
WHITE PAPER · PROVING THE IMPACT OF LEARNING

The return on learning.

Learning has never been able to prove its worth. How xAPI data and the higher reaches of Bloom's taxonomy finally turn training into transparent evidence — of impact, and of ROI.



Juliette Denny

Learning scientist · Author of *Learning to be Human* · Founder, Growth Engineering & Zavmo

The argument in one page

Every learning budget eventually meets the same question: *what did we get for it?* For decades, learning and development has struggled to answer — reaching for completion rates and satisfaction scores because the real evidence was out of reach. This paper argues that the evidence is now within reach, and that it comes from two things working together: **xAPI data**, and a decision to measure the **higher levels of Bloom's taxonomy** — the levels where impact is actually made.

- ① **Learning has a proof problem.** Almost every organisation wants to measure the business impact of learning, yet only around six in ten have the capability and just a quarter have a budget to do it.³ Most measurement still stops at reaction and completion — the bottom of every evaluation model.¹
- ② **Completion was never proof.** Finishing a course sits at the bottom of Bloom's ladder — *remember* and *understand*. Impact is made at the top: when a learner can *analyse*, *evaluate* and *create*. A completion certificate cannot tell those apart, which is why so much training never changes anything.^{4,5}
- ③ **The higher levels of Bloom's are where impact lives.** To analyse, evaluate and create is to do something valuable with what you learned. Monitoring those higher-order behaviours is, in effect, monitoring impact — the applied capability that changes work.
- ④ **xAPI makes the higher levels visible — and transparent.** Because xAPI records real-world performance across the flow of work, not just course completion in an LMS,⁶ it can capture a learner analysing, evaluating and creating *in role*. That is an auditable evidence trail from learning to behaviour to result — exactly what evaluation models have always asked for and never had.¹
- ⑤ **Evidence is the missing ingredient in ROI.** Return on investment is a simple ratio² — but it is only as trustworthy as the evidence beneath it. A transparent chain from capability to behaviour to business result is what finally lets learning be spoken of in the language of the boardroom.

This is the third of three companion papers. *Future Fluency* set out *what* capabilities matter; *Measured in Verbs*, *how* people learn them. This one is about *proof* — showing that they learned, that it changed something, and what it returned.

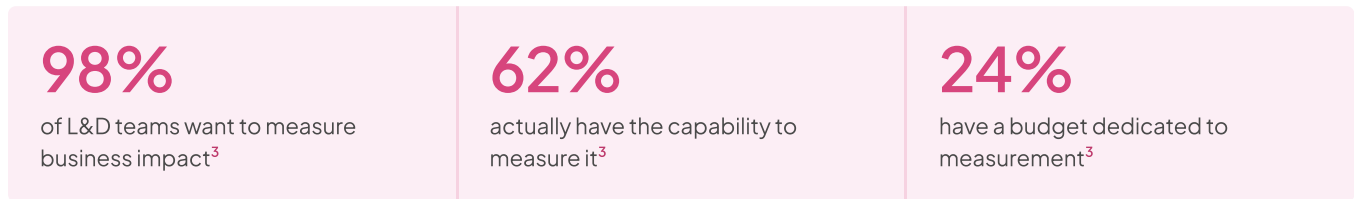
SECTION 01

The question learning has never answered

Ask a learning leader whether their programmes worked and you will usually hear about completion rates, attendance and how learners *felt*. Ask whether they changed the

business, and the room tends to go quiet. This is not a failure of effort. It is a failure of evidence — and it is remarkably well documented.

The most recent industry data is stark. **98% of L&D teams** say they want to measure the business impact of learning, and almost all believe it is possible — yet only **62%** have the capability to do it, and just **24%** have a dedicated budget for measurement.³ Only around one in seven organisations does any advanced analysis of its learning at all.³ The intention is nearly universal; the ability is not.



The reference point for all of this is a model most of the profession knows by heart: Donald Kirkpatrick's four levels of evaluation — **Reaction** (did they like it), **Learning** (did they acquire it), **Behaviour** (did they use it), and **Results** (did it change the organisation).¹ The trouble is that almost everyone measures the first two, where data is easy and cheap, and almost no one reaches the second two, where value actually lives. Jack Phillips later added a fifth level — **ROI** — placing a monetary return on top of results.² For most organisations, levels three, four and five have remained aspirations, because the evidence to support them could not be captured. The rest of this paper is about why that has changed.

