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Relevant Professional Development: Reflective of Adult Learning Styles

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Relevant Professional Development:
Reflective of Adult Learning Styles

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in fulfillment of the requirements for the MAED degree

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Abstract

This action research project was instigated to determine the effects of professional development (PD) for practicing Montessori teachers using the Montessori Language materials. The specific targeted materials included: vocabulary cards, sound analysis, sandpaper letters, moveable alphabet, pencil use, and reading. The research took place during a four week period in a large west coast Montessori school that serves children between 18 months and 12 years old. The teachers who participated in the study all worked with children between the ages of 3 – 6 years old. The data was collected using a provider journal (notes taken by the researcher during the PD sessions), questionnaires and weekly teacher logs. The researcher used available PD literature to plan and execute the study, which highlighted the importance of teachers participating in PD that was designed around participant identified content. The literature also provided guidance as to the content methods to incorporate into the PD sessions. At the conclusion of the study, findings revealed that the teachers benefited from support in all the language categories listed. They also became aware of the content delivery methods that best met their individual needs. Future research is needed to determine the content and delivery needs of teachers in different stages of their careers.

Keywords: professional development, Montessori teachers, language materials, early childhood

RELEVANT PROFESSIONAL DEVELOPMENT

The intent of Montessori training is to prepare teachers theoretically and practically to work with children. As a teacher trainer and a consultant, I have met many new and experienced teachers who need theoretical and practical assistance when faced with the realities of working with a group of children. They need a support system on which they can rely to provide them with the PD that will allow them to experience more success. Many teachers throughout their careers seek out support through mentoring, workshops, conferences, and study groups. Teachers also need assistance in specific aspects of the work, so it is not unusual for a teacher to be unable to find the exact information needed in a planned workshop or conference. For years, I have been interested in this topic and sought ways to provide the right information at the right time for specific groups of teachers. In my research as a trainer, I found literature that addressed this issue and used that information to plan and prepare for teacher events. This information intensified my interest, so I chose the topic of PD for my research project.

As a trainer and consultant, I have visited many schools for 3-6 year old children, and have found that many teachers struggle with presenting language materials, and requested Professional Development (PD) opportunities in that area. They report that some of the children are not successful using the materials and moving through the language sequence with ease. When the opportunity arises, practicing teachers frequently ask questions about various aspects of the language work with the children. They report that some children have very little interest in the materials as well as ask for support in using the materials. Formulating my plan, I chose categories of language materials that teachers report are problematic both in presentations and in the children's interest and use of the materials. The categories chosen were Spoken Language, Writing, and Reading. PD sessions focusing on these categories were scheduled throughout the

RELEVANT PROFESSIONAL DEVELOPMENT

research period. My goal is to better understand the PD practices and procedures that provide the best and most useful experiences for the teachers, which will lead to better outcomes for the children.

The research project took place in an Association Montessori Internationale (AMI) Montessori school in the western United States. AMI is an international organization that was started by Maria Montessori in 1929, and provides specific standards for schools who are affiliated. The school has multiple campuses and serves about 400 children from toddlers through elementary age children. The school provided space for the PD sessions and supported the teachers' attendance by arranging for coverage of their duties at the time the sessions took place. There were nine AMI trained teachers of 3-6 year old children participating in the study and two teachers and two administrators attending as observers.

The background research provided guidelines for organizing and implementing this action research project. PD literature addressed the importance of the content, context, and pedagogical knowledge in relevant PD (Dever & Lash, 2013; Han, 2013; Patton & Parker, 2015; Trivette, Raab, & Dunst, 2014). It is helpful and meaningful when the content and context of PD sessions reflects the topics requested by the attending teachers. Providing pedagogical knowledge adds to the benefit, as it gives the teachers the theory and practical skills they need to implement the content delivered.

The literature also encourages PD that allows for social learning, peer support, assessment, and reflection. The social experience of mentoring was found to be quite helpful, especially for novice teachers (Desimone et al., 2014). Reflection is a natural result of learning in a non-threatening environment.

RELEVANT PROFESSIONAL DEVELOPMENT

Finally, the literature highlighted the importance of administration support for PD, the duration of the PD, and positive results for the children whose teachers attend meaningful PD offerings. The research clearly stated that administrative support means more than providing the funding for PD, it also means participation by the administration to demonstrate agreement and support of the topic (Whitworth & Chiu, 2014). Providing PD that spans over time also proved beneficial. Teachers who attended PD sessions with many or all of these elements experienced positive benefits for the children with whom they worked.

