Designed for Learning?

By: Ryan Krohn and Robert Antholine
Ryan Krohn, PhD

Twitter: pulled_ED_Learning
email: pulled_EDlearningsystems@gmail.com
or
ryankrohn.edu@gmail.com
WTF
What's The Function?
What is the function?
take off the training wheels!
"The righter we do the wrong thing, the wronger we become. When we make a mistake doing the wrong thing and correct it, we become wronger. When we make a mistake doing the right thing and correct it, we become righter. Therefore, it is better to do the right thing wrong then the wrong thing right."

- Russell Ackoff
Robert Antholine

Twitter: @Antholine
email: bobantholine@gmail.com
“Next Step Learning”
(tech lens)
1. A statement that the values of two mathematical expressions are equal (indicated by the sign =).
equation
1. a statement that the values of two mathematical expressions are equal (indicated by the sign =).
In Wisconsin we are working off the idea that... personalized learning **designs** are described as an instructional approach, model, concept, or strategy where learning is the primary **function** of the system.
IDEA #1: “Every function has an optimal design” - Joe Schroeder.

Instructional Paradigm
- Function: Provide Instruction
- Design: ?

Learning Paradigm
- Function: Ensure High Levels of Learning for ALL.
- Design: ?

(From Teaching to Learning - Barr 1995)
The two brothers were bicycle builders who funded their early work through their bike shop, used bicycle parts and designs, and performed invaluable experiments on "angle of attack" (an aviation term for the angle of the wing in relation to direction of airflow), using a bicycle.

see the possibilities...
...at STEM we built our early work through our current model, used existing parts and new **designs**, and performed invaluable **experiments** on “angle of attack”...
The “double s” curve...
IDEA #2:
Variables and ‘Controls’
1. a statement that the values of two mathematical expressions are equal (indicated by the sign =).
variables
1. an element, feature, or factor that is liable to vary or change.
?x?x?x?x?x?x? = LEARNING
IDEA #3: The Platform
The Age of the Platform - P. Simon

“redefining businesses...”
A platform is simply a set of integrated planks. The most powerful platforms today have two things in common:

- They are rooted in equally powerful technologies—and their intelligent usage. In other words, they differ from traditional platforms in that they are not predicated on physical assets, land, and natural resources.
- They benefit tremendously from vibrant ecosystems (read: partners, developers, users, customers, and communities).

The Age of the Platform - P. Simon
“redefining businesses...”
### Middle School Schedule 2012 / 2013

<table>
<thead>
<tr>
<th>Time</th>
<th>6th</th>
<th>7A</th>
<th>7B</th>
<th>8A</th>
<th>8B</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00-9:00</td>
<td>SS</td>
<td>Math</td>
<td>SS</td>
<td>LA</td>
<td>Science</td>
</tr>
<tr>
<td>9:05-10:00</td>
<td>LA</td>
<td>SS</td>
<td>Math</td>
<td>Science</td>
<td>LA</td>
</tr>
<tr>
<td>10:05-11:00</td>
<td></td>
<td></td>
<td>SPECIALS / Adv Band/Music Exploration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00-11:30</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
<td>Lunch</td>
</tr>
<tr>
<td>11:35-1:00</td>
<td>Math</td>
<td>Science</td>
<td>LA</td>
<td>SS</td>
<td>Math</td>
</tr>
<tr>
<td>1:05-1:30</td>
<td>Activity Period (MS Teachers/PE/Beginning Band/Choir)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:35-3:00</td>
<td>Science</td>
<td>LA</td>
<td>Science</td>
<td>Math/Alg</td>
<td>SS</td>
</tr>
</tbody>
</table>

### Instructional Platform

- **Year 1 Kindergarten** (5/6 year olds)
- **Year 2 Grade 1** (6/7 year olds)
- **Year 3 Grade 2** (7/8 year olds)
- **Year 4 Grade 3** (8/9 year olds)
- **Year 5 Grade 4** (9/10 year olds)
- **Year 6 Grade 5** (10/11 year olds)
The Power of Pull - Hagel & Brown

“How small moves...can set big things in motion...”
NXGL SIX Critical Attributes

- Student Agency
- Clear, High Expectations
- Competency-Based Learning
- Comprehensive Supports
- Anytime, Anywhere, Learning
- Customized Pathways

*a pull-based platform...*
a pull-based platform...
Significance of Leaders as DESIGNERS?

**Learning Platform**
Operating from thoughts, words, and actions that support learning as the system output.

**Culture that Supports Innovation**

**Personal Habits of Mind**
- Associating
- Questioning
- Observing
- Experimenting
- Networking

**Teaching Platform**
Operating from thoughts, words, and actions that support teaching as the system output.
“Platform Transitional Leadership” from push to pull...
Leadership for the “TRANSITION”
FLIGHT
Academy
HMS
FLIGHT
What are you going to learn?

How are you going to learn it?

How will you show it?
The Waukesha STEM Academy has seen itself growing in phases. We have named these phases: STEM 1.0, STEM 2.0, etc. We are constantly expanding our instructional horizons, learning modalities and responsiveness to learning needs in order to continue growing the success of all students.