SECTION 02

Why completion was never proof

The deepest reason learning struggles to prove itself is that it has been measuring the wrong altitude. A completed course and a changed capability are not the same thing — and Bloom's taxonomy tells us exactly how far apart they sit.

Bloom's revised taxonomy arranges thinking as a ladder of six cognitive processes, from lower-order to higher-order.⁵ Most training — and almost all of its measurement — lives on the bottom two rungs: *remember* and *understand*. A completion record proves, at best, that a learner was exposed to content and could recognise it. It says nothing about whether they can use it.

Create	design, build, originate something new	WHERE IMPACT IS MADE
Evaluate	judge, critique, decide between options	HIGHER-ORDER
Analyse	break down, compare, find the pattern	HIGHER-ORDER
Apply	use it in a familiar situation	
Understand	explain it back	WHERE MOST TRAINING STOPS
Remember	recall the facts · a completion certificate	WHERE MOST TRAINING STOPS

Bloom's revised taxonomy (Anderson & Krathwohl, 2001).⁵ A completed course evidences the bottom rungs. Impact is made at the top.

This altitude gap has a well-studied name in the research: the **transfer problem**. A meta-analysis of 89 studies of training transfer put it plainly — the original learning in a training experience is rarely enough to make that training effective; what matters is whether the learning *transfers to the job and leads to meaningful changes in work performance*. The same review noted how often organisational decision-makers simply do not know whether people perform any differently once they are back at work.⁴ Completion tells you the course ended. It does not tell you the person changed.

A completion certificate proves a course ended. It does not prove a person changed. Those are different claims — and only one of them is worth paying for.

SECTION 03

Impact lives at the top of the ladder

If completion sits at the bottom of Bloom's, then impact is unmistakably located at the top. To *analyse*, *evaluate* and *create* is not to recall information — it is to do something valuable with it. And doing something valuable is precisely what "impact" means.

Consider what each higher-order level actually looks like at work. A learner who can **analyse** is breaking a real problem into its parts and seeing the pattern others miss. One who can **evaluate** is weighing options and making a defensible judgement under uncertainty — including judging the output of an AI, which is fast becoming the core of knowledge work. One who can **create** is producing something that did not exist before: a plan, a solution, a better way of working. These are not academic abstractions. They are the behaviours that move a metric — and they are, not coincidentally, the same human capabilities the AI economy now prizes most.

This reframes measurement entirely. We do not need a separate, expensive "impact study" bolted on after the fact. **Monitoring whether learners are operating at the higher levels of Bloom's — in their real**

work — is monitoring impact directly. When someone moves from recalling a framework to using it to analyse their own team's problem and create a new approach, that ascent up the ladder *is* the value being created. The question is simply whether we can see it happen. That is a question about data.

The shift in one line. Stop asking "did they complete it?" (the bottom of Bloom's) and start asking "are they analysing, evaluating and creating with it?" (the top). The first question measures activity. The second measures impact.

SECTION 04

How xAPI makes the higher levels visible

For most of the history of e-learning, the higher levels of Bloom's were invisible to our systems — not because they weren't happening, but because our tools could only see inside the course. That limit has been lifted by an open standard that has been available for over a decade.

The old workhorse, SCORM, could really only record whether a course had been completed and scored inside a learning management system. The **Experience API** — xAPI — was built to escape that box. Where SCORM stops at the edge of the course, xAPI is designed to *track real-world performance*, informal and on-the-job learning, simulations, and activity that happens offline or over the long term.⁶ Its guiding idea is simple: learning happens everywhere, so the record of it should too. Each experience is written as a statement — *actor, verb, object* — to a Learning Record Store, whether or not it began in a course at all.⁶

