The Observation Scientist

by Molly O'Shaughnessy

Once the reasons for habitual observation in the classroom have been established, and the intent to observe has been settled, the practical details of observation must be organized. In this article, O'Shaughnessy gives us a model for the implementation of observation. She thoroughly reviews Montessori's work curves and how they can be used to show the development of the child through four stages of concentration. O'Shaughnessy discusses how these work curves can be used to aid the practice of observation, and she has embedded case studies to clarify her points. She offers practical tools and tips for use in recording observation and points of awareness, including the documentation for the observation of errors in order to understand the obstacles a child is encountering. Constant attention must be given to the point of contact between the child and the environment so that we are ever conscious of our role in facilitating that most important interaction that will allow the child's potential to unfold.

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When I am in the midst of children, I do not think of myself as a scientist, a theoretician. When I am with children I am a nobody, and the greatest privilege I have when I approach them is being able to forget that I even exists for this has enabled me to see things that one would miss if one were somebody—little things, simple but very precious truths. It is not always imperative to see big things, but it is of paramount importance to see the beginning of things. At their origins there are little glimmers that can be recognized as soon as something new is developing. (Montessori, Education and Peace *101)*

Dr. Montessori described normalization as "the most important single result of our whole work" (*The Absorbent Mind* 178). Her discovery was based on the fact that whenever certain conditions were provided, the characteristics of normalization would unfailingly appear. The necessary conditions must be present and when they are we see the child brought back to the normal path of development. It is a healing process, a process that restores optimal conditions for natural development to occur.

Montessori states, "Normalization comes about through 'concentration' on a piece of work. For this we must provide 'motives for activity' so well adapted to the child's interests that they provoke his deep attention . . . The essential thing is for the task to arouse such an interest that it engages the child's whole personality" (180).

The result? Children who love work, are happy, self-disciplined, sociable, and kind to one another. The essential key is that the activity call to the inner urges of the child to self-construct through his own efforts. It is we, the trained adults who have the responsibility and privilege of linking the child to the offerings in the prepared environment. They must be presented at the right time, in the right manner, and with the necessary freedom to repeat without interference or interruption.

Our decision on what to specifically offer the children must be determined through careful, precise, and sustained observation. It is the greatest tool we possess to assist children in their development. Most of Montessori's discoveries were based on her observations of children around the world. As a medical doctor and scientist, she was well versed in the techniques of observation. As Montes-

sori educators we must develop the art of observation and become observations artists—both spiritually and scientifically. The two must work in concert to fully serve the child.

As Sherlock Homes proclaimed, "Data, data, data! I can't make bricks without clay." In order to develop a plan, execute it and evaluate its success, we must have sufficient data. Various methods of collecting data in Montessori environments have been developed over time. The system articulated in this article will be primarily based on the extensive writings of Dr. Montessori on the nature and importance of observation, as well as the specific work outlined in chapter 3 of *Spontaneous Activity in Education*, "My Contribution to Experimental Science." Additional elaborations are based on the expanded work of the Maria Montessori Institute and my own work on the topic.

A framing model outlining the various components of scientific observation will help to guide the process, ensuring all aspects are considered in the proper sequence with enough detail and sufficient processing, analyzing, and planning (figure 1).

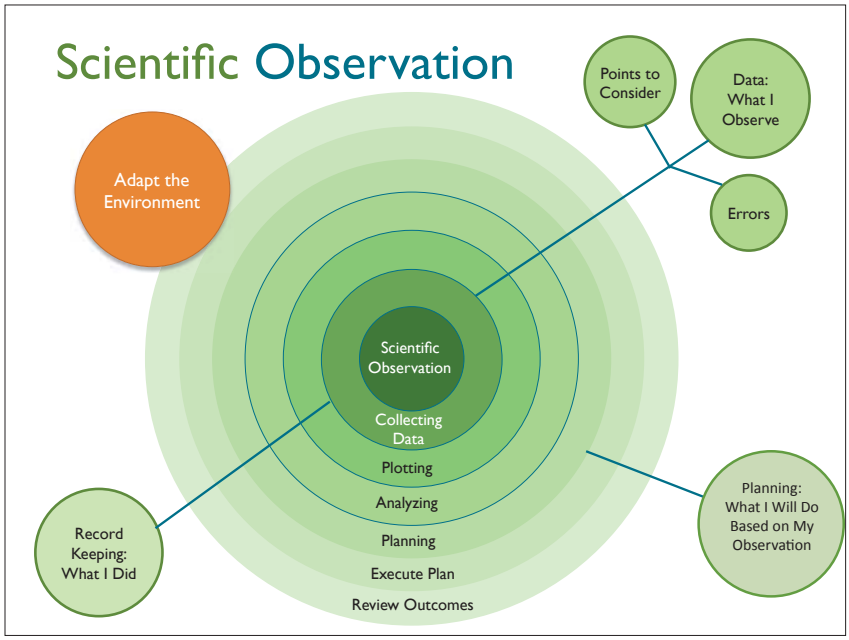


Figure 1. Framing model for scientific observation.

Montessori describes the phenomenon of deep engagement by telling the story of a young child of three, who with deep concentration, repeated taking wooden cylinders in and out of the block forty-four times, ending in great satisfaction (*Spontaneous Activity in Education* 68).

Further explaining it she states, "And each time that such a polarization of attention took place, the child began to be completely transformed, to become calmer, more intelligent, and more expansive; it showed extraordinary spiritual qualities, recalling the phenomena of a higher consciousness, such as those of conversion" (68).

In *Spontaneous Activity in Education,* chapter 3 "My Contribution to Experimental Science," Montessori explained that in the Children's Houses directed by Anna Maccheroni they were able to do more methodical observations, which were represented by diagrams or charts—in order to demonstrate the course of the phenomena more clearly (96).

There are fourteen charts in this chapter analyzing various aspects observed, such as the whole class at work, working curves of poor children, a primitive curve of ordered work, and so forth. The charts demonstrate the characteristics and observable factors of children at work, starting from a new child and moving to a more experienced older child. These curves allow us to understand the process of normalization and how the child develops, helping us to support normalization and development in the best way possible. Montessori clearly pinpoints the features that can be observed in four levels of normalization as the child progresses along the path of inner discipline.

We observe to help determine what the children are trying to achieve. We can understand this by the way that they behave and interact with the materials. These clues help us pay attention to the child's normal development rather than their mistakes.

Understanding some of the key factors inherent in the curves will help interpret their meaning. The horizontal line on each chart represents the line of quiescence, the point at which the child is at rest, quiet

and still. The length on the line from left to right represents the three-hour work period. The lines above and below the line of quiescence represent mental states from deep concentration to extreme chaos.

Work Curves and the Four Levels of Normalization

Stage One

The main features of the child in stage one are:

1. A new child who is still at the stage of moving quickly from one activity to the next showing no real interest.
2. A child who tends to work with activities that he/she has been introduced to rather than through knowledge and previous experience.
3. A child developing the ability to choose through experience, practice, and repetition.
4. A need for presentations to increase the possibility of independent choices, points of consciousness which lead to repetition.
5. Interest can only be observed if initial presentations have taken place. Observation therefore provides the key to discovering where the child's true interests lie. As Montessori observed, the first initial polarization

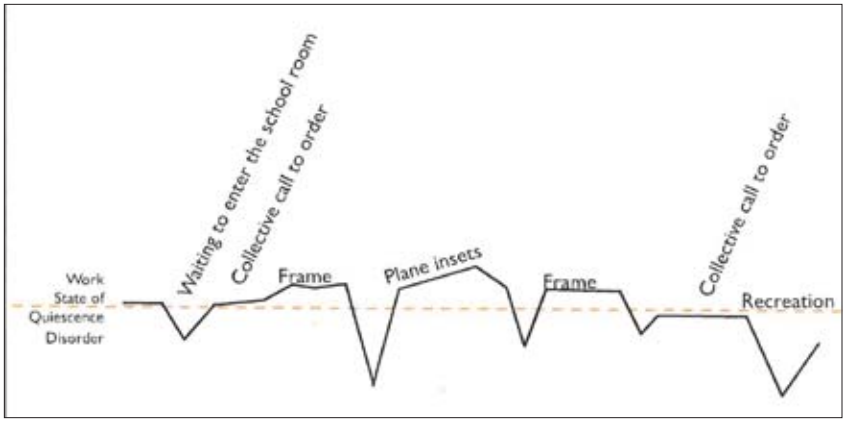


Figure 2. Work curve for stage one.

of attention can only be captured when appropriate presentations meet the child's interest.

6. Polarization of attention provides the child with the first experience of "I can do . . . therefore I want to do more." The guide must follow this momentum and continue to present activities accordingly.

During stage one, the work curve (figure 2) is characterized by the following features:

- Short periods of work with little or no concentration.
- The child is in and out of everything and is attracted to everything in the environment. Movements often impulsive.
- Superficial interest (mainly curiosity).
- The child does the work because it has been shown.
- There is a need for a variety of presentations including practical life, grace and courtesy, spoken language, etc.
- The child needs a lot of encouragement to make choices.
- The child needs assistance in completing a cycle of activity.

Montessori shares stories from guides describing the children at this level:

> They [the children] at first snatched the objects out of each other's hands; if I tried to show an object to any particular child, the others dropped what they themselves were holding and gathered aimlessly and nosily round us. When I had finished the presentation, all the children snatched at it and quarreled for its possession. The children showed no interest in the material: they passed from one object to another without persevering in the use of any . . . In many cases the movements of the children were quite aimless, they ran around the room without any apparent object to their movements. During these movements they made no attempt to respect the objects about them; indeed, they stumbled against the table, stepped on the material, etc. (*Spontaneous Activity in Education* 88).

Stage Two

The main features of the child in stage two are:

1. The ability to make independent choices.
2. The ability to meet a challenge and repeat the activity.
3. The first signs of concentration.
4. The ability to complete a cycle of activity.
5. Points of consciousness, representations, games, and extensions of experience are essential to encourage repetition and for us to follow their interest through our observations.

The features of the work curve at stage two (figure 3) are:

- Some short periods of work. However, work periods are beginning to lengthen as concentration develops.
- The child beginning to make choices of a challenging nature.
- The child tending to start each day with familiar work before moving on to a challenging activity.
- A pattern of work that often points to the child starting with some kind of preliminary work usually followed by periods of restlessness or false fatigue.

