

THE TWO FUNDAMENTAL LEARNING GAMES WE PLAY: A FRAMEWORK FOR DISCUSSION AND REFLECTION

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Introduction

The classroom can be thought of as an arena in which *The Learning Game* is played. At first glance, there would appear to be myriad variations of this game. When stripped to their essentials, however, the number of learning games reduces to two. I label them *The Knowledge Game* and *The Sense-Making Game*. These two learning games are quite different in character and purpose. They make different demands on the players. They are governed by different rules. They have different goals. They foster and reinforce different dispositions, habits, and beliefs in the players. Knowledge acquisition and use is a part of both games, but knowledge is acquired very differently and used very differently in the two games. In addition, the habits and dispositions fostered by one game act as impediments to playing the other game. Played well, both learning games can prepare players for success in school. However, only the Sense-Making Game prepares players for life beyond the classroom. Unfortunately, and herein lies the problem, the Knowledge Game is the learning game that is played most frequently, in most classrooms.

This paper presents a *framework* for describing, reflecting on, discussing and comparing the environmental factors, actions, learning experiences, thinking habits, dispositions, and beliefs characteristically associated with teachers and students ('the players') when they play each of these two fundamentally different forms of the learning game. Anyone who invests the time and energy to put flesh on this framework will be rewarded with a resource that should permit clearer identification of:

- the demands each game places upon the different players;
- the kinds of experiences players can expect to have in each game;
- the thinking habits, dispositions, patterns of behavior, and beliefs each game fosters in (and requires of) the various players;
- the benefits of playing the Sense-Making Game; and
- ways to encourage / enable the players to turn away from the Knowledge Game and embrace the Sense-Making Game (i.e. to shift paradigms.)

[Author's Note: A comprehensive discussion of these learning games can be found in *Teaching With Rich Learning Tasks* (2nd Edition) by Flewelling with Higginson, published by The Australian Association of Mathematics Teachers, <http://www.aamt.edu.au>, 2005]

A (Brief) Description of the Two Learning Games

<p><u>The Sense-Making Game</u> involves such things as:</p> <ul style="list-style-type: none"> - action (sense-making action) - teaching for understanding - learning with understanding - making sense of / with concepts and procedures - making sense of situations - using knowledge in an integrated, authentic, and purposeful fashion - using one's imagination and intuition / indulging one's curiosity - making sense to / of others - learning / using / refining sense-making procedures - inquiring / investigating / experimenting - thinking critically - problem solving / problem posing - developing dispositions / attitudes / habits of mind / beliefs of a sense-maker - engaging rich learning tasks 	<p><u>The Knowledge Game</u> involves such things as:</p> <ul style="list-style-type: none"> - acquisition (of knowledge) - transmitting / reproducing information - selecting appropriate rules / facts - duplicating procedures / adhering to conventions - knowing 'how' to do things - mimicking others - memorizing - answering speedily / accurately - technical proficiency - developing dispositions / attitudes / habits of mind / beliefs of a knowledgeable person - engaging routine or (at best) pseudo-rich learning tasks
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The Three Essential Conditions for Playing Either Learning Game

Students and teachers will not (and cannot) play either learning game unless they are willing to play it, unless they have the opportunity to play it, and unless they have the means or wherewithal to play it. The following generic 3-part framework (for reflecting on the two learning games) is based on these ‘*three essential conditions for playing a learning game.*’ Factors that have a major influence on each of these three conditions are included in the framework.

Any discussion of learning games that doesn’t take all three of these conditions into consideration is incomplete. Learning activities or initiatives that don’t take all three of these conditions into consideration usually prove to be ineffective, usually founder.

A Generic Framework for Understanding Either Learning Game

The following framework should be interpreted from (at least) two perspectives, the student’s and the teacher’s.