This study began with an invitation to participate in a research project that would provide feedback on PD practices that proved beneficial to teachers. The teachers were informed that the focus of the PD sessions would be various aspects of the Language area. At the orientation session, the teachers filled out a Baseline Questionnaire (see Appendix A) indicating where they needed support in Language theory or presentations and where the children were floundering or succeeding in the Language area. This information was used to design the PD sessions, which followed the suggestions from the literature review that content and context proved more meaningful if derived from the needs of the participants. During each session, various modes of delivery of information were used, which included the research recommendations of peer support and social learning. The questions on the Baseline Questionnaires (see Appendix A) required significant time to answer, giving opportunities for reflection. Weekly information was collected on the relative benefits of each type of PD experience as well as the frequency of use of particular Language materials by the children. The former information aided me in planning each successive session. The latter information gave the teachers and me an indication of how the content of the PD sessions was serving the children's learning. Throughout the PD sessions, I kept a Provider Journal of my observations and reflections.

RELEVANT PROFESSIONAL DEVELOPMENT

The information gathered gave me direction for planning subsequent sessions, both in manner of presentation and Language area content. I compiled knowledge about preferred PD practices as well as specific sections of the Language area where re-presentations or practice were needed. This allowed me to reflect on and practice relevant PD experiences for Montessori teachers for 3 – 6 year olds using Language materials.

Review of Literature

Professional Development (PD) for practicing teachers provides experiences and information that will elevate their practice and enhance the outcomes for their students. The literature on this topic provided guidance for planning and implementing PD opportunities for practicing teachers. The literature addressed several topics with supporting research. First, it was beneficial to solicit teachers' input to determine the content, context, and provide pedagogical knowledge in PD. Second, PD given in a social learning environment with peer support, assessment, and reflection enhanced the experience. Third, PD presented over time provided greater value, and when bolstered by administrative endorsement provided greater student achievement.

The Content, Context, and Pedagogical Knowledge in Professional Development

Teachers are concerned with their individual situations and the difficulties those situations present. Therefore, PD that addresses the teachers' needs in content and context is more effective than seemingly randomly chosen topics (Dever & Lash, 2013; Han, 2013; Patton & Parker, 2015; Trivette, Raab, & Dunst, 2014). The initiation of Professional Learning Communities (PLC) provides for job-embedded PD in school settings. PLC's can be made up of grade level teams, high school departments, school committees, or professional organizations. At the end of a year-long study, research showed that this type of learning community for

RELEVANT PROFESSIONAL DEVELOPMENT

teachers had significant value on student outcomes and teacher development (Dever & Lash, 2013). Another example is reported by Tannehill and Murphy (as cited in Patton, Parker, & Tannehill, 2015) described a working group of teachers formed into a community of practice to address the specific issues that stemmed from mandated changes in the curriculum. The program took place over a six year period, and at the end of the specified time, the teachers themselves wanted to continue the collaboration, as they found value in exchanging ideas and strategies specific to their individual situations.

The importance of content is directly linked to teacher education. Thirty six teachers and teaching assistants representing 19 classrooms participated in a PD Head Start study. The study focused on promoting evidence-based classroom practices by providing an average of 35.4 hours of training; 94% of which was delivered to the teacher and teaching assistant at the same time. The educational level of the participants included 11% who had a high school diploma, 31% who had some college experience, 42% who had an Associate degree, and 17% who had a Bachelor's degree (Trivette et al., 2014). Content becomes a significant factor for teachers with no education beyond high school, as they might need more information to understand the content of PD sessions of which college graduates are aware.

Content in PD includes pedagogical knowledge, which increases teachers' knowledge and skills (Desimone, 2011; Han, 2013; Kindle, 2013; Patton & Parker, 2015; Trevitte et al., 2014). Lotter, Rushton, and Singer (2013) conducted a study addressing the needs of science teachers over a year long period. A two week summer workshop included 90 minutes each day in a pedagogy session where the teachers were the "students." In addition, they were provided with three hours each day of pedagogical content in different science fields. The organization of this study demonstrated the importance of content knowledge. At the end of the study, 12 of the

RELEVANT PROFESSIONAL DEVELOPMENT

36 teachers experienced dramatic changes in the way they presented material to their students. Anders, Hoffman, and Duffy (as cited in Kindle, 2013) state that it is important to differentiate between training and educating teachers. Training gives specific guidelines to use with children, while educating implies deepening pedagogical understanding. The other factor that needs consideration is that pedagogical focus is a significant element in PD for teachers who do not have an extensive education.

