

Part II:

Activities and Outcomes



ACCOMMODATION OPTIONS CONSIDERED

After some trial and error, it was determined Vicki did not yet have the mental capacity to accurately measure and add multiple ingredients with varying sizes of spoons, especially since any mistake would result in the discard of the entire batch. In addition, Vicki was not able to get these various scoop devices repeatedly into the small package envelope, due to the tremors and spasticity. Initial findings indicated the canister and spoons would most likely need to be replaced or adapted.

RECOMMENDATIONS/PLAN OF ACTION

Vicki has difficulty following multi-step procedures and job carving was one method utilized to assign some of the tasks or essential functions to others. Too many steps were involved in the soup measuring process and modifications were suggested, based on each essential function and Vicki's functional and cognitive capacities.

1. *Read recipe to determine which spices are needed and how much of each spice should be placed in the bag.* Vicki is not consistently able to read the recipe to determine the correct number and amount of spices. It was therefore determined that this critical function should be "carved" out of her work process and given to another employee. Her co-worker would measure and combine the spices needed for a given recipe and place this mixture into Vicki's container. The supervisor notes how much of this mixture should be bagged and places this information by Vicki's workstation for easy referral.
2. *Select containers with specified spice and fill up canister if necessary.* The above procedure eliminated the need for Vicki to select or refill spice containers.

3. *Measure and place spices into bag using measuring spoons, continuing until all ingredients have been added.* In addition to having difficulty handling the small spoons due to the tremors and spasticity, Vicki would often confuse a teaspoon from a tablespoon. The rehab engineer custom designed a handle that would dispense exactly one teaspoon at a time. He determined that a 7/8” hole, machined into a 3/8” acrylic sheet, would contain exactly one teaspoon. By placing a handle on the edge of this cross-section, which could be used to slide the sheet directly under the spout of a large plastic funnel, the spice mix would merely drop into this 7/8” hole. Moving the handle one inch in the other direction aligns this hole with the stainless steel dispensing spout, which allows the product to drop into the plastic bag. If four teaspoons of spice were required for the mix, Vicki would activate the handle four times, after placing a bag over this spout.

It was decided that a vibrating hopper, or funnel, would serve as the reservoir, replacing the canister. A small vibrating motor, attached to the funnel, prevents the spices in the funnel from compacting and insures that the spices fall into the magazine when it lines up beneath.

4. *Fold bag and staple.* Once a bag is full, Vicki staples the bag together, using an off the shelf ergonomically designed stapler. This function does not require any special accommodation.
5. *Place filled bag on rack, to be sent to next station on assembly line.* This function does not require accommodation.

COST ANALYSIS

Miscellaneous parts from the workshop at Woodrow Wilson Rehabilitation Center were used to fabricate the apparatus but with time and materials the estimated cost to complete was \$410. Included in this estimate were two hours spent evaluating the work site and Vicki’s functional capacity as she attempted to measure the spices using the canister and measuring spoons, and another full day prototyping and refining the devise.

FOLLOW-UP/OUTCOMES

The measuring and dispensing device worked flawlessly for four months, until Vicki remarried and left the workshop. However, this apparatus is still used by other employees since the contract with the soup manufacturing company has been renewed.



ACKNOWLEDGEMENTS

We would like to thank Dave Law with Woodrow Wilson Rehabilitation Center for contributing this case study and his assistance with this presentation.

REV 060903