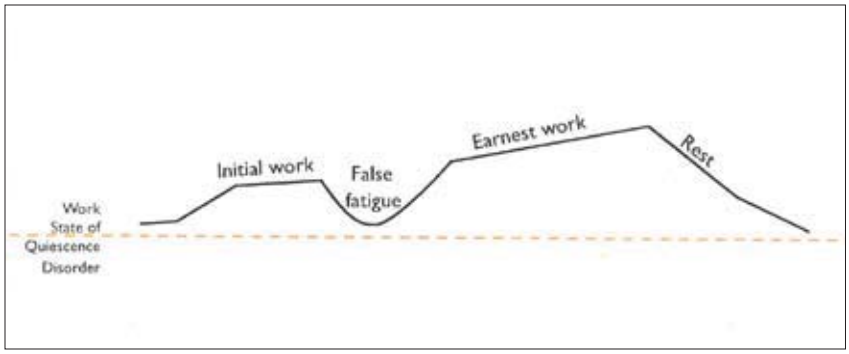


Figure 3. Work curve for stage two.

- Trying out different activities, the child appearing unsettled.

- This is followed by the main work of the day in which the child puts in his earnest effort if he is not disturbed or interrupted by other children or adults.

- Usually the main work of the day is brought to an end by a state of repose or rest (e.g., child may walk around without disturbing others, watch other children working, talking to friends, watching other presentations being given, etc.).

Montessori urges us not to intervene at this point and generally we observe:

> After a few minutes he undertakes some much more difficult work, and becomes so deeply absorbed in this, that he shows us he has reached the acme of his activity. When this work is finished, his activity comes to an end in all serenity; he contemplates his handiwork for a long time, then approaches the guide and begins to confide in her. The appearance of the child is that of a person who is rested, satisfied, and uplifted. (*Spontaneous Activity in Education* 97)

She also warns us not to try and control the children during this period of unrest. She states, "If in the period of 'false fatigue' by 10:00 a.m. an inexperienced teacher, interpreting the phenomenon of suspension or preparation for the culminating work as disorder, intervenes, calling the children to her, and making them rest, etc., their restlessness persists, and the subsequent work is not undertaken" (*Spontaneous Activity in Education* 99).

To summarize stage two, we can state that we see preliminary work, restlessness, and the main work, ending with repose.

Stage Three

The main features of the child in stage three are that:

1. Work has become a habit.

2. Work is of a concentrated level over an extended length of time.

3. They have the ability to make true conscious choices for activities which absorb their whole being spiritually, emotionally, psychologically, and physically.

For the child, the work curve (figure 4) typically features:

- Continuation from the previous stage.
- Work periods lengthening.
- Further desire to get involved in work.
- Usually characterized by the disappearance of the period of unrest.
- Preliminary activity/activities followed by more challenging work.
- A child normally determined and adamant about their choice of work.
- The main task of the day brought to a close in contemplation.
- Contemplation of the finished task for some time after the child ceases to work, before finally putting the material away.

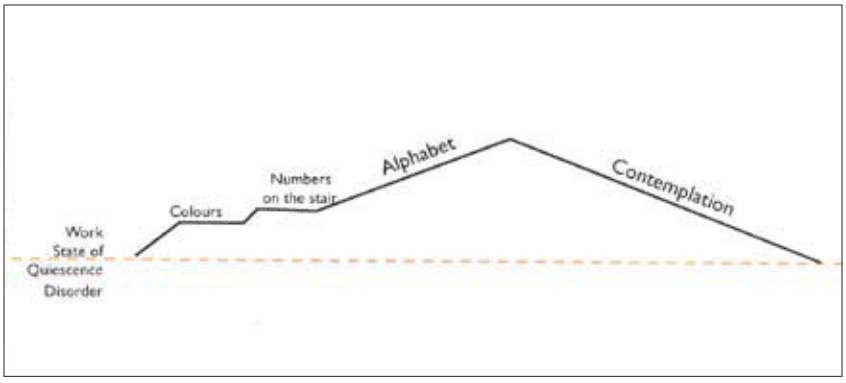


Figure 4. Work curve for stage three.

Montessori refers to this period of contemplation as a period of internal work, a period of assimilation, and a period of internal maturation. She describes it this way:

> The contemplative period becomes henceforth an obvious period of internal work, almost a period of assimilation or internal maturation. Observation of the work of others becomes increasingly frequent, as if it were a spontaneous comparative study between the child himself and his companions; or as if an active interest in the contemplation of the external surroundings were developing: the period of discovery. We may say that the child studies himself in his own productions and puts himself into communion with his companions and his environment. (*Spontaneous Activity in Education* 104)

The internal work and assimilation happens in all creative processes. We see this in adults as well as children. Our role is to protect the creative process in all children.

To summarize stage three, we can state that we witness a disappearance of restlessness and that the main work ends with contemplation. It is important to note that we see a disappearance of false fatigue at this stage. A misinterpretation can lead us to believe that we will always see false fatigue every day, which may not be the case.

Stage Four

By stage four, the child is normalized. But what is normalized? The child's main features at this stage are:

1. The ability to concentrate on a higher level.
2. Self-motivation.
3. The ability to make choices of a sufficiently challenging level.
4. The ability to judge their own work.
5. Total independence—the guide knows where they are but only sees them when they are wanting further challenge or because the child tells them something's happening.

6. A drive for order in the way they work and organize their work.

7. Social awareness.

8. A kindness, thoughtfulness toward others, respect, and caring.

9. Spontaneous care of the environment.

10. Presenting to others without being asked.

11. Voluntary obedience as described by Montessori as the third level of obedience.

The features of the stage-four work curve (figure 5) are:

- A higher level of work that Montessori termed "a general elevation." Montessori observed that the child at this level, even his preparatory work or warm-up activities, is now at a higher level.

- Development of ones character: perseverance, calmness, and inner discipline.

- A greater interest and enjoyment in more intellectual work.

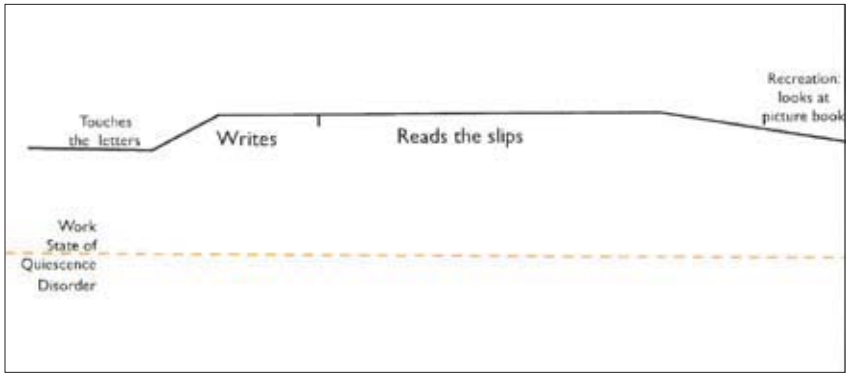


Figure 5. Work curve for stage four.

Work Curves for Individual Children

The practice of creating work curves for individual children lends itself to understanding the true interests of the child, which in turn helps the guide to create a plan based on scientific measurements rather than on a subjective feeling or more limited observations. While it would be impossible to create a full work curve for each and every child in the environment on a regular basis, it is a fruitful process and can be modified with a shortened version that can be completed with all of the children.

Developing and working with a system of codes enables the observer to identify the essential indicators toward normalization. They provide a shorthand that allows the observer to focus on the key elements of the child's work. The shortened version, which will be described, using the same codes, helps us analyze the children's work in an effective, efficient, and thoughtful manner, which in turn will help with planning for individual children. It can also be beneficial with the entire group of children. Each guide can develop her own individual codes, but it is best to keep them in the following categorized groupings.

Cornerstone Schools, St. Paul, Minnesota

Observation Codes

Choice of Work

- (ic) Independent choice
    - The child knows what he wants and chooses on his own.
    - The choice typically responds to an inner need, and inner impulse.
- (sc) Suggested/guided choice
    - The child may not have confidence to choose.
    - The child might have a lack of knowledge at this point.
    - We can start with a guided choice, but if by the end of the year the child is not able to make a conscious choice, we are not following or aware of their interest.
    - Choice, not have to be limited to two activities—"Would you like to do this or that?"
    - A guided choice may involve looking at the shelf together.
    - Guided choices need to be informed by previous observations and notes.
    - We use points of consciousness to enhance success and interest.
    - Take steps to ensure a completed cycle so the child feels capable of doing it later on their own.
- (dc) Directed choice
    - At times a child is incapable of making a choice and we need to direct it for him.
- (ci) Child influenced
    - The child is interested in something by watching other children.
    - Another child invited him to join.

We also may see an impulsive choice that is not on the list of codes. An example of this is a child who takes something off the shelf, explores with it a bit, curious about it, but does not interact with the material based on real knowledge. We should try and observe and discover the source of the interest. We may also see an impulsive choice when an adult who might instruct the child to "find some work" approaches them. He may take something to satisfy the request of the adult, but it is not based on true interest.

Initiation

- (M) The first letter of guide's name that presents the activity, e.g., Molly. If it is a child, then state the full name, e.g., Kathy.
- (1) Indicates a first presentation
- (rp) Representation
- (p.o.c.) Points of consciousness

  An extra challenge (or help) is given to the child in his work. After the equal sign state what you gave (e.g., p.o.c. = application of polish in horizontal-circular movement).

Work Types

- (iw) Working independently on an activity.
- (name) Child that is working or helping another child, collaborative piece of work.

Work States

- (wd) Working distracted with the activity.
- (WC) Working concentrated with the activity.
- (DC) Child experiencing deep concentration for a sustained period of time without any distraction.

Completion of Work

- (i) Putting work back independently.
- (m) Putting work back with guides help.

Other

- (g+c) Grace and courtesy
    - Child practices on social manners and how to respect the environment and peers, e.g., (g+c=how to carry a chair)
- (st) Snack table
- (bc) Book corner
- (wotl) Walking on the line

State of Disorder

- (sd) slight disorder
- (d) disorder
- (u) uncontrollable

Points to Consider

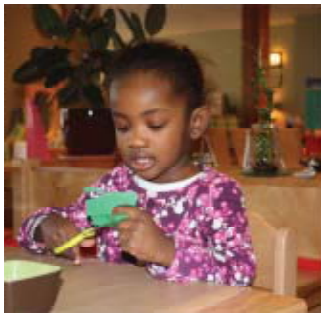
A point to consider is additional information that will help inform our decisions. For example, we may notice that a child is very successful in most aspects of table washing but cannot squeeze the water out of the sponge. The point to consider might be using a point of consciousness to highlight that part of the presentation. Or a child may be baking cookies and you notice that she is most engaged in the washing and cleaning up process, so you may consider offering other activities that involve washing and cleaning. After presenting the geometry cabinet, a point to consider might be to continue adding contrasting figures, and so forth.

