



the self-doubter

invested

anxious

open



The Self-Doubter is fully invested in the makerspace, but might be too uncomfortable with the possibility of failing or being judged to really embrace it.

the self-doubter

Questions to ponder:

These learners may shy away from activities that **seem** difficult to perform. How can we alleviate the feeling of risk while still supporting adventurous exploration?

These learners might willingly approach an activity, but then require constant reassurance. How can we satisfy that desire, even when our focus needs to be diverted elsewhere?

How can we get these learners to embrace being experimental, curious, process-oriented and adventurous?





the lone wolf

disengaged

confident

open



A Lone Wolf understands the value of trying new things and accepting the unexpected, but is not yet engaged with the community of makers.

the lone wolf

Questions to ponder:

How can our space facilitate the formation of communities of learners?

Once they get involved in the community, these learners could make good role models. How can we welcome this contribution?

Getting Lone Wolves involved in the maker community can be challenging. How can we demonstrate the value of working with others?

How can we show them that there is always something new to learn or experience?

What can this learner contribute to the community? Could they have useful expertise, insights, or questions?





the template-bound

invested

confident

fixated



The Template-Bound likes to get involved and try new things, but may be hesitant without a roadmap of clear goals and expectations.

the template-bound

Questions to ponder:

How can our space demonstrate that there are many ways to approach a problem?

Templates and examples seem to be a great way to get these people started. How can we encourage them to make the process or project their own?

These learners come in with a great attitude. How can we leverage their enthusiasm to help other learners?

In what ways can a template be useful? Can the use of a template be a jumping-off point for personal expression?



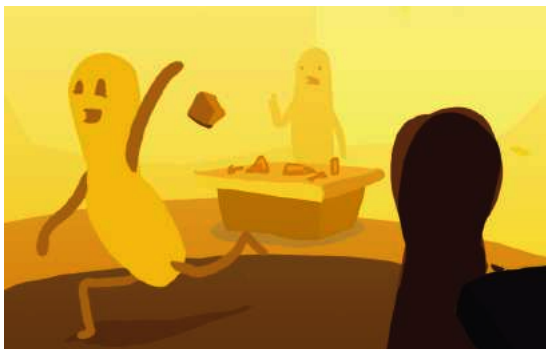


the drive-by learner

disengaged

confident

fixated



Drive-By Learners are all about trying things once, but they may need encouragement to dive deeper.

the drive-by learner

Questions to ponder:

How can our space encourage thoughtfulness?

Without new stimulus, these learners tend to lose enthusiasm quickly. How can we keep the energy high?

These learners may be impatient to produce something during an activity. How can we communicate the value of the learning process?

These learners may be trying to get the most value out of the day's visit. How can we make their focus on a single activity feel like time well spent?





the lifeguard

invested

anxious

fixated



Lifeguards are eager to be a part of the action, but sometimes their high, rigid standards, concern for safety, and fear of risk and failure can make it difficult for them to embrace the makerspace ethos.

the lifeguard

Questions to ponder:

How can our space put fearful learners at ease?

These learners really want to help! How can we let them engage this desire, while maintaining an open-ended exploratory process?

These learners often get anxious at the idea of others being wrong. How can we help them understand that taking risks and failing is okay?

These learners tend to be more comfortable when there is only one way to do an activity. How can we help them experiment with a new process?



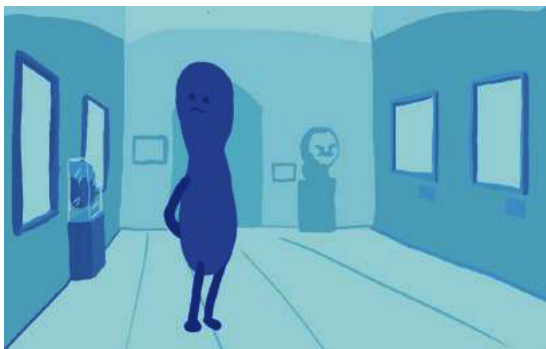


the observer

disengaged

anxious

open



Observers are open to being affected by the experience, but they tend to be passive learners and need help buying into the hands-on, experimentalist philosophy of makerspaces.

the observer

Questions to ponder:

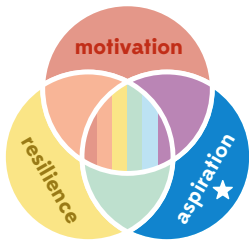
How can our space invite people to interact?

Observers tend to sit back and watch. How can we invite them into a more hands-on approach?

How can we make these learners feel invested in their learning process?

