

PROJECT-BASED LEARNING

The Comprehensive Guide to Phenomenon-Based Learning:

Volume 2

The Growth Mindset and Mini-Lessons

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Table of Contents

Introduction **4**

Pushing ourselves out of our comfort zone **10**

Carol S. Dweck's theory of the Fixed vs. the Growth Mindset **14**

How Phenomenon-Based Learning projects promote the Growth Mindset **18**

The Growth Mindset and How to Give Praise in a PhBL setting **20**

The Growth Mindset and Using Reflection as a Formative Assessment **27**

Case Study: Barbara **29**

How the Growth Mindset Becomes Visible in PhBL project **40**

Table of Contents

MINI-LESSON 1	44
MINI-LESSON 2	52
MINI-LESSON 3	57
MINI-LESSON 4	63
Benefits of Mini-Lessons	67
Positive messaging, myelinated neurons and PhBL projects	68
Case Study: Lyn	71
The Growth Mindset, Errors and PhBL projects	77

Table of Contents

The Growth Mindset, Neurology, and PhBL projects

82

Using Mini-Lessons to introduce key information during project work

90

Conclusions

104

Bibliography

107

When we believe that we can add to our knowledge base and skill sets through concerted effort, when we understand that success is tied to our willingness to apply ourselves and proactively dedicate ourselves to advancing...we have a **Growth Mindset**.

We bring these beliefs into our classrooms whether we are aware of it or not. Depending on our own mindset...

...we either actively further or actively deter our students in moving ahead. Either one manifests itself in our attitude toward their progress (or lack of progress) in how we approach planning - either introducing new information through many different modalities or through only one



What if... you were given the opportunity to go to another country to teach? You've taught in the same school, at the same level, using the same books and curriculum for the past 15 years, the methodology is teacher-centred so that you have little to prepare either from day-to-day or year-to-year as you use the same planning you've followed for the past umpteen years. You are comfortable, the curriculum is familiar, you have lunch every day with the same group of co-workers, you know most of the student body and their families. You can continue this way until retirement without too much effort.



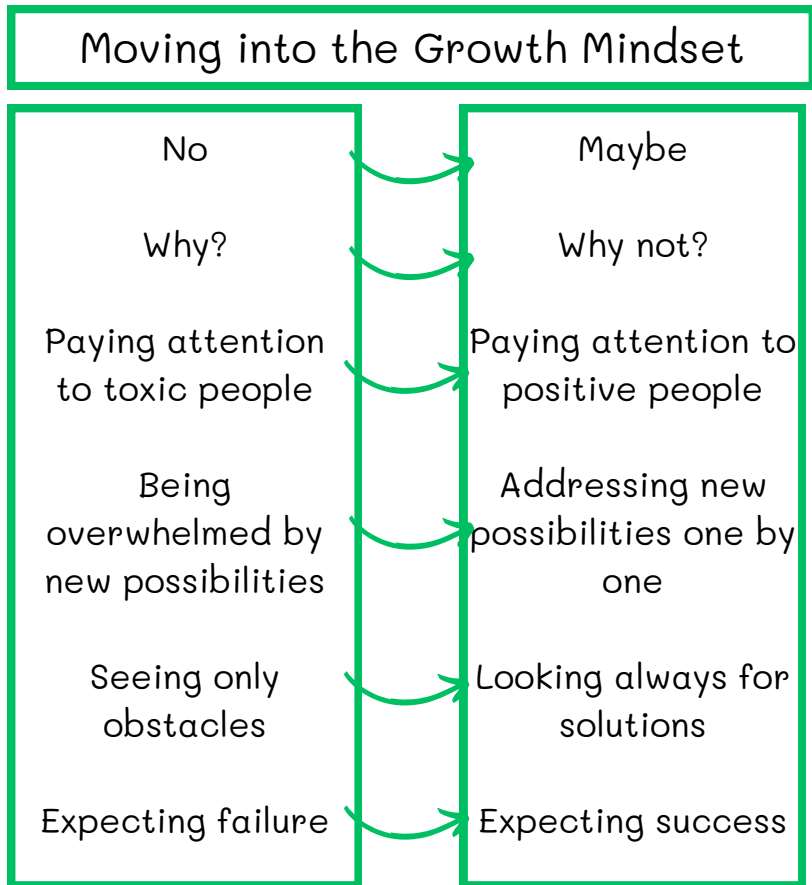
There are downsides. You see that your students are not engaged most of the time in class and you have to admit that it bothers you. You have tentatively researched different methodologies and have periodically proposed them to your staff. However, the staff is not at all motivated to consider other methods as the majority of the students pass the exams.

