Accessibility Solutions for the Wheel for Instructors

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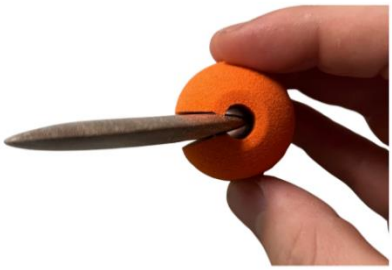
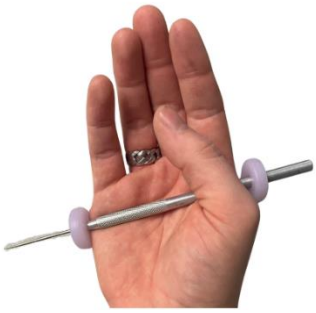
1. Solutions for Arthritis, joint pain, and Hypermobility in the fingers.

When teaching students with joint pain, hand positions that place less stress on individual fingers and joints, or use more of the whole hand, are gentler and easier for students to use for longer periods of time. Adding larger, softer grips on tools can help with this as well. Pencil grips made from foam or longer foam tubes that you can cut to size are cheap and easy to source for this. Silicon grip aids can help with weakness in the hand, or a lack of fingers. Below are photos of the tools we have found useful for joint pain and hand weakness. The grip for the rib is a simple foam pencil holder that had a slit cut into it. Foam grips, silicon grip, pencil holder.





When holding tools, a full fist grip instead of the way most people hold a pen or pencil will reduce strain on individual fingers. Throwing with a second finger next to the traditional middle finger helps act as a splint and supports the motions using the middle finger. For students who are very double jointed, or need help with strength, I encourage them to use “mittens”, keeping all four fingers together, while still only using the middle finger to pull or open for precision and strength during throwing. Compression gloves can also be helpful to reduce pain.

Centering can also be a challenge for students with wrist pain and weakness. I typically teach with the left hand on the side, right hand on top, with hands touching, utilizing leverage from the body to keep steady. An alternative to this is to use the wooden rib to smooth and flatten clay to get it mostly centered. Typically, if I need the clay to be 100% centered, I can go back in with hands to get the last little wobble out. *Strong Arm Tools* and attachments can be an alternative if you have the money to purchase one.

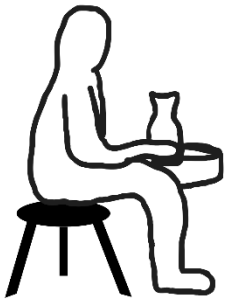
Below are the hand positions for the rib when centering. Photo 1 shows how to hold the tool. Photo 2 demonstrates flattening the top, and photo 3 shows the position for smoothing the side. It is important to point the flat edge of the tool slightly away as to not gouge or carve into the clay. When smoothing the top, positioning the point of the rib at the very center of the piece can be ideal.

Link to strong arm tool.

For students who are double jointed and having trouble with finger strength or pain from that, ring splints are an excellent tool. These photos below are of my finger before and after pressing on a table surface with splints. Preventing fingers from bending backwards is very important with larger pieces, general strength, and long-term joint health. While the most economical version is made of plastic, I usually encourage students to purchase their own set. If they want to invest long term, I recommend the metal versions as they are less likely to break, and less likely to gouge into the clay when throwing due to smoother, rounder edges. Ring Splints

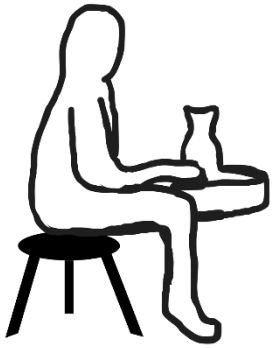
2. Adjusting the wheel for various heights.

When teaching class, it is important to recognize when a student needs a posture correction. Usually students under 5'3", and students over 6'2" both will need help with adjusting the wheel for their ideal posture.



Correct posture involves the foot being flat on the ground, the leg being at close to a 90-degree angle, and the center of the wheel not being too far away or too close.

This is the posture I usually see when someone is a bit too tall for the wheel. Their knee is quite high, and the center of the wheel is too close, which leads to elbows that are too far from the torso, and general discomfort.



These two examples are common postures for students under 5’3”. The foot is either on tiptoes, or the leg is below the splashpan, which then usually digs into the underside of the forearm.

