

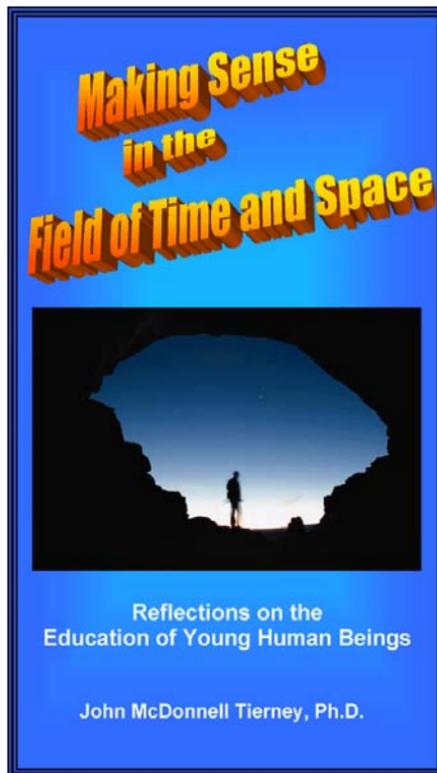
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# Making Sense in the Field of Time and Space

Reflections on the  
Education of Young Human Beings

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## Author's Notes

I am dragged...kicking and screaming...into this writing, having threatened colleagues, friends and myself for years that I was going to write a "book" titled ***Making Sense in the Field of Time and Space***.

Well, I would have written it (before now, that is), except I was busy, so I didn't. Now I did. This is it.

And so, thus begins this attempt at  
**Making Sense in The Field of Time and Space**

Respectfully submitted for your kind consideration,

*John McDonnell Tierney*

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**DEDICATION**

**Shaun Patrick Tierney  
"BEAR"**

***"Learning is a loop!"***  
Bear



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***About this book...***

This little book is a collection of reflections on various topics more or less related to the education of young human beings on the third planet from the Sun in the Milkyway Galaxy at the beginning of the 21<sup>st</sup> Century.

Each reflection is a simply stated idea; something to think about.

The content of this work is nothing more than the sense I have made about education after more than thirty-five years in the field.

It's my personal reality.

It comes from experience and intuition.

I make no claim to be "right" about anything.

This is just what makes sense to me.

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## 1. Making Sense

Human beings are fundamentally sense makers.

All human activity, physical and mental,  
is in some way about making sense.

Science, mathematics, language, religion, the arts  
are ultimately tools that we human beings have invented  
for making sense of our lives  
and the world in which we live.

***Teach these and other things  
as tools for making sense.***

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## 2. The Field of Time and Space

The phrase, "*The Field of Time and Space*" is borrowed from Joseph Campbell.

For me, the phrase suggests the possibility of other realities, other dimensions; at the same time, it suggests that we are constrained, however temporarily, to the time and the space in which we live.

***Teach and learn to make sense  
at this time in this space.***

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### 3. Spontaneous Education

Education is the process by which pieces of *socially constructed sense* becomes part of individual human beings as they develop. For the last several million years human beings have made sense of their worlds and times (*ascribing divine and unknowable intention to those things that just did not make sense*).

Once the sense has been made, it permeates culture and social practice. Young human beings (*spontaneous learners*) assimilate that pre-made sense through interaction with the people and objects in their environment.

Very recently in human history however, *what* and *how* young human beings learn, to a great extent, became formalized and prescribed.

Prescription limits possibilities.

***Be spontaneous in teaching.  
Encourage spontaneity in learning.  
Allow all the possibilities.***

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## 4. Schools

Schools are places where young human beings may learn in curricular (*intentional*) and non-curricular (*spontaneous*) situations.

School curricula are extensive. Often the most minute detail of what is taught and what is to be learned are pre-scribed and objectified.

School is also a place where lots of non-curricular learning takes place.

Through observation of peers and adults, assimilation of cultural and sub-cultural values, and interaction with people and objects in their environment, young human beings learn.

***Be careful what you teach;  
it may be learned.***

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## 5. Authentic Experiences

In formal educational situations, students who would become teachers...*doctors, musicians, scientists*, learn about education...*medicine, music, science*...

