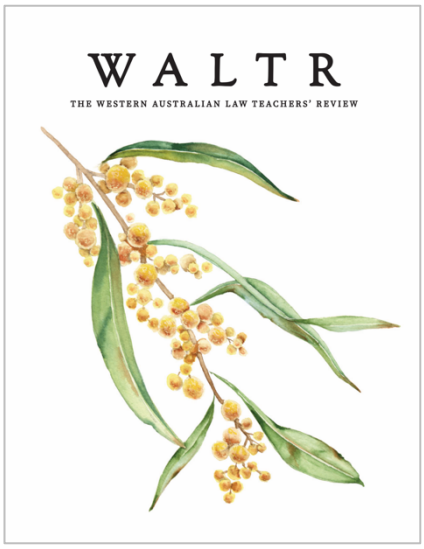

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Teaching Note

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TRANSFERABLE SKILLS FROM TEACHING PRIMARY LITERACY AND NUMERACY

USING SILENCE AS A TEACHING TOOL

NATALIE BROWN *

*This piece is published as a **'teaching note'** rather than a scholarly article.*

WALTR publishes teaching notes to provide space for reflective, practice-based contributions that sit outside the scope of traditional peer-reviewed articles but are nonetheless of value to the community of legal educators. They may include reflections on teaching and assessment, contextualised lesson plans (including for secondary legal studies), or opinion and commentary on broader issues in legal education.

I INTRODUCTION

This teaching note is about how my experience teaching literacy and numeracy to primary and middle school students transferred into my tertiary teaching. My teaching pedagogy developed organically, more bluntly, by trial and error – if it works keep it, if it does not, discard. It is only later, such as when I decide to write a teaching note, that go to the research to discover why what I am doing works. In this teaching note I discuss creating verbal 'white space' – or, if you prefer a more technical description, incorporating silence as part of information delivery to allow for optimal cognitive processing.

Culturally I identify as European, and as such I am not naturally comfortable with silence in conversation or discussion. My natural tendency is to fill the space with words. I may perceive silence as boredom or disinterest. So, I follow up with a question or more interesting information to elicit a response from my listener. However, it may equally be the case that my listener needs time to think before responding. Just as we become comfortable with silence in a close friendship, we can also develop our teaching relationship and become comfortable with silence when we teach.

In many other cultures, silence is an important part of discussion and conversation.[1] It demonstrates that the receiver respects the speaker because they are taking time to consider

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[1] See generally Diana Eades, 'Telling and Retelling Your Story in Court: Questions, Assumptions and Intercultural Implications' (2008) 20(2) *Current Issues in Criminal Justice* 209.

their response. Speakers who try to elicit a response by following-up or prompting commit a social faux-pas. Often it results in the listener providing the answer they think the speaker wants (such as agreement), rather than processing the information to develop their own conclusion or opinion.

When teaching literacy and numeracy in primary education it was difficult to resist the temptation (and my cultural tendency to fill silence with words) to 'help' the student by prompting. When I resisted assisting, I allowed the student to process in their own time. It was a valuable insight to learn that filling the space with prompts, questions, further explanation, examples, or paraphrasing all interfered with the student's cognitive process because I was not providing enough 'thinking time'.

II USING SILENCE FOR COGNITIVE PROCESSING WHEN TEACHING LITERACY

In primary education, creating a comfortable silent teaching space was key to students' literacy success. When teaching literacy, the silent processing time can be quite long – minutes, not seconds. When you break down the complexity of reading you have a better understanding of why long silent spaces assist cognitive processing.

For example, teachers of literacy use flash cards to teach the vowel sounds. Imagine a card with an image of dog for the vowel sound 'oh' represented by the letter 'o'. The flash card will have the image and the word with the vowel underlined 'd o g'. The prompt question may be 'what is the middle (or underlined) sound in this word?'. A simple task for a literate person but let us consider the process from the point of view of a non-reader. The student knows the word is dog because of the image. But the question 'what is the middle sound?' requires deep processing. They can see there are three symbols, therefore there are three sounds. The next step is to break down the word into three sounds 'Der', 'oh', and 'ger'. Then the three sounds need to be matched with the three symbols, 'Der' = 'd', 'oh' = 'o' and 'ger' = 'g'. Therefore, the middle symbol 'o' must make the sound 'oh'. That process takes time and the more complex the word the more complex the process becomes.

So, not allowing silence for thinking or deep processing will create confusion (from the interference with the thought process) and anxiety (because the student may feel they are not completing the task quickly enough). In my experience, student results improved when they were not prompted, did not feel rushed and had been provided with lots of time to think.