Social Learning, Peer Support, Assessment, and Reflection in Professional Development

Social learning, peer support, assessment, and reflection play a vital role in PD experiences. Social learning can take many forms, and is an important component of PD. Patton, et al. (as cited in Patton & Parker, 2015) states that an informal social experience within the framework of PD opportunities creates trust and bonds between staff members. It encourages cooperation and collaboration, which enhances the learning environment. Patton and Parker (2015) describe PD sessions that included well-planned social events interspersed between the working sessions as being highly beneficial. Desimone (2011) supported this idea indicating that learning for adults was both social and interactive and that this kind of learning took place in formal and informal settings. In a study involving 255 Early Childhood practitioners from 26 states (Dunst & Raab, 2010), PD opportunities were offered in several formats: presentations, day workshops, multiday workshops, institutes, and on-site training. The teachers rated the effectiveness of the experiences related to their practice with children, and the on-site training as most useful, giving it the highest mean participant score. The on-site training included role-playing, such as incorporating new practices in sample lessons given to their peers (hands-on experiences), highlighting the benefits of PD that includes peer interaction.

RELEVANT PROFESSIONAL DEVELOPMENT

Peer support can take on many forms in PD, such as thoughtful group discussions based on observations of implementation with students (Lotter, Rushton, & Singer, 2013). Another kind of peer support is encouraging and providing opportunities for teachers to become a professional community outside of the formal work environment (Patton & Parker, 2015). Desimone (as cited in Whitworth & Chiu, 2014) indicates that groups of teachers from the same school or department benefit from attending PD opportunities as a unit. PLC teams also provide meaningful peer groups that have positive effects on the teachers' understanding and student outcomes (Dever & Lash, 2013). Another type of beneficial peer support is mentoring.

Formal and informal mentoring is effective for elevating practice or understanding specific situations, especially for novice teachers (Desimone et al., 2014). A five year study involving 57 first year teachers from 11 districts covering four states focused on the benefits of assigned mentors and informal peer mentors. It was found that both types of mentoring have value, and in most cases, the mentors served similar functions.

Assessment is also a factor in the success of PD. Snyder and Wolf (as cited in Han, 2013) state that 'needs assessment' is necessary for effective PD. It is used as a shared focus as well as a baseline for evaluation of the PD experience. Assessment can also take the form of observation focused on implementation of skills (Trivette et al., 2014). It is evident from the literature that peer support and assessment enhance PD and also build stronger school communities. As teachers participate in assessment activities, it becomes important to reflect on one's practice as well as the issues the assessments raise.

Reflection is a component of worthwhile PD offerings as an individual experience, such as keeping a journal, or as a collaborative experience, such as discussion groups. Teachers who participated in one study had both of these aspects embedded in the program. When questioned

RELEVANT PROFESSIONAL DEVELOPMENT

about their instructional choices, they reported that they incorporated their beliefs into their practice (Lotter et al., 2013). Dana and Yendol-Hoppey (as cited in Han, 2014) list the following ways that reflection is helpful individually or in a group as a part of on-going PD: keeping a reflective journal, PLC teams, or establishing a critical friends group. In a small study focused on reading aloud to young children, one of the sessions was devoted to providing structure for the teachers to self-evaluate and reflect on their practices (Kindle, 2013). Reflection can take more than one form, and adds value as an element of PD practice. Introducing the tool for reflection to teachers during PD will help instill this practice throughout their work.

Duration, Administrative Support, and Student Benefits from Professional Development

The traditional format which provides a one-time workshop on a topic chosen by the administration and presented by an outside expert does not meet the needs of most teachers (Dunst & Raab, 2010; Han, 2013; Patton & Parker, 2015). In an overview study of PD in four states, one-time PD events were offered 51.1% of the time and PD over a semester was offered 13.7% of the time (Cox, Hollingsworth, & Buysee, 2015). It is evident from the research that multiple sessions over an extended period that offer a variety of activities have proven to provide better results (Desimone, 2011; Dever & Lash, 2013; Han, 2013; Kindle, 2013). A study of 36 science teachers focused on the development of reform-based inquiry method began with a two week workshop and continued with an academic year of PD and support (Lotter et al., 2013). At the end of the PD sessions, 12 of the science teachers reported that they had experienced dramatic changes in the way they presented science, all of them reported using inquiry methods frequently. This information makes sense as, throughout the duration of the focused PD, teachers will be able to practice what they have learned and improve their skills and the outcomes for the students.