To correct posture in a tall student, give them a slightly taller stool or something to sit on until their knee is at a 90-degree angle. Then place bricks or cinderblocks under the three wheel-legs to lift it up to a comfortable height if necessary. Tall students tend to also have larger hands, which makes centering a standard one-pound piece difficult. You can size up the clay for them, and they can cut off any extra height from the rim to make smaller things. I also sometimes encourage people with large hands to use just their right hand to center. (Think cone centering but one-handed.) Sometimes the left hand can help stabilize, but I’ve found most students do not need it.

For students under 5’3”, I will usually place a brick under their left foot. Usually, the foot pedal will be tall enough to help with the right foot. For people 5’ and under, sometimes a foam wedge is needed to get the proper leverage for centering. Use something dense like a yoga block, the wedge should not have much if any give to the foam. The corrections for shorter people can be used for helping children learn at the wheel as well (I typically will use some techniques for people with muscle weakness when teaching children also). If someone is under 4’ tall, I recommend a short stool under both feet for sitting or raising the wheel up onto cinderblocks to make a standing wheel. For folks with dwarfism, getting closer to the center of the wheel is important, and they might need a more obtusely angled foam wedge for their arms to be in a better position. Some potters will buy adjustable stools for the studio which can be a big help, but a phonebook and a brick will work just the same. I try to find the lowest budget solutions I can, so that studios of all kinds can use this information. Foam wedge.

3. Throwing without the use of all fingers.

Students without the use of all fingers on one or both hands are still able to throw, mostly we need to adjust the part of the hand used to what is the most functional for them personally. If they do not have any fingers, or a hand, sometimes it can be easier to adjust throwing motions for those individuals. Students can use their stump just like a throwing stick and can use the silicon grip aids to use tools for finer motions and leveling rims. Sitting on a slightly taller stool or using a foam wedge can help those students get in a better position above the center of the wheel so they won't have to have their elbow as high/akimbo for pulling. If they are only missing one hand, using their stump on the inside of the pot, and their other hand on the outside will probably be the easiest way to get height when pulling. Make sure to have the wheel going the right direction for whichever hand they are using on the outside of the pot (clockwise for lefties, counterclockwise for righties).

If the student is missing or unable to use the fingers with the most strength (index, middle, pointer) the second knuckle of the pinky is a fine substitute. If they are missing a half a finger, I have found that there is little to no adjustment to the throwing process, but just make sure there is no pain or soreness for them. If the strongest fingers are present but unable to be used due to immobility, I suggest using the silicon grip with a throwing stick as a substitute for their fingers, and using the palm/arm for support, strength, and leverage. One thing to be conscious about is people who have their fingers, but who are unable to feel them. Be careful to observe that they are not accidentally performing motions that could unintentionally cause damage.

Justin Behm is a one handed potter who has great examples in Instagram of himself throwing pottery, which can be helpful to show students what is possible.

Below is a photo of how to use the round end of a wooden knife with a full fist grip to help with weakness or numbness in the hand, a similar result can be achieved by using a throwing stick.

It is important when using a pencil tool or a throwing stick to slightly angle the tool, so it does not gouge into the clay. A student who had a pinched nerve and no feeling in their left hand was able to use this technique very well. You can move the tool with the outside hand up the pot while pulling or use it like a rib to push the clay against.

4. Throwing without a limb.

For students missing legs, place the foot pedal up on a stool next to them.

For students missing an entire arm, or for whom the missing/unusable fingers techniques do not work, center one handed, by cupping the clay entirely and squeezing their fingers towards their palm.

Opening one handed can be done per usual, with a middle finger. I encourage all students to open slowly and intentionally, keeping their finger behind the midway point of the clay. If their finger goes past the midpoint of the clay it can gouge into the other side. Opening can also be done with a throwing stick or the round end of a wooden knife.

Pulling can be achieved by placing their hand at noon or 6 o'clock on the pot in a "puppet hand" position with four fingers on one side and a thumb on the other. For taller pieces, make sure the student is moving their hand towards the center of the wheel when moving up the side of the pot. I recommend pulling at 6 o'clock for bowls, as it is easier to get width. Below is a photo of the hand position at "noon".

This hand position worked well for a student who had her right arm but was unable to use it. She had no prior wheel experience and succeeded in making very nice bowls. She used her left hand, not her right as depicted in the photo. We also had to switch the wheel direction to clockwise for her to be able to use her left hand.

If a student is missing both hands, silicon grip tools can be used to aid in finer motions.

I have never taught a student without both arms, but there have been many examples of people who throw with their feet. Opening with the heel or big toe and pulling with toes instead of fingers. Especially nimble potters will hold tools with their feet as well. I can imagine making sure you are sitting much higher than the wheel is helpful, you could even cut the legs of the wheel shorter to achieve a better angle to work at.