<p>FRAMEWORK</p> <p>1. The Player’s Desire / Willingness to Play the Chosen Learning Game</p> <p>(a) player’s <i>history of learning experiences</i></p> <p>(b) player’s <i>learning / classroom environment</i></p> <p>(c) player’s <i>values</i></p> <p>(d) player’s <i>dispositions / attitudes</i></p> <p>(e) player’s <i>expectations; beliefs about / sense of self and other players</i></p> <p>(f) player’s <i>beliefs about / sense of the discipline</i></p> <p>(g) player’s <i>motivation / incentives / rewards</i></p> <p>2. The Player’s Opportunity to Play the Chosen Learning Game</p> <p>(a) <i>the learning/ classroom environment</i></p> <p>(b) <i>learning tasks</i></p> <p>(c) <i>interaction amongst players</i></p> <p>3. The Player’s Ability / Wherewithal to Play the Chosen Learning Game</p> <p>(a) <i>prior knowledge</i></p> <p>(b) <i>previous learning experiences</i></p> <p>(c) <i>inclinations</i></p> <p>(d) <i>thinking / learning habits</i></p> <p>(e) <i>teaching practices / tools to facilitate learning</i></p>
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Indicators: Fleshing Out the Framework

Frameworks such as the one above are sterile, juiceless, colorless, faceless things until we flesh them out with descriptions of the players (and their play) in each game. These indicators describe such things as, the characteristic (or typical) actions, experiences, behaviors, practices, habits, beliefs, nature of tasks and use of resources generally associated with students and teachers as they play each game.

Think of these indicators as brush strokes on four paintings.

Painting #1 *Student Playing the Sense-Making Game*

Painting #2 *Student Playing the Knowledge Game*

Painting #3 *Teacher Playing the Sense-Making Game*

Painting #4 *Teacher Playing the Knowledge Game*

The table below illustrates the beginning of two of the paintings. Column 2 paints a (partial) picture of a student playing the Sense-Making Game. Column 3 paints a picture of a student playing the Knowledge Game.

<u>Framework</u>	<u>Sense-Making Game</u>	<u>Knowledge Game</u>
1. Student Desire to Play (a) Student History of Learning Experiences	Student Indicators for 1(a)	Student Indicators for 1(a)

(b) Learning / Classroom Environment (c) Student's Values Etc.	Student Indicators for 1(b) Student Indicators for 1(c) Etc.	Student Indicators for 1(b) Student Indicators for 1(c) Etc.
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A Closer Look at the Framework

This more detailed look at the framework should assist the reader to identify teacher and student indicators. The sample student and teacher indicators presented do not apply universally to all students and teachers nor do they apply exclusively to one game. Nevertheless, they do (I believe) begin the task of capturing the essence of the play associated with each game.

1. The Player's Desire / Willingness to Play the Chosen Learning Game

(a) player's history of learning experiences

Students and teachers tend to continue playing the learning game they have become accustomed to playing and, when asked, resist (at least initially) switching to the other learning game.

<u>Sample Indicators</u> Student / Teacher -	<u>Sense-Making Game</u> ▪ <i>accustomed to participating in discussions to make sense of ideas / situations / ...</i>	<u>Knowledge Game</u> ▪ <i>accustomed to listening to lectures and taking notes.</i>
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(b) player's learning / classroom environment

Environment includes such things as policies, resources, and classroom organization. Both, how curriculum is structured and how the teacher interprets curriculum, can influence the choice of learning game. The quality and presence or absence of print / hardware / software resources can also influence the game played (and the level to which it is played.) The 'rules of conduct' and atmosphere for learning in a classroom can lock teachers and students into a particular learning game (as can parental, public and administrative pressures.) The physical arrangement of a classroom can influence which game is encouraged or discouraged.

<u>Sample Indicators</u> Student - Teacher -	<u>Sense-Making Game</u> ▪ <i>flexible seating allows for independent and group activity.</i> ▪ <i>perceives curriculum as outlining a coherent set of important 'big ideas'.</i>	<u>Knowledge Game</u> ▪ <i>seating inflexible and suited to independent activity.</i> ▪ <i>perceives curriculum as a mandatory 'list of ingredients'.</i>
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(c) player's values

What the teacher or student believes is important influences game choice / play.

<u>Sample Indicators</u> Student - Teacher -	<u>Sense-Making Game</u> ▪ <i>'satisfying my curiosity'</i> ▪ <i>critical thinking skills</i>	<u>Knowledge Game</u> ▪ <i>'satisfying my teacher'</i> ▪ <i>technical proficiency</i>
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(d) player's dispositions / attitudes

Feelings, with regard to a person or thing (and mental outlook or mood) affect play and choice of game.

