**COMMENTARY**

# Meeting John Bransford

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## Abstract

John D. Bransford died in 2022. He was an intellectual giant. His seminal work in educational psychology was recognized by Division 15 of the American Psychological Association with their Career Achievement Award in 2001. This paper is an introduction to the man. It traces his intellectual development from cognitive psychology to educational psychology to the learning sciences. It is written as a first-person narrative to echo the perspective he often adopted in his surprisingly accessible papers. This paper also describes the intellectual community he built around himself, one that was remarkably successful in generating novel ideas, supporting collaborative research, and training generations of young researchers who would go on to make their own marks. Finally, it portrays what it was like to work alongside a man who saw just a little further down the road than the rest of us.

**Keywords** Cognitive revolution · Schemas · Mental models · Anchored instruction · Transfer · Learning sciences

In 1991, I met John Bransford for the second time. I was 22 and fresh out of college, working as a programmer at Northwestern's Institute for the Learning Sciences, one of the birthplaces of that field. Susan Goldman was in town for the first Learning Sciences conference. I did not attend the conference, but I did join her for dinner one night in Lincoln Park. There, I met some of the early members of Vanderbilt's Learning Technology Center (LTC), a ragtag party of about ten. Among them was John, sitting at the opposite end of the long table from me. A compact man of curly brown hair and beard, dressed in his slouchy preppy way. Mostly smiling. Mostly silent as the conversation unfolded around him.

I would later realize that I had "met" John for the first time a few years earlier in my undergraduate cognitive psychology class. We had learned about how in the

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early 1970s, he had basically invented the notion of *mental model*.[1] John, messing around in the lab with Jeff Franks and his other graduate school buddies. And how a few years later, as a new assistant professor, he and Marcia Johnson had taken the notion of *schema* which had been kicking around psychology for several decades and re-introduced it to the field in experiments so striking they still have the power to awe.[2] ("The procedure is actually quite simple…") He was a young god then, and he dealt lighting with both hands.[3]

Six months after that dinner in Lincoln Park, I quit my job at Northwestern and drove south to Nashville to join the LTC as a programmer. A few weeks in, someone knocked on my office door and said to come see "the footage." The footage? This would turn out to be the rough cut of the third installment of *The Adventures of Jasper Woodbury*, directed from a script written by the "Cognition and Technology Group at Vanderbilt," being presented to us for the first time by the local production house.[4] Everyone packed into the room, the whole center including the newly arrived, and we watched. The viewing was followed by a discussion of the video as a story, and also of the video as an instructional tool. "What is going on here?" I wondered. "Is this research?" Yes, I would learn, it was research, and of the most innovative kind. I met John for the third time that day.

I would later learn the history of how, following his early successes, John turned from the question of what it means to understand to the question of what it means to learn. First, in the late 1970s, when he introduced the principle of *transfer appropriate processing* — another bolt, hurled by his hand![5] Then, in the decade following, when he and his graduate students published a series of exquisite studies that cognitive psychology did not seem to know what to make of.[6] Perhaps John didn't as well. During that time, he also authored a short textbook on cognitive psychology,[7] a popular book on problem solving,[8] and a series of theoretical papers disguised as folksy book chapters.[9] And, as I understand it, he started spending less and less time in the Psychology Department at Vanderbilt and more and more time in the College

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[1] The seminal papers here are Bransford and Franks (1971) and Bransford et al. (1972). They appear in the earliest volumes of the journal *Cognitive Psychology* and helped launch and define that field.

[2] The experiments are presented in Bransford and Johnson (1972). This paper appeared in the *Journal of Verbal Learning and Verbal Behavior* (later renamed the *Journal of Memory and Language*) and helped shift the field from "memory" to "knowledge," and from "verbal behavior" to "understanding.".

[3] For an integrative account of these early experiments, see Bransford and Johnson (1973).

[4] For the early fruits of the *Jasper* series, see The Cognition and Technology Group at Vanderbilt (CTGV; 1990; 1992).

