

Demonstrating the Business Value of L&D

PEAS Model Case Study – VRAI/ Defence Forces

Author: Peter Gillis – Learnovate Centre

Contents

1. Introduction	3
2. Executive Summary	4
3. VRAI – Case Study - Plan stage	5
4. VRAI – Case Study - Explore Stage	12
Assumptions	12
Top Level Impact Findings	13
Learning Benefits	14
5. Supporting Detail	15
Reduced Costs:	15
Sustainability (Carbon Saved):	15
Capacity returned to the Defence Forces	16
Conclusion	17
References	18
Appendix	19
PEAS Model - Introduction	19
Addressing L&D issues when showing business value	20
Showing the Business Value of L&D – The PEAS model	21

1. Introduction

The Learnovate Centre, hosted in Trinity College Dublin, works with industry to identify issues related to the future of work and learning and resolve them through research and innovation projects. A workshop co-hosted by Learnovate and members of the Irish Institute of Training and Development (IITD) to identify an important issue revealed the need for Learning & Development (L&D) to show business value to senior leadership as their most pressing issue.

Learnovate undertook a research project to investigate the issue. The purpose of the research was to support L&D to understand how they might start to move forward and experiment with delivering business value metrics.

The research identified the need for a more appropriate model fit for purpose. A simple but significant shift proposed was to think of business value as a parallel activity to learning evaluation, rather than the end of the same chain and to provide practical guidelines toward identifying the business value goal through a four-stage model called PEAS:

Plan, Working with the organisation, analyse backwards from the training request to identify the business need for training.

Explore, Working with other departments, identify the specific measures and predicted effect, showing expected business impact of the training.

Analyse, Following the intervention re-measure to identify actual business impact for comparison and reporting.

Share, In internal and external communications around success, lead with the business impact gains, leverage storytelling and visualisation techniques.

Learnovate have developed and tested the model over two years with many real case scenarios. More detail on the origins and research behind the PEAS model can be found in the Appendix.

This report looks at recent Case Study undertaken with VRAI and the Defence Forces.

2. Executive Summary

In March 2022 Learnovate and VRAI, the data driven VR simulation organisation providing training for high hazard environments, engaged in an evaluation project of the Learnovate's PEAS model designed to show the organisational benefits accruing from Learning and Development interventions. The proposed collaborative activities were designed to serve both Learnovate and VRAI's interests as follows:

- VRAI received the opportunity to investigate the value of the PEAS model for their purposes, through hands-on participation in the development of a case study applying the model with Learnovate, using real data from VRAI's client.
- Learnovate was given an opportunity to further investigate the value of the PEAS model through testing the model in the development of a further case study through access to VRAI's client.

The client for the case study was the Defence Forces (Ireland) and in specific terms related to the VR simulation training for the MOWAG armoured vehicle crews.

Through two onsite workshops between April and June 2022, VRAI, the Defence Forces and Learnovate worked the PEAS model in relation to "The Gunnery Course" for new trainees.

In comparing simulation-based training with the alternative of on range training, for one incidence of a three day training course, the following beneficial impacts were shown:

- Reduce Costs by €52,076
- Save 2 tons of Carbon
- Return 81 person-days capacity
- Provide 45 days of additional vehicle access

In addition to these impacts, the simulation training provides significantly more dedicated training time over a three day course on the range, and is also in no way restricted by other logistics.

3. VRAI – Case Study - Plan stage

The first step of the PEAS model is the ‘P’ which stands for Plan. As detailed earlier in this report the goal in the Plan stage is to work with the organisation to analyse backwards from the training request to identify the business need for training. In April 2022, representatives from VRAI, the Defence Forces and Learnovate held a Plan workshop on site in the Curragh Camp, Co. Kildare. The workshop employed a ‘Jobs to be Done’ (JTBD) approach to unearth the impact from an organisational perspective of supplying supplemental training to MOWAG crews via simulation rather than the alternative, which is to go to the training range. The purpose of the plan stage is not to quantify these impacts, it is to identify the potential impact areas to be explored in the next stage. Jobs to be done looks at the three areas of; the problems to be solved or JTBD, the expected outcomes or Gains and the potential barriers or Pains. The workshop utilised a canvas as per Fig2. With contributions from the attendees providing individual input with post-its and then analysed to identify clusters and prioritise.