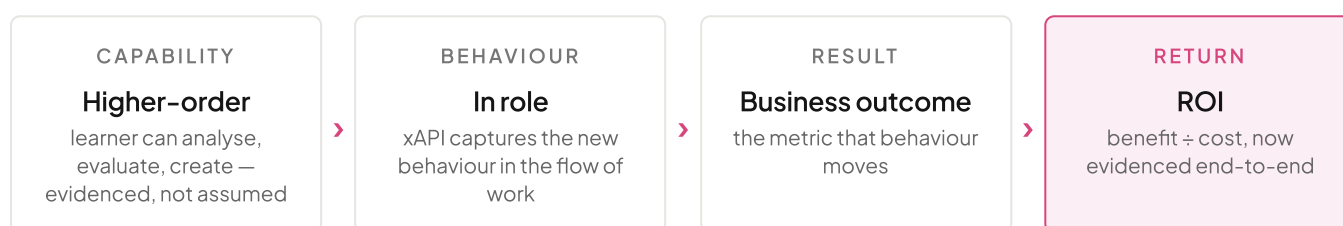
That capability is exactly what the higher levels of Bloom's require. Analysing, evaluating and creating are things people do *in their work*, not on a quiz — and xAPI can capture them there. This is what turns Kirkpatrick's aspirational upper levels into something observable: an auditable trail that runs from the learning, to the behaviour it produced in role, to the result that followed. It is not a survey of what people *think* changed; it is a record of what they actually *did*.

A note on transparency. The word matters here. Because xAPI produces an open, structured, portable record rather than a private score buried in a platform, the evidence of impact can be shown, checked and trusted — by a sceptical executive, an auditor, or a buyer. Learning that can show its working earns a different kind of credibility from learning that asks to be taken on faith. And the same transparency is a duty to the learner: this data exists to evidence and support their growth, never to surveil them.

From evidence to ROI

Return on investment has never been a hard sum. Phillips' formula is disarmingly simple: the net benefit of a programme, divided by its cost, expressed as a percentage.² The reason learning ROI has stayed so elusive was never the arithmetic. It was that the numerator — a credible, evidenced benefit — could not be established. Fix the evidence, and the calculation becomes possible.

What the higher levels of Bloom's and xAPI provide, together, is that missing evidence — as a transparent chain:



Each link in that chain used to be a leap of faith; xAPI turns the first two into recorded fact, and a disciplined method turns the last two into a defensible number. The Phillips methodology, used across more than seventy countries and much of the Fortune 500, exists precisely to make that final translation rigorous — including the honest, essential step of *isolating* the effect of the learning from everything else that was going on.² Evidence does not remove the need for judgement; it gives judgement something real to work with.

And the returns worth counting are not exotic. Development is one of the most direct levers on retention: **94% of employees** say they would stay at a company longer if it invested in their career development⁷ — and in a market where replacing a skilled person costs a fraction of a salary many times over, a measurable lift in retention alone can carry a programme's ROI. The point is not to promise a magic multiple. It is that, for the first time, the benefit side of the ledger can be built on evidence rather than hope.

Transparency is becoming the mandate

This shift is arriving just as the pressure to prove value is intensifying. Measuring impact is moving from a nice-to-have to a condition of survival for the learning function.

The same industry data shows the squeeze: well over half of L&D teams now feel active executive pressure to demonstrate impact, rising to roughly two-thirds among those closest to the business.³ The consequence is blunt — teams that cannot evidence their value risk being pushed back into an administrative role and having their budgets cut, while those that can are treated as strategic partners.³

In that environment, transparency is not a virtue signal. It is the difference between a learning function that shapes strategy and one that processes course completions.

This is where the three papers in this series meet. *Future Fluency* argued that the capabilities the AI economy rewards most are deeply human, and largely uncertifiable by traditional qualifications. *Measured in Verbs* showed that those capabilities are learned as behaviour, and that xAPI can make the process of learning them visible. This paper closes the loop: the very same data — the higher-order behaviours, captured as verbs in the flow of work — is what finally lets us **evidence that the learning happened, prove that it changed something, and put a defensible return on it**. What matters, how it is grown, and whether it paid off, measured with one honest, transparent thread.

The learning function that can show its working will shape strategy. The one that can only show completions will be asked to justify its budget.

SECTION 07

What this means in practice

Moving from completion to consequence is a decision anyone responsible for learning can start making now. Three shifts follow directly from the argument of this paper.

For L&D — measure higher up the ladder, and instrument the work

Retire completion and satisfaction as your headline metrics; they measure activity, not impact. Design learning that asks people to analyse, evaluate and create, and use xAPI to capture those higher-order behaviours where they matter — in the flow of real work, not in a quiz. Build the evidence chain from capability to behaviour to result deliberately, and report it in the language of the business, not the language of the course catalogue.

For leaders — demand levels three, four and five

When you commission learning, ask for evidence of behaviour change and business result, not attendance and smiley sheets. Fund the measurement, not just the delivery — the 24% of organisations that budget for it are the ones that will ever know what their learning is worth.³ The right question is never "how many completed?" It is "what changed, and what did it return?"