RELEVANT PROFESSIONAL DEVELOPMENT

School leadership is a critical component in the preparation of PD. It affects the quality and types of experiences provided as well as the support the teachers experience during and after PD (Whitworth & Chiu, 2014). Dever and Lash (2013) studied the development and maintenance of PLC teams dedicated to improving student learning. This was a district wide endeavor, with the study focusing on one PLC with five members. This PLC met twice a week over a three year period. While the PLC was satisfied with the improvement of student learning, they noted a lack of administrative support. The effects of leadership interest and support came up in two ways. First, the effects of leadership interest were mentioned in relationship to collaboration with administrators about the PLC teams. The study covered 27 PLC meetings, and administrators were in attendance at two of those meetings. Second, these effects were noted when the PLC teams found they desired more support and guidance from the administration. The PLC requested PLC assessment guidelines from the administration.

In a meta-analysis of school leadership research combining qualitative and quantitative data from several studies spanning 30 years, Marzano, Waters, and McNulty (as cited in Whitworth & Chiu, 2015) discovered a pertinent conclusion. They noted that from 69 empirical studies, there was an average correlation of .25 between pupil development and achievement and school leadership. School leadership funds most PD, making their involvement in planning and execution of events a significant factor. Teachers who work in small private schools experience this need more acutely.

The desired results of PD are the benefits the students receive in content and method, which enhances their learning. Another result is the skill and knowledge development of the teachers. When the students' results improve through information offered through PD, the teachers' attitudes becomes more positive, as they see the effects of their efforts reflected in the

RELEVANT PROFESSIONAL DEVELOPMENT

students' learning (Dever & Lash, 2013; Kindle, 2013; Lotter et al., 2013; Patton & Parker, 2015; Whitworth & Chiu, 2015). The purpose of PD is to provide information that will support teachers in offering better learning opportunities for their students. As teachers elevate their practice and knowledge, they also benefit.

Methodology

To gain access to a group of trained AMI Montessori teachers, a local school was approached and invited to participate in the study. The administration quickly agreed, and we made plans for the PD sessions to take place at the main school campus. After an introductory e-mail, the orientation session was held on September 24, 2016 with 15 people in attendance. Eleven of the attendees were teachers; two of the attendees were administrators; one was an elementary teacher who was there for observation; and one primary teacher also joined us for observation. I was told that two other teachers would be joining us for future sessions, one as a participant and one as an observer. At this session, I described the purpose of the study and the requirements for the teachers who opted to participate. I also informed the teachers that the focus of the work with the children as we did the study would be in the language area. Specifically, we would examine the development of the children's vocabularies, sound analysis skills, sandpaper letter use, moveable alphabet use, pencil use, and reading skills. After that, I asked them to give me some information about the difficulties the children had with these materials or skills as well as naming materials or skills that they found problematic to present or use with the children. The group provided me with several elements of the language area where they needed support. I used a Provider Journal to record their concerns and questions about the language area. Toward the end of the session, I gave them the Baseline Questionnaire (see Appendix A) to fill in. It asked questions about the children's proficiencies with the targeted language experiences as well as the

RELEVANT PROFESSIONAL DEVELOPMENT

kind of support that they needed using these materials. They filled it in while we were together, and gave it to me for my planning of the first PD session. As they left, I gave each teacher a Weekly Teacher Log of Language Material Interactions with the Children (see Appendix B) to fill in during the week and return at the next session.

The first two hour PD session took place on October 3, 2016, and was attended by all the teachers and one administrator. They returned their Weekly Teacher Log of Language Material Interactions with the Children (see Appendix B) to me at the beginning of the session. I used the Baseline Questionnaires (see Appendix A) that they turned in at the orientation session to determine the content of this session. The teachers were consistent in the Baseline Questionnaire (see Appendix A), and asked for support in every language category. I also referred to the PD research literature to plan the method of delivery of the information. In the first PD session, I provided information on vocabulary enrichment cards, sound analysis, and moveable alphabet. The forms of delivery included handouts, my demonstration of materials, teacher practice with the materials, a slide show of moveable alphabet work, discussion among the teachers, and lecture. At the end of each topic (vocabulary enrichment cards, sound analysis, and moveable alphabet), the teachers asked questions which we discussed as a group or I answered. At the end of the session, I encouraged them to read an article on cursive writing that I provided and to view a Montessori Guide video online that pertained to language development before the next session. I gave each teacher another Weekly Teacher Log of Language Material Interactions with the Children (see Appendix B) and an Ongoing Questionnaire (see Appendix C) to fill in as the week progressed. The Ongoing Questionnaire asked (see Appendix C) questions about the PD sessions, and which types of delivery of information they found most useful. It also had open