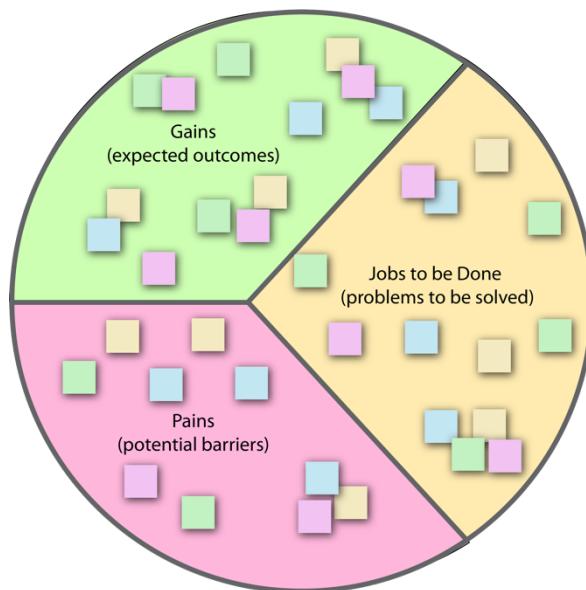


Fig. 2 Illustration of Jobs to be Done Canvas

The output of the workshop led to the following clusters and subcomponents that might show potential organisational impact for the Defence Forces:

Cost Savings related to Logistics

- Transporting students
- Security
- Vehicles, running, maintenance, number
- required
- Catering
- Insurance?
- Ammunition
- Weapons maintenance

Cost Saving of training:

- Instructor hours required per crew
(eg if three crews can be trained at the same time...)

Reduction in accident related incidents/ costs

- Cost of an incident, €/lost service
- Compensation

Carbon Emissions

- Saving from lack of need for transporting students and instructors to/from
- Saving from lack of need for transporting vehicles to/from
- Saving from lack of need for accommodating students?

NCO/Officer Availability

- How many days can be returned to the defence forces for other duties

Having identified areas of impact the next step was to look for authentic and meaningful metrics under these headings. Our next questions are, where can we find these metrics? can we quantify them historically and now? and who do we need to involve to provide validated information linked to the metrics?

4. VRAI – Case Study - Explore Stage

Following our workshop the team at VRAI in conjunction with the team from the Defence Forces set about quantifying the areas of impact. Working with other departments, identify the specific measures and predicted effect, showing expected business impact of the training. In early June we reconvened to participate in the Explore workshop, the 'E' in PEAS.

There is an ambition within the Defence Forces to improve the quality of "The Gunnery Course" for new trainees. To quantify the impact of the simulation training it was necessary to identify what the traditional alternative would look like. During the current course, trainees currently go to the range for five days, this is seen as critical to the training and will continue. One way to improve training could be to provide three additional days on the range in MOWAGS. The other option would be to provide the equivalent additional training via the VRAI simulation system. The following data is based on these alternatives.

Assumptions

The next section lists some benefits for the Defence Forces by providing the additional training via VRAI simulation pods. The calculations are based on researched data from the Defence Forces and other sources.

On average the **Gunnery Course for new Trainees** is run seven times a year for both the Cavalry (12 students x 4 courses) and the Infantry (24 Students x 3 courses). Therefore, there are on average 7 courses a year with 17 students and 3 instructors per course.

Range visits require

Support staff : 27 staff (3 Officers, 8 NCOs and 16 privates).

Support Vehicles: 6 Transit vans, 1 Ambulance, 1 EOD Truck and 6 MOWAGs

Top Level Impact Findings

In the next section the detail behind the figures below are detailed. VRAI's simulation platform will deliver superior training outcomes when compared to on-range training of the same duration. In addition, per course, Gunnery Training delivered via VRAI's simulation platform will deliver:

The figures below are calculated for **one 3-day instance** of the gunnery course.

