Is a noisy classroom a thinking classroom?

Carl Hendrick

A new study makes a surprising finding on the hidden costs of classroom chatter on thinking.

When I first started teaching English 20 years ago, a fairly uncontested idea was the notion that 'a noisy classroom is a thinking classroom'. This became a kind of benchmark for lesson observations and judgements of teacher quality, where the more talk in a classroom, the more proof you were doing something right. Silence, by contrast, was suspect; a sign of passivity or dull compliance. This was especially true for English where meaning was seen as socially constructed through dialogue. This usually meant students talking in groups for large parts of a lesson.

I always struggled with this idea because so much of what made literature so precious for me as a boy was that sacramental act of reading, that intensely private communion between reader and text that demanded solitude, quiet, and the kind of sustained inward attention that outward chatter destroys. During my formative years as a reader, I went to a secondary school where thankfully I was spared the tyranny of classroom 'activities' and there were many lessons where we were simply invited to read for extended periods.

Now, nobody wants completely muted classrooms of course, and it should be said that rich class discussion is not just a key driver of learning *when facilitated well*, but it's also a core part of students' apprenticeship into social and academic discourse. To be clear, rich classroom dialogue, in the Socratic sense, is undoubtedly an engine of collective reasoning and a way of cultivating habits of democratic engagement, questioning, and crucially, intellectual humility.

But there's a crucial distinction between purposeful dialogue and the undertow of ambient verbal clutter so often seen in group work activities. The former requires what we might call 'cognitive presence'; the ability to attend fully to both one's own emerging thoughts and the contributions of others. I've always felt that the noble aspirations of oracy as not just a form of teaching but as an end in *itself*, were always compromised by the fact that when working memory is fractured by competing semantic demands, students become less capable of the kind of deep listening and thoughtful response that genuine dialogue demands.

The other thing is that for some neurodiverse students, the constant demand for verbal participation creates a double burden. Not only must they process complex academic content while filtering out semantic interference, but they must also perform their understanding in a mode that feels often unnatural to them. Many students often do their best thinking in solitude, drawing energy from internal reflection rather than external interaction. The student who needs time to process, who prefers to think before speaking, who finds their voice through writing rather than discussion, can feel like educational outsiders in their own classrooms.

Darkness visible

The noisy classroom however, offers a compelling vision of education: talk over silence, energy over passivity, student agency over compliance. Part of its force comes from the fact that we can never directly observe learning, we can only infer it. So the sight of students clustered in discussion becomes a kind of visual shorthand: groups talking together must indicate thinking, reasoning, grappling with ideas. In that logic, noise becomes a proxy for evidence, something visible and audible that observers can latch onto. Silence, by contrast, is ambiguous and suspect: how do you prove thought is happening in quiet?

Then there is its resonance with prevailing ideals: as schools place more emphasis on democratic engagement, oracy, collaboration and student voice etc, classroom noise becomes a symbolic container for those virtues. These claims rest on several implicit premises:

1 That talk is the outward expression of internal thought.

2 That collaboration and discussion are more cognitively productive than quiet individual work.

3 That noise is a sign of intellectual vitality, better than stillness.

4 That students produce reasoning by orally processing it, rather than in silence.

In a sense, some of these claims are true and nobody would want completely silent classrooms as I've said. Indeed, in many cases a noisy classroom *is* a thinking classroom especially in subjects like drama or foreign languages. In a science classroom, students doing practicals might be describing observations, hypothesising, arguing about measurement or anomalies, troubleshooting experiments, comparing results; all of which generates noise. Many adherents of talk as the main lever of learning would also say that the noise needs to be productive not merely noisy. If kids are engaged in meaningful discussion, what's wrong with that noise?

Well a new study in *Cognition* (Marko et al., 2026) shows just how costly that particular noise can be if students are trying to think hard about something. The researchers found that when we are trying to retrieve certain concepts from memory to generate new ideas, the greatest interference comes not from meaningless sounds (traffic, humming, background tones etc), but surprisingly from *meaningful speech*. Background words, even those we are not consciously attending to, intrude on our semantic networks, activating irrelevant ideas and clogging up the very mental pathways we're trying to use. Crucially, the more effortful the thinking, the more destructive the interference becomes.

The explanation for this seems to be that the brain processes speech for meaning automatically and involuntarily, whether you want it to or not. This creates interference not by stealing attention, but by creating competing neural activity in the same systems you need for thinking. The researchers conclude this supports an 'interference-by-process' explanation: background speech disrupts thinking not by grabbing your attention, but by involuntarily activating the same semantic processing systems you need for the main task.

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The effect is particularly pronounced because classroom talk is typically meaningful, topic-related speech; exactly the kind that maximally activates semantic networks. When students are engaged in effortful learning tasks requiring semantic processing (reading comprehension, problem-solving, creative writing, complex reasoning), this background semantic activity becomes cognitively costly in ways that other environmental sounds do not.

The conclusion's point about *interference increasing with relatedness between cues and distractors* is particularly damaging to classroom practice. Students discussing related topics create maximum interference for peers working on similar material – exactly the opposite of what we'd assume about 'productive classroom talk'.

The theatre of engagement

The notion of noisy classrooms as vehicles for learning is evident in the work of Peter Liljedahl, whose 'Building Thinking Classrooms' approach has become a lodestone for many mathematics teachers. His classrooms look radically different from the traditional model: students stand at vertical whiteboards, clusters form unpredictably, and voices rise and overlap. In this formulation, noise is not a bug but a feature; the more lively the classroom, the better the learning.

This assumption rests on three problematic premises for me: firstly, that internal cognitive work is somehow inferior to its external manifestation; secondly, that silent students are passive students; and finally, that learning can only be validated through performance. But thinking and talking are not competing activities, they are complementary processes that require different cognitive conditions to flourish.

This creates a pedagogical paradox. The observable signs of engagement; the animated discussions, the collaborative energy, the visible grappling with problems – may actually be working against the invisible cognitive work of academic reasoning. We're optimising for what we can see and hear rather than what we cannot: the delicate, internal processes of working memory, semantic retrieval and conceptual understanding.

It would be ridiculous to suggest that this study invalidates classroom talk and there is, of course, a crucial place for discussion, for dialogue, and for collaborative inquiry (to belabour the point; as a card-carrying Bakhtinian[1], I'm firmly of the belief that meaning emerges through the collision and interplay of different voices and viewpoints) but talk is not noise and we should be wary of elevating noise into a proxy for thought.

This is not an argument for educational monasteries or a return to Victorian silence. Rather, it's a call for cognitive hospitality; creating learning environments that honour both the social *and* solitary dimensions of thinking. We need classrooms that can move fluidly between modes: collaborative when ideas need to be shared and tested, quiet when concepts need to be grasped and consolidated.

Endnote

[1] I did my PhD on Bakhtin and among the best reading experiences of my life was reading Dostoyevsky while also reading Bakhtin's commentary on him. For Bakhtin, Dostoyevsky is the only writer worth reading because he is the only writer whose characters truly speak with their own voice, unmoored from authorial intent.

This article originally appeared on the author's blog, The Learning Dispatch.

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