However, in the highly structured pre-scribed curricula that dominate educational practice, they do not learn the interrelated complexities and day-to-day requirements for expert performance.

It is through ongoing authentic experiences with the complexities that human beings build expertise, drawing on what they know about the domain to make sense of experiences in the domain.

***Provide authentic experiences.  
Do real work.***

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## 6. Complexity

To put it simply, everything is complex.

The relationship between the complexities we encounter and our ability to make sense of those complexities is a strong indicator of our intelligence.

Through on-going interaction with the complexities we learn to use the fullness of our intelligence to make sense of life.

To mask the complexities of life; to hide the complex interrelationships among and between all things; to simplify, stratify, and isolate the *parts* of life in the interest of understanding the *whole* of life (*it seems to me*) is just plain silly.

***Celebrate the complexity!***

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## 7. Understanding

Understanding is made sense.

Understanding results from the integration of *prior knowledge* and *present experience*.

When what we know and what we are experiencing do not provide sufficient information to make sense, we do not achieve understanding.

These states of understanding (*sense*) and not understanding (*nonsense*) create states of equilibrium (*stability, consonance, joy*) and disequilibrium (*instability, dissonance, sorrow*).

These states are not mutually exclusive; they can and often do co-exist.

***Do not seek total equilibrium, you will not find it.  
Do not fear total disequilibrium, it will not find you.  
Seek balance and live with both.***

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## 8. Equilibrium and Disequilibrium

There is a tendency in human nature to the state of equilibrium; to achieve stability, consonance, joy.

Yet, because all things are in a process of change, there is also a strong tendency to disequilibrium, instability, dissonance, sorrow.

And so it is that all life is the confluence of equilibrium and disequilibrium, stability and instability, joy and sorrow; a multiplicity of constantly teetering scales.

Because we human beings are active learners, we can choose to tip the scales in favor of joy.

***Choose joy!***

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## 9. Active Learning

All human learning is active. Even in the most passive situations, human beings learn, and in doing so, construct “new” knowledge.

New knowledge, like old knowledge, is not necessarily reality-based. We can be wrong.

“Wrong or right” our thoughts and actions are informed by this newly constructed knowledge.

As we act we experience;  
as we experience we learn;  
as we learn we construct new knowledge.

***Create learning opportunities  
in which young human beings can  
be mentally and physically active.***

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## 10. Motivation

(I just don't feel like writing about this today.)

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## 11. Interests

Interests are guideposts to our destiny.  
They lead us to our own unique path.  
They allow us to know ourselves better.

Stronger interest creates stronger motivation to act.

Interest can be cultivated and the actions that emerge can be guided.

***Pay attention to what interests learners.  
Make connections.***

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## 12. Motivation

Motivation flows from interest.  
It is the force that moves us to act.

Internal motivation is fire within.  
It is that which flows from internal interests,  
those that are natural and spontaneous,  
coming from a place central to each individual human being.

External motivation is heat from without.  
It is that which flows from external interests,  
those that are imposed and manipulative,  
coming from a place outside the individual.

***Feed the fires that burn within.***

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## 13. Training

When it is important for someone to be able to do something specific in a hurry there is a place for training within the spectrum of learning.

Humans train dogs, whales, elephants  
and other humans to do task-specific activities.

We do not ask Lassie, Free Willie, Jumbo or Johnny to understand why.  
They roll over, jump through hoops, stand on their hind legs,  
and walk in line because we reward them for doing so (*or punish for not*).

Training is fine for most animals.  
It's not enough for humans.

***Train critters.  
Educate people.***

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## 14. Human Needs

Needs are characteristic of human beings.

*"Children need to feel safe in school."*

All need statements carry an unspoken "if."

*"Children need to feel safe in school if they are to learn."*

It is important to understand where needs lie.

*"Children need to sit quietly in school."*

Some needs lie within us and not within other persons, objects, or things.

*"I need the children to sit quietly if I am to teach the way I want to teach."*

***Seek to understand the genuine  
Needs that lie within children.  
Respect your own needs.  
Find a balance.***

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## 15. Words and Meaning

Words do not have meaning.

Words are no more than collections of sounds, phonemes strung together.