Certain elements are necessary to record in order to chart the work curve of an individual child. These include the following:

- How the activity was chosen.
- The beginning and ending times for each activity.
- Whether the child was working alone or with another child.
- The child's level of concentration.
- Completion and putting away of the work.

Children Observed

At the Montessori Center of Minnesota we were able to film entire three-hour work cycles of four children at various stages of normalization. After filming the entire three hours, we edited the videos to match the elements that appear on the work curves. The guides in these environments continued to "chart" the children for the remaining days of the week, allowing us to see an entire week of work.



Macaella

Macaella, now two years, ten months, began Cornerstone Montessori in the infant community. After four months she transitioned into the Children's House. She had been in the environment for approximately two weeks when we filmed her. Her activities and behavior demonstrate the classic features of the first stage of normalization. As shown in figure 6, we see very short periods of work, mostly working distracted, a fair amount of wandering along, with periods of slight disorder. The slight disorder tends to occur toward the end of the morning. It is interesting to note that on Thursday, right before Macaella goes home early because she is sick, she falls below the line of quiescence.

At this point, for planning purposes, we would rely mostly on *points to consider*, to help inform our presentation choices. When looking at Macaella's chart, we see that she works with concentration while washing dishes, washing hands, and working with the pink tower. She also shows interest and is working, but distracted, with spoken language cards (fruits and vegetables), polishing wood, zipper frame, cutting paper, pouring water, and cleaning items.

Caroline

Caroline is three years, one month. She has been in an established Montessori school for three months. She enjoys practical life activities and often talks to herself while she works (figure 7).

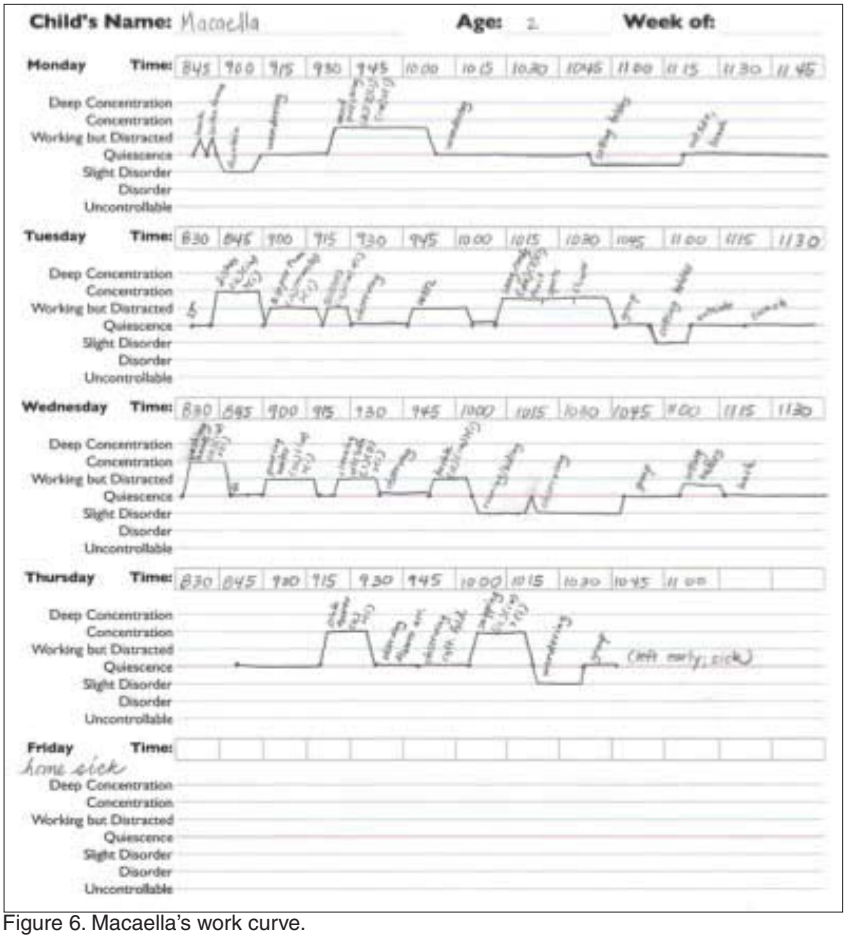


Figure 6. Macaella's work curve.

Evan, Age 4½

Evan is four and one-half years old. He has been in an established Children's House for eighteen months. He demonstrated a strong sense of order on the day of filming (figure 8). Evan had returned from a family trip to Europe the night before filming. On the day of filming, we observed what appears to be a re-orientating to his environment.

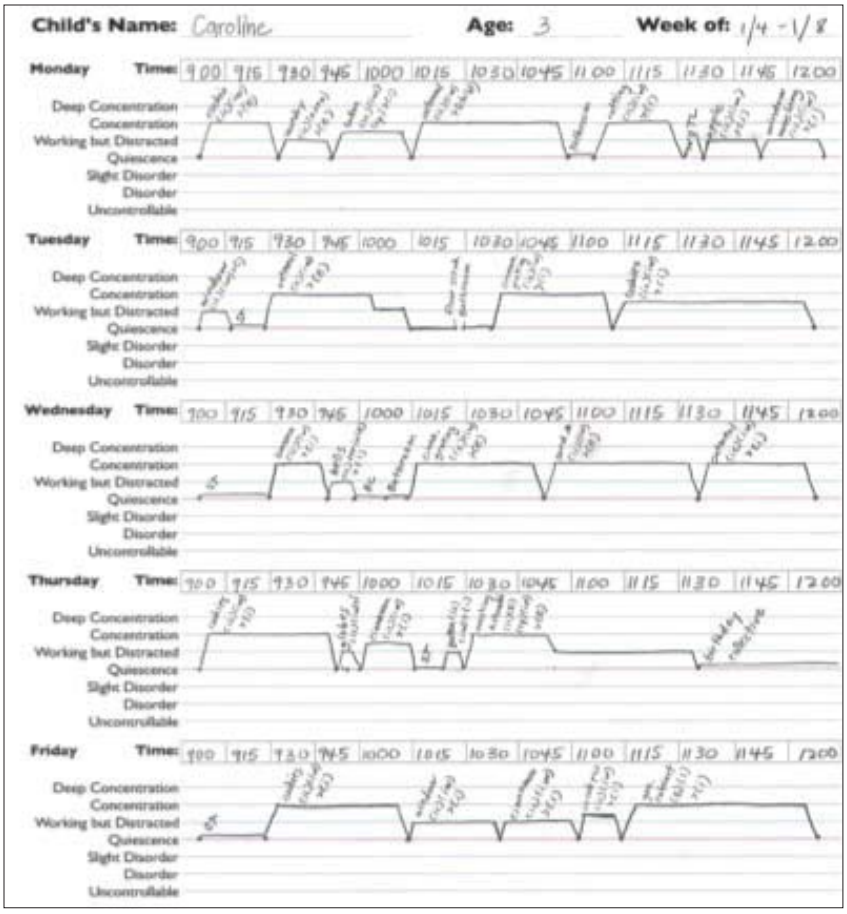


Figure 7. Caroline's work curve.

Throughout the morning he spent significant time adjusting and re-ordering things that were out of place. For example, he noticed a scrap of paper in the fish tank and told the guide to come and see because it does not belong there. He ordered the strips for the addition strip board; he fixed the number cards for the rods; and he noticed a cushion was off one of the chairs, fixed it, and proceeded to check the cushions on six other chairs.

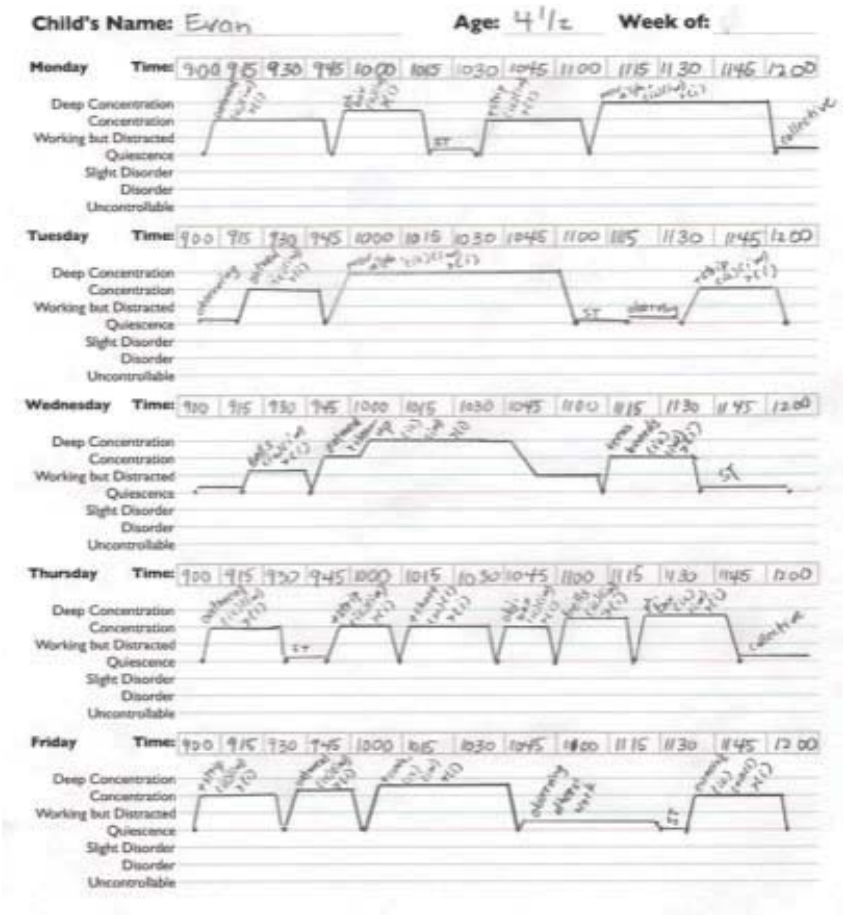


Figure 8. Evan's work curve.

Jack

Jack is six years, three months old. He has been in an established Children's House for three years. Jack is very interested in working with the math materials. Jack is very self-sufficient, careful in his work, and demonstrates the fourth level of normalization (figure 9).

By visually examining the charts for these four children in the process of normalization (figures 6, 7, 8, and 9), we can clearly see the trends from the times of engagement, concentration, and deep concentration. Deep concentration is the best indicator of interest, and interest is the primary motivating factor in learning.

