



### Put the learner in the driver's seat

## The Wheel of Learning

If you ask people what the word *learning* means to them, you will get many responses: school, discipline, restrictions, rules, structure, feelings of panic, stress, competition, boredom, and tests. People tend to equate learning with a myriad of experiences that may have little to do with what learning actually is. The most troubling aspect of these responses is that so many learning experiences seem to have been unrewarding. As a result, people may harbour negative perceptions toward the word, and ultimately the concept of, *learning*. It is as if the great *wheel of learning* has stopped for many people.

Yet learning continuously is vital for today's workplace. The individuals, teams, and organizations that value learning, and that are willing to learn effectively, are those that are better able to respond to increasing change and complexity. Today, information may be power, but the **ability to learn effectively** is the key to being successful in the 21st Century.

What we need to do is restart the *wheel of learning* that is resident in each person. That is what this **Course Design Guide** does. It shows you how to create an environment that puts learning and the learner in the driver's seat. In this Guide, discover a *Design System* that you can use to design any kind of learning situation, including short presentations, workshops, courses, and programs. Explore easy-to-use design patterns, templates, and strategies that rev up thinking and learning.



## Learning and Knowledge

### Defining learning and knowledge



#### Reference

This section is adapted from the **InfoMine** newsletter Vol. 3, No. 1. For more information on **InfoMine** newsletters, see Section 8, *Useful Contacts*, page 210.

We are designed to learn, and we can and do learn continuously throughout our lives. Learning is the process by which we create knowledge. It is not learning itself that is an issue, but how we learn, and whether or not we are able to create the knowledge we need. To understand this perspective, we need to understand what learning and knowledge mean. To define learning and knowledge, try this activity:

1. Below, sign your name the way that you would sign a cheque.
2. Now, sign your name with your other (non-preferred) hand.

This activity demonstrates the difference between *learning* and *knowledge*. Below is a table that lists general perceptions people have when they describe signing their name with their preferred and non-preferred hands.

Preferred Hand	Non-Preferred Hand
<ul style="list-style-type: none"><li>• Comfortable, natural</li><li>• Easy</li><li>• Automatic; didn't think about it</li><li>• Fast</li><li>• It has flow</li></ul>	<ul style="list-style-type: none"><li>• Uncomfortable, unnatural</li><li>• Hard, awkward, challenging</li><li>• Not automatic; had to think about it</li><li>• Slow</li><li>• It looks messy</li></ul>

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When you signed your name with your preferred hand, you probably did it without thinking about it. You probably found this activity to be comfortable, natural, and automatic. It is likely that you felt *competent* and in control while signing your name. This is because you *know* how to sign your name with your preferred hand. Your ability to sign your name without thinking about it is a form of knowledge. It is knowledge because it is repeatable and automatic.

In fact, if you stop to think about how to sign your name, you will find that you will be unable to sign your name automatically. The reason is that when you know something, you do not have to think about it; it is an *unconscious* activity. When you need to think about signing your name (as when you used your non-preferred hand), you move from the unconscious to the conscious.

Another way to look at the preferred and non-preferred hand experience is to consider how schools and organizations measure *success*. Typically, they measure success by how *competent* we are in producing knowledge and results, rather than by how we learn in order to produce the knowledge and results. In other words, if we know how to do something, we are competent, and we are *rewarded* with good marks or excellent performance reviews. But this is not what learning is about. Knowing something is a product of a process called *learning*. When you are learning, you can experience something very different than what is usually defined as success. The table below indicates this difference.

Preferred Hand	Non-Preferred Hand
<ul style="list-style-type: none"><li>• Knowledge</li><li>• Competency</li><li>• In control</li></ul>	<ul style="list-style-type: none"><li>• Opportunity for learning</li><li>• Lack of competency</li><li>• Out of control</li></ul>



### Reference

Candace B. Pert, Ph.D., is a neuroscientist, and the author of **Molecules of Emotion**. Pert has established a biomolecular basis for our emotions and their connection to how we learn. For more information, see Section 8, *Guide References*, page 204.

When you signed your name with your non-preferred hand, you might have found it uncomfortable, unnatural, and anything but automatic. You might have felt *incompetent* and *out of control*, because you do not know how to do this well. Therefore, it is an *opportunity for learning and for creating knowledge*.

If you read the descriptions in the non-preferred column, you will notice that they all describe how people feel. The act of learning is directly linked to our feelings. When we are learning, we are feeling emotion. In fact, we cannot learn without engaging our emotions. Candace B. Pert, a neuroscientist, has established a biomolecular basis for our emotions and their connection to how we learn. The authors' experiences with this name-signing activity has shown that people verbalize a wide range of feelings when signing their name with their non-preferred hand. For example, some people feel both good and not so good at the same time. Some find this activity a challenge, which can be both interesting and engaging. Others find this activity frustrating, because they feel incompetent. Still others find this activity boring, too difficult, or not worth the time.