Here are some video examples of potters throwing in the ways I've described.

1. One Handed. (https://www.youtube.com/watch?v=KN8hxmqUKRc)

2. With feet. (1) (2)

5. Solutions for back pain/chronic muscle soreness.

Most of the back strain in throwing can be alleviated by placing a foam wedge in front of the torso to lean on. This means the student will have to sit further away from the center of the wheel, so sitting on a foam wedge can also be helpful if they are unable to reach. Here is an image of the placement of the foam wedge. I managed to find an old foam pillow at a thrift store and cut it into a wedge, placing a towel over top for easy cleaning.

Students who want a back support wedge will have to sit a little farther away from the wheel, which might be difficult for shorter people. A standing wheel might be a better option for them if the wedge makes it more difficult to throw, sometimes adding a foam mat under the standing wheel can help too. Some people, such as hairdressers, will use back braces or corsets in their daily life to help with back pain. This may be a good option for your students depending on what hurts/how much it hurts. Foam wedge.

6. Lack of vision or hearing.

We have a blind studio member who can make both handbuilt and wheel-thrown pieces, but you mostly need to describe where tools are on the table and use descriptive words while they are working. Do not use general terms like “the tool is over there”; try to be specific by saying “the tool is to your right, on the table behind the splashpan”. This goes for demonstrating techniques as well. Try to be specific in the direction and orientation of their hands. *Be My Eyes* is a great app for helping blind folks navigate studios. Peel and stick vinyl floor transition strips can be used as tactile walkways for helping cane users find their way around. Tactile dots on tool cabinets in braille can help students find the tools they need. Meta glasses with cameras can describe the surroundings to people as well. The app “Be my Eyes” can connect students to a live person on a video call that can help them with reading or locating things.

Links to those tools. (Floor) (Dots)

For deaf and hard-of-hearing students, providing an additional written version of your instructions, or supplemental video classes with subtitles can be helpful. Sitting the student directly in front of you and making sure you face them when talking can help with lip reading. If possible, having an ASL interpreter, using services like *Convo Now* (a video call ASL app), or real-time captioning like *Captify* can also be very helpful. If you have the ability to purchase a TV screen, you can hook up the phone to the TV, so it is larger and easier to read.

7. Larger bodies/smaller bodies.

For a lot of people with larger stomachs or chests, placing elbows on the best places for leverage when throwing is not possible. Leaning forwards enough can also be a challenge. Placing a 2x4 over the splashpan or their legs can give students a place to rest their elbows when throwing if reaching their legs is not comfortable. Standing wheels can also be a better option for being far forwards enough and can help students keep their elbows close to the body for better support and strength, if standing is not difficult for them.

For students with larger chests that prevent them from being able to lean forward without touching the pot, I encourage cone centering, and resting their wrists on their chest, to provide stability and strength for the motions of pulling.

For some people who are very thin, sometimes their elbows cannot reach their bodies to be in a stable place for leverage. I try to give them a folded towel or two behind their elbow to act as a cushion and to fill the gap.

8. Fingernails.

Pottery with fingernails is fairly difficult. Most of my students with long fingernails are there for only one class, such as a date-night or one-day workshop event. This means that cutting their fingernails just for class is not an option. For long nails that are ¾ of an inch past the fingertip and shorter, I suggest wrapping a sponge around the middle finger with the ring and index, to keep the

thumb free for stabilizing motions. This should be used on the right middle finger for opening, and the left middle finger when pulling. When pulling, the hand on the outside of the pot should be parallel to the ground and using the ring finger rather than the middle finger on the outside can help to get the pressure lined up better.

For fingernails that are longer than an inch, using a full fist grip and a throwing stick or blunt end of a wooden knife is a better solution, which can help with opening and pulling, but very long fingernails will be difficult to work around in the long term, especially for larger pieces.

To the right is a photo of opening with the blunt end of a wooden knife. This technique can be used for people with arthritis or muscle weakness as well.

9. Wheelchair users.

For students in wheelchairs, there is a wheel made by *Brent* specifically to help them. I have also seen studios raise up wheels with cinderblocks so students can fit their chairs underneath the wheel. Adjustable tables from *Ikea* and the like can bring tables to the proper height for handbuilding. Potentially utilizing the back support wedge can be helpful if the student does not have a lot of core muscle strength. Providing lower sinks and wash basins, along with lower to the ground reclaim bins can be very helpful. Brent wheel.