**Instructional Concept/Model**

**STEM 1.0**
- Project Based Learning (PBL)
- Everyday Math
- CMP II
- EIE
- SEPUP
- PLTW
- GTT

**STEM 2.0**
- Hybrid Courses
- Google Apps
- Student Email
- iA
- Connect
- ALEKS
- IXL.com

**STEM 3.0**
- Proficiency Based Structure
- Multi-Aged Learning
- Flexible Hybrid Courses
- Rosetta Stone
- HS Math Courses

**STEM 4.0**
- Personalized Learning Development
- Creation of Learner Profiles
- Proficiency Based Learning Options
- Creative/Innovative Elective format
- Personalized Goal Setting and Student Led Conferencing
STEM 1.0 – ‘The What’
Science, Technology, Engineering and Math

In our first year of existence there was a strong emphasis on the STEM disciplines and the new curriculum to be taught. There was a significant amount of PD centered around team building, STEM content, project-based learning, developing innovative mindsets and teaching to the 21st century student. The “What” was the building blocks that built the Waukesha STEM Academy’s curricular faci and helped us deliver the Common Core State Standards.

The ‘What’ included:
Professional Development Training:
- TRIBES
- FOSS (Full Option Science Systems)
- EIE (Engineering is Elementary)
- 21st Century Skills (Essential Learning Skills)
- INTEL Math Training (deep pedagogy analysis)
- Math Certification program (Carroll Univ.)
- Google Training

STEM 2.0 – ‘The How’ Strategies That Engage Minds

In our second year as the STEM Academy, we continued our development as a STEM charter school with an evolving focus on innovative instructional practices with an emphasis on student engagement. We continued to challenge ourselves to think of new models that would better meet the needs of today’s learners. We constantly analyzed our instructional models and delivery of material to students, understanding that all students learn differently and the “How” of educating our students needed and continues to be responsive to those needs.

The ‘How’ included:
- Blended Learning and Flipped Lessons
- Specialization, Flexible Grouping, JA
- Data-Driven Instruction
- Instructional Coaching Model
- Disruptive Innovation Sessions
- Looking forward and planning for STEM 3.0

STEM 3.0 – ‘The Why’
Personalization…Bringing Together the ‘What’ and the ‘How’

Now in our third year, the STEM Academy-Randall Campus implemented whole school changes to our instructional delivery model in order to enhance our ability to deliver personalized learning to all students. Consistently analyzing and reflecting on our data, has pointed us in the direction of creating different modalities of learning for all students, in order to allow students to have personalized choice in how they learn content through various contexts and delivery models. Our goal is to deliver instruction that matches the readiness level of all learners and increase student ownership over their learning.

The ‘Why’ included:
- Multi-Age Classrooms
- Teacher Specialization
- Flexible grouping to meet individual learner needs (across grade-levels)
**STEM 4.0/5.0 – ‘The How and Why’**

**Delivering STEM in a Personalized Learning Environment**

As we look ahead to STEM 4.0/5.0, building on existing successful strategies is critical for growth. Using data to continuously drive our instructional decisions, we are moving to a multi-age, flexible-grouping model at our middle school campus as well. Student needs will be met at their unique readiness-level, in order to continue to move them forward at their own pace and learning style and not necessarily the pace and style of other students. Students will come in and be able to look forward to a 3-year math, literacy and science experience, where they attend seminars to build strong, application-based knowledge of content standards through context.

**The “Why” includes:** Weekly PLC’s (data driven); Vertical Planning; Cross-Curricular Mapping; Connected to Values; Use of Clear Template (image below)
Learner Profile Development

STEMfolio
- Student Led Conferences
- Artifacts as outcomes
- Implement Essential 8 in K-8

Coaching/Goals

Proficiency Based Outcomes

Multi-aged Instruction
- Teams
- Specialized
- Feedback tools developed

Learning outcomes based on 3 year experience

Customized Learning Pathways

CONNECT

Multiple modes of instruction
- Blended Learning
- Modules
- Flexible groupings

Waukesha J.T.E.M. Academy
STRATEGIC INTENT

...is about setting a bold and ambitious goal, out of all proportion to current resources and capabilities. Strategic intent takes the long view...to operate from the future backward, disregarding the resource scarcity of the present.
Boone County
My ‘Customized’ Path...

Welcome to California, the Golden State.

California is the most populous state in the U.S. Every year thousands of immigrants from Asia, Latin America and Europe, as well as from other parts of the U.S. come to California seeking a better life.
An educator’s editorial:
We are really at a time of application.....
What are our options?

Billy Beane
Evolution...evolving...
The questions we tend to ask....

What do I apply?
How do I apply?
When do I apply?

PAUSE
So for the rest of our time….

Blended

Transformative

Personalized

“Next Step Learning” (tech lens)
Taking The Next Step Learning

What can I as an educator do next to improve the opportunities to learn for my student(s).

What variable can I change to create a blended learning step?

- place
- time
- tools
- environment
- numbers
- resources
What we need to ask…..

Do we innovate-transform-blend/etc…

- What do we want students to know?
- How can students best learn what we want them to know?
- How will we know if they’ve learned it?
- How can we respond if they haven’t learned or if they have?
Blended learning is any time a student learns in part at a supervised brick-and-mortar location away from home and in part through online delivery with some element of student control over time, place, path, and/or pace.

Defined from the perspective of a student:

The Rise of K-12 Blended Learning Horn and Staker (2011)
Blended - “The Quick”

F2F: teacher deploys online learning on a case-by-case to supplement and/or remediate

Rotation: think stations, students rotate through learning formats - F2F and online

Flex: online platform that delivers most of the curriculum - teacher provides support and seminars as needed

(Horn and Staker 2011)
Self-Blended: students select to take one or more courses online to supplement their offerings

Online Driver: students work remotely through an online platform

(Horn and Staker 2011)
So a decision has to be made....

What experience do we want our students to have?

Become okay not knowing...
So once you have the idea....
Anytime, Anywhere Learning

Power goes out at home

One size does not fit all
It is okay to live here....
49.8 million
35.1 million Pk-8
14.7 million 9-12
PLUS
another 5.0 million in private settings