The director of your school is not exceptionally demanding but expects you to conform to the rules of the district, does not criticise but has never made you feel that your initiative is in any way welcome. Even when you suggest that the school may not be preparing the students for the future of today, she rejects alternative methods, as the parents are content with the statistics of their children's achievements (a.k.a. exam scores).

There is a definite attraction towards the opportunities of the job offer. You would be able to test out different methodologies and have the chance to see how they affect the engagement of your students. The possibility of participating in a more dynamic learning environment in which students are active, interested and excited, creates a temptation that is hard to ignore.



With a colleague she had known for years, she talked through all of her doubts and anxieties. Her colleague was an extremely positive person, and also realistic, and so little by little they addressed each of the elements blocking Päävi's decision to accept the new job offer.



Here is how Päävi worked through some of her main blocks:

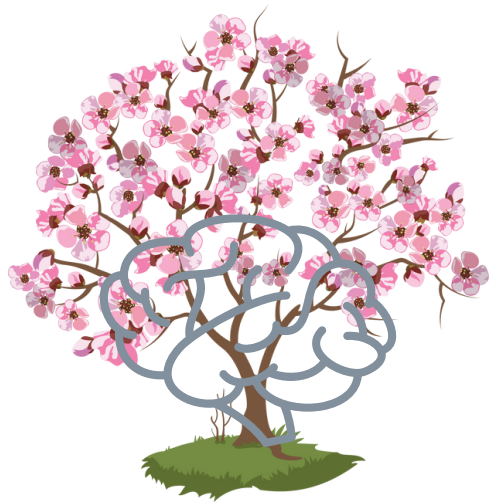
- ◆ *Whenever she visualised a situation and fear came up, Päivi turned it around and learned to see it as an opportunity.*
- ◆ *When her mind said 'no' to something, she trained it to change to 'perhaps', 'maybe' and...eventually...'yes'.*
- ◆ *When she asked herself the question 'why?' she got in the habit of adding "why not?"*
- ◆ *She stopped listening to her director's assessment of her abilities and ideas and instead prioritised her friends' and family's faith in her skills.*
- ◆ *When she felt exhausted thinking about learning different methodologies, she took a deep breath and visualised of all ways she and her students would benefit from the more vibrant learning environment.*
- ◆ *She stopped trying to solve all the moving problems on her own and enlisted her husband to consider them with her. They reframed them as 'challenges', discussed each one at length, and found ways to resolve each one of them together.*
- ◆ *She faced the panic she felt about being so far from her extended family by taking note of vacation dates, and making arrangements not just to visit them, but for them to visit her in her new home.*

In short, she found every way she could to be successful instead of accepting failure even before she began trying. This transition was a monumental feat that would influence her trajectory of the rest of her life.

Carol S. Dweck's theory of the Fixed vs. the Growth Mindset



Fixed Mindset



Growth Mindset

Later, when I read *Mindset*, a groundbreaking book by Carol Dweck, a psychologist on the faculty at Stanford University, I realised that what Päivi had done was to switch from a Fixed Mindset to a Growth Mindset.

In PhBL projects, the stress on competences instead of content is critical in helping students change their belief system about their assessment of their own importance in the world. In using positive affirmations from the concept of a Growth Mindset, students learn to see how they can make a difference to the people around them precisely because of their differences and those strengths that are not usually feted in conventional scholastic evaluations and objectives.



How Phenomenon-Based Learning projects promote the Growth Mindset

Phenomenon-Based Learning projects intrinsically counteract the Fixed Mindset and promote the Growth Mindset by giving room for students to work through and reframe their negative messaging so they can shine in different arenas. The varied elements involved in the structure of a PhBL project give students opportunities to demonstrate knowledge in many different forms - challenging them to augment their strengths and strengthen their weaknesses.