10. Limb differences.

One of our employees, Saya, has radial clubbed hands and has adapted her pottery practice. She has found that propping her leg up on a stool and leaning on her knee works as opposed to putting her elbow in her hip and using her body weight to push forward due to the lack of length in her arms .

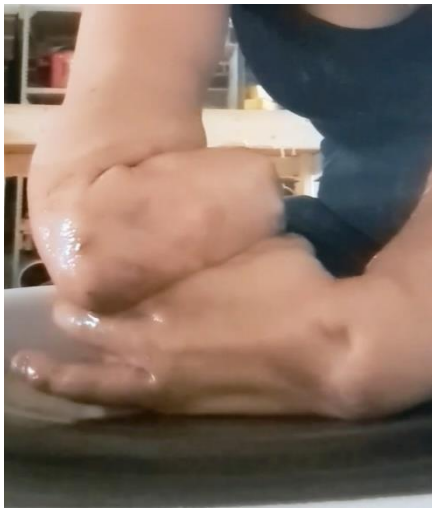
Before the stool

Arms are too far from the wheel

After the stool

Arms can get close to the wheel

Due to her hand shape and the angle it's bent at, she uses her pinkies as opposed to her pointer or middle finger to do the majority of the work. She also uses a thin sponge to help distribute pressure when dealing with the walls of her pots because of the lack of control and muscle in her fingers makes it hard to create even pressure when making a pull.



Her positioning for centering

Her positioning for opening

Some of her other tactics involve using the back of her hand where the bone is, to make pulls on much larger chunks of clay to reduce the strain on her fingers in a similar fashion that people with no fingers/hands would utilize that part of their arm.

She will also utilize wooden ribs to help steady the outside of the pot's walls and use metal flexible ribs to compress the clay and create even surfaces.

Conclusion

For all kinds of students, I will wait and see if they ask for help/would be receptive to alternative techniques with throwing motions before jumping in with a solution. It is important to be mindful, especially when teaching many students at one time, to not point out or draw unnecessary attention to your student's accommodation needs. I will always try to wait and see if any of these accommodations are necessary before offering a solution by saying, "Would you like to try this a slightly different way? You might find this other technique a little easier". Offering a section on your class registration for people to list accommodations they might need for class can help with understanding what your student needs or offering office hours for people to ask questions/get help after class is over can be a great way to discuss needs.

Be flexible! Try to change techniques to fit the person, you want to find the easiest way to complete the task. Try to get out of the mindset that there is a "right" way to throw, and just try to find the best way for them to throw. Try to be as accommodating as possible with people being late, or unable to make it to class. Providing supplemental videos or instructional sheets can be helpful for people to be able to complete curriculum if they are not able to make it to class. Expecting people, especially folks with chronic pain, to be able to work at the same pace as you is unreasonable. It is important to realize that some students will never disclose their needs to you, so be patient and kind to everyone you teach. Look out for when a technique you usually demonstrate just isn't working for someone.

Be mindful for all students, visual learners might have to be reminded to look up at your demonstration. Tactile learners might need you to show them exact hand placement by physically moving their hands into place or describing a similar motion they do every day that is similar to the technique you are showing them. People who learn from reading instructions might benefit from the written instructional sheets, and people who learn from listening might need you to repeat yourself a few times.

Creating a classroom environment where your students feel they can freely ask questions, ask you to repeat yourself, and ask for help is generally the most conducive to learning across the board. Inevitably, there will come a point when your students have the technique correct, and just need to put in the time to practice, but I try to avoid just throwing the phrase "just practice until you get it" around as much as possible. I usually encourage students, and then tell them to try to focus on improving one part of their throwing at a time. Starting with evenness, moving to height, then to shape, then intentionality, and finally style/function. Think of it similarly to Maslow's Hierarchy of Needs. If someone can't make even pieces, they can't make tall pieces. If someone can't get height, they can't control the shape. If someone can't shape a piece, they can't intentionally make what they want, etc.

This information has been gathered over years of having to improvise on the fly in classrooms, which means it may not be perfect! If you have any information or techniques you have found that work better for these students, or you personally, please let us know so we can add it to this document. Below are some additional adaptive tools that we have come across that might be useful to you or your students.

Sip-n-Grip by Quadtools (video)

Small item gripping aid by Activehands

Push whisk (for mixing glazes) by Activehands

Grip tape (for tools) by Activehands

Electric scrubber for cleaning bats and wheels

Full catalog from Enhancing skills for life.