Plotting Work Curves

In order to be able to "plot" the chart, we need to collect important data on the individual child for a week or two using the codes as our guide. We use a daily observation form to fill in the necessary data (figure 10). It tells us the start and end times of the activity, the specific activity used, how it was chosen, whether it was

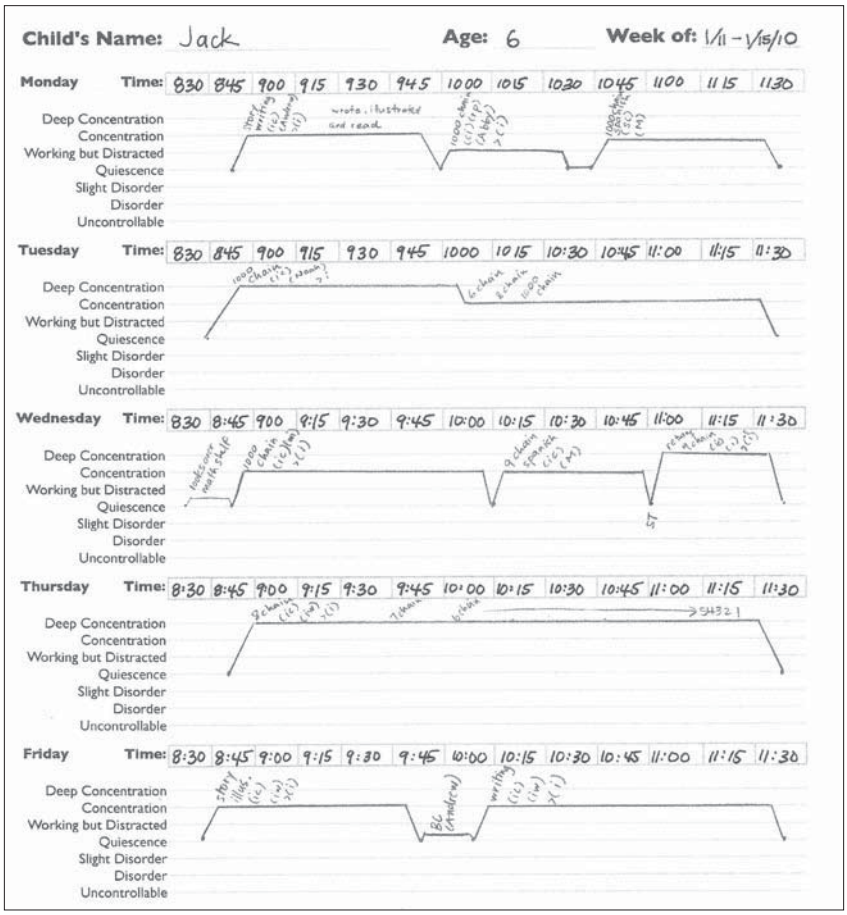


Figure 9. Jack's work curve.

a presentation, whether the child is working alone or with someone, the level of concentration, and how the work was put away. It also allows us to include points to consider which will inform and support us in the planning process. Planning cannot be done casually, but must rely on sufficient, significant, and accurate data. We need one form for each day that we are observing the child. The bottom of the form includes the key to the codes to make it easy to reference when first learning the technique.

Daily Observation Form – Individual Child

NAME OF CHILD:				
WEEK OF:				
DATE AND DAY OF WEEK:				
START TIME	**ACTIVITY**	**WHAT HAPPENED**	**POINTS TO CONSIDER**	**END TIME**

Key to Codes:

Choice of Work	Initiation	Work Type	State of Concentration	State of Disorder	Completion of Work	Other
(ic) independent choice	(G) Guide	(iw) independently working	(wd) working distracted	(sd) slight disorder	>(i) put away independently	(G+C=) Grace and Courtesy
(sc) suggested choice	(1) 1st presentation	(name) name of collaborating child	(WC) Working Concentrated	(d) disorder	>(g) put away work with guide's help	(ST) Snack Table
(dc) directed choice	(rp) representing work		(DC) Deep Concentration	(u) uncontrollable		(BC) Book Corner
(ci) child influence	(p.o.c.=) point of consciousness					(WOTL) Walking on the Line

Molly O'Shaughnessy
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Figure 10. Daily observation form.

Figure 11 shows how the daily observation form was filled in the day we filmed Caroline. She started her day making an independent choice of cookie baking. She worked alone with concentration from 9:00 a.m. until 9:45 a.m., at which time she put the material away independently.

A point to consider was that she was most engaged while cleaning and washing the materials. Next she chose the painted globe, but only had it out for three minutes and then put it back. Interestingly, she then proceeded to take out the sandpaper globe for just five minutes. It appears there is something within those globes that she was attracted to—a point to consider. The next long timeframe

Daily Observation Form – Individual Child (Example)

NAME OF CHILD: Caroline

WEEK OF: 12/7/09 – 12/11/09

DATE AND DAY OF WEEK: Thursday, 12/08/09

START TIME	ACTIVITY	WHAT HAPPENED	POINTS TO CONSIDER	END TIME
9:00	Arrival			
9:03	Baking Cookies	(ic) (iw) (WC) > (i)	most engagement during cleaning and washing	9:45
9:45	Painted Globe	(ic) (iw) (wd) > (i)		9:48
9:48	Sandpaper Globe	(ic) (iw) (wd) > (i)		9:53
9:54	Grinding Cinnamon	(ic) (iw) (WC) > (i)	leaves out cutting board	10:08
10:08	Snack	(ic) (Lilly) (ST) > (i)		10:15
10:17	Button Frame	(ic) (iw) (wd) > (i)	put away unbuttoned	10:19
10:21	Vacuuming up spill	(ic)	responding to need; care of environment	
10:22	Washing a chowki	(ic) (E) (rp) (iw) (WC)		
10:48	Washing a chowki	(iw) (wd) > (e)	going back and forth between scrubbing and giving cookie advice	11:26
11:26	Group collective; birthday			12:00

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(ic) independent choice	(G) Guide	(iw) independently working	(wd) working distracted	(sd) slight disorder	>(i) put away independently	(G+C=) Grace and Courtesy
(sc) suggested choice	(1) 1st presentation	(name) name of collaborating child	(WC) Working Concentrated	(d) disorder	>(g) put away work with guide's help	(ST) Snack Table
(dc) directed choice	(rp) representing work		(DC) Deep Concentration	(u) uncontrollable		(BC) Book Corner
(ci) child influence	(p.o.c.=) point of consciousness					(WOTL) Walking on the Line

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Figure 11. Sample daily observation form for individual child.

was her work with washing a chowki. It was an independent choice, but at one point the guide re-presented part of the presentation, which Caroline watched with great attention. We see a change in concentration levels during the time she is washing the chowki and this was noted on the chart once it was plotted.

We collected data for five days and summarized. Each day is recorded on a separate sheet. All five days are recorded on the weekly observation summary (figure 12). We start with a brief narrative stating

Weekly Observation Summary – Individual Child (Example)

Child's Name: Caroline				Birthdate: 11/11/06	
Short Narrative: Caroline started in the Children's House in September. She enjoys practical life activities and often talks to herself while she works. She engages easily in conversations with adults and peers.					
Week of: January 4-8					
DATE	**START TIME**	**ACTIVITY**	**WHAT HAPPENED**	**POINTS TO CONSIDER**	**END TIME**
1/4/10 MON	9:00	Cookie Baking	(ic)(iw)(wc)>(e)	forgot to wash a few items	9:20
	9:25	folding laundry	(ic)(Nora)(wd)>(e)	distracted by another work choice that interested her	9:30
	9:40	button sewing	(ic)(iw)(rp)(WC/wd) >(i)	needed frequent help	9:55
	10:10	making oatmeal	(ic)(iw)(WC)(e)>(chil d)	asked guide for help putting away	10:45
	10:50	bathroom			10:55
	11:00	scissors – cutting	(ic)(iw)(wd)>(i)	put away to do WOTL	11:15
	11:20	WOTL	(wd) >(i)	deeply engaged; with objects – interest in large motor movements	11:30
	11:33	apple cutting	(ic)(iw) (wd)>(i)	repeated twice	11:40
	11:45	window washing	(ic)(iw)(wd))>(i)	hurried to put away because of end of work cycle	11:55
	11:55	joined collective			
1/5/10 TUE	9:02	window washing	(ic)(iw)(wd))>(i)	[interesting: she had to hurry to put this away at the end of the day yesterday, and took it out first thing today – follow up with p.o.c.]	9:08
	9:10	ST	>(i)	left when she spotted new work	9:18
	9:20	oatmeal work	(ic)(iw)(WC)>(e)	Distracted during cleanup	10:10
	10:20	floor scrubbing	(ic)		
	10:22	Bathroom		did not return to work	10:28
	10:32	Cinnamon grating	(ic)(iw)(wc)>(i)		11:10
	11:10	Cookie baking	(ic)(iw)(WC/wd)(i)		12:00
1/6/10 WED	9:05	ST			9:15
	9:25	Banana cutting	(ic)(iw)(WC)>(i)		9:40
	9:40	Bells – striking	(ic)(trixie)(wd)>(i)		9:50
	9:50	BC			

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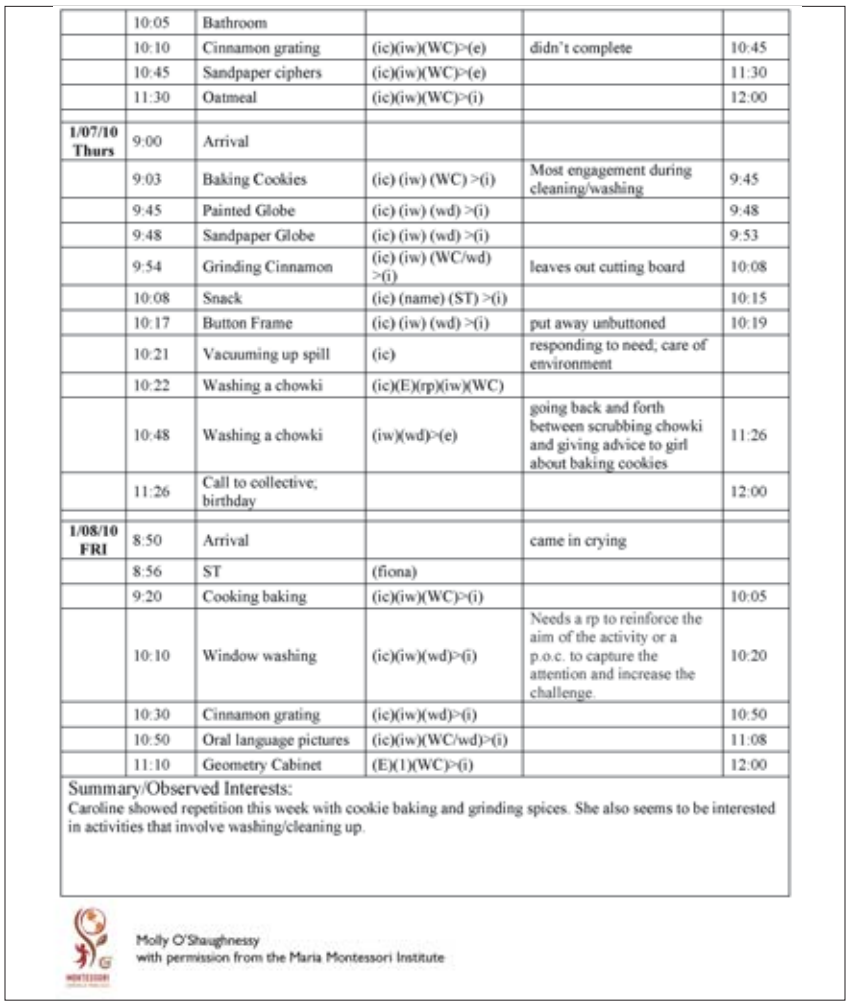
Figure 12. Weekly observation summary (continued on the following page).