The reading experience is an individual cognitive process, no two students learn in the same way. A teacher can help, but cracking the code and developing the associations between sounds and symbols is their own journey. Whether learning to read or learning law, you can help with clear instruction, building confidence, patience, and giving students some silent time to process the information in their own way.

III USING SILENCE IN TERTIARY TEACHING: UM, AH AND OTHER INVADERS

When compared to primary teaching, tertiary teaching is a completely different ballgame: because the student body typically has a well-developed skillset, minutes of silence are not necessary. However, a few or more seconds of silence play an important role in my lecture and tutorial delivery.

As a student I found fast delivery with lots of 'ums' or 'ahs' affected my understanding. In retrospect, it was because this style delivers the information in one long continuous sentence with no segmentation (or processing time). When I became a lecturer, I tried to cut out the 'ums' and 'ahs'. It was not easy, because I was using um and ah to collect my thoughts and formulate the next sentence. No sooner did extract um and ah than I noticed I had replaced them with 'so', which subsequently got replaced with 'now' or 'like' or 'really' – all filler words to avoid silence. Heaven forbid that students should notice I needed to think! The filler words – um, ah, now, and so – were all just tools to allow me to formulate my next thought. Why not look at my notes, take a sip of water or a deep breath, or just silently think for a few seconds? And importantly, give my students a few seconds to think as well.

Essentially what my fear of silence was doing was removing all the full stops from my carefully prepared lecture notes. Just as we do not enjoy reading an essay or article that has long convoluted sentences because it is confusing and tiring for our brains, it is not easy to listen to either.

Once I became more comfortable with silence, I found I now had time for other things. I could connect with my audience by making eye contact. I can scan the room and pick up on the body language and facial expressions. Is the information landing or is it confusing, is my audience bored or engaged, or tired? After delivering a difficult or important concept, pause, wait, and watch until your audience it ready. Has the typing died down, are the heads coming up, am I receiving eye-contact, is now the right time to provide an example or follow-up information?

Silence is also a useful tool for correcting mistakes. Immediately and hastily correcting yourself in the same sentence as the incorrect information was delivered is confusing. Instead, pause for a moment and make a statement such as, 'that was incorrect – scratch my last statement'. Give the listeners time to remove the incorrect information from their notes, and importantly from their minds, before you deliver the corrected statement.

Silence is more powerful than speech for controlling large groups, and for drawing attention when you wish to speak. If my lecture or tutorial is being disturbed, I stop speaking and wait. The group listening will join you, and those who are the reason for your silence will soon give you their attention. To take control of a room that is chatting, a gesture such as a raised hand and deliberate eye contact will do the job quicker than a call to order. Do not be afraid to wait. Students will get used to the method and respond to a signal. It is a 'lead by example' technique. If you are calling order (making noise) your audience will also feel they can

continue to make noise, at least finish their sentence or – at worst – their conversation. But if you are silent, the expectation is clear, and nobody wants to be the last one speaking when the rest of the audience has already caught the cue to be silent. Let the silence speak for you.

IV WHAT DOES THE RESEARCH SAY?

When I researched the topic, I discovered many new terms. While I did not discover anything specifically on my idea of 'verbal whitespace' or the incorporation of silence, the concept falls more or less into the topic of clarity. The germane finding being that the clarity of the instruction can affect the students' cognitive function and capacity for deeper processing.[2] Cognitive load theory ('CLT') posits that that instructors should consider that humans have a limited working memory capacity.[3] Therefore, instruction that overloads the student's working memory impedes the student's ability to transfer and retain the information in their long-term memory.[4]

There are three types of cognitive load: germane load that links the information to pre-existing knowledge in the long-term memory (essential to learning); intrinsic load, which relates to how complex the material is; and extraneous load, which relates to the complexity of the delivery.[5] The instructor does not want to reduce germane load because it is useful, cannot reduce intrinsic load because it is fixed, but they *can* control extraneous load by providing good structure and clear delivery.[6] Clear teaching can enable students to take better notes, become more emotionally and cognitively invested in the course, and have better recall and retention of information.[7]

Reducing extraneous load may reduce receiver apprehension and facilitate deeper processing.[8] Overloading a student with information can lead to receiver apprehension.[9] Deeper processing is described as a student's capacity to analyse and reflect on the information during the class.[10] Receiver apprehension can manifest as anxiety about misinterpreting or making sense of the information; or it may be an emotional response to receiving complex information.[11] The receiver's level of apprehension can correlate to a