<u>Sample Indicators</u> Student - Teacher -	<u>Sense-Making Game</u> ▪ <i>delights in subject</i> ▪ <i>'risk taking is necessary'</i>	<u>Knowledge Game</u> ▪ <i>subject anxious</i> ▪ <i>'risk taking to be avoided'</i>
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(e) player's expectations

Teacher's expectations for their students affect the choice of game and level at which it is played. Student expectations of success or failure affect level of engagement in the game. Some students expect learning will involve such things as complexity, uncertainty and ambiguity while others expect it will involve such things as certainty, routines, clarity, and closure.

<u>Sample Indicators</u> Student - Teacher -	<u>Sense-Making Game</u> ▪ <i>'It's up to me to figure out how to do it.'</i> ▪ <i>'I expect different products from each of my students.'</i>	<u>Knowledge Game</u> ▪ <i>'My teacher will tell how to do it.'</i> ▪ <i>'I expect a similar product from each of my students.'</i>
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(f) player's beliefs about / sense of self and other players

Teacher's sense of what their work is; student's sense of their role as learner; student's sense of the role of teacher and fellow students; and similar things, affect the choice of learning game.

<u>Sample Indicators</u> Student - Teacher -	<u>Sense-Making Game</u> ▪ <i>'The subject is revealed to me by my actions.'</i> ▪ <i>'My work is to facilitate student sense-making activity.'</i>	<u>Knowledge Game</u> ▪ <i>'The subject is revealed to me by my teacher.'</i> ▪ <i>'My work is to share my subject expertise with my students.'</i>
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(g) player's beliefs about / sense of the discipline

A discipline can be seen as a collection of important / useful truths and tools or as a way of thinking and a way of making sense of one's world. The former is usually associated with the Knowledge Game, the latter with the Sense-Making Game. Assessment practices can reinforce a particular vision of the discipline in the mind of the student.

<u>Sample Indicators</u> Student / Teacher -	<u>Sense-Making Game</u> ▪ <i>'The subject is a way of thinking and making sense of my world.'</i>	<u>Knowledge Game</u> ▪ <i>'The subject is a collection of important truths and procedures I need to share with others.'</i>
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(h) player's motivation / incentives / rewards

Students can act out of fear of failure or out of regard for authority and they can act out of interest in the task at hand. Rewards can range from a validating comment from a teacher and a good mark to the pleasure experienced through increasing one's control over their own learning and through increasing their understanding of a situation. Preparation for exams or large-scale testing initiatives can cause the players to focus on one learning game turn away from the other.

<u>Sample Indicators</u> Student - Teacher -	<u>Sense-Making Game</u> ▪ <i>intellectual work is its own reward</i> ▪ <i>turning students on to the subject</i>	<u>Knowledge Game</u> ▪ <i>teacher / peer validation</i> ▪ <i>covering the course</i>
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2. The Player's Opportunity to Play the Chosen Learning Game

(a) the learning/ classroom environment

Resource materials, textbooks for example, can deny students (or provide students with) the opportunity to play the Sense-Making game. Depending on its design and the way it is used, software may give students the opportunity to play only one of the learning games. Time restrictions may restrict players' opportunity to play either game well.

<u>Sample Indicators</u> Student / Teacher -	<u>Sense-Making Game</u> ▪ <i>software used as a tool with which to think, problem solve, inquire</i>	<u>Knowledge Game</u> ▪ <i>software designed to guide student through tasks in lockstep / predictable fashion</i>
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(b) learning tasks

The richness, structure, relevance and nature of engagement in a task affect the opportunity for a student to play a learning game. Assessment practices and assessment tasks can encourage or discourage playing the Sense-Making Game.

<u>Sample Indicators</u> Student - Teacher -	<u>Sense-Making Game</u> ▪ <i>engages rich tasks.</i> ▪ <i>provides students with situations that generate rich learning tasks.</i>	<u>Knowledge Game</u> ▪ <i>engages routine or (at best) pseudo-rich tasks.</i> ▪ <i>provides students with routine learning tasks.</i>
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(c) interaction amongst players

How students and their teacher interact provides or denies players the opportunity to play the Sense-Making Game.

<u>Sample Indicators</u> Student - Teacher -	<u>Sense-Making Game</u> ▪ <i>discusses progress on task as it unfolds.</i> ▪ <i>encourages students to reflect on their work on task as it unfolds.</i>	<u>Knowledge Game</u> ▪ <i>answers teacher's questions.</i> ▪ <i>tells students what to do and how to do it</i>
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3. The Player's Ability / Wherewithal to Play the Chosen Learning Game

(a) player's prior knowledge

The conceptual and procedural knowledge already available to the players is a set of tools to use when playing a learning game, and a set of tools to use to generate / acquire new knowledge. These tools can be used in an integrated, authentic and purposeful fashion or in an isolated, arbitrary and artificial manner.