	10:05	Bathroom			
	10:10	Cinnamon grating	(ic)(iw)(WC)>(e)	didn't complete	10:45
	10:45	Sandpaper ciphers	(ic)(iw)(WC)>(e)		11:30
	11:30	Oatmeal	(ic)(iw)(WC)>(i)		12:00
1/07/10 Thurs	9:00	Arrival			
	9:03	Baking Cookies	(ic) (iw) (WC) >(i)	Most engagement during cleaning/washing	9:45
	9:45	Painted Globe	(ic) (iw) (wd) >(i)		9:48
	9:48	Sandpaper Globe	(ic) (iw) (wd) >(i)		9:53
	9:54	Grinding Cinnamon	(ic) (iw) (WC/wd) >(i)	leaves out cutting board	10:08
	10:08	Snack	(ic) (name) (ST) >(i)		10:15
	10:17	Button Frame	(ic) (iw) (wd) >(i)	put away unbuttoned	10:19
	10:21	Vacuuming up spill	(ic)	responding to need; care of environment	
	10:22	Washing a chowki	(ic)(E)(rp)(iw)(WC)		
	10:48	Washing a chowki	(iw)(wd)>(e)	going back and forth between scrubbing chowki and giving advice to girl about baking cookies	11:26
	11:26	Call to collective; birthday			12:00
1/08/10 FRI	8:50	Arrival		came in crying	
	8:56	ST	(fiona)		
	9:20	Cooking baking	(ic)(iw)(WC)>(i)		10:05
	10:10	Window washing	(ic)(iw)(wd)>(i)	Needs a rp to reinforce the aim of the activity or a p.o.c. to capture the attention and increase the challenge.	10:20
	10:30	Cinnamon grating	(ic)(iw)(wd)>(i)		10:50
	10:50	Oral language pictures	(ic)(iw)(WC/wd)>(i)		11:08
	11:10	Geometry Cabinet	(E)(1)(WC)>(i)		12:00

Summary/Observed Interests:
Caroline showed repetition this week with cookie baking and grinding spices. She also seems to be interested in activities that involve washing/cleaning up.

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Figure 12. Weekly observation summary (continued).

that Caroline started in the Children's House in September. She enjoys practical life activities and often talks to herself while she works. She engages easily in conversations with adults and peers. After all five days have been recorded we give a summary of her week and interests that have been observed. Caroline showed repetition this week with cookie baking and grinding spices. She also seems to have be interested in activities that involve washing and cleaning up.

To begin the plotting we use the plotting chart (figure 13) and write the times in fifteen-minute increments in the rectangles de-

voted to time. The times are blank because each school could have a different starting and ending time. After the times are entered, a dot is placed at the beginning times for each of the activities. Next we look at concentration levels and draw a line up to the appropriate level and write the other information, using abbreviations above the line (see chart). Other information that needs to be included is the name of the activity, choice, working alone or with someone, and putting it away. We can use abbreviations because we have the full information on the daily observation forms to refer back to if necessary. The purpose of the chart is not to write down every piece of information. Its purpose is to look at patterns in the child's work.

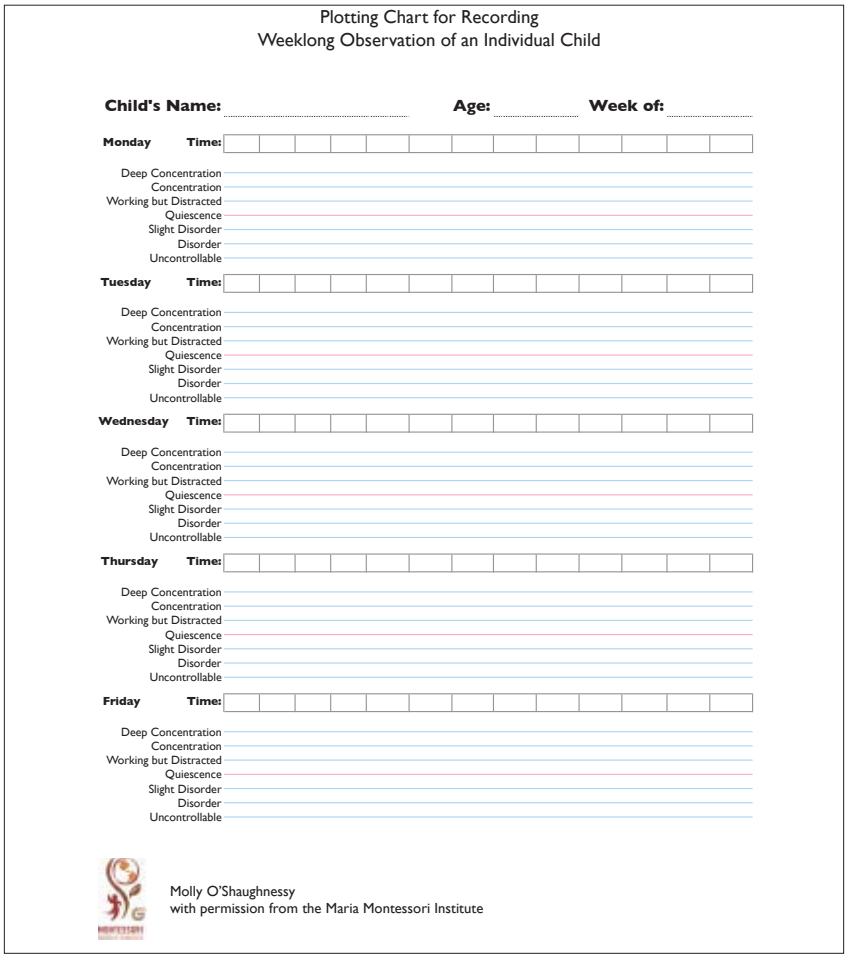
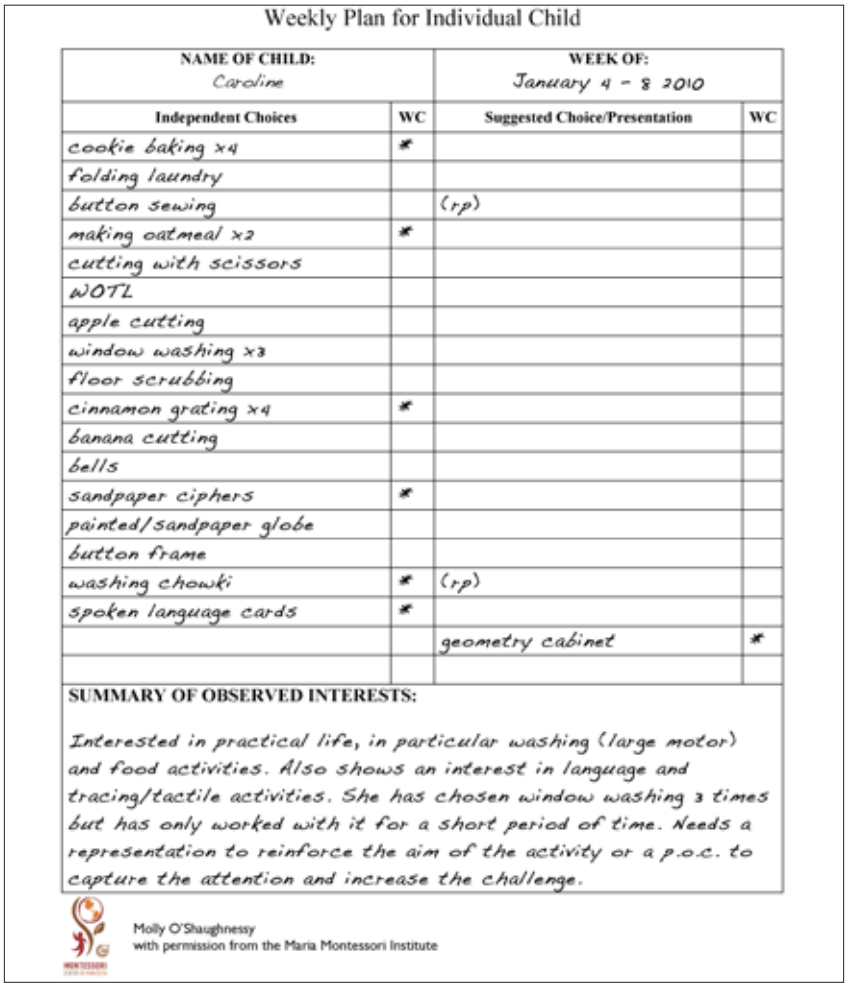


Figure 13. Plotting chart for week-long observation.

Figure 14 represents the day we filmed Caroline and her chart after all the above data was entered.

The next step is to analyze the charts and develop a plan for the following week based on the collected data with points to consider supporting the process.

Looking at the completed weekly observation summary (figure 14), enter the independent choices in the left-hand column (Independent Choices) and the number of times the choice was repeated



Weekly Plan for Individual Child

NAME OF CHILD: Caroline		WEEK OF: January 4 – 8 2010	
Independent Choices	**WC**	**Suggested Choice/Presentation**	**WC**
cookie baking x4	*		
folding laundry			
button sewing		(rp)	
making oatmeal x2	*		
cutting with scissors			
WOTL			
apple cutting			
window washing x3			
floor scrubbing			
cinnamon grating x4	*		
banana cutting			
bells			
sandpaper ciphers	*		
painted/sandpaper globe			
button frame			
washing chowki	*	(rp)	
spoken language cards	*		
		geometry cabinet	*

SUMMARY OF OBSERVED INTERESTS:

Interested in practical life, in particular washing (large motor) and food activities. Also shows an interest in language and tracing/tactile activities. She has chosen window washing 3 times but has only worked with it for a short period of time. Needs a representation to reinforce the aim of the activity or a p.o.c. to capture the attention and increase the challenge.