[2] Nick Serki and San Bolkan, 'The Effect of Clarity on Learning: Impacting Motivation Through Cognitive Load' (2024) 73(1) *Communication Education* 29, 29–30; San Bolkan and Alan K Goodboy, 'Conditional Indirect Effects of Clarity on Students' Information Processing: Disentangling Sources of Cognitive Load' (2024) 73(3) *Communication Education* 247, 248–9, 251.
[3] San Bolkan, 'The Importance of Instructor Clarity and Its Effect on Student Learning: Facilitating Elaboration by Reducing Cognitive Load' (2016) 29(3) *Communication Education* 152, 154.
[4] Serki and Bolkan (n 2) 30–1; Bolkan (n 3) 154.
[5] Serki and Bolkan (n 2) 31.
[6] Bolkan and Goodboy (n 2) 250–1.
[7] Serki and Bolkan (n 2) 31.
[8] Bolkan (n 3) 153–4; Bolkan and Goodboy (n 2) 259.
[9] Joseph L Chesebro, 'Effects of Teacher Clarity and Nonverbal Immediacy on Student Learning, Receiver Apprehension, and Affect' (2003) 52(2) *Communication Education* 135, 138; Bolkan (n 3) 156; Bolkan and Goodboy (n 2) 255.
[10] Bolkan and Goodboy (n 2) 255.
[11] Chesebro (n 9) 138.

backlog of unassimilated information.[12] So the theory is to reduce the extraneous cognitive load to reduce the receiver apprehension.[13]

Reducing extraneous load may also reduce the student's perception of intrinsic load.[14] A recent study indicates that the higher the intrinsic load, the less effectively teacher clarity reduced receiver apprehension.[15] Researchers described this as a tapering process, as the material becomes intrinsically more difficult, clear teaching has less impact because as more working memory is required it is more difficult to influence receiver apprehension.[16] In short, students benefitted more from teacher clarity when receiving easier information than more difficult information.[17] On the other hand, when intrinsic load is high, clarity may preserve what little resources students have left for learning.[18] To my mind, any reduction is valuable, as a receiver of information, when I later review my notes I will more easily process a difficult concept if the instruction was delivered clearly (and I had time to record the information accurately). It would be interesting to see a study on how teacher clarity effects students later, when they are reviewing material for examination and have the time and the need to deeply process the difficult information in their notes or by reviewing the lecture online.

Clarity has five main factors, disfluency, working memory overload, interaction, coherence, and structure.[19] In my opinion, the use of silence as a teaching tool falls into disfluency and working memory overload. Disfluency refers to the capacity to explain in a simple manner or use appropriate examples, and working memory overload relates to when the instruction out-paces the student's capacity to process the information.[20]

So how does the incorporation of silence fit into that framework more specifically? In my opinion, an element of disfluency is segmenting.[21] Basically, recognising a full stop in your speech, which includes removing the ums and other silence fillers.[22] Disfluency could also include pacing,[23] but using silence as a teaching tool is not really pacing – that refers more to the speed of delivery.[24] Silence falls into the working memory overload factor, because its purpose is to let students 'catch-up' with the information and/or process the information. The verbal whitespace concept also fits into a subgroup of clarity research that researchers have termed 'non-verbal immediacy'. That concept includes pausing before or after important points, gestures, and smiling.[25] However, the non-verbal immediacy study cited here did not produce highly significant results in relating immediacy to cognitive function – the authors

[12] Bolkan (n 3) 156.
[13] Ibid 159–60.
[14] Ibid 252.
[15] Ibid 260.
[16] Ibid.
[17] Ibid.
[18] Bolkan and Goodboy (n 2) 261.
[19] Ibid 250–1.
[20] Ibid 250.
[21] Bolkan (n 3) 155.
[22] Chesebro (n 9) 140.
[23] Ibid 137; Bolkan (n 3) 155.
[24] Chesebro (n 9) 136.
[25] Ibid 140.

of that study noted the efficacy of the study may have been limited by the delivery via video rather than live lectures.[26]

I suggest alleviating both intrinsic and extraneous load by utilising silence a few times in your delivery, so as to allow the student's deeper processing or germane cognitive load. Practice the pause – short pauses and long pauses, pause for emphasis, pause because the information just delivered was complex, pause for a full stop, pause to engage your audience.

V CONCLUSION

I am by no means perfect in my performance. The ums and ahs slip in every now again, but a lot less often since I started consciously working to include a pause for a full stop. I avoid 'um', I try to keep 'so' for when I mean therefore, 'like' for when I mean similar, and 'now' for when I mean the present. I am now more comfortable with silence, and I use it confidently. I am not discombobulated if I lose my train of thought, I just take moment to recalibrate. I am comfortable with lengthy pauses, up to 5–10 seconds, after delivering after new complex information to allow the deeper processing. Silence is useful to you, but more importantly it is useful to your audience. A few seconds to gather your thoughts and formulate your next sentence also gives your audience relief and time to process the information. My message is: embrace the pause, enjoy the silence, your students will enjoy it too.

[26] Ibid 145–6.