Learning is more about experimenting, making mistakes, and failing, as we figure out how to do something well. For example, if we sign our name 10 times in a row using our non-preferred hand, each resulting signature will be different from the last, and we will do it differently. What we are doing is figuring it out as we experiment. Once we learn how to do something, it becomes knowledge. We do not have to think about it to gain access to this knowledge. The table on the next page summarizes the experience.

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Preferred Hand	Non-Preferred Hand
<ul style="list-style-type: none"><li>• Knowledge</li><li>• Competency</li><li>• In control</li><li>• <b>Doing it the same way again and again</b></li><li>• Doing it right</li><li>• Succeeding</li></ul>	<ul style="list-style-type: none"><li>• Opportunity for learning</li><li>• Lack of competency</li><li>• Out of control</li><li>• <b>Experimenting</b></li><li>• Making mistakes</li><li>• Failing</li></ul>

When organizations say that they want people to deal with increasing complexity and change, what they are asking is for people to become more effective in learning. It is only through the learning process that the knowledge can be created to deal with the challenge that complexity and change bring. However, if organizations insist on measuring learning not by its process, but by its results, this leaves little room for mistakes and failure, two essential ingredients in the learning process. This is one of the reasons that many people see the learning process in a negative light, as heard in people's descriptions of signing their name with their non-preferred hand:

- Uncomfortable, unnatural
- Hard, awkward, challenging
- Not automatic; had to think about it
- Slow
- It looks messy

This inability to understand the learning process becomes an even greater problem when organizations are faced with increasing complexity and change. In order to change, people must *learn to change*. In order to deal effectively with increasing complexity, people must *learn to deal with increasing complexity*. And if learning requires us to experiment — and thus make mistakes and fail some of the time — then increasing complexity and change requires the same.



### Reference

Tom Boydell, a researcher and consultant in relational systems, has developed a method of looking at relational systems in three ways: *a machine to be designed, a problem to be solved, or a mystery to be explored*. For more information, see Section 8, *Research References*, page 200.

However, in most organizations and schools, people *do not feel safe* to experiment and fail. Most of us want people to learn, but we want them to learn by *doing it right the first time* and to be *excited* about the prospect of learning something new — both aspects of knowing and competence, not of learning and a lack of competence. Even more revealing is that, when people cannot learn in this way, it becomes easy to judge them as either resistant to, or incapable of, learning.

This judgement is a product of an industrial age view of learning in which people are thought to be like machines. If people do not do it right, fix them or re-design them. Although this works well with machines, it does not work well with people. People are not machines; they are not problems to be solved. Rather, they are living beings, with skills and aspirations, all unique to each person — they are *mysteries to be explored*. And how each person learns is one of those mysteries that calls out to be explored.



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### An alternative learning agenda

What we need is a more realistic view of what it takes to learn, and to create an environment that engages learners. To do this, we first need to understand what learning really means to the people experiencing it. Then, we need to find out what helps these people to learn, especially when they feel incompetent, out of control, and possibly resistant to the learning process.

For people to make mistakes and fail, they need to cross over from their preferred state to their non-preferred state. To demonstrate this crossover, notice that a middle column, the *Learning Zone*, has been added to the table below. This zone represents the experience of crossing from the preferred state to the non-preferred state.

Preferred Hand	Learning Zone	Non-Preferred Hand
<ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Competency</li> <li>• In control</li> <li>• Doing it the same way again and again</li> <li>• Doing it right</li> <li>• Succeeding</li> <li>• Predictable</li> <li>• Order</li> <li>• Certainty</li> </ul>	<p><b>Questions we might ask ourselves:</b></p> <ul style="list-style-type: none"> <li>• Is it safe to try this?</li> <li>• Do I really have the time to do this?</li> <li>• What will happen?</li> <li>• Why do I have to do this?</li> <li>• Am I committed to doing this?</li> <li>• Do I have to do this?</li> <li>• Why do I feel compelled to do this?</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunity for learning</li> <li>• Lack of competency</li> <li>• Out of control</li> <li>• Experimenting</li> <li>• Making mistakes</li> <li>• Failing</li> <li>• Unpredictable</li> <li>• Disorder</li> <li>• Uncertainty</li> </ul>



**Reference**

Edgar Schein, a professor of management at the MIT Sloan School of Management, has coined the term *psychological safety*. For more information, see Section 8, *Guide References*, page 204.