Reduced Costs:

Fuel:	€1,008
Ammunition:	€49,358
Instructor Costs:	€1,710
<i>Total</i>	€52,076

Sustainability (Carbon Saved):

6 x MOWAGs:	1,555.20 kg
8 x Support Vehicles:	518.40 kg
<i>Total</i>	2,073.60 kg

Capacity returned to the Defence Forces

27 Support Staff:	81 days
Availability of MOWAGs:	18 days
Availability of Transit (or similar) vans:	18 days
Availability of Ambulance:	3 days
Availability of EOD Truck:	3 days

Learning Benefits

In comparing the two options above it is worth considering that due to the logistics and realities of any range visit, a trainee will receive approximately 3 hours in the MOWAG and a limit on ammunition they can use over three days. Repetition is a key component of good gunnery training, in the VRAI system, trainees receive 17hrs access and limitless ammunition.

Further research will look to investigate at a deeper level if, for additional training, there are other learning benefits of the VRAI system over the range, including components like confidence. However these benefits are beyond the remit of the current PEAS Impact project.

5. Supporting Detail

In this section we look at the specific calculations used to deliver the figures in the previous section. All figures were calculated from data available from the Defence Forces and public sources.

The figures below are calculated for one 3-day instance of the gunnery course.

Reduced Costs:

Fuel: €1,008

Per student/per day fuel = €12 for MOWAG plus €3 for Transit = €15 per day.
 $\text{€15} \times 3 \text{ days} \times 17 \text{ students} = \text{€765}$

Per support staff/per day fuel = €3 for Transit.
 $\text{€3} \times 3 \text{ days} \times 27 \text{ support staff} = \text{€243}$

Total = €765+€243 = €1,008

Ammunition: €49,358

Cost of ammunition for the current 5 day course is €4,839 per student,
 $\text{€4,839} / 5 = \text{€967.80}$ cost of ammunition per student/per day.
Total = €967.80 per day x 3 days x 17 students = €49,367.80

Instructor Costs: €1,710

It was established the cost of an instructor per day is €190
Total = €190 x 3 instructors x 3 days = €1,710

Sustainability (Carbon Saved):

6 x MOWAGs: 1,555.20 kg

It was established that 1 MOWAG uses 32 litres of diesel per day in training.
 $32 \text{ litres} \times 6 \text{ MOWAGs} \times 3 \text{ days} = 576 \text{ litres}$

It was established that 1 litre of diesel produces 2.7kg of carbon when used.

Total = 576 litres x 2.7 = 1555.2 kg carbon

8 x Support Vehicles: 518.40 kg

It was established that 1 Support Vehicle uses 8 litres of diesel per day in training.
 $8 \text{ litres} \times 8 \text{ Support Vehicles} \times 3 \text{ days} = 192 \text{ litres}$

It was established that 1 litre of diesel produces 2.7kg of carbon when used.

Total = 192 litres x 2.7 = 518.4 kg carbon

Capacity returned to the Defence Forces

27 Support Staff: 81 days

27 staff x 3 days = 81 days

(Note cost equivalent equals average rate across ranks at €187.50 per day x 27 staff x 3 days = €15,187.50)

Availability of MOWAGs: 18 days

6 MOWAGs x 3 days = 18 days

Availability of Transit (or similar) vans: 18 days

6 Transits x 3 days = 18 days

Availability of Ambulance: 3 days

1 Ambulance x 3 days = 3 days

Availability of EOD Truck: 3 days

1 EOD truck x 3 days = 3 days

Conclusion

In this Case Study we have stopped after the ‘P’ and ‘E’ of the PEAS model. The ‘A’ is when we measure again post intervention, the lack of need for the Analyse section is something we have seen in previous case studies where the impact metrics are directly under the control of the Learning and Development/Training team, or indeed in cost reduction, both apply in this case study. The VRAI Team will continue in terms developing out the ‘S’ or Share stage with the Defence Forces.

It is worth noting that this is just one course and measured as one incidence of the course.