For the sector — raise the bar from completion to consequence

An industry that markets itself on completion rates has quietly agreed to be judged by the wrong number. The tools to do better — an open standard for evidence, a taxonomy that locates impact, a rigorous method for ROI — already exist. What remains is the will to use them, and to make transparent, evidenced impact the standard a learning provider is expected to meet.

None of this makes measurement effortless, and none of it removes the need for honest judgement about what the learning truly caused. But the era in which learning could only ever gesture at its value is ending. The evidence is capturable. The question is whether we choose to capture it.

Learning that shows its working

For as long as I have worked in this field, learning has carried a quiet insecurity: a suspicion, never quite dispelled, that it could not prove it was worth the money. We answered with completion rates because they were all we had, and in doing so we agreed to be measured by the shallowest thing we do.

We no longer have to. We can see people climb to the top of Bloom's taxonomy in their real work; we can record it transparently; and we can trace it, honestly, all the way to a return. That is not a threat to learning — it is its liberation. When learning can show its working, it stops asking for faith and starts earning trust. And trusted learning is learning that gets invested in, again and again.

Where this thinking is being built

These ideas are built into **Zavmo**, an AI learning companion I founded that is xAPI-native by design — coaching people toward the higher reaches of Bloom's in the flow of real work, and capturing the evidence of impact as it happens. If you're trying to prove, not just deliver, the value of learning in your organisation, that's the conversation I'd love to have.

Read more, and the companion papers *Future Fluency* and *Measured in Verbs*, at juliettedenny.com



About the author

Juliette Denny is a learning scientist and the author of *Learning to be Human*. She is the founder of Growth Engineering, an award-winning learning-technology company, and of Zavmo, an AI-native learning companion built on the science of how people actually learn. Her work sits at the intersection of pedagogy, behavioural science and technology, with a single throughline: designing learning that treats people as capable of growth.

REFERENCES & SOURCES

- 1 Kirkpatrick, D. L., *Evaluating Training Programs: The Four Levels* (Berrett-Koehler, 1994; model first published in articles from 1959). Four levels of evaluation: Reaction, Learning, Behavior, Results. Model definitions per Kirkpatrick Partners, kirkpatrickpartners.com.
- 2 Phillips, J. J. & Phillips, P. P., *ROI Basics* (2nd ed., ATD Press / ROI Institute, 2019). Adds Level 5, Return on Investment: $ROI (\%) = (\text{Net Program Benefits} \div \text{Program Costs}) \times 100$. The ROI Methodology is used in 70+ countries and by over half the Fortune 500.
- 3 GP Strategies & Watershed, *Measuring the Business Impact of Learning 2025* (9th annual report, 2025). 98% of L&D teams want to measure business impact; 62% have the capability; 24% have a budget for it; ~14% perform advanced analytics; 57% (rising to ~65% for strategic-partner teams) feel executive pressure to demonstrate impact.
- 4 Blume, B. D., Ford, J. K., Baldwin, T. T. & Huang, J. L., *Transfer of Training: A Meta-Analytic Review*, *Journal of Management*, 36(4), 2010. Meta-analysis of 89 studies; the value of training lies in transfer to the job and meaningful changes in work performance, not in the original learning alone.

- 5 Anderson, L. W. & Krathwohl, D. R. (eds.), *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy*, 2001. Six cognitive processes from lower- to higher-order: remember, understand, apply, analyse, evaluate, create. Analyse/evaluate/create are the higher-order thinking skills.
- 6 Advanced Distributed Learning (ADL) / Rustici Software, *Experience API (xAPI) and SCORM vs. the Experience API* (xapi.com). xAPI records actor–verb–object statements to a Learning Record Store and tracks real-world performance, informal, simulated, offline and long-term learning — beyond SCORM's course-completion tracking.
- 7 LinkedIn, *2018 Workplace Learning Report* (2018). 94% of employees say they would stay at a company longer if it invested in their career development (survey of 4,000+ professionals).
- 8 Denny, J., *Future Fluency* (2026) and *Measured in Verbs* (2026) — companion white papers on the capabilities the AI economy rewards, and on measuring how people learn. juliettedenny.com/papers.

© 2026 Juliette Denny. This white paper may be shared and cited with attribution. Figures are drawn from the peer-reviewed and industry sources above and were current at the time of writing (July 2026). juliettedenny.com