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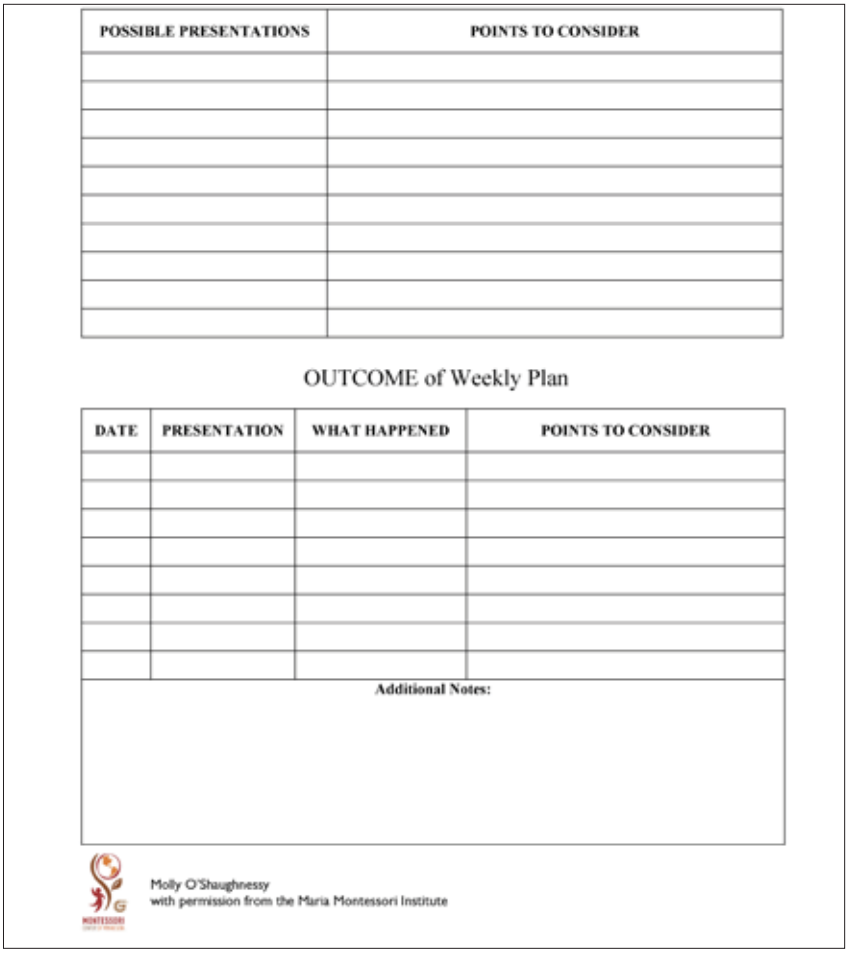
Figure 14. Caroline's weekly observation summary (continued on the following page).

throughout the week. For example, cookie baking x4, cinnamon grating x4, and so forth.

The right-hand side indicates suggested choices (sc) and presentations. In this case, a re-presentation of button sewing and washing a chowki were entered as well as a presentation on the geometry cabinet. The next step is to look at concentration levels. In the column WC (working concentrated), place an asterisk next to the activities that were WC or DC (deep concentration), leaving the other ones blank. The second WC column on the right can also be filled in if



POSSIBLE PRESENTATIONS	POINTS TO CONSIDER

OUTCOME of Weekly Plan

DATE	PRESENTATION	WHAT HAPPENED	POINTS TO CONSIDER

Additional Notes:

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Figure 14. Caroline's weekly observation summary (continued).

appropriate. In this case, Caroline worked with concentration on the geometry cabinet after the presentation.

The back of the form is for possible presentations and points to consider and the outcome of the weekly plan. Based on all of the data from Caroline's week, we recommended the following plan for the next week:

Possible Presentations	**Points to Consider**
(PL) window washing	p.o.c. to reinforce aim
(PL) washing laundry	
(L) voc. enrichment cards	fruits/vegetables
(L) sound games	shows interest in spoken language
(L) sandpaper letters	interested in tactile activities
(S) geometry cabinet	add contrasting figures
(S) bells	listening to different pitches

Finally, we execute the plan as fully as we can, keeping in mind that it may be altered based on our subsequent observations as well as independent choices the child makes. We document the presentations given, what happened, points to consider, and any additional notes.

This in-depth observational tool gives us a clear understanding of the work cycle, as well as patterns and details of the work with an individual child. It can help guide us with new children as well as with children with whom we are not sure how to proceed.

In order to effectively observe and plan an entire group, a shortened version has been developed using the same key factors. A simple daily observation form with fifteen children per page is used for tracing observations (figure 15). The names of the children are entered from youngest to oldest or vice versa.

Figure 16 is a sample of a daily form filled in. Notice the short-hand. There are no times entered. It is kept in an easily accessible location where the guide can quickly enter data.

Obviously we will not capture everything that each child does every single day, but this form gives us enough information to make well-informed decisions and to engage in careful planning. As with the in-depth method, we concentrate on noticing what is most in-

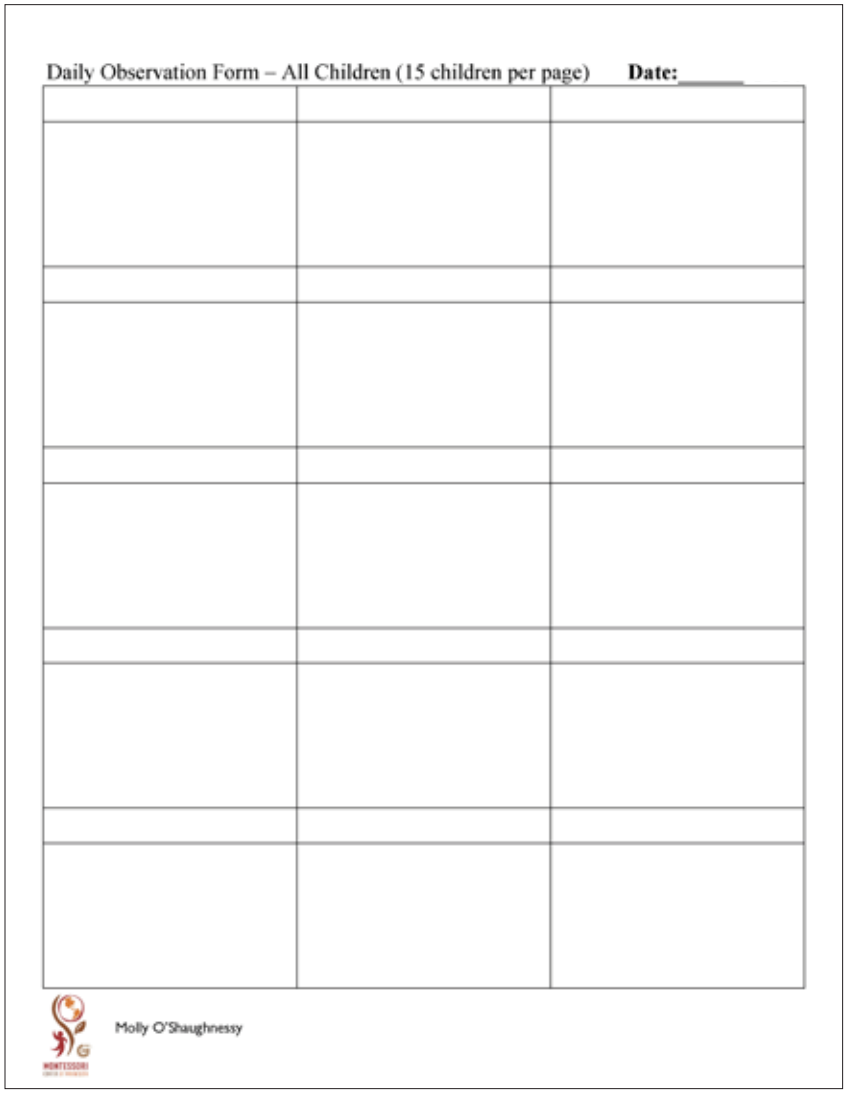

Figure 15. Group daily observation form.

teresting to the children and which activities cause a "polarization of attention" as described by Montessori.

Additionally, to become scientific observers, we need a measurement for looking at the flow of the entire environment throughout the day. Dr. Rita Zener, AMI director of training, developed the whole class at work daily observation form (figure 17). It is simple to use and gives us a glimpse of the patterns of engagement throughout

Daily Observation Form – All Children (15 children per page) **Date: 4/2/09**

John, 2.9	Mary, 3.1	Alec, 3.7
Observing Folding (ic)(w)(WC) →i ST BC Washing Table (ic)(w)(wd) →g (p.o.c.) much water on the floor G C. Excuse me BC	Sound Games, I[st] sound (sc)with Alec, Maddie) (G) Brown Stair (sc)(w)(wd) →g ST Geometry Cabinet, 2 drawers (ic)(w)(WC) →i BC	Sound Games, I[st] sound (sc)(with Mary, Maddie) (G) Color Tablets 3, sunburst (ic)(w)(WC)→i WOTI. ST Metal Insets, stage 3 (ci)(w)(WC)→i
Jenny, 4.1	**Christina, 4.3**	**Raoul, 4.5**
Painting (ic)(w)(WC)→i Spindle Box (ic)(w)(WC)→i Sound Games, sounding out (Sarah, José) (G) Moveable Alphabet, story (G)(Sarah)(WC)→g BC Metal Insets (ic)(w)(wd)→i	Wandering, upset(w) G C. blow nose Observing Chalkboard (sc)(w)(wd)→i Observing G C. Excuse me BC Metal Insets (ic)(w)(wd)→g	BC ST WOTI. Trinamial cube, stereognostic (ic)(w)(WC)→i Addition w/beads (Anna, Daniel) (rp)(ci)(WC)→i
José, 5.3	**Michael, 5.7**	**Daniel, 5.0**
Addition Snake Game (1)(WC)→i Asia Map w/Labels (ic)(w)(WC)→i Reading Analysis, stage 2. (sc)(ic)(wd)→i BC	Wandering (sd) WOTI. G C. Excuse me Wandering (d) Handwriting (sc)(w)(wd)→i BC Metal Insets (ic)(w)(WC)→i	Continuation of Command (sc)(Krista)(wd)→i WOTI. Preposition w/farm. (ic)(Krista)(WC)→i Addition w/beads (Raoul, Anna)(rp)(ci)(WC)→i
Jonas, 3.5	**Maddie, 3.2**	**Anna, 4.10**
Observing SPL. t. v. o (dc)(G)→i Painting (ic)(w)(DC)→i WOTI. Stereognostic Bags (1)(w)(WC)→i G C. Blow nose Tasting Bottles (rp)(w)(WC)→i ST	Sound Games, I[st] sound (sc)(with Mary, Alec) (G) G C. Blow nose Plant care (ic)(w)(wd)→i Safety pin frame (sc)(1)(WC)→I (p.o.c.) did not close frame Painting (ic)(w)(WC)→i G C. Excuse me	Metal Insets (ic)(Gina)(wd)→i 100 chain (sc)(1)(WC)→g Addition w/beads (Raoul, Daniel)(rp)(ci)(WC)→i BC Washing Cloth (ic)(w)(wd)→i (p.o.c.) did not wring cloth
Sarah, 4.10	**Krista, 5.2**	**Gina, 5.6**
Observing (sd) BC Sound Games, sounding out (Jenny, José) (G) Moveable Alphabet, story (G)(Jenny)(WC)→g 100 chain (ic)(w)(DC)→i	Continuation of Commands (sc)(Daniel)(wd) WOTI. Preposition w/farm. (ic)(w)(WC) Metal Insets (ic)(w)(wd)→i Reading class 2 (ic)(w)(WC)→i	Metal Insets (ci)(Anna)(WC)→i Bells, grading (ic)(w)(WC)→i (p.o.c.) was wondering about names of the bells WOTI. ST Reading Class 3, horse (ic)(w)(WC)→i

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Figure 16. Completed group daily observation form.

the environment. This information will guide us in determining what might be the best time to present, whether there is false fatigue, and so forth.