Recorded in this *Learning Zone* is a sample of questions that people might ask as they cross over. Notice that these questions refer to how people might deal with the uncertainty that is connected to entering the non-preferred state. Also notice that the questions indicate different views of uncertainty, and are all emotion-based:

- As a possible threat: “Is it safe to try this?”
- As a challenge: “What will happen?”
- As a feeling that one must do it regardless of how one feels: “Why do I feel compelled to do this?”
- As questionable: “Why do I have to do this?”

For people to cross into the *Learning Zone*, they need to feel *psychologically safe* to experiment and to make mistakes. This means that they will feel safe and stable in their experience and knowledge, while also feeling safe enough to journey into the unknown. Psychological safety makes it acceptable for people to experience possible negative feelings associated with experimenting and taking risks. The spiral in the table below shows how the learning process is a movement between the preferred and non-preferred states.

Preferred Hand	Learning Zone	Non-Preferred Hand
<ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Competency</li> <li>• In control</li> <li>• Doing it the same way again and again</li> <li>• Doing it right</li> <li>• Succeeding</li> <li>• Predictable</li> <li>• Order</li> <li>• Certainty</li> </ul> <p><b>Psychological Safety</b></p>		<ul style="list-style-type: none"> <li>• Opportunity for learning</li> <li>• Lack of competency</li> <li>• Out of control</li> <li>• Experimenting</li> <li>• Making mistakes</li> <li>• Failing</li> <li>• Unpredictable</li> <li>• Disorder</li> <li>• Uncertainty</li> </ul>



### Engaging in the learning process



### Reference

David Perkins is a senior research associate at the Harvard Graduate School of Education, and author of several books. For more information, see Section 8, *Research References*, page 200.

## Becoming an Expert Learner

Learning is a process by which knowledge is created. In order to produce new knowledge, people must engage in the emotional roller coaster that accompanies the learning process. To do this, people need to become *expert learners* who do not give up when the learning process gets tough. Expert learners are able to:

- Generate the knowledge required to anticipate and to create the future
- Take the initiative to identify the root causes of problems at their level, and to solve those problems
- Create a culture in their organizations that favours two-way communication
- Sustain a high level of internal motivation, so that they can share ownership of both the problem and the solution to the problem
- Learn continuously, in order to develop themselves and their organizations, and to develop the skills and capabilities to design and implement their own learning systems
- Release their talent and energy for innovation, creativity, and risk, so that they can overcome any individual and/or organizational barriers to change
- Increase their confidence, their capacity to understand others, their ability to achieve results in spite of uncertainty, and their capacity to work with diverse people and groups
- Embrace complexity, uncertainty, change, and diversity, so that they can anticipate, and respond effectively to, any change or circumstance

According to David Perkins, expert learners consider any difficulty an intellectual challenge; on the other hand, *nonexpert learners* give up when the intellectual going gets tough. However, this does not mean that nonexpert learners have less intellectual capability.



### Reference

Peter Honey and Alan Mumford are primary researchers in management learning from the United Kingdom, and authors of several books on action learning and the learning process. For more information, see Section 8, *Research References*, page 201.

According to Peter Honey and Alan Mumford, it simply means that nonexpert learners learn by chance and through crisis, whereas expert learners learn by reflecting on their experiences, and by planning to learn *before* an experience occurs. As a result, expert learners more often experience success throughout all aspects of their lives.

Honey and Mumford explain the difference between expert and nonexpert learners. In their research, they identified four different approaches to learning:

- The Intuitive Approach
- The Incidental Approach
- The Retrospective Approach
- The Prospective Approach

**The Intuitive Approach** involves learning from experience, using preferred methods of learning and knowing. In other words, people who use this approach simply learn as they experience life, but cannot describe *how* they learned something. They learn by chance. This group of people struggle the most with believing that reflecting on learning, and planning to learn, are beneficial to their success in both work and personal life.

**The Incidental Approach** involves learning by chance from crisis and/or change. People who use this approach learn from the traumas and changes that life presents. They are made aware of the need to change their behaviour through a crisis that shows them that something is not working, and that they must change their approach to this particular situation. Then, they move on to the next experience without having analyzed the learning that the crisis offered. They miss the opportunity for reflecting on the experience to determine what worked and what did not work, in order to plan to learn from the next experience.

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### Note

The authors believe that, generally speaking, nonexpert learners tend to rely only on one or two of these approaches, whereas expert learners have the capacity to rely on all four approaches.

**The Retrospective Approach** involves learning from experience by reflecting on what happened, and drawing conclusions. People who use this approach have no difficulty reflecting on their experience and analyzing it to identify the learning points. However, they tend only to look backwards on a situation, rather than looking forward and planning to learn.

