THE LEARNING BLUEPRINT

MODULE ONE OUTLINE

THE LEARNING BLUEPRINT | BOOSTING ACADEMIC OUTCOMES THROUGH LEARNING SCIENCES

Welcome to The Learning Blueprint, a practical Science of Learning program designed for teachers and educators.

Developed (and led) by leading expert Dr. Jared Cooney Horvath, the aim is to deliver the latest and most impactful applications from the Learning Sciences; help teachers develop a deep understanding of the learning process; and introduce an ongoing, easy-to-implement innovation tool called Micro Projects.

MODULE 1: FROM THE LAB TO THE CLASSROOM

The Learning Blueprint is designed to introduce teachers and educators to the latest and most important concepts from the field of Learning Sciences, as well as to deliver a practical model that educators can use to evaluate their own teaching strategies and evidence.

Our objective is to bridge the gap between the laboratory and the classroom. We begin by exploring how the brain works to make sense of reality/drive learning, before diving into the 12 PEN Principles of education. From there, we consider how scientific research can (and cannot) be meaningfully applied in practice.

The Learning Blueprint is divided into five sections:

SECTION LISTING

- ✓ **SECTION 1** | Foundations of Thinking
- ✓ **SECTION 2** | Foundations of Learning
- ✓ **SECTION 3** | Principles of Learning (Pt 1)
- ✓ **SECTION 4** | Principles of Learning (Pt 2)
- ✓ **SECTION 5** | From Theory to Practice

By examining issues of purpose, value, and what we mean by 'effective practice', teachers will come to recognize their own expertise and understand how to best unite their personal style with emerging ideas from the laboratory.

More importantly, teachers will learn how to effectively develop and assess their own ideas in order to promote the types of learning outcomes they desire from their students.

LEARNING OUTCOMES

After completing this module, teachers will be able to:

- ✓ Describe the two primary modes of thinking, the three primary ways of 'accessing the coder', and the key role that errors play in learning.
- ✓ Describe the basic mechanisms that underpin learning, the learning process, and the impact this process has on learning transfer.
- ✓ Understand the 12 PEN Principles, and identify how each might inform their daily educational practice.
- ✓ Evaluate how scientific research can (and cannot) be meaningfully applied in the classroom.

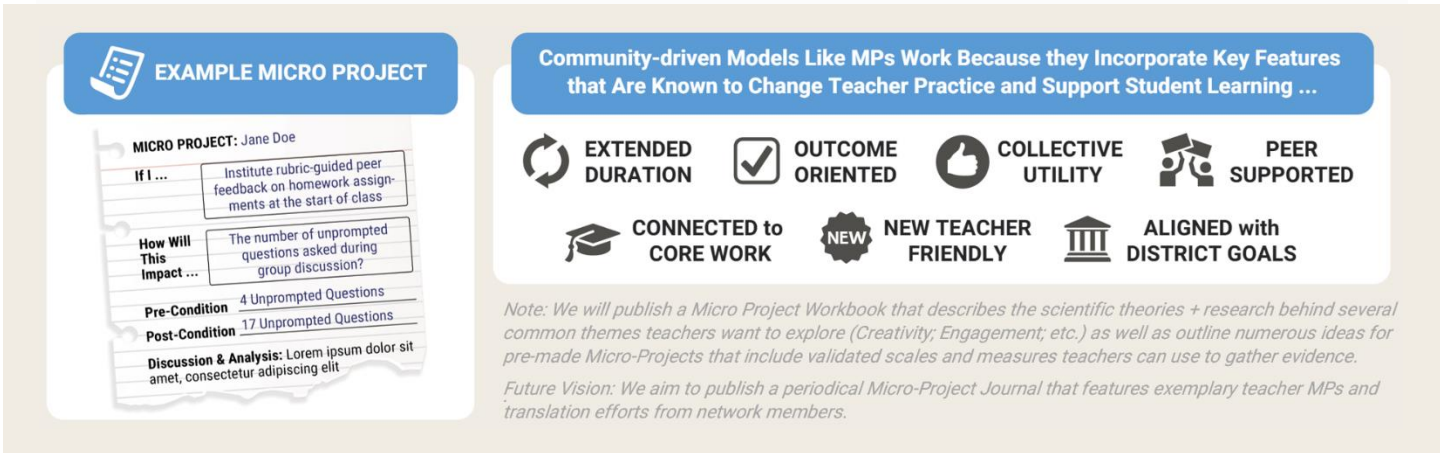
MODULE ASSESSMENT

Following this module, teachers will complete two brief Micro-Projects (MPs).