The upper half of the form represents the morning work cycle and the lower half the afternoon work cycle. The numbers on the sides indicate how many children are present in both the morning and the afternoon work cycles. The rectangles on the bottom are for time in fifteen-minute increments. Every fifteen minutes, look

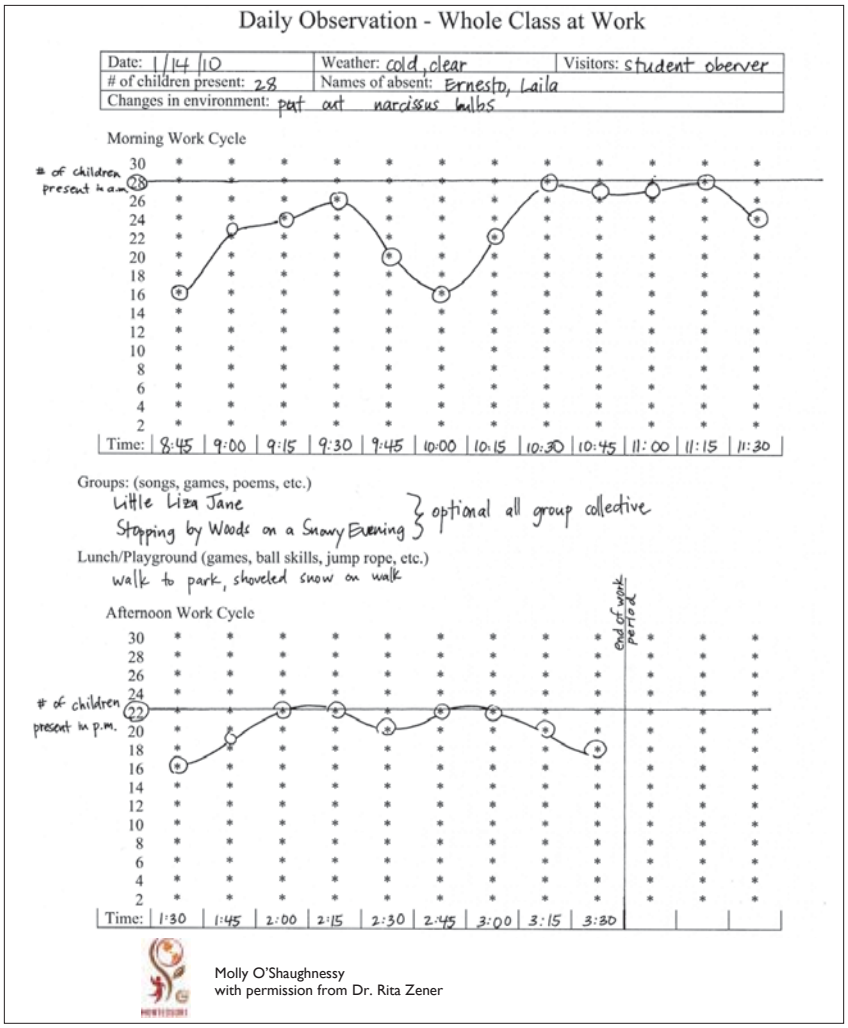

Figure 17. Whole class at work daily observation form. Developed by Dr. Rita Zener.

around the room and estimate how many children are engaged. Circle the asterisk next to that number. At the end of the day, connect the asterisks with a line and it will show the flow of the day, possible false fatigue, periods of greatest engagement, and so forth. This is an effective tool to use when a new school gets started. We used it when we opened Cornerstone and saw the gradual normalization evolving over time.

In addition to creating individual plans, we need to have a plan for potential group presentations and activities based on observa-

Weekly Plan for Group Presentations

Plan	Date Executed	Outcome/Notes
Grace and Courtesy:		
Songs/Poems/Etc:		
Walking on the Line:		
Language:		
Math:		
Sensorial:		

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Figure 18. Weekly plan for group presentations.

tion. Figure 18 is a weekly plan for group presentations, divided into areas we offer to small groups of children. These presentations are ones we often forget to plan and therefore may not be fully utilized. The major categories include grace and courtesy, song, poems, stories, walking on the line, language activities, math, and sensorial activities. In addition to what is planned for the week, there is space to indicate when these presentations were executed and what the outcome was. Additional points to consider will help.

Another aspect of scientific observation included in the framing model is record keeping (figure 1). It is critical to keep precise records of what has been presented to the children. Many record keeping systems have been developed, both electronically and in paper form. The key is to determine what will work best for you. It should be simple, clear, and easy to access. There should be a clear distinction between record keeping "What I did" and "What I observed." If we only know what we did, it will not give us sufficient information to reflect and create the best plan. A simple checklist of what has been presented does not tell us how long the child worked with the material, his level of concentration, number of repetitions, challenges he encountered, and so forth. The shortened form of observation in addition to record keeping gives us a fuller picture of what is happening with each child in the environment.

The Role of Error in Scientific Observation

Looking at the framing model at the beginning of this article (figure 1), we see a circle that directs us to look at the children's errors to inform our planning and to help us see the developmental challenges and successes they encounter. In order to understand the errors we observe, we must first examine the nature of mistakes. Errors are developmental; all children and adults make errors. What are some major points to consider?

The first is our attitude. We need to adjust our attitude toward mistakes because if we become obsessed by them, what will happen? We will not be able to more forward and we will get "stuck" in judgment and in the belief that we need to correct the child. Instead of focusing on the child and the mistakes she is making, it is better to focus on the difficulty she is experiencing in that moment. While considering the mistakes themselves may lead us to subjective

judgment, we can observe difficulty objectively. We must focus on the *particular* difficulty the child is experiencing at this *particular* moment with this *particular* activity. By shifting our perspective in this way, we are able to focus on the nature of the mistake, rather than the mistake itself.

Many of us have visceral memories of being corrected as children that deeply influence both our beliefs about ourselves and how we view mistakes. In a discussion about this with trainees, they were asked if they had a difficult time in their own educations with not feeling capable or good enough based on comments from people in authority. One of the students aptly stated, "That is why we are here." This is a profound statement. We know that when we approach education as an aid to life rather than as a teaching method the adult prepares herself to function in a radically different manner. It becomes a kind of healing process. It gives us the opportunity to re-envision how to be in relationship with children and with ourselves. Montessori says, "It is well to cultivate a friendly feeling towards errors, to treat it as a companion inseparable from our lives, as something having a purpose, which it truly has" (*The Absorbent Mind* 215). She reminds us, "Many errors correct themselves as we go through life. The tiny child starts toddling uncertainly on his feet, wobbles and falls, but ends up walking easily. He corrects this by growth and experience" (215).

> We help the child become interested in his own mistakes, to be interested in knowing what went wrong. I have seen children with the finger charts trying to discover where they made a mistake. When they check their work with the control chart and see a mistake has been made, they use their power to know and reason to figure out where the mistake was made. Our role is to find a way to engage them in doing it for themselves rather than us stepping in and correcting their errors.

In the insightful article "Errors and Their Correction," A. M. Joosten suggests that in the early period of a child's development we must observe and remember the child is far from what he will become. That disorder will vanish as the child normalizes. Not to

concentrate on the child's imperfections. To hold a view of reality not yet visible; not to attach ourselves to the mistakes as it will only make them permanent (4).

We must focus exclusively on the *nature* of the mistake. We do not want to have a negative response. Sometimes we jump in to correct something without pausing to observe how the child might correct herself if given the time to explore and reflect. It is important to find indirect ways to help children with mistakes.

Joosten also explains that we must examine the child's activity and determine whether it is spontaneous, and whether it is contributing to development or hindering it. These are important considerations when we are observing a child. If the child's activity is not hindering development, and is in fact supporting development, we must not intervene even of she is making a mistake, because the materials are self-correcting and through her own repetition, the child will learn from the experience.

We cannot rob the children of the opportunity to discover their own mistakes. When children discover their own mistakes, it is a powerful experience and a self-taught lesson. We cannot do it for them. Normal development cannot happen without making mistakes. Most likely, the activities that are freely chosen, and are based on interests and knowledge, will be the activities that are the most engaging for the children. As Joosten writes, "Interest is the life breath of development" (5).

There are many reasons that children make mistakes and keen observations will reveal them. Did they not understand how to handle the material? Was the presentation unclear? Were the concepts beyond their comprehension? An example we often observe is in the presentation of the sound cylinders. The control of error is that the pairs are not going to have two cylinders of the same color. There will not be two blues together or two reds together. This is contrary to what they are accustomed to in their matching patterns. Typically they put things that are identical into pairs. As we observe children working with the sound cylinders, we see them try to put the two reds and two blues together. If we deem that as lack of clarity, we can do something as simple as saying, "These red ones are

exactly the same as the blue ones. We put them together." The point of consciousness may be a simple statement lending clarity to the procedure. We do not have to go into a long explanation.

Is it a lack of capacity? Sometimes we think a child can understand something based on our observations. We discover actually that they cannot. The indirect supports are not in place yet. We have to determine if that is the issue. If the mistake stems from a lack of capacity we have to respond differently.

Or is it really a lack of interest? Some children will even tell us they are not interested in what we are offering or they may tell us it is boring. When children say these things, we should listen. It brings us back to the importance of charting the children to determine their true interest.