Phenomenon-based learning presents real life problems and asks learners to actively discover the knowledge and skills required to solve them. For teachers and students who are accustomed to teacher-centred learning environments, more autonomy in the learning environment can be intimidating. Filling the classroom with positive messaging, encouraging a focus on effort, the process, a willingness to learn, all support learners in facing different methods, methodologies, expectations, and skills.



With respect to diversity, you'll be very glad to know that functioning with a Growth Mindset as an underlying pin in your PhBL projects will also create a more inclusive, balanced learning environment. Addressing our students' self-messaging influences those with special needs in mainstream classroom activities. By creating a habit of facing challenging tasks with positive self-messaging, our students with different scholastic, physical and emotional needs, will begin to believe that they can master language and content that had previously seen as unattainable.



What messages do we give to our students during their work in a PhBL project? Glad you asked! Here are some guidelines...

Inappropriate praise (comments that are too general, ambiguous, irrelevant, or intrusive)

'That was great!'

'Wonderful!'

'Correct!'

'Really well done!'

'Great kick!'

'Very pretty colours!'

'How smart you are!'

'Very nicely written!'

'First place!! Excellent!!!'

'What a pretty shirt!'

'Your hair looks so pretty that way!'

'That t-shirt makes you look very strong!'

etc.



As common as these are and as benign as they seem to be, we need to reconsider their appropriateness. Comments about physical appearance - a student's hair, clothes, makeup, etc. - are extremely inappropriate and insinuate that a student's self-worth is tied to appearance.



encourage a push towards more student agency during project work. In the meantime, we have at our disposal one of the most powerful tools available to us as educators - and it's completely free: reflection.

To create and supervise PhBL projects with a solid foundation of a Growth Mindset, we need to begin by asking ourselves some fundamental questions...

How much do you truly believe
your students can improve?
All of them?

How does your planning directly
transmit your beliefs about the
above?

If you take a deep breath and think about your answer from your heart, from your practice, from your deepest belief system, it's possible that you'll be surprised by your own conclusions. I was.

These questions have farther reaching impact on your students than they may seem to have at first glance, so it behooves us all to consider them more closely.



I'll give you a personal experience and one which is a bit embarrassing, but instructive, so I force myself to share it with you, hoping it will encourage you to take a deeper look at your beliefs and practices and consider whether they're aligned for the deepest good of you and your students.

My student Barbara forced me to take these questions to heart and through her own Growth Mindset, she showed me that I had some serious reflecting to do.

Case Study: Barbara

When Barbara first became my student, I was teaching literature in a private bilingual school in Spain. As my formative training in the States had been in a charter school that eschewed publisher's textbooks, I was extremely lucky to once again have the freedom to design my own curriculum. With this flexibility, aside from being able to choose the texts we were going to use, I was also able to plan the learning through projects. Moreover, instead of conventional summative assessments (exams), I was able to ask for Final Tasks that would demonstrate critical thinking, creativity, inferencing, collaborative work, and a general insistence on student responsibility.

This heavy leaning towards higher-level thinking contradicted the methodology the students had in their other classes, which was deeply rooted in the traditional



How the Growth Mindset Becomes Visible in PhBL project

So, let's go back to the initial question 'Do you believe all of your students can learn?'.

I did not; but in admitting that, I began to reassess, reorganise, retrench. Could you do the same?

It's not our job to identify our students' limits.

It's our job to create learning environments in which our students feel limitless.

A teacher who promotes the Growth Mindset plans for and celebrates different criteria than one who does not. If you walk into a classroom in which students are working on a PhBL project with teachers who have a Growth Mindset, you will see that students are valued for their effort, determination, intention.



When I committed myself to expunging my belief that not all of my students can to learn, and to operate under the dictum that, given the appropriate circumstances they can all achieve their goals, I got down to work.

The following is how I approached learning differently from then onward.

In the next series of pages, you'll see four Mini-Lessons that are designed to facilitate and spark critical thinking and present key information in a common way at specific moments in the otherwise autonomous work in groups.