[5] Transfer appropriate processing, or TAP as it was called around the LTC, was introduced in Morris, Bransford, and Franks (1977).

[6] These include Perfetto et al. (1983), Stein et al. (1984), and Adams et al. (1988).

[7] The textbook was titled *Human Cognition: Learning, Understanding, and Remembering* (Bransford, 1979). It followed on the heels of *Perceiving, Acting, and Knowing*, a fantastic collection of chapters that John co-edited to collide ecological psychology and cognitive psycholgy (Shaw & Bransford, 1977).

[8] *The Ideal Problem Solver* was co-authored with his graduate student Barry Stein (Bransford & Stein, 1984). It would see a second edition (Bransford & Stein, 1994).

[9] The chapters are too numerous to list. They span roughly from Bransford and McCarrell (1974) to (the non-chapter) Bransford et al. (1986).

of Education. Finally, in 1989, he wrote the *Because Wisdom Can't be Told* chapter,[10] coalescing the prior 15 years of his research into a set of insights that became the foundation for what came next — for John Bransford, educational psychologist (and later, learning scientist).

John's method was this: Anything goes, especially if it involves video or music, narrative and technology, used in the service of getting kids (1) to learn new things and (2) to understand what they had just learned and (3) to use this knowledge to learn even more new things. If you cared about these questions, and if you had skills and enthusiasm, then you were welcomed into the LTC. They would find a place for you at the table and soon enough you would be part of the conversation. This had happened to me — an Indian American programmer boy completely out of my comfort zone in the beginning, watching raw Jasper footage and thinking for the first time about how students think and learn about mathematics. This happened to everyone.[11]

Theories of learning constrained the conversation, but only loosely. Creativity came first, *and here John was in his element*. He would sit, arms crossed tightly around his blue sweater vest pulled over his white button-down shirt. He would listen as you spoke, as everyone around the table spoke. Then, patiently, he would offer his ideas. "What if…" "That's good. Another way to think about it is…" "Your idea reminds me…" It felt good when John took your idea and told it back to everyone better than you had just said it, better than you had thunk it. "Is that really what I said, what I thought?" you'd ask yourself silently. It was, he would nod back.

It did not take long for me to understand that many of these ideas were his alone, although he dressed them up in this way. I came to see these meetings, the whole of the LTC, as an idea amplification tool that he had built. An orchestra where all of the players noodled around on their own. Sometimes John would collect the individual tunes together into themes. Other times, our noodling would inspire him with a new idea, which he would graciously call co-authored. Or we would take the spirit of the practice room and fashion something of our own from it.[12] And then, we would play…

There were only a few who could collaborate with John on something like even ground. Dan Schwartz and John wrote their brilliant papers on transfer.[13] And there was that time when John disappeared from us for what felt like a year. The result was *How People Learn*, the book he and Ann Brown wrote, and as you probably know **that changed everything**.[14]

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[10] This chapter, Bransford et al. (1989), is one I still teach from. It has the power to interest computer science students to think about cognition and instruction, which is no small feat!

[11] For the continuing development of the *Jasper* series, see Barron et al. (1998) and the book-length monograph CTGV (1997).

[12] Important papers by graduate students and postdocs from that time include Williams (1992), Hickey (1997), Hmelo (1998), Barron (2003), and Nathan and Petrosino (2003).

[13] These papers are Schwartz and Bransford (1998) and Bransford and Schwartz (1999), and also Schwartz et al. (2005) published a few years later.

[14] This book (Bransford et al., 2000) is available as a free PDF download from the National Academy of Science website: https://nap.nationalacademies.org/catalog/9853/how-people-learn-brain-mind-experience-and-school-expanded-edition. It has been cited tens of thousands of times.