We observe to help determine what the children are trying to achieve. We can understand this by the way that they behave and interact with the materials. These clues help us pay attention to the child's normal development rather than their mistakes. Mistakes and development are not contradictory. This is true at all levels of learning. Throughout our lives as adults, it remains true.

Particularly in young children, if they believe that it is acceptable to make a mistake they will take risks and keep trying. Unfortunately, we also have children who come into our environments terribly afraid, for one reason or another, to make a mistake. They feel they must do things perfectly. It can be difficult to help these children feel comfortable with their mistakes.

The decision to correct or not can be a difficult one. Many mistakes are about the ability to correctly perceive something. If a child cannot build the pink tower symmetrically, it is telling us they do not yet have the ability to perceive the proper order. Telling or correcting them is not going to help them perceive it. When my husband tries to show me something on the computer that he understands but I do not, he just cannot understand that I am not able to perceive it. Once I do get it, though, it is like, "There it is!" That is how it is with the children. To intervene or correct does not help their development. A lesson may need clarification or maybe a re-presentation,

but in general repeated experience with the material is the greatest lesson of all.

> Instead of focusing on the child and the mistakes she is making, it is better to focus on the difficulty she is experiencing in that moment. While considering the mistakes themselves may lead us to subjective judgment, we can observe difficulty objectively. We must focus on the particular difficulty the child is experiencing at this particular moment with this particular activity.

As Joosten points out, correction in and of itself is not an obstacle to development. Sometimes there is not a control that is obvious to the child with the material. In this case, we might be able to help the child by just making a small point of consciousness. With corrections we have to figure out when to intervene. When do I stand back? When do I wait a bit longer? It is usually better to wait a bit longer. But we do correct it if something is really being misused. Faulty handling is something we address immediately, making sure to show what to do, rather than what not to do.

Every correction must serve development. The last thing we want to do is to destroy interest. In general it is best to not correct immediately, unless a situation is harmful or disrespectful to the material or to others. There are other effective ways that mistakes can be handled. As discussed above, very often the material corrects the mistake. Often the child discovers the mistake himself, which is the ideal solution. Other children may also step in to help. They are often the best control of error and they do it gracefully with kindness.

When we do correct, we should always respect the efforts the children are making and understand the positive value. We help the child become interested in his own mistakes, to be interested in knowing what went wrong. I have seen children with the finger charts trying to discover where they made a mistake. When they check their work with the control chart and see a mistake has been made, they use their power to know and reason to figure out where the mistake was made. Our role is to find a way to engage them in doing it for themselves rather than us stepping in and correcting their errors.

The Center and the Periphery

One of the most important principles of the Montessori method is that we do not directly teach the child, but we feed the periphery. Montessori makes a distinction between the center and the periphery. In most educational methods, the teachers attempt to feed directly into the child's center—the child's mind. Montessori, however, asserts that we must not attempt to penetrate into the mysteries of the mind directly:

> What goes on in this mysterious center of the child's creative intelligence is his secret, and we must respect that secret…That inner creative center is the part of the individual that belongs entirely to himself. The center is the innermost part of the personality from which action proceeds; it is the place from which things start. At this center the child increases his mental powers by seeking out sensations and movements, which take part at the second part of his personality—the periphery. This is the part of the child's personality that comes into contact with the external world. It comprises the senses, and movements, and the outward manifestations of his choice. Through the continuous interaction of these two factors, the center and periphery, the mind of the child develops, unfolds, and creates itself. (Montessori qtd in Standing 235)

Our job is to respect the center, for this is the child's creative work. Instead of focusing on the center, we feed the periphery. We do this by presenting activities in such a way so as to evoke purposeful movement on the part of the child.

When we have teacher-centered, curriculum-based education, the teacher is at the center, directly teaching the children. But in Montessori environments, the child is at the center and we act at the periphery. We cannot directly penetrate the child's own creative process. We must offer the right things at the periphery and this can only be done if we hone our skills as observers.

Observation is our best guide and a critical part of our daily work. It is not something that we do once a week; it must happen daily with systems in place to make the data meaningful, measurable and usable. Our observations will reveal visible, tangible magnifications of what is feeding the spirit of the child and we must

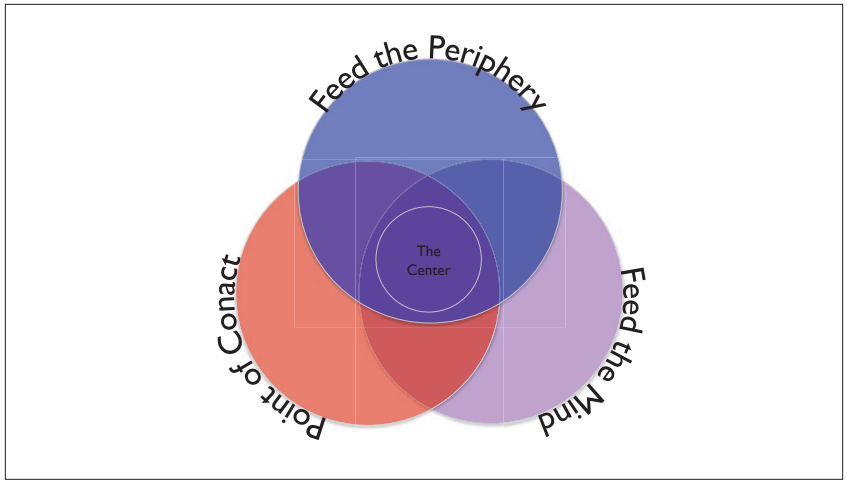

Figure 19. The center and the periphery.

note those and reflect on them in our planning. We can most clearly observe what is happening at the periphery when the children are given true freedom of choice in their activities.

We feed the periphery, E. M. Standing states in *Maria Montessori: Her Life and Work*, "by means of occupations so prepared that they meet the child's natural tendency to explore the world around him through material objects, and by doing so abstract ideas from them. These ideas he spontaneously builds into his own individual mental system. This is the work of the center" (237). It is at the periphery, through what we offer him, that the child comes into contact with the external.

Connecting the child to the developmental materials is one of our main responsibilities, but we are not always successful in this regard. Montessori states, "In practice you may often see that a teacher has prepared the environment, but the children do not pay attention, are not interested, and act in a disorderly manner. What is the matter? Is it the method, or the environment, or the teacher, or the children? Something evidently has gone wrong" (in Standing, 239). Montessori clearly explains what is missing is the "Point of Contact" (239). Standing elaborates, explaining that "Through the continuous interaction of these two factors, the center and the periphery, the mind of the child develops, unfolds, expands, creates itself in unity" (236).

How do we know when we have successfully made a point of contact? What should we observe? Standing describes two key changes we observe in the child's behavior when a point of contact has been successful:

> First, there is a limitation of his movements; and secondly, there is exactitude and precision. In the mental sphere an analogous process must take place. Before the establishment of the point of contact there results at once a limitation of the mental field, that is a concentration on a definite aspect of reality; which is accompanied by a movement with exactitude and precision. (240)

We aim to present activities in such a way that they invoke interest, engagement, and purposeful movement. As a child engages using very purposeful movement, she begins to understand the concepts that are imbedded in the materials. Each of our materials has concepts imbedded in them that can only be revealed through repeated exploration.

In order to feed the spirit of the child, we must respect that process of exploration; we must have the humility of a spiritual observer. We must remember that the periphery is the only part of the child that is accessible to us. How do we know what is happen-

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ing at the center? Our best guesses are based on what the children choose, what they say, and how they interact with the material. These are the visual manifestations when we have fed the periphery in a meaningful way. The point of contact is a communication between our spirit and the spirit of the child.

What we offer is not chosen randomly. It has to be based on what we have observed. The material must ensure that the child can use it with his own hands. When they use their own hands and repeat it, it creates what we call intelligent hands. It is like when you practice with the materials in your own training. Why did anyone care how precise you were? We wanted intelligent hands. Our hands must be so intelligent they can do these presentations without even looking at the materials. It allows us to observe how the child is responding so we can see details we may need to refine or points of interests that we need to offer.

That is the other thing that is important: The point of contact is not always with us. I believe that right now we do not facilitate enough peer teaching in our environments. Ideally, children will show each other things, one child acting as a point of contact to another child.

In his chapter on "Movement and Mental Assimilation," Standing outlines some practical rules on how to establish a point of contact (243–244). To summarize, points of contact are individual and cannot be established with the whole class together; they should be individually initiated and followed by free choice; in the beginning, the guide may act as a traditional teacher presenting in front of the class; as each child's ability increases, the guide's presence must decrease; points of contact are established through movement. Movement is especially critical in points of contact involving the exercises of practical life. Montessori, he says, describes the response of the children when shown something as simple as putting down a chair. Obviously they have seen chairs put down before, but the way we present it is special and different. The careful precision, the slow movements, the silence, intrigues and fascinates the children. The specialness with which we imbue this activity inspires them to repeat it with the utmost care. We witness the great joy it brings them.

Once this contact has been made, the child is essentially altered; she is not the same human being. And the "new child" that Montessori describes begins to emerge, able to follow along the path of normal development.

Conclusion

When we develop ourselves as spiritual and scientific observers we are able to truly serve the children with love. The secrets of childhood reveal themselves to us through our observations and as Montessori suggests "Life acts of itself, and in order to study it, to divine its secrets or to direct its activity, it is necessary to observe it and to understand it without intervening—this idea, I say, is very difficult for anyone to assimilate and to put into practice" (*The Montessori Method* 88).

The practice and art of observation must become a habit of mind, fully engrained in us, never to be abandoned or neglected. We must diligently attend to what is in front of us, to the smallest details. As we move along the path, side by side with the child, we strive to prepare both the environment and ourselves to support the spontaneous activity of children, in an atmosphere of freedom. Observation is our core and most ardent ally in these fundamental preparations. It protects the integrity of the method and the work of the child. It fuels our understanding of each unique individual child allowing us to truly serve her needs in an exact and thoughtful manner.

Montessori reminds us, "As we observe children, we see the vitality of their spirit, the maximum effort put forth in all they do, the intuition, attention and focus they bring to all life's events, and the sheer joy they experience in living" (*The Child, Society, and the World* 99).

Be as the children, and we will thrive; we will become joyful observers.

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This article has been based on the writings of Dr. Montessori and the extensive work on scientific observation that has come out of the Maria Montessori Institute in London. In preparation for presenting on the topic of observation at the AMI/USA Refresher Course in 2010, O'Shaughnessy worked directly with Hilla Patell and Karen Pearce, who developed and conducted a postdiploma certificate course on observation, and with trainees on the London courses. Patell entrusted her with the extensive body of work she has done over many years on the topic with the hope of extending its reach and of perpetuating further interest in and study of this important topic.

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