SCAFFOLD	<ul style="list-style-type: none">◇ Dynamic activities◇ Student centered◇ Written instructions◇ Different learning modalities◇ Introduction of academic language, concepts or content of Body of Lesson◇ DIRECTLY tied to Body of Lesson <p>(For more details, see scaffoldingmagic.com or 101 Scaffolding Techniques)</p>
BODY OF LESSON	<ul style="list-style-type: none">• The next page/unit of Student Book• A video• A podcast• A mathematical equation• Criteria to a project• Instructions to a science experiment• Rules of a sport
FORMATIVE EVALUATION/ REFLECTION	<ul style="list-style-type: none">○ 1-3 questions about the SCAFFOLDING activity (how they pre-learned the academic language, content or concepts, in a cooperative, dynamic way)○ 1-3 questions about the CONTENT of the Body of the Lesson <p><i>"This is so students become more conscious learners and aware of how they learn information most effectively"</i></p>

To be truly successful in the development of this very special structure of learning units, you need these mini-lessons to facilitate the consideration of various sides of specific concepts of literature, dilute dense scientific concepts so students have a common initial understanding of definitions, practice different meanings of academic language to proactively avoid



MINI-LESSON 2

Introducing Dense Literature through Art

As if the Bard's epic poem wasn't enough, I decided that my students were not going to graduate from my classes without having a



knowledge base of the Greek myths. I was horrified that they had none. From our travels with Odysseus, I realised that they were completely lacking in the references to names and events that would pop up unexpectedly for the rest of their lives, and I wanted their eyes to spark with recognition whenever that happened. (and of course to thank me retrospectively!)

Once again, however, though for me the whims of the Greek gods and the consequences for the humans who worshipped them have always been a fascinating source of pleasure, this turned out *not* to be the go-to reaction for most of my literal-minded students.



MINI-LESSON 3 continued

Thanks to some of Barbara's classmates who interpreted the world through art, I found the solution. I combined the importance of linguistics with illustrations in the Mini-Lesson you see below.



The first step of the Mini-Lesson is the **scaffolding activity** that combines a) a close-up study of specific dialogue, b) outlining what was happening in the scene when this dialogue was being spoken, and c) a 180° twist to portraying at least one element of the scene through art through the eyes of one of the protagonists who *wasn't* present.

*I prithee, and I'll pay thee bounteously,
Conceal me what I am, and be my aid:
For such disguise as haply shall become
The form of my intent, I'll serve this duke;*

- _____ says these lines.
- _____ says these lines to _____.
- At this point in the play, this is happening:

This is an image of at least one thing that is happening in the play at this point:

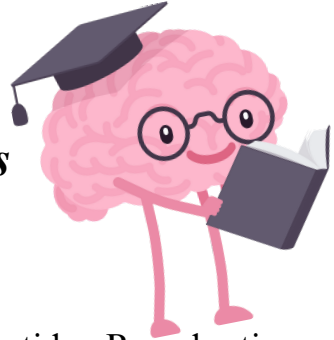
*By my life, this is my land's hand! These
be her very C's, her U's and her T's: why
that?*

- _____ says these lines.
- _____ says these lines to _____.
- At this point in the play, this is happening:

This is an image of at least one thing that is happening in the play at this point:



Benefits of Mini-Lessons



These Mini-Lessons turned the tide. By adopting a Growth Mindset and manifesting that outlook in my classes, I gave my students the opportunity to participate in activities in alternative ways (other than solely linguistic), and so they found that they could enjoy the plots and characters of the stories. By being able to build a strong platform of detail, they could then use their cerebral energy to uncovering hidden symbolism and meaning, which meant that they would be able to reach more original conclusions in their Final Tasks. Moreover...

- by using kinesthetic, artistic, visibility in scaffolds, they could understand the action in a more empiric manner.
- by playing games in scaffolds that involved thinking critically, their minds were actively engaged.
- by participating in collaborative scaffolds, the students were supported in retaining details of the plots.

Why is that important in the context of Phenomenon-Based? Well, especially since the pandemic, all of us have realised how important it is to make sure the Affective Domain is strong and foundationally sound in our students' learning environments. If we know that having a Growth Mindset with regards to our self-messaging can make the difference between feeling successful in completing a PhBL project or not, we can use it as a fundamental part of the structure of our students' work schedule.