**The Prospective Approach** involves being retrospective, and includes planning to learn *before* having an experience (e.g., scenario planning). This approach has the advantage of helping people to become ready to learn the most from anything that a situation may offer. People who use this approach are called *expectant learners*, because they *expect to learn* from everything.

The authors believe that none of these four approaches is better than the other. All four approaches work in a dynamic relationship with each other; they are all useful in certain situations, and they all contribute to the learning process. In fact, in the real world of work, there is often little or no time to use retrospective and prospective learning approaches because they require more time. More often than not, in these time-starved situations, people resort to intuitive and incidental learning approaches. The authors realize this, and have developed this Guide to increase people's effectiveness in using all of these approaches. They have focused on developing the retrospective and prospective learning approaches whenever there is *time* for learning to occur (e.g., in a classroom or presentation). Then they focus on transferring this learning capacity to both intuitive and incidental learning.

To become an expert learner, we need to use a mix of all four approaches. In *choosing* to use all of these approaches, we make a commitment to a journey of taking advantage of everything that life has to offer — and to learning from it. We make a commitment to becoming expert learners.



## Increasing Learnable Intelligence

### Learnable intelligence

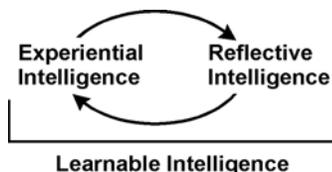


### Reference

David Perkins is a senior research associate at the Harvard Graduate School of Education, and author of several books. For more information, see Section 8, *Research References*, page 200.

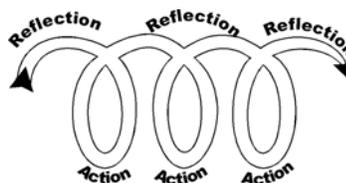
Using the four approaches together is a way of increasing what Perkins calls *learnable intelligence*. According to Perkins, we are born with *neural intelligence* (measured by IQ), which never changes. We gain *experiential intelligence* through experience in a specific area, such as playing chess. We gain *reflective intelligence* by being aware of our thinking patterns, and the way that we can change these patterns. Experiential intelligence works in partnership with reflective intelligence (shown below).

### Learnable Intelligence



Perkins calls this partnership *learnable intelligence*, and he believes that we can increase this form of intelligence by focusing on how we use reflective intelligence (retrospective and prospective learning). This partnership of reflective and experiential intelligence is similar to the spiral shown previously in the *Learning Zone*. The *Spiral of Learning* diagram below shows that, as we learn and create knowledge, we also create new and novel ways of thinking and knowing. In this diagram, experience is shown as *action*, because we gain experiential intelligence by taking action.

### Spiral of Learning



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### Experiential intelligence and patterns

Research in cognitive science, the study of how the brain functions, shows that the human brain focuses on pattern generation and recognition. The human brain develops patterns in order to deal with the input of massive amounts of information. These patterns manifest themselves in the ways in which people think, learn, and act.

According to Perkins, experiential intelligence increases as we build more and more patterns about the world as we know it through our experience. Patterns are important as a guide through life. They help us to get dressed in the morning, to get to work on time, to do our work well, and to have relationships with people.

Relying on these patterns can also get us into trouble, especially if they do not get us the results that we want. The pattern recognition system gives rise to *illusions of knowing*, when we are convinced that we know, when, in fact, we do not. These illusions are short cuts in our minds. They only become a problem when these short cuts are not true, but we believe them to be true.

Tapping into, and using, reflective intelligence helps us to be aware of whether or not we may be operating from an illusion of knowing. This enhances our ability to learn, thus increasing our learnable intelligence. The *Design System* in this Guide is based on developing the reflective and experiential intelligence partnership, thus increasing learnable intelligence.

## Rationalizing experiential intelligence

When we tap into *reflective intelligence*, we are able to critically question our illusions of knowing. However, too often, we are not aware of our ability to tap into this resource. As a result, we can make hasty decisions that come back to haunt us. We can take actions without considering the impact of those actions over time, and we can jump to conclusions by neglecting important evidence that contradicts our initial judgement.

This happens because it is much easier for us to rely on our *experiential intelligence*, rather than to spend the time to tap into our *reflective intelligence*. Relying on experiential intelligence is the same as being in the preferred state (shown below). What we tell ourselves and others gives clues as to when we are relying on experiential intelligence (see *Rationalizations* in the *Learning Zone* shown below).