<u>Sample Indicators</u> Student / Teacher -	<u>Sense-Making Game</u> ▪ <i>conceptual and procedural knowledge coherent / connected / understood</i>	<u>Knowledge Game</u> ▪ <i>understanding of concepts and procedures often superficial or lacking (often disconnected / memorized fragments)</i>
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(b) player's previous learning experiences

The quality of a player's knowledge in great measure depends on the learning games within which it is constructed / acquired. How players can use knowledge depends on how they learned to use it in earlier games. Things go awry when the teacher or the student tries to play Game A with the same methods and tools they use when they play Game B.

<u>Sample Indicators</u> Student / Teacher -	<u>Sense-Making Game</u> ▪ <i>is accustomed to using knowledge in integrated, purposeful, and integrated ways.</i>	<u>Knowledge Game</u> ▪ <i>is accustomed to using knowledge in narrow, isolated, artificial ways.</i>
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(c) player's inclinations, thinking / learning habits

Players experienced in the Sense-Making Game are sensitized to noticing things, anticipating outcomes, adapting procedures, integrating procedures, searching out patterns, making connections, and searching out problems. They are inclined to question, justify, argue, critique, clarify, and convince. Players experienced in Knowledge Game are inclined to obey, conform, acquiesce, and follow instructions; to respond quickly, clearly and accurately to questions; to memorize facts and procedures; to apply concepts and procedures to familiar / routine situations

<u>Sample Indicators</u> Student / Teacher -	<u>Sense-Making Game</u> ▪ <i>anticipates problems and tasks involving complexity, ambiguity, and challenge.</i>	<u>Knowledge Game</u> ▪ <i>anticipates well-defined problems and tasks.</i>
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(d) player's thinking habits / learning habits

The Sense-Making Game places an emphasis on meta-cognition, inquiry, investigation, problem solving (and posing), creativity, using one's imagination and intuition, and all forms of communication. The Sense-Making Game emphasizes thinking. The Knowledge Game emphasizes knowing.

<u>Sample Indicators</u> Student / Teacher -	<u>Sense-Making Game</u> ▪ <i>evaluates /discusses / considers alternative methods or strategies.</i>	<u>Knowledge Game</u> ▪ <i>satisfied with one method or strategy.</i>
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3(e) teaching practices / tools to facilitate learning

‘Teaching practices’ here refers to (standard or innovative) practices, strategies, modes, methods, approaches, and tools that the teacher (or the student) might use when *facilitating* the playing of a learning game. They can include the use of:

- i) Questions & Answers
- ii) Demonstration
- iii) Presentation / Lecture
- iv) Discussion
- v) Cooperative / Collaborative Learning
- vii) Learning / Activity Centers
- viii) Modeling / Role Playing
- ix) Practice
- x) Technology / Software / Internet / AV
- xi) Textbooks
- xii) Home Activity
- xiii) Assessment
- xiv) Portfolios / Journals
- xv) Field Trips / Walking Tours
- xvi) Competitions
- xvii) Other Resource People

The kind of game played doesn’t depend on ‘which’ practices are used so much as they depend on ‘how’ these practices are used and the purposes to which they are put.

<u>Sample Indicators</u> Student - Teacher -	<u>Sense-Making Game</u> ▪ <i>engages (with other players) in critique of tentative plans, procedures, and conclusions.</i> ▪ <i>gives students time to think (to give a considered response) before answering a question.</i>	<u>Knowledge Game</u> ▪ <i>tells fellow students how to do things.</i> ▪ <i>expects students to respond quickly and accurately to questions.</i>
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[Author’s Note: Additional student and teacher indicators can be found in Flewelling with Higginson, 2005, cited above.]

Conclusion

There are two fundamentally different learning games being played in our classrooms. Only one of them, the Sense-Making Game, prepares our students for life outside the classroom. We need to understand the nature of these two games and the differing demands they make and the impacts they have on both teachers and students before we can make intelligent decisions and take effective actions that will encourage more teachers and students to play the Sense-Making Game. Hopefully, the framework described in this paper will help us develop this understanding.