The fourth time I met John was on the West Coast. My wife Keisha Varma had gone on to a postdoc with Marcia Linn. I followed and hung around Stanford long enough that Dan Schwartz finally took pity on me and offered me a postdoc. John and Roy Pea and some others had just landed the LIFE Center, one of NSF's newly minted Science of Learning centers. John was in a center again … but it was not the same. No, this was *big science*, a confederacy of research groups spread across labs, departments, colleges, and universities. There was little room for John the creative in this context. He had to be John the administrator, a role for which he was in many ways ill-suited. I watched him struggle. He had once again built something for others, but this time he was missing out on most of the fun.[15]

I met John for the final time soon after Keisha and I started as assistant professors at the University of Minnesota. This was the institution where John had been a graduate student 40 years earlier. He had been invited back to talk about the new science of learning. The hall was packed with the whole university community, everyone from educational researchers to neuroscientists to administrators. I was disappointed that he gave his LIFE Center stump speech. I had hoped that returning to his old stomping grounds might have released him to speak more personally and intimately, but that was not John. He did veer off script once though, telling the audience how lucky Minnesota was to have me and Keisha. That was the John I knew, the man who inspired and supported those who came into his orbit.

At Minnesota, I inherited books stamped with the name of his advisor, Jim Jenkins. Some were classics, others previously unknown to me. I looked through them for clues about the sources of John's early, epochal ideas as a grad student. There were none to be found there. I was not surprised. I had read his papers, and all of the papers and books they had cited in turn. But this quirky set of authors did not add up. John's citations paid back intellectual debts he did not owe: not to Cassirer, not to Gibson, not to Simon, not to Broudy. Was his genius in seeing glimpses of something important in the writings of others, and bringing them fully into the light in his own papers? I do not believe this was the case. No, John was a true original. I think his ideas came from his introspecting about his own thinking and learning, and from his observations of how others thought and how they learned. From these raw materials, John composed. He conducted. We heard the music, and together we all played.

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[15] Circulating around the LIFE Center at the time was a manuscript entitled *Foundations and Opportunities for an Interdisciplinary Science of Learning*. It was written in the same accessible style as John's best chapters. Whether it was ever published, I do not know.

## Declarations

**Ethics Approval**  N/a.

**Consent to Participate**  N/a

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## References

Adams, L. T., Kasserman, J. E., Yearwood, A. A., Perfetto, G. A., Bransford, J. D., & Franks, J. J. (1988). Memory access: The effects of fact-oriented versus problem-oriented acquisition. *Memory & Cognition, 16*, 167–175. https://doi.org/10.3758/BF03213486

Barron, B. (2003). When smart groups fail. *The Journal of the Learning Sciences, 12*, 307–359. https://doi.org/10.1207/S15327809JLS1203_1

Barron, B. J., Schwartz, D. L., Vye, N. J., Moore, A., Petrosino, A., Zech, L., & Bransford, J. D. (1998). Doing with understanding: Lessons from research on problem-and project-based learning. *Journal of the Learning Sciences, 7*, 271–311.

Bransford, J. D. (1979). *Human cognition: Learning, understanding, and remembering*. Wadsworth.

Bransford, J. D., Barclay, J. R., & Franks, J. J. (1972). Sentence memory: A constructive versus interpretative approach. *Cognitive Psychology, 3*, 193–209. https://doi.org/10.1016/0010-0285(72)90003-5

Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school*. National Academy Press.

Bransford, J. D., & Franks, J. J. (1971). The abstraction of linguistic ideas. *Cognitive Psychology, 2*, 331–350. https://doi.org/10.1016/0010-0285(71)90019-3

Bransford, J. D., Franks, J. J., Vye, N. J., & Sherwood, R. D. (1989). New approaches to instruction: Because wisdom can't be told. In S. Vosniadou & A. Ortony (Eds.), *Similarity and analogical reasoning* (pp. 470–497). New York: Cambridge University Press. https://doi.org/10.1017/CBO9780511529863.022

Bransford, J. D., & Johnson, M. K. (1973). Considerations of some problems of comprehension. In W. G. Chase (Ed.), *Visual information processing* (pp. 383–438). New York: Academic Press. https://doi.org/10.1016/B978-0-12-170150-5.50014-7

Bransford, J. D., & McCarrell, N. S. (1974). A sketch of a cognitive approach to comprehension: Some thoughts about understanding what it means to comprehend. In W. Weimer & D. Palermo (Eds.), *Cognition and symbolic processes* (pp. 299–303). Erlbaum.