Preferred State	Learning Zone	Non-Preferred State
<ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Competency</li> <li>• In control</li> <li>• Doing it the same way again and again</li> <li>• Doing it right</li> <li>• Succeeding</li> <li>• Predictable</li> <li>• Order</li> <li>• Certainty</li> <li>• Psychological safety</li> </ul> <p style="text-align: center;"><b>Relying on experiential intelligence</b></p>	<p><b>Rationalizations:</b></p> <ul style="list-style-type: none"> <li>• I know what I'm doing!</li> <li>• I know I'm right!</li> <li>• I don't have time!</li> <li>• This is good enough!</li> <li>• I know what will happen!</li> <li>• I don't need to do this!</li> <li>• This isn't important!</li> <li>• This isn't relevant!</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunity for learning</li> <li>• Lack of competency</li> <li>• Out of control</li> <li>• Experimenting</li> <li>• Making mistakes</li> <li>• Failing</li> <li>• Unpredictable</li> <li>• Disorder</li> <li>• Uncertainty</li> <li>• Survival anxiety</li> </ul> <p style="text-align: center;"><b>Using reflective intelligence</b></p>

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These rationalizations support a feeling of *competence* that is based in experiential intelligence, but is not necessarily good thinking. Most of the time, people are completely unaware that they are doing this.

Why do people not use their reflective intelligence more often? The reason is that people do not think to do this, because using reflective intelligence is not an established pattern that they have. This means that using reflective intelligence is not easy to do — it is a non-preferred method. The outcome of this deficiency is that people continue to create results that they do not want. Even if they do create the results they want, they are often unsure about how they did this, so it is hard to re-create the same results.

Do people who are more reflective by nature use reflective intelligence simply by being more reflective? The answer is probably no. Their reflective nature is their form of experiential intelligence, thus it is their preferred state. Being reflective means that you are an observant person who is paying attention to what is going on around you, and you are gathering information. Like anyone else, people with a reflective nature have biases on what they decide to use for reflection (e.g., they may gather information on people and relationships, or on tasks and how they get done). Using reflective intelligence is useful for people who are reflective by nature, because it can show them their biases both in reflection and action.

## Transfer of learning



### Reference

David Perkins is a senior research associate at the Harvard Graduate School of Education, and author of several books. For more information, see Section 8, *Research References*, page 200.

David Perkins explores yet another aspect of learnable intelligence called *transfer of learning*. There are three kinds of transfer:

- *Low road transfer* is pattern driven, stemming from an over-reliance on experiential intelligence. For example, people do things the same way all of the time.
- *Far low road transfer* is also pattern driven and relies on experiential intelligence, but it does so by stretching the thinking over broader areas. For example, people will try to make improvements in how they do things.
- *High road transfer* is a transfer of concepts from one situation to another situation that is not directly related. For example, people will try to apply their learning to other parts of their work or lives.

Expert learners continuously work at increasing their learnable intelligence. They do this by developing skills and experience in using reflective intelligence. They transfer their learning across a wide range of applications, thus broadening and deepening their learning experiences. They are comfortable with the varied emotions that learning provides.





### Disposition to use reflective intelligence



#### Reference

David Perkins is a senior research associate at the Harvard Graduate School of Education, and author of several books. For more information, see Section 8, *Research References*, page 200.

Perkins draws on Professor Richard Paul's concept of *strong-sense* and *weak-sense* critical thinking to explain how disposition works.

## High and Low Disposition

Perkins believes that the most important part of reflective intelligence is *disposition*, because everything we think and do is shaped by our disposition toward what we do. If people exhibit high disposition, they are *committed* to thinking about their thinking, to being open to other forms of thinking, and to thinking across different areas, as well as to acting in different ways; they are willing to experiment by going into their non-preferred state. Those exhibiting low disposition may have the ability to think and act well, but they *lack the commitment* to think about their thinking and to experiment with learning. A lack of commitment to thinking deeply about complex situations and to experimentation indicates a low disposition to thinking and learning. When faced with a complex situation, a person exhibiting low disposition may try to simplify it by looking at only those aspects of the situation that seem easy to tackle. This person is unlikely to inquire into his or her thinking and acting. The person who exhibits high disposition is more likely to explore the complexity of the situation, and to be committed to exploring what underlies his or her thinking and acting.

Disposition is also contextual, which means that it depends on the situation. Some people who exhibit low disposition in one situation may exhibit high disposition in another. The difficulty with disposition is not understanding it as a condition of thinking and learning. Often, those who exhibit low disposition can be unfairly judged as being slow or resistant to learning. Often, learners who exhibit low disposition cannot understand those who enjoy learning. And there are those of high disposition who also do not enjoy the learning process. To these learners, learning something new can seem difficult and even painful, as painful as *walking on broken glass*.