Just this one course runs on average seven times a year which would have the following impact per year:

Reduced Costs:

Fuel:	€7,056
Ammunition:	€345,506
Instructor Costs:	€11,970
Total	€364,532

Sustainability (Carbon Saved):

6 x MOWAGs:	10,886.40 kg
8 x Support Vehicles:	3,628.80 kg
Total	14,515.20 kg

Capacity returned to the Defence Forces

27 Support Staff:	567 days
Availability of MOWAGs:	126 days
Availability of Transit (or similar) vans:	126 days
Availability of Ambulance:	21 days
Availability of EOD Truck:	21 days

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Appendix

PEAS Model - Introduction

“Whether you’re one of the inhouse survivors or a struggling consultant, you can no longer coast on lofty notions about continuous learning and employee development. You need to provide compelling evidence that training delivers bottom-line results and contributes to mission accomplishment.” (Kirkpatrick and Kirkpatrick, 2015).

A workshop co-hosted by Learnovate and members of the Irish Institute of Training and Development (IITD) to identify an important issue which their members face revealed the need for Learning & Development (L&D) to show business value to senior leadership as their most pressing issue.

Learnovate undertook a research project to investigate the issue, including:

- Case studies of organisations in Ireland currently showing business value.
- Current academic thoughts in the area.
- The L&D industry associations’ views.

The purpose of the research was not to look at data analytics techniques or technologies in the marketplace, rather, it was a probe at the appropriate level, for L&D to understand how they might start to move forward and experiment with delivering business value metrics.

Looking at some recent industry research, the need for L&D to show value is evident. A CIPD/Accenture report tells us that 65% of L&D say they are measuring impact, but 54% of the impact they are reporting is satisfaction or knowledge transfer. Only 8% evaluate the wider impact on the organisation and/or society (Crowley and Overton 2021).

The current models have experienced a lot of success both commercially and in terms of delivering results, yet why has no model emerged as the de facto for L&D? Also, given the increase in demand for business impact metrics from senior leadership teams, why are only 11% (Ahmetaj and Overton, 2018) of organisations reporting ROI?

Looking at practitioner models like Kirkpatrick, the four terms associated with Kirkpatrick’s levels; Reaction, Learning, Behaviour and Results are excellent in terms of being distinct and memorable, but they are also very broad and open to interpretation by each L&D

professional. Decision Maker models like the Phillips ROI Model provide a scaffold to show return on investment considering all the inputs and outputs and definitively show the benefit, or not, of a particular intervention. However, taking in to account the ten critical success factors and twelve guiding principles it can look like a formidable task for a time-poor L&D department to engage in ROI development.

So, Kirkpatrick's four-level evaluation model can be open to interpretation while Phillips ROI Model can appear complex and time-consuming. Learnovate's research identified the need for a more appropriate model fit for purpose. A simple but significant shift proposed was to think of business value as a parallel activity to learning evaluation, rather than the end of the same chain and also to provide practical guidelines toward identifying the business value goal through a four-stage structure: Plan, Explore, Analyse, Share. The model proposed is flexible to allow for the context-driven nature of L&D from organisation to organisation. While the model is still evolving through projects like the one reported here it does provide guidance to L&D professionals who want to start looking at demonstrating the business value of L&D now.

Addressing L&D issues when showing business value

In innovation terms, when looking to create a solution, the place to start is by understanding what the problem is. In carrying out this research and listening to the contributors a picture emerges of some of the issues a new model would need to address. The problems coming to light are:

No Time: To date, in most cases, showing business value is not mandatory and therefore is seen as an additional unnecessary task to an already busy team.

No Value: The belief that any figure you show will not be viewed as reliable, it cannot show it 'caused' an outcome, so the prevailing attitude is "why bother?"

No Skills: Many L&D people come from HR or other backgrounds and are dedicated to the development of human capital therefore business analytics is not in their comfort zone. Models like Phillips look complicated and time-consuming.

It's Fine as it is: Showing the behavioural and learning outcomes have always been enough, and in fact, in a lot of cases L&D generate these for their own sake because no one is looking for metrics.