WHAT IS A MICRO-PROJECT?

A Micro-Project (MP) offers a practical framework for teachers to test, assess, document and share pedagogical strategies that are relevant to their practice. Through this process, MPs allow teachers to:

1. **DIAGNOSE IMPACT** … by testing, assessing and gathering tangible evidence
2. **SHARE IDEAS** … by collaborating via a simple, consistent framework



Note: We will publish a Micro Project Workbook that describes the scientific theories + research behind several common themes teachers want to explore (Creativity; Engagement; etc.) as well as outline numerous ideas for pre-made Micro-Projects that include validated scales and measures teachers can use to gather evidence.

Future Vision: We aim to publish a periodical Micro-Project Journal that features exemplary teacher MPs and translation efforts from network members.

WELCOME MESSAGE

Hi there. My name is Jared Cooney Horvath, and first and foremost I want to thank you for participating in The Learning Blueprint. I'm very excited about this module, and I hope to deliver some practical value that you can immediately leverage in your day-to-day practice.

Before you begin going through the main content, I wanted to quickly express my 'big-picture' goal for this module ... as well as emphasize a few points to set expectations and help you extract maximum value.

MY PRIMARY GOAL (AND WHY 'HOW TO' GUIDES OFTEN FAIL)

To help you better understand my primary goal with The Learning Blueprint, I find it helpful to analogize my general approach to cooking.

Let's imagine you wanted to bake a cake.

If I were to give you a detailed, step-by-step recipe for baking a cake, you'd probably be able to follow the instructions quite easily. Mix three eggs with some butter, add whole milk, whisk in some flour … pretty simple.

But what would happen if you had no eggs? Or were allergic to milk?

Without a deeper understanding of the purpose for and interaction between each ingredient, you might become derailed and have little clue about how to press forward and tweak the recipe to suit your unique kitchen; your unique tastes; your unique requirements; etc.

This is why simple 'how to' guides so often fail. Although surface-level tips and techniques may be useful under certain circumstances, without a deeper understanding of the fundamental concepts, we must blindly follow instructions with no clear sense of why they work (or don't work).

Accordingly, if we want our instruction to be effective, we must move beyond simple recipes and dig deeper into the mechanisms behind why each recipe works. In other words, we should strive to become a Gordon Ramsay of teaching.

That is my goal.

By exploring brain research, diving into key psychological ideas, and conducting a number of relevant (and fun) experiments, I will introduce you to the latest and most important concepts from the field of Learning Sciences, and present 12 fundamental principles of learning.

However, I don't want to simply help you apply these concepts in the classroom.

Instead, I want you to ‘take ownership’ of key learning principles by helping you develop a deep understanding of each one -- which, in turn, will give you the power to confidently adapt, modify and personalize them to your own contexts.

A FEW QUICK NOTES

Before we dive in, there are two things I want you to be aware of:

First, the concepts we will explore are foundations of learning. Accordingly, they are supported by a wealth of brain and behavioral research. In this instance, when I say ‘research’, I don’t mean a single obscure study from 1970 conducted with rats in the Siberian wilderness. I mean well-characterized, well-replicated research spanning decades of scientific toil.

For this reason, I don’t want you to simply take my word for anything. If you wish to probe deeper into any of the topics I discuss -- or if you’d like to review the research that supports any of the claims I make -- please contact my staff at LME Global (or just submit a support ticket from this portal) and we will point you in the right direction.

Second, whenever I step into the role of ‘teacher’, I adhere to a basic maxim: if I cannot get my learners to experience a concept that I am discussing, then I do not yet truly understand that concept myself.

As such, I’ve tried my best to apply this maxim to The Learning Blueprint by offering a complement of learning devices -- including interactive lectures, guided reviews, reflection questions, recall exercises, recognition quizzes and additional resources (optional).

To get the most out of this module, I urge you to carve out the necessary time to complete all of these synergistic activities.

TIME COMMITMENT

The Learning Blueprint is delivered over five sections. Each section includes 45-60 minutes of main content, divided into short video lectures that can be tackled daily or every-other day.

Additionally, each section includes about 20 minutes of guided reviews, quizzes, recall exercises and reflection questions.

The total time commitment for this course is approximately 7.0 hours.

REQUIRED TOOLS & RESOURCES

Aside from an open mind and a strong internet connection, the only tool you really need at your disposal as you go through The Learning Blueprint is a physical journal or notebook.