## How disposition works



### Note

The authors have developed the model on the next page based on their experiences with working in situations in which adults displayed a great deal of what might be considered *low disposition*. The authors have come to believe that disposition is a complex dynamic that is not simply an individual phenomenon. Although it seems to occur within individuals, disposition is affected greatly by group and cultural dynamics. The diagram on the next page, and the accompanying narrative, is an attempt to illustrate this complexity.

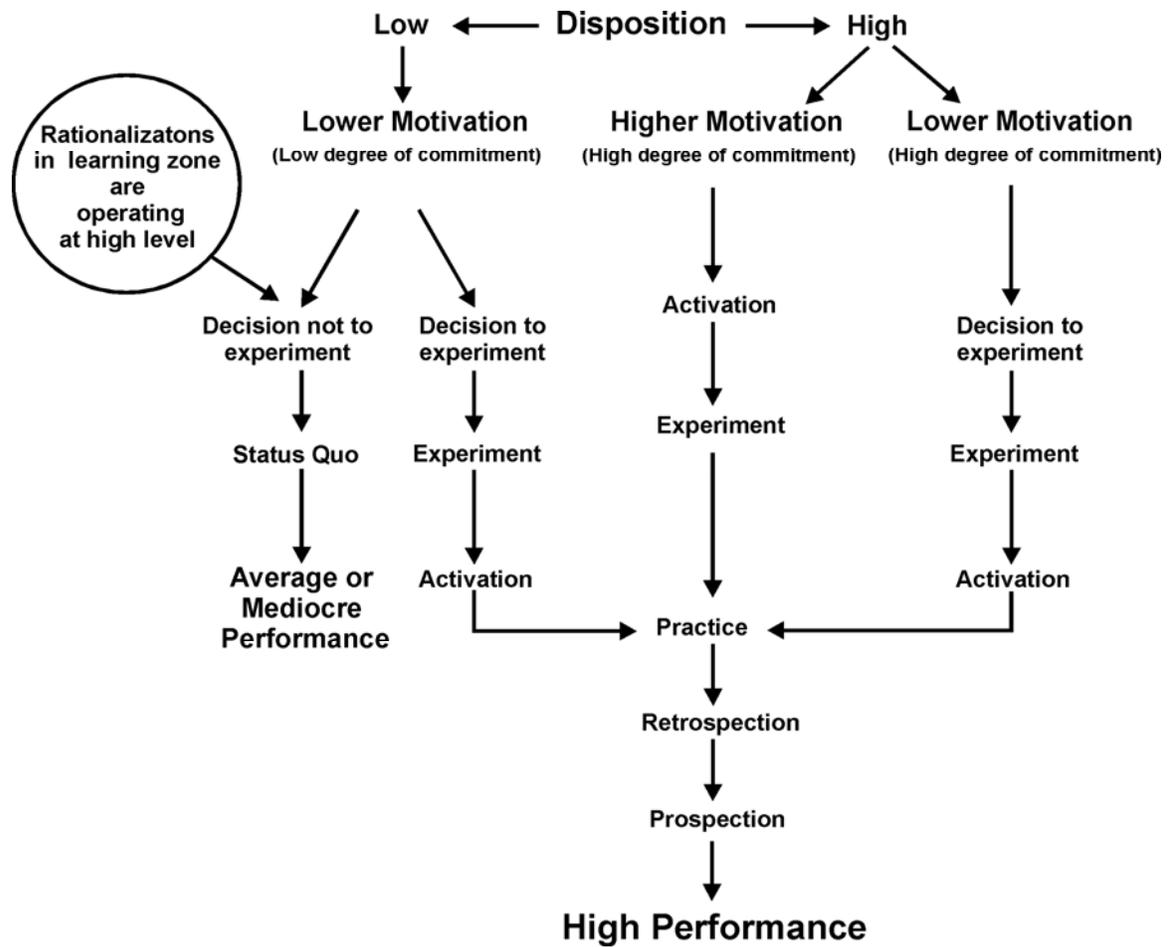
However, having a low disposition does not mean one cannot learn or increase reflective intelligence. Even those of high disposition can increase their reflective intelligence. Disposition can tell us how easy it is for someone to become committed to the learning process. Perkins has found that specific kinds of learning structures enable thinking and learning to happen, especially for those exhibiting low disposition. Perkins has also found that facilitating the learning experience plays an equally critical role in supporting those with low disposition to become engaged in the learning experience. For example, it is important that facilitators not expect or require all learners to enjoy the experience. In fact, facilitators need to be open to a number of behaviours from learners, including complaints about how difficult learning is. Thus, the learning structure and facilitation stance, when in a collaborative partnership, create optimal conditions for thinking and learning.