Context: “context influences the nature and type of analytics” (Williams Van Rooij, 2018 p.289). This can lead to frustration when looking to show business value as models can be too vague to offer support or too prescriptive to be flexible.

In spite of all the points above, the Learnovate/IITD workshop showed the single biggest question for L&D is, how to show value up the management chain. So how might a model be developed to help support L&D in addressing these issues and concerns and thereby show business value? The following section is the resulting design of a model fit for purpose.

Showing the Business Value of L&D – The PEAS model

In synthesising the research lenses adopted it emerged that any solution should be:

- **Supportive in terms of guidance.**

As mentioned there are tools associated with Kirkpatrick’s model, but most L&D practitioners are only measuring the lower levels (Ahmetaj and Overton, 2018), so value measurement is a slightly alien territory and therefore support is needed in terms of practical guidance.

- **Not overly prescriptive.**

While support is needed, if it is too formulaic or prescriptive it will lack the flexibility required to deal with different contexts. Besides, if like the Phillips model it seeks to show ROI as a robust, undisputable figure it may become perceived as unrealistic, and indeed sound more defensive of money spent on L&D than value created for the business.

- **A separate activity.**

The chain analogy is used a lot in the current measurement models. Kirkpatrick does not see the levels as a chain (Kirkpatrick and Kirkpatrick, 2015), but most practitioners do. Yes, Kirkpatrick levels 1 to 3 are important for other reasons and may contribute to establishing business value, but the task should be seen as an adjacent one rather than part of the same chain.

In this next section, we put down our thoughts on what the model might look like.

The PEAS Model

Our working title is the acronym PEAS. It is kind of appropriate, we know peas are good for us, but we don't always want to eat them!

PEAS stands for Plan, Explore, Analyse and Share; four stages for business value metrics development, not directly linked to learner progression.

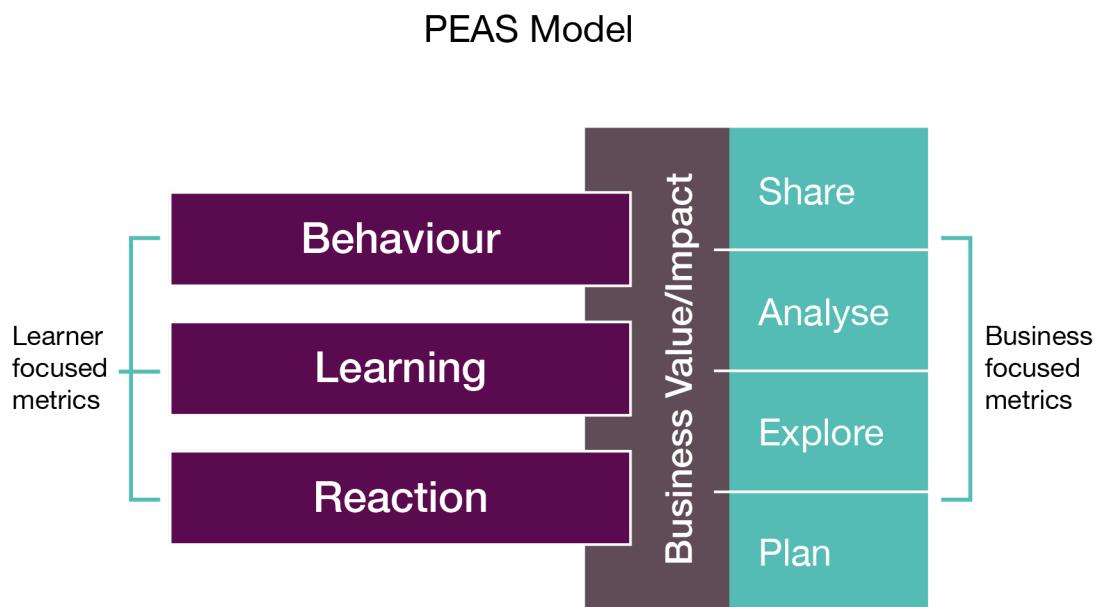


Fig 1. PEAS: A hypothetical model to measure business value

Plan (before the intervention)