Throughout the module, I will be asking you to consider reflection questions and complete 'free-recall' exercises ... and it will benefit your learning most if you physically write-down your thoughts and ideas.

In addition, it may be helpful (but not required) if you have access to a printer. There are a number of handouts and optional readings which you may decide are easier to consume in hard-copy format -- depending on your unique learning preferences.

OUTLINE

SECTION 1: FOUNDATIONS OF THINKING

The brain does not function like most people think … and this misunderstanding often stands in the way of effective learning.

In this section, we explore how the brain truly makes sense of reality, the power that concepts have over perception, and the importance of 'building the right story' BEFORE learning.

- **SECTION 1.1** | The Coder: How does the brain truly work?
- **SECTION 1.2** | The Predictor: Who is really in charge here?
- **SECTION 1.3** | Errors + Failure: The unsung heroes of learning

SECTION 2: FOUNDATIONS OF LEARNING

Now that we understand the power stories exert on perception, it's time to understand how these stories *physically act* within the brain to drive learning.

In this section we explore the foundational process of learning (from novice to mastery), how thoughts/actions physically drive this process, and the role that genetics play when it comes to skills and intelligence.

- **SECTION 2.1** | Brain + Plasticity: What is the brain made of ... and how does it change?

- **SECTION 2.2** | Genes + Intelligence: Are we slaves to our genes … or are they slaves to us?
- **SECTION 2.3** | Foundational Learning: What is the essential ingredient for learning at a fundamental level?

SECTION 3: PRINCIPLES OF LEARNING | PART 1

Now that we've uncovered the truth about how the brain actually works and explored the foundational process of learning, it's time to dive into specific educational principles that can be applied and leveraged in the classroom to improve learning outcomes.

In this section, we look at the first-half of the 12 PEN Principles. The PEN principles are a set of foundational educational concepts that have been gleaned at the nexus of Psychology, Education and Neuroscience.

- **SECTION 3.1** | PEN Principle #1: Written Text and Spoken Word Do Not Mix!
- **SECTION 3.2** | PEN Principle #2: Visual Images and the Spoken Word Mix Well
- **SECTION 3.3** | PEN Principle #3: Spatial Predictability Guides Attention
- **SECTION 3.4** | PEN Principle #4: Spacing Out Practice Enhances Memory
- **SECTION 3.5** | PEN Principle #5: Leverage Context According to Outcome
- **SECTION 3.6** | PEN Principle #6: Multitasking Impairs Memory and Learning

SECTION 4: PRINCIPLES OF LEARNING | PART 2

Now that we've uncovered the truth about how the brain actually works and explored the foundational process of learning, it's time to dive into specific educational principles that can be applied and leveraged in the classroom to improve learning outcomes.

In this section, we look at the second-half of the 12 PEN Principles. The PEN principles are a set of foundational educational concepts that have been gleaned at the nexus of Psychology, Education and Neuroscience.

- **SECTION 4.1** | PEN Principle #7: Mix-Up Practice Tasks to Boost Performance

- **SECTION 4.2** | PEN Principle #8: Embrace Errors to Improve Learning
- **SECTION 4.3** | PEN Principle #9: Active Recall Trumps Passive Review
- **SECTION 4.4** | PEN Principle #10: First Impressions Color Future Judgement
- **SECTION 4.5** | PEN Principle #11: Find the Story Behind the Facts
- **SECTION 4.6** | PEN Principle #12: Pre-Activate Strategies to Guide Learning

SECTION 5: FROM THEORY TO PRACTICE

Finally ... it's time to transform 'the science of learning' from theory to practice!

We start off this section by exploring two vital concepts: translation and emergence. Then, we dive into the *what, why and how* of Micro-Projects before cutting you loose to craft and execute two Micro-Projects of your own design.

- **SECTION 5.1** | Translation: Challenging the Prevailing View of Learning Sciences
- **SECTION 5.2** | Micro-Projects (Part 1): The What, Why and How
- **SECTION 5.3** | Micro-Projects (Part 2): Crafting and Executing Your Own Micro-Project

MODULE ASSESSMENT

In this section, you will find instructions for completing and submitting the results of your two micro-projects, which will serve as the assessment for this module.

MODULE WRAP-UP

After you've completed the module, please take a few moments to complete the following items:

- **FINAL RECOGNITION QUIZ** | Reactivate/reinforce the most important concepts we explored throughout the module.
- **EXIT SURVEY** | An opportunity to share some final thoughts about the module