to influence readers (ACELY1801)
 - discuss the conventions of a range of complex texts, eg act and stage directions in plays, literary devices in poems and stories, layout conventions in print and digital texts
- Stage 4
 - EN4-7D – analyse and understand the ways techniques of representation in multimodal texts are used to present alternative views of the world, people, places and events
 - EN4-6C – compare the text structures and language features of multimodal texts, explaining how they combine to influence audiences (ACELY1724)
 - EN4-5C – understand and use conventions of storytelling in a range of modes and media, eg digital storytelling

Experimenting

Using the entries in 'Aquatica' as models students could create their own futuristic specimen of aquatic creatures or land animals, insects, carnivorous fauna, and so on. The [field guide identification sheet](#) [Word doc 13kb] offers some guidelines. The entry would require a common name and a Latin name (use Google Translate for ideas)*, a description, an identification list, an illustration and a detailed report on the creature. Work can be completed as hard copy or digitally. Once completed, the specimen can be presented to the class. The work can then be digitised and, if desired, published as a class ebook with its own title, introductory text and index.

[Google translate](#)  is a useful tool for being creative with names for fictional creatures. Type the name of creature in the left hand box then select Latin in the language box on the right. Click translate to give a 'Latin' name for your creature. For example 'scary jelly fish' becomes 'Formidulosus gelata piscis'.

Syllabus links

- Stage 3
 - EN3-5B – compose more complex texts using a variety of forms appropriate to purpose and audience
 - EN3-7C – create literary texts that adapt or combine aspects of texts students have experienced in innovative ways (ACELT1612, ACELT1618)
- Stage 4
 - EN4-4B
 - experiment with particular language features drawn from different types of texts, including combinations of language and visual choices to create new texts (ACELT1768, ACELT1805)
 - create literary texts that draw upon text structures and language features of other texts for particular purposes and effects (ACELT1632)
 - EN4-5C
 - use imaginative texts as models to replicate or subvert textual conventions to create new texts
 - compose texts using alternative, creative and imaginative ways of expressing ideas, recognising, valuing and celebrating originality and inventiveness

Cross-curriculum application

Apart from the English and literacy aspects presented here, 'Aquatica' by Lance Balchin and his previously published 'Mechanica' have application across curriculum, with relevance to subjects such as science, mathematics, geography and visual arts and cross-curriculum priority of sustainability as well as to general capabilities including critical and creative thinking; ethical understanding; and information and communication technology capability.

References and further reading

Balchin, L. Aquatica: A Beginner's Field Guide, 2017, The Five Mile Press, Vic. Australia

Balchin, L. Mechanica: A Beginner's Field Guide, 2016, The Five Mile Press, Vic. Australia

[English Textual Concepts](#) 

[Google translate](#) 

[Make Your Own Mechanica](#) 

[Mechanica by Lance Balchin](#) 

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