Lyn took this practice to heart.

Case Study: Lyn



Lyn is a high school teacher in a private school in Taiwan. I had begun workshops with her school online, helping them to move into Phenomenon-Based Learning projects. and I began introducing elements of the Growth Mindset which is one of the critical steps in the successful interaction of the groups.

I noticed that all of a sudden, Lyn stopped participating. When I questioned her about it in private, she explained to me that she didn't see the relevance for her, as her students were on the honour roll and on the university track. She didn't see any reason to use the concept of the Growth Mindset in her lessons if they were already self-motivated.

After carrying out the routine with the Growth Mindset table for a few months, Lyn wrote to me enthusiastically with the following comments:



My conclusions after working with my students on the Growth Mindset affirmations:

- *By the end of the school year, 100% of my students now believe that we can activate our own intelligence through effort. They all admit that previously, they did this infrequently. Yesterday, at the end of our 5-minute discussion of the Growth Mindset affirmations, I asked one student why he was so quiet. He said that he was very nervous about an exam he had in another class the next day and he hadn't passed any of them during the entire school year. Before I could say a word, his classmates shouted out 'You haven't passed them YET!!! THINK POSITIVELY!!!'*
- *In the beginning of the school year, most of my students believed that they were failures because of their low academic skills. Now they see that a) they can also do well scholastically with effort and perseverance and b) their strengths in the 21st century skills we talk about frequently are also extremely valuable.*

The interesting part of her studies is that, even if the individual is not at first aware a mistake has been made, there is still more recorded brain activity.* Further - and this is key - she demonstrates that those with a Growth Mindset have a greater awareness of errors than individuals with a Fixed Mindset, so they are more likely to go back and correct their mistakes.

For students working in PhBL projects that continually challenge them to turn different corners, to be more creative, to think more laterally, know that their abilities are not fixed, that wrong turns are blessings, that their brain is more likely to spark and grow when they make mistakes, their anxiety will lesson. As educators, we have a large role in shaping our students' beliefs about themselves (although the case study of Barbara, above, shows that this can work in reverse - our students' beliefs of themselves can affect our own!)



So, though it's a bit extreme, if we did dance around the room, rang bells, and generally treated mistakes with a positive, joyous attitude, we might help our students to adopt a more consistent growth mindset.

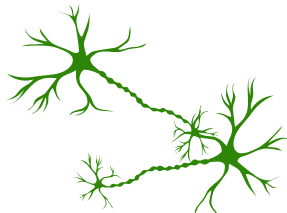
*Boaler, 2018

The Growth Mindset, Neurology, and PhBL projects

The neurology behind the Growth Mindset is actually visible and if you share this information and the following images with your students, you may help them - especially those with a scientific sensibility - to pay more attention to the veracity of the concept. I have seen that having this knowledge has long-reaching, positive effects on students.

This process also is tied to PhBL projects, so let's take a fairly shallow dive into the processing of the mind in three short steps...

1). The human brain is made up of a complex network of approximately 86 billion neurons.* These neurons serve as the building blocks for the nervous system, transmitting information to and from the brain and throughout the body. Along the sheaths (or axons) of the neurons, impulses continuously move as waves, and these waves move from one neuron to another.



*Cherry, 2019

If our students understand this, then they may be more likely and willing to repeat information as many times as it takes to myelinate their neurons with whatever information it is that they are trying to include in their deep consciousness.

Furthermore, and this is key, neurons myelinate with positive or negative messaging, so if your students understand that this also has a huge influence on their emotions as well and their outlook on the world because of blatant or hidden messages they receive from family or friends, they may be more motivated and engaged to practice the positive Growth Mindset affirmations as well.

What they also need to understand, is that for each of us, neurons myelinate on different timelines due to our biology and our predilection towards mastery of different skills. For instance...



when working on a project that includes a new art technique, your best friend, who has always seemed to be able to express herself easily through images takes one class session to master the technique, while for you, it takes months for your neurons to myelinate efficiently.

How can I share this information with my students?

Another phenomenal question.

I've created a Mini-Lesson just for this purpose - to help students fully understand the neurology behind the Growth Mindset. See what you think!