Words have no inherent meaning. If they did, if the meaning was in the word, then all people would understand all languages.

The meanings of words are constructed in the minds of those who utter them, and in the minds of those who hear them.

The meaning intended by the speaker and inferred by the listener may or may not be the same.

***Speak to be understood.  
Listen to understand,  
Check for understanding frequently.***

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## 16. Language

Language is an attempt at wide-scale consensus.

When we use language, we agree that a particular collection of sounds (words) will be used to represent (mean) a particular concept.

Through participation in the language we internalize and eventually take for granted that this or that word *means* this or that.

We begin to think that the meaning lies in the word. It doesn't.

Language is alive, evolving, changing and a servant of context.

Meaning is always negotiable.

***Negotiate for shared meaning.***

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## 17. Personal Meaning

Personal meaning is constructed in our minds;  
emerging from our interests, perception and experience.

Meaningful things fill our life experience.  
They help define who and what we are as individuals and as cultures.

Meaningful experiences are a framework for making sense of life.

The more significant an experience is; the more meaning it holds.

***Nurture significant experiences.***

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## 18. Context

Context is everything. Everything is connected.  
Everything influences something.

Some aspects of the context are what they are;  
unchangeable features of the field of time and space.

Some aspects of the context can be manipulated to the benefit of living things.

We can create micro-contexts friendly to our intent;  
but they must always exist with the larger context.

***Build things that make sense within  
the whole context and the  
micro-contexts will work.***

***Honor the whole.***

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## 19. Models and Paradigms

Much of who we humans are, how we think and act, is describable in terms of *models*.

When a model becomes so pervasive that large groups of human beings no longer think outside the model, it may be described as a *paradigm*.

The evolution of human kind will be the result of the models we build and live.

Models that are friendly to living things will form paradigms that are friendly to living things.

***Build friendly models.***

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## 20. Tests

If we teach young human beings to take tests,  
we may eventually have a lot of old human beings who are good test-takers.

If we teach young human beings to live authentically,  
we may have a lot of old human beings  
who don't really need to be good at taking tests.

***Look at how people live  
to know what they have learned.***

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## 21. Knowledge

Knowledge is a collection of cognitive tools.

The building of knowledge over time is a fundamental characteristic of all life.

Knowledge is the amalgamation of information into form.

There are many kinds of knowledge, *(some useful, some not)*.

All knowledge has dimensions of breadth and depth.

***Seek the deeper knowledge in  
those things that resonate  
within you as meaningful.***

***Build useful knowledge.***

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## 22. Shared Knowledge

When we human beings experience life, we construct knowledge. When two or more human beings experience life similarly, we construct similar knowledge.

No two human beings construct exactly the same knowledge no matter how “similar”.

To the degree that the knowledge is “the same”; that knowledge may be thought of as shared.

Shared knowledge is essential for social interaction and for making sense of shared contexts and situations.

Shared knowledge is always under construction.

***Leave room for building.***

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## 23. Beliefs and Assumptions

We make sense of our experiences, to a great extent, based on what we believe and what we assume to be true.

Beliefs influence perceptions.

Assumptions frame judgments.

Beliefs change over time.

The more personal the belief; the more we resist changing it.

By examining our old beliefs and assumptions in the light of newly constructed knowledge, we have the opportunity to reinforce valid beliefs or to reframe those that no longer represent our true selves.

This process of self-examination often leads to cognitive dissonance.

***Don't be afraid.***

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## 24. Cognitive Dissonance

When new evidence conflicts with our beliefs and assumptions, we experience emotional pain and distress.

In music, when two tones “clash” harmonically, our “ear” tells us something is “wrong”.

In life, when two mutually exclusive beliefs clash, our “heart” tells us something is wrong.

We feel bad, confused, and anxious; we experience dissonance and we are in a state of disequilibrium.

***Build new beliefs that reframe, refine,  
and when necessary, replace old beliefs.  
And then...continue the cycle.***

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## 25. Mind and Brain

Brains are marvelous organs, electrochemical powerhouses.

Humans are born with a brain; we develop a mind.

Our brains allow us to think and feel, to experience life.

Our minds are the sum total of that thinking, feeling and living.

Minds can be shaped.