On the next page is a model that describes how disposition works. In this model, the term *experiment* is used to signify the crossover from the preferred state to the non-preferred state. The term *motivation* is used to demonstrate that some people, even those with high disposition, are not always motivated to learn. Those with high disposition and high motivation are driven by the exhilarating feeling that facing a challenge brings. Those with high disposition and low motivation are committed to learning, even if it is a struggle. Those with low disposition and low motivation struggle with being committed to the learning process at all.

In this model, if a person exhibits high motivation, he or she will be *activated* before the experiment. If a person exhibits low motivation, he or she may be *activated* after the experiment. In fact, some people say they *never feel good about what they have learned, but know it was good for them to learn it*. However, people exhibiting either low or high disposition, or high or low motivation, can learn effectively, and they can increase their use of reflective intelligence.

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## Disposition Model



## Disposition and design



### Note

The authors based the idea that *design is everything* on their work with both novice and experienced facilitators, and on their own personal experiences with facilitating. They have found that the *Design System* in this Guide produces consistent results in both engaging learners and accelerating the learning process.

Understanding disposition can help you to engage learners in reflective intelligence, thus creating increased learnable intelligence. What people need, especially those with low disposition, is a feeling of *psychological safety* in order to experiment. And you can also help those who exhibit higher disposition to understand that not everyone sees learning their way. This Guide gives you a system and a set of tools that help you to design experiences that increase both psychological safety and experimentation at the same time. If you follow the *Design System*, you automatically create experiences that enhance all learners' capabilities to become expert learners.

The authors of this Guide developed this *Design System* out of their own experiences and desire to enhance the learning process. When they first started instructing, consulting, and facilitating, they found that they paid more attention to what was being taught than on how it was being received. As a result, they encountered what they thought were resistant learners who did not want to learn what they had to teach. It would take 15 years for the authors to understand what is required to inspire and rev up learners to learn. In their hearts, the authors knew that the learners were not the problem. They knew that the problem had something to do with *how* they were delivering the content.

*Design is everything.* It is the *design* that can make or break the effectiveness of a course or program to inspire learners to learn. A strong and effective design can save a novice. Even an exceptional and experienced facilitator cannot save a weak and ineffective design. Those novice and experienced facilitators who have tried the *Design System* in this Guide swear by it. The authors use this system for every situation in which they work. It works almost every time, and when it does not work, the situation is always salvageable. The reason is that the *Design System* puts learning and the learners first.

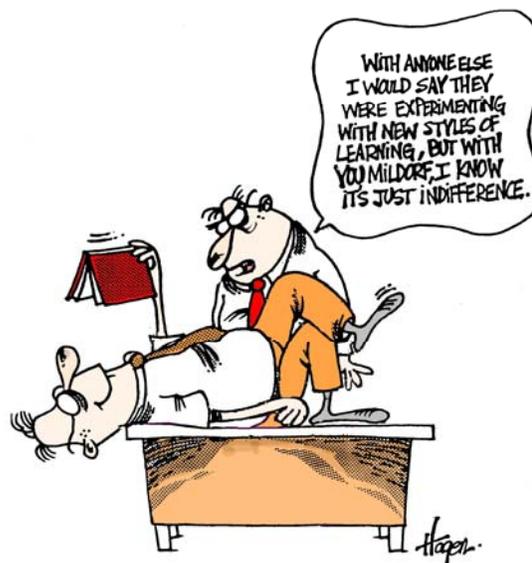


### Using This Guide

#### Purpose of this Guide and the Design System

This Guide and its *Design System* help you to:

- Design courses and programs that enhance the learner's ability to think and learn
- Design courses and programs that inspire learners to explore the content more deeply and broadly
- Help learners to be able to transfer what they learn in your courses and programs to the real world in which they work and live
- Support learners in taking responsibility and control of their own learning
- Create learning experiences that are challenging in ways that stretch the learner's ability to think
- Design learning experiences that accommodate learners with diverse learning and thinking styles
- Examine how you currently design courses and programs, in order to determine whether or not you are designing for whole thinking and whole learning
- Learn how to design learning experiences that accelerate the learning process



**Who uses this Guide?**

This Guide has been written for:

- Consultants, facilitators, and trainers who design and deliver courses and programs
- Instructors in post-secondary institutions (e.g., universities, colleges)
- Teachers in elementary and secondary school systems
- Parents who do home schooling

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**When to use this Guide**

Use this Guide when you are designing:

- Presentations
- Seminars
- Specific activities
- Short courses and workshops (e.g., 3-hour sessions, 1-day workshops)
- Long courses and workshops (e.g., 3-day workshops, 5-day courses)
- Entire programs