These learners may be more comfortable thinking through a process on their own. How can we encourage them to feel comfortable talking to, working alongside, and gleaning insight from others?

If these learners are not yet ready to be hands-on, what other media or processes of inquiry can be used to engage these learners?





the maker

invested

confident

open



The Maker is truly at home in a makerspace, fully invested in exploring and discovering through purposeful play.

the maker

Questions to ponder:

How can we leverage this learner's willingness to participate as a model for other learners?

How can we help these learners to deepen, prolong and diversify their interest areas?

How can these learners encourage you to further your own expertise, as a facilitator? Is there anything we can learn from these learners?

How can our space help advanced makers continue to grow?





the uninitiated

disengaged

anxious

fixated



The Uninitiated is new to everything about makerspaces, and may not know what to expect or how to proceed.

the uninitiated

Questions to ponder:

How can our space be made intuitive to those with no prior experience in a makerspace?

How can we leverage those they came with to help get them more involved?

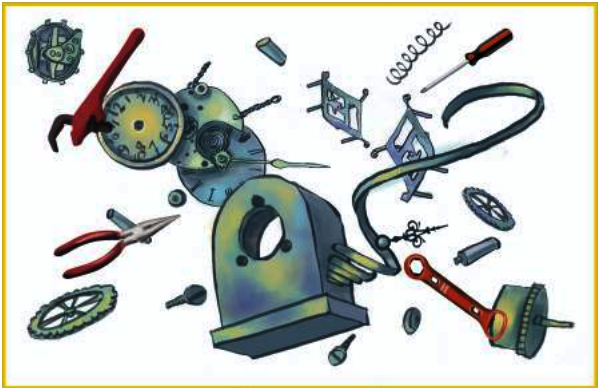
Sometimes identity roadblocks can be a problem – the thinking, for example, that sewing is “for girls.” How can we counter these barriers?

Sometimes a learner can be simply overwhelmed by the novel environment. How can we make the space and activities feel more accessible to them?



observable learning

tinker



Learners' purposeful play, testing, risk-taking, and evaluation of the properties of materials, tools, and processes.

tinker

Questions to ponder:

How does our space encourage hands-on experimentation with materials and tools?

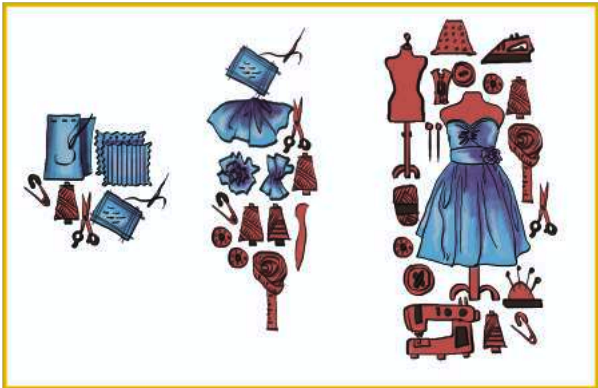
A test that returns a negative result is a success if we learn from it. How can we help others appreciate these situations, and try again?

Rigorous testing requires repetition. How can we allow learners to repeat experiments for a more complete mental picture?

Learning is a process, not a moment or a destination. How do we help learners value the process?

observable learning

develop fluency



Learners' development of comfort and competence with diverse tools, materials, and processes; developing craft.

develop fluency

Questions to ponder:

How does our space allow learners to demonstrate their mastery?

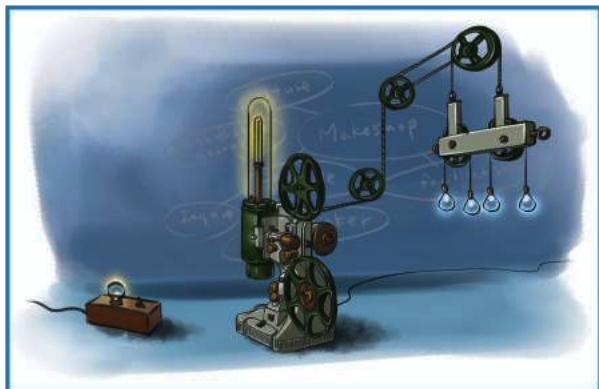
As learners progress, in what ways do their attitudes towards failure change?

How can we ensure new learners are comfortable working among experts?

Vocabulary and techniques evolve to help experts speak and work more precisely, but it can impede new learners. How do we bridge the gap between access and precision?

observable learning

simplify to complexify



Learners' demonstration of understanding of materials and processes by connecting and combining component elements to make new meaning.

simplify to complexify

Questions to ponder:

How does our space encourage deeper curiosity regarding how things work?