Bransford, J. D., & Stein, B. S. (1984). *The IDEAL problem solver*. Freeman.

Bransford, J. D., & Stein, B. S. (1994). *The IDEAL problem solver* (2nd ed.). New York: Freeman.

Bransford, J. D., & Schwartz, D. L. (1999). Chapter 3: Rethinking transfer: A simple proposal with multiple implications. *Review of Research in Education*, *24*, 61–100. https://doi.org/10.3102/0091732X024001061

Bransford, J., Sherwood, R., Vye, N., & Rieser, J. (1986). Teaching thinking and problem solving: Research foundations. *American Psychologist, 41*, 1078–1089. https://doi.org/10.1037/0003-066X.41.10.1078

Cognition and Technology Group at Vanderbilt. (1990). Anchored instruction and its relationship to situated cognition. *Educational Researcher, 19*, 2–10. https://doi.org/10.3102/0013189X019006002

Cognition and Technology Group at Vanderbilt. (1992). The Jasper series as an example of anchored instruction: Theory, program description, and assessment data. *Educational Psychologist, 27*, 291–315. https://doi.org/10.1207/s15326985ep2703_3

Cognition and Technology Group at Vanderbilt. (1997). *The Jasper Project: Lessons in curriculum, instruction, assessment, and professional development*. Erlbaum.

Hickey, D. T. (1997). Motivation and contemporary socio-constructivist instructional perspectives. *Educational Psychologist, 32*, 175–193. https://doi.org/10.1207/s15326985ep3203_3

Hmelo, C. E. (1998). Problem-based learning: Effects on the early acquisition of cognitive skill in medicine. *Journal of the Learning Sciences, 7*, 173–208. https://doi.org/10.1207/s15327809jls0702_2

Morris, C. D., Bransford, J. D., & Franks, J. J. (1977). Levels of processing versus transfer appropriate processing. *Journal of Verbal Learning and Verbal Behavior, 16*, 519–533. https://doi.org/10.1016/S0022-5371(77)80016-9

Nathan, M. J., & Petrosino, A. (2003). Expert blind spot among preservice teachers. *American Educational Research Journal, 40*, 905–928. https://doi.org/10.3102/00028312040004905

Perfetto, G. A., Bransford, J. D., & Franks, J. J. (1983). Constraints on access in a problem solving context. *Memory & Cognition, 11*, 24–31. https://doi.org/10.3758/BF03197658

Schwartz, D. L., & Bransford, J. D. (1998). A time for telling. *Cognition and Instruction, 16*, 475–5223. https://doi.org/10.1207/s1532690xci1604_4

Schwartz, D. L., Bransford, J. D., & Sears, D. (2005). Efficiency and innovation in transfer. In J. P. Mestre (Ed.), *Transfer of learning from a modern multidisciplinary perspective* (pp. 1–51). Greenwich, CT: Information Age.

Shaw, R., & Bransford, J. (Eds.). (1977). *Perceiving, acting and knowing: Toward an ecological psychology*. Erlbaum.

Stein, B. S., Littlefield, J., Bransford, J. D., & Persampieri, M. (1984). Elaboration and knowledge acquisition. *Memory & Cognition, 12*, 522–529. https://doi.org/10.3758/BF03198315

Williams, S. M. (1992). Putting case-based instruction into context: Examples from legal and medical education. *Journal of the Learning Sciences, 2*, 367–427. https://doi.org/10.1207/s15327809jls0204_2