You're about to start your first PhBL project, but know that a large population of your students have heavy leanings toward a Fixed Mindset.



Before you begin the project, presenty the following Mini-Lesson:

Scaffolding activity: Give your students them the three steps on pp. 81-82. Ask them to illustrate these steps. They mount the illustrations on the classroom walls, study the illustrations from other classmates, give critiques (always following the 'best practices feedback approach', and verbalise the conclusions.

Using Mini-Lessons to introduce key information during project work

So now it's time to answer the question we posed above: What are Mini-Lessons? You've probably already figured it out from the many examples leading up to this section. However, let's spell it out clearly...

Before the details, however, a small disclaimer: One of the overriding goals of PhBL projects is to create opportunities for students to have more agency - to take more responsibility in every aspect of their learning (you'll see in Volume 4 how this is expanded into students co-creating the criteria for their projects). There are times, however, when all the students need to receive information at the same time and in the same way.

Well - at those times, we introduce scaffolding activities, then, right? Yes. But there's a bit more we need to do. We want students to go back to working autonomously as quickly as possible, but a scaffold relates directly to the Body of the Lesson, and for the time spent on the Body of the Lesson to be effective, we need to know in the moment whether they have assimilated the information we've targeted. For this, we need formative assessments, *ergo*: Mini-Lessons.



STEP ONE:

Scaffolding...There are as many definitions of 'scaffolding' as there are scaffolding activities. I find examples help me understand the actuality of any concepts, and yhou'll find examples of scaffolding activities in Volume 1 as well as in all the other volumes. However, all of us have different learning styles and many of you need the concept defined. So, here are some definitions that might help you clarify a scaffolding strategy more clearly:

- *an activity that temporarily supports learners and that is taken away when the information has been assimilated*
- *ways to approach curriculum points through various modalities in order to stimulate the curiosity of students and help them to become engaged in their studies*
- *techniques that help your students to reach beyond where they may have been able to go on their own by giving them the opportunity to approach material through different strategies and techniques*



- activities presented as a mode to lower anxiety about the introduction of new knowledge, so that learners can be more open and engaged in their studies, and in this way continue to move forward
- activities that target academic language, grammatical structures and concepts through contextual platforms
- presents and is directly tied to the Body of the Lesson

STEP TWO:

Body of the lesson...A key point or concept included in the PhBL project that you either know ahead of time needs clarification to the class as a whole, or one that arises during the production of the project that needs clarification to the majority of your students. This could be:

...a mathematical function that most of the groups are having difficulty using

...an art technique that requires a teacher-directed demonstration

...a group of musical notes and chords that are unusually complex and need a common technique



Many times many, during the follow-up sessions of the PhBL workshops I give, teachers excitedly share the positive feedback they've received from their students. When I ask them to show the written answers, they explain that they received the comments verbally. Then I ask them who gave them the feedback - the ones who raised their hands? The teachers nod, and then they have to admit that these are the students who always respond, and they have no feedback from those who never raise their hands. For this reason, written feedback is almost always more reliable.

You are really moving along now. Your first PhBL project is getting closer every breath you take!!!



Now that you have more of an understanding of Mini-Lessons, here are three more that you can use and adapt to your own needs...



Scaffolding

- ❖ Making predictions on what the video will be about based on quotes
- ❖ Putting quotes in context
- ❖ Considering images in the context of the quotes

Body of Lesson

- Watch video on the Ethics of Triage
<https://www.youtube.com/watch?v=CgDgM0xBSNE>



Formative Evaluation/ Reflection

- What is an ethic?
- What is the central ethical question that is highlighted in the video?
- How close were your predictions to what was explained in the video? How were they different?
- What part of the scaffolding activity helped you the most to understand the video more completely?

Knowing what techniques we can use to promote the Growth Mindset, gives us a comfort zone in which we can then create supportive structures for our students' work.

Tools such as the Growth Mindset table, redirecting our praise so that we encourage and recognise process and 21st century skills, designing Mini-Lessons to make sure our students have key information needed to make informed conclusions, all of this and more is needed to create a strong learning environment in which are students can shine.

How will you promote the Growth Mindset the next time you walk into the classroom or see your students in the hallways?

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