Does our space offer opportunities for generalizing a newly learned process to another project or investigation?

How do we emphasize to learners the spectrum of simple to complex activities or ideas?



makerbox

MAKESHOP[®]

observable learning

hack & repurpose



Learners' harnessing and salvaging of materials, tools, and processes to modify, enhance, or create new products or processes; includes dissociating object property from familiar use.

hack & repurpose

Questions to ponder:

How can we help learners recognize the essential qualities of materials and processes?

Hacking is an extension of imaginative play, common in young learners. How can we support all learners, of every age, to keep this imaginative spirit and approach alive?

Novel uses of materials or tools might subvert their original intention or challenge a resting assumption. How can we encourage this divergent thinking?

observable learning

inquire



Learners' openness and curious approach to the possibilities of the context through exploration and questioning of its material properties.

inquire

Questions to ponder:

How does our space support open-ended inquiry?

If facilitators are experts, we may expect answers from them. How do we encourage exploration? How can our answers encourage further inquiry?

How do we scaffold inquiry to accommodate novice as well as advanced learners?

observable learning

seek & share resources



Learners' identification, pursuit/
recruitment, and sharing of expertise
with others; includes collaboration and
recognition of one's own not-knowing
and desire to learn.

seek & share resources

Questions to ponder:

How does our space facilitate the sharing of ideas among learners?

How do we encourage co-learning, rather than a teacher/student relationship?

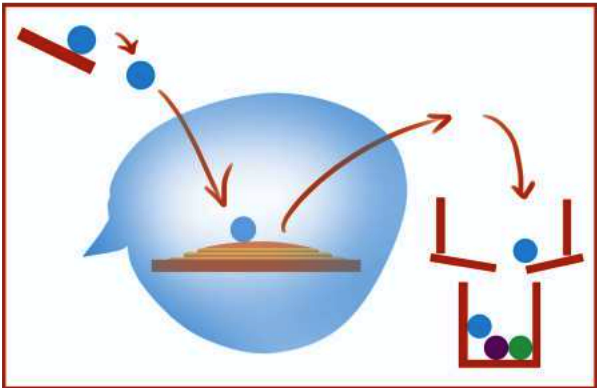
Everyone has something good to share. How do we validate every learner's contribution?

How do we support the sharing of multiple kinds of resources, like physical tools, references, and expertise?

How do we create the conditions for learners to feel comfortable admitting that they don't know?

observable learning

express intention



Learners' discovery, evolution, and refinement of personal identity and interest areas through determination of short- and long-term goals; includes learners' responsive choice, negotiation, and pursuit of goals alone and with others.

express intention

Questions to ponder:

How does our space support interest-driven learning?

Expressing oneself is a deeply personal behavior. How can we acknowledge the uniqueness of every instance of expression?

How do we encourage passive guests to become active learners?

What and how you make is inextricably linked to personal identity. Is our space a safe place for learners to be authentically themselves?

We want our intentions to last in some way. How can we make learners' accomplishments here last beyond this moment?



makerbox



makerbox

expect greatness

be impressed by everything

celebrate small victories

abandon them once
they are safe

dare them

ask them why twenty times

make them the model

give real-world
analogies/examples

ask a learner to ask another

make them feel dangerous

show them their progress

simplify

ask a learner to teach another

let them sound smart

think about thinking

suggest a starting point

provide a soundtrack

inquire about their process

congratulate curiosity

take away the finish line

have them describe
the project to you

make them plan

ask a learner to teach you

ask a learner to teach you

think out loud

tell them what to expect
before they even arrive

show off others' work

grant permission to be silly

work in parallel on
something else

tell them why you love it

challenge yourself

Take the cards and put them in action!

Facilitators could take a Learner card, an Observable Learning card, and/or 3 Inspiration cards.

Learner card: the facilitator briefly records their interactions with learners like this in the space that day

Have two facilitators with the same card, each on document independently and at the end of the day have them talk about the people they saw and see how many were the same

Observable Learning card: the facilitator could chose this card a day in advance or that morning and design an activity they think would successfully get guests to exhibit this behavior.

The facilitator could, if the space allowed, refine the activity midday if they were not seeing desired outcomes.

Inspiration Card: the facilitator would take 1-3 inspiration cards, with the goal of using at least one, if not all, directly in their facilitation that day.