The Plan phase comprises two main tasks. First is to fully understand the problem that is to be solved through the intervention. At Learnovate we start every project by understanding and validating the problem through structured innovation techniques. Doing this allows two things to happen; one, it identifies if there is a problem that can be solved by L&D and two, it provides the insight into what can be measured to show if the intervention has been successful. As mentioned, there are structured innovation models to help with this. The model should focus on 'value proposition' or 'customer development' such as; Jobs to be Done <https://strategyn.com/jobs-to-be-done/> or Alex Osterwalder's Value proposition <https://strategyzer.com/books/value-proposition-design>. Innovation methodologies are

designed to be quick and agile, so this should not be a time-heavy task. At a simple level, the ‘five whys’ technique is another quick way to interrogate a problem to try to identify the root cause (Serrat, 2017). The process involves, as the name suggests, questioning why a solution is requested five times to get to the actual need. For example, if a request comes in for sales training, start with the first why? The answer may be “sales are down”, by proceeding with the why questioning, the real issue stands a better chance of being revealed. The answer may or may not be one that L&D is suited to solving.

The second task is to start to develop a “business case” that resonates with the senior leadership team. A business case is not the same as a business plan. It is a short document based on the findings from the innovation stage. The business case outlines the intended effect the L&D intervention should have, on what aspect of the business (not the learner), and by how much. This evidence should be offered well before a particular intervention is taken (Williams Van Rooij, 2018).

Explore (before, during and after the intervention)

In the Explore stage, it is about becoming the detective and the relationship-builder. The job is to develop a strategy to allow you to collect the data that will support your business case. The idea, as demonstrated by our case studies, is to keep it as simple as possible while still delivering the business value data you need. Again, to refer to an earlier comment, this is meant to be a flexible and practical model, so to practice, start with a case with a readily identifiable business goal e.g. cost-saving, or increased sales and productivity. In the Servier case, they looked at the time saved but went a step further to show increased productivity in terms of sales value.

The Explore phase will capture data in the current status to make your business case. It may require data to be captured during the intervention and should also capture data post-intervention to look for impact.

You will engage stakeholders in the Plan stage. You should maintain and possibly widen these connections to assist in the Explore phase. As in the Woodies Case, the Commercial Manager and Finance Department assisted in gathering data to support the demonstration of business value.

Barends, Rousseau and Briner (2014) suggest the following principles when gathering data:

- Asking: Translating a practical issue or problem into an answerable question.
- Acquiring: Systematically searching for and retrieving the evidence.
- Appraising: Critically judging the trustworthiness and relevance of the evidence.
- Aggregating: Weighing and pulling together the evidence.
- Applying: Incorporating the evidence into the decision-making process.
- Assessing: Evaluating the outcome of the decision taken.

Analyse (after the intervention)

Another potentially formidable aspect for L&D is the concept of analysing data, a skill often outside the portfolio of L&D. Once again, the concept is to keep it simple; most of the case studies here used a simple A vs B or pre and post-measure of an intervention. This approach gets the plan moving and as the case studies show when finance or commercial are involved, they may well be able to assist with the ‘number crunching’ and add validity to outcomes. In addition, there are many user-friendly statistics packages now emerging to allow non-statisticians to generate statistics, for example, Stats iQ

<https://www.qualtrics.com/uk/iq/stats-iq/>

Share (after the intervention)

Again in both the literature and the case studies one of the most important, and often forgotten tasks is to share any good news in the right way to the right people. If the good news is shared in a business value format it is likely to resonate easier with the wider organisation. Also, as in the case of Woodies, it will earn future buy-in, not just from the senior management team but also from other units in the business to see L&D as an asset that adds value rather than a ‘cost centre’.

While storytelling is around since the dawn of human communication it has seen a recent resurgence as a means of teaching and learning. L&D should leverage the storytelling approach in sharing news; make them care, book-end it, make it purposeful, engaging and emotional. Visuals can also help in providing interest, context and telling a story very quickly.