This is an awesome responsibility.

***Shape minds responsibly.***

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## 26. Personal and Physical Reality

Personal reality is constructed in the mind.  
It is defined by our on-going experience.  
It is always under construction.

Physical reality exists.  
It is always changing.

All personal realities exist within one physical reality, the field of time and space.

There is no single personal reality, when the product of a healthy brain,  
that is inherently better or more valid than any other.

***Honor other personal realities.  
Find commonalities with yours.  
Build bridges.***

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## 27. Talent

Everyone is differently talented.

Talent is the expression of natural inclinations that emerge from a specifically intelligent mind.

For the talented person, mental and physical activity in a domain flows spontaneously.

The athlete's body moves with grace and style;  
the musician's ear hears depth and clarity;  
the artist's eye sees subtlety and shape.

These things are not taught to talented people; they are nurtured.

***Look for natural talent in people.  
Nurture it.***

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## 28. Teaching and Learning

Teaching always results in learning; someone learns something.

Teaching does not always result in the intended learning by the intended learner.

What learners learn is not always what teachers teach.

Teaching is not enough.

Great teaching is not enough.

We need great learning.

We need great learners.

***Become an expert learner.  
Model great learning.***

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## 29. Contexts for Teaching and Learning

Teaching and Learning can happen anywhere at any time.

Teacher and learner have a good chance for success when the teaching and learning are motivated by genuine needs that arise from authentic “real world” situations.

The best context for teaching young human beings to live in the world’ is the world in which they live.

It’s not about the teaching!  
It’s about the learning!

***Go out into the world.  
Find places ripe for learning.  
Teach in context.***

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## 30. Experts

Experts are different than just plain folks. Oh, for the most part they're just plain folks too, but in some small aspect of life, they are really different from the rest of us. This is true even for things we can all do. There are some folks that are just so much better at and are so much more knowledgeable about even the most mundane activities that they have become *experts*.

Experts think differently about their field.

Experts have spent a lot of time getting to be experts.

Experts have multiple strategies for solving problems.

Experts use domain-specific language fluently.

Experts use technology effectively.

Experts do authentic work

Experts see the beauty.

***Become an expert teacher.  
See the beauty.***

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## 31. Expert Teachers

Most teachers are not experts in the domains they teach.

At the elementary levels, most subjects are taught by novices in the domain.

There is too much to know,  
too much time required,  
too much energy necessary for teachers  
to become experts in all the domains they teach.

Teachers *can't* be experts in *all* domains.

Teachers *can* be experts in *one* domain, *Learning*.

***Become an expert learner  
if you want to be an expert teacher.***

***Learn how human beings learn.***

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## 32. Technology

Tool-use is a defining human characteristic. The tools we have invented, our technologies, have allowed us to survive and flourish as a species.

With *physical* technologies we can lift more than an elephant; run faster than a cheetah; dive deeper than a dolphin; and, fly higher than an eagle.

With *cognitive* technologies, we can compute faster and more accurately than any other creature on the planet, including our human predecessors.

We have very powerful physical and cognitive tools.

How we use these tools, for good or not, will be the measure of our humanity.

***Use technology humanely.  
Teach children to do the same.***

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### **33. Authentic Work**

Authentic work is real work, consistent with expert practice, done for a genuine purpose and resulting in a physical or mental product.

Authentic work reflects inner fires, consistent with who we genuinely are, our true selves.

Authentic learning contexts are situations in which genuine work can be done.

***If you teach someone to cook;  
make sure there's someone who will eat.***

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## 34. Confusion

There are two, and only two, characteristics of confusion.

They are consistency, variety, and illusion.

*Don't worry about it!*

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## 35. Spirit

In the depths of who we are, in the essence of our humanity lies a commonality: *Spirit*.

Beyond religions, beyond politics, beyond paradigms and beyond time, Spirit makes us one.

Spirit says to us, "*Humans! Do you hear my music?*

*Do you feel the beat? It is your heart.*

*Do you sense the rhythm? It is your blood.*

*Do you know the harmony? It is your body.*

*Do you remember the melody? It is your song."*

Spirit says to us, "*Humans! Learn to live in tune."*

***Live in tune.***

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