Having more than one card allows a facilitator more latitude to adapt to the person or activity, and then reflect on who the guests were in regards to the learner archetypes and why one method worked better than the other.

party quirks

Gain a deeper understanding of the Learner Archetypes - the more they understand the learners, the quicker they can assess them in the space.

Each facilitator takes a Learner card and reads over the card front and back.

Participants pretend to be at a party, acting like the person on their Learner card.

Depending on the size of the group, this activity could go on for 5+ minutes

After time is up, everyone should come together and try to guess who the other attendees were.

If there are more facilitators than cards, those without cards should observe and guess who the different guests were.

You can do other role playing games in this way as well!

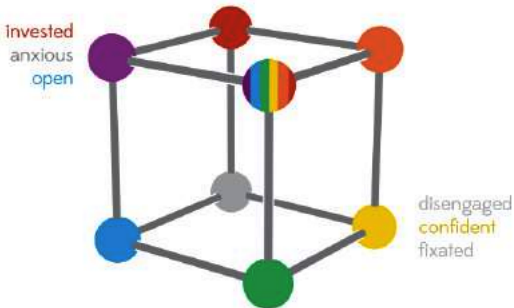
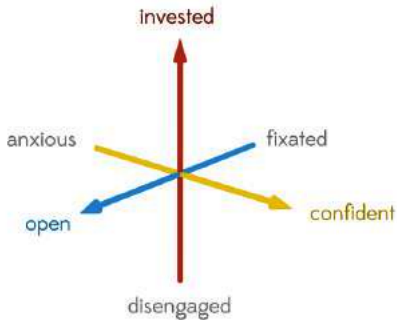
Why this model?

Our research suggests that there are **3 distinct attitudes** that contribute to learning in exploratory, open-ended spaces. While this learning is intensely personal, some general patterns of behavior emerge based on which combination of attitudes a given learner has.

motivation

resilience

aspiration



motivation

A learner's willingness/desire to engage in both the social and physical aspects of making.

Low motivation is termed "disengaged;" the highly motivated are "invested" in the maker community.

resilience

A learner's willingness to try new things, and to push past failure. It assumes that failures reflect learning, rather than a person's value.

Low resilience is termed "anxious;" the highly resilient are "confident" in themselves and their learning.

aspiration

Reflects eagerness to learn in unexpected ways, rather than looking to standardized as the sole gauge of achievement, expertise, or insight.

Learners with low aspiration are "fixated" on such measure; high values signify a learner who is "open" to the value of unexpected or immeasurable insights

To make the traits easier to keep track of, we've color-coded them and the learner archetypes.

Archetype colors are combinations of their component attitudes: so someone with yellow (resilience) and blue (aspiration) is green.



pairs

Recognize the relationship between the Learner cards and the Observable Learning cards

Some group members take a Learner card and others take an Observable Learning card.

Participants pair up according to what Learner would have an easier time with a specific Observable Learning card, have the pairs explain their reasons.

Next, participants pair up according to what Learner would have a more difficult time with a specific Observable Learning card, have the pairs explain their reasons.

***In larger groups, try having an audience dictate the pairs.**

who am i?

Become more familiar with the different categories of cards; reverse engineer the clues to find the answer.

Place shuffle the Learner and Observable Learning card together, and place them in a box.

On their turn, players pull a card and, and without looking at it, place it on their forehead.

If the player has pulled a Learner card, then everyone should take turns facilitating that person according to their Learner card until the player guesses who they are.

If the player has pulled an Observable Learning card, then everyone should take turns describing what they would see a learner who is exhibiting that behavior do, until the player correctly guesses.

For an extra challenge, use the Inspiration cards as the facilitation – players must figure out how to use the Inspiration card in respect to that learner card or observable learner goal.

best fit

Start using the inspiration cards as idea generators for facilitation.

Take one Learner card and one Observable Learning card and place them in the center of the table.

Each person should take at least 3 inspiration cards

Each person must pick a card out of their hand that they feel best suits the set on the table, and explain their reasoning.

After each person has gone, the group could discuss what the best of the best options presented is and why.

Again have each person pick an inspiration card, but now pick out the card in their hand that seems least useful for the pair of cards on the table, and explain why.

Can be played alone or with a group.

Groups larger than 4 may want to subdivide and discuss, then reconvene and share their findings together.

make your own

The objective of this activity is to start exploring other ways they could use these cards in their space.

Feel free to modify any of the previously suggested uses of the cards to better fit your needs

When coming up with new uses, try to have at least one specific objective for that activity.

Other things that are good to think about are:

Who is the activity good for?

How long should they play?

How many people could the activity accommodate?