## Section 1: Getting Started

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### Designing for learning

When you are designing a course or program, remember that there are two ways in which learners can experience the content that you want to deliver:

**If you focus on designing for content**, both the learners and the learning experience take second place to delivering the content. You can focus on *content* by:

- Telling learners what they are to learn
- Using case studies that are not personally relevant to the learners
- Assuming that learners have learned the content, and will be able to transfer that learning to the real world

**If you focus on designing for learning**, both the learners and the learning experience take first place in delivering the content. As a result, you get the best of both worlds: learners learn from their actions, while learning about the content. You can focus on *learning* by:

- Helping learners to identify what they need to learn
- Using case studies as examples, then linking those case studies to each learner's personal experience
- Helping learners to apply and transfer learning that is personally relevant to the real world

This Guide focuses on designing for learning.

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### Stretching your capacity



#### Reference

For more information on support groups, see Section 8, *Useful Contacts*, page 210.

It is difficult to write a Guide that will meet everyone's needs. To deal with this issue, the authors have given you examples of how to use the concepts and ideas, but they do not cover all of the possible situations in which you may use this Guide. The authors assume that you will stretch your thinking and learning by experimenting with these ideas and concepts in your specific situation. To increase your thinking and learning capacity in this *Design System*, you may want to join or form a support group of people who are also using this *Design System*.

## Learning principles



### Reference

These learning principles are based on several sources, including the work of Reg Revans, Peter Senge, David Perkins, Alan Mumford, Peter Honey, Stephen Brookfield, Victoria Marsick, and Karen Watkins. For more information on these and other researchers in the field of learning, see Section 8, *Research References*, page 200.

The *Design System* in this Guide is based on five learning principles:

**1. Learners learn through real-life experience.**

The more that you design activities in which the learner applies the content directly to his or her personal experience, the more the learning will endure. For example, instead of using a generic case study to teach content, use the learner's personal example as the case study.

**2. Learning moves through action and reflection.**

Learning endures when learners reflect on their experience in a way that helps them to understand the experience, so that they can make informed decisions and take effective actions in the future (i.e., using reflective intelligence). For example, when the learners have done an activity, ask them to reflect on what they learned from the activity, and how what they learned translates into the real world.

**3. Human beings are designed to learn.**

No matter how resistant a learner may appear, given the right circumstances, this learner can become internally motivated to learn. For example, when a learner connects the learning to a personal experience, there is an automatic increase in that learner's internal motivation.

**4. Learners employ many different kinds of mental representations.**

The key to learning deeply, broadly, and quickly is to be aware of the way in which the human brain uses mental representations. Humans operate on assumptions in order to function. In some cases, these assumptions are reasonably correct; in some cases, they are not. To be effective in learning, learners need to examine their own assumptions, as well as the assumptions of others.

**5. Humans learn best with others.**

Humans learn best in groups, in which they can observe others who are learning, and receive feedback on their learning.

# Section 1: Getting Started

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## Guide contents

This Guide has 8 sections, as described below.

### 1. Getting Started

This section includes information on:

- Learning and knowledge generation
- Becoming an expert learner
- Learnable intelligence
- Disposition to thinking and learning
- How to use this guide

### 2. Design System

This section includes information on:

- The *Learning Cycle* and learning orientations
- Critical thinking and the *Learning Cycle*
- The *Learning Cycle* and the types of thinking
- How the *Learning Cycle* and learning orientations relate to each other
- How the *Design System* works
- Details of each of the 8 elements of the *Design System*
- How to use the *Design System* to design experiences that engage the learner

### 3. Start Here! Road Map

This section includes information on:

- Considerations for the design process
- Design outlines
- A road map that tells you where to go in the Guide to use the *Design System*

### 4. Design Patterns

This section includes information on:

- 8 design patterns for designing specific sections of a course or program
- Details on each design pattern, including references to strategies and templates

**5. Quick Tour**

This section includes:

- A summary of the *Design System* and *Design Patterns*
- How to use the *Design System* and *Design Patterns* quickly

**6. Design Strategies**

This section includes information on:

- 6 design strategies to use in designing an entire course or program
- Details on each design strategy, including how to use these strategies in designing courses

**7. Design Templates**

This section includes information on:

- 12 design templates to use in designing specific activities within a course or program
- Details on each design template, including how to use these templates in specific activities

**8. More Information**

This section includes information on:

- Instructions for completing and interpreting the *Learning Styles Questionnaire*
- Research references that inform this Guide
- A list of additional reading
- Useful contacts
- Information on the two authors
- A booklet called the *Learning Styles Questionnaire*
- A booklet called *Capitalizing on Your Learning Styles*