RELEVANT PROFESSIONAL DEVELOPMENT

ended questions about changes in the ways the children are using the materials and any changes in the teachers' attitudes about the presentations of the materials.

The next PD session took place October 10, 2016 and eight teachers and one observer attended. At the beginning of the session, I asked them to tell me about their experiences with the language materials over the past week. Almost everyone contributed or asked a question. They reported much more extensive use of the vocabulary cards, increased use of the moveable alphabet to make lists and stories, and one teacher had a question about a non-native speaker who sometimes refused to respond when new vocabulary is introduced. After the discussion, we moved on to writing and the use of the pencil. Since they read the article on cursive writing, they broke up into discussion groups to focus on information in the article that might help them give answers to the parents about our use of cursive letters. They reported back to the whole group and their insights on the best ways to approach this topic with the parents.

After that, I addressed the topic of handwriting, requested the week before, beginning with chalkboard use. This led to a lively discussion about the size and use of chalkboards with the children. Then we explored inset work and the various writing strokes that the child needs to master in order to form letters. I gave the teachers a handout with the basic handwriting strokes, and then they worked with a partner to come up with other necessary strokes. This related to the previous discussion of chalkboard work, as the strokes are introduced long before children are making letters. After that, we moved to the topic of reading. Teachers voiced concern about children's reading practice opportunities before the child is ready for books. I introduced an environment reading game for emergent readers, and then the teachers brainstormed about phonetic names of objects in the environment that could be used for this game. Before they left, I

RELEVANT PROFESSIONAL DEVELOPMENT

gave them an Ongoing Questionnaire (see Appendix C) and a Weekly Teacher Log of Language Material Interactions with the Children (see Appendix B).

The third PD session took place October 17, 2016, with twelve teachers in attendance. They turned in their current Weekly Teacher Logs of Language Material Interactions with the Children (see Appendix B) and Ongoing Questionnaires (see Appendix C). The Weekly Teacher Log from the previous week showed an increase in the number of times teachers were using language materials in the environment. The Ongoing Questionnaire indicated that all the participants experienced a positive change in attitude about the presentation and use of the language materials. All but one teacher reported that the group discussions and brainstorming sessions were beneficial. It was a surprise to read that most of them value answers to their questions about individual children's language difficulties more than many of the other activities provided. As a continuation from last week's work, we spent more time on writing. Using the chalkboard and then paper, I demonstrated the sequence of writing to the teachers. Based on the information from the Ongoing Questionnaire (see Appendix C), I facilitated small group discussions on how to organize the materials needed for writing and how to begin introducing it to the children. After that, we tackled the individual problems that children experienced with the language materials. To attempt to meet everyone's needs, I asked them to form small discussion groups and talk about what individual problems the children in their environments faced. From that information, I asked them to compile one universal question from the group. When we came back into a large group, each small group posed their question and we discussed it. At the end of the session, I passed out a revised Ongoing Questionnaire (see Appendix C) the Weekly Teacher Log of Language Material Interactions with the Children (see Appendix B), and a Revised Questionnaire (see Appendix D).

RELEVANT PROFESSIONAL DEVELOPMENT

The final PD Session took place October 24, 2016, with twelve teachers in attendance. I collected the current Weekly Teacher Logs of Language Material Interactions with the Children (see Appendix B), Ongoing Questionnaires (see Appendix C) and Revised Questionnaires (see Appendix D). At the beginning of the session, we focused on reading, with photos of materials to assist the children in their early reading experiences. After that, the teachers discussed among themselves what materials they wanted to add or change in their environments. Following the reading discussion, I introduced many ways that children use their writing skills in the environment. After a brief introduction, I asked them to explore the environment and come up with as many opportunities as they could for the children to practice their writing by making labels or writing about the environment. This came up in the orientation session as a stumbling block for some of the group. At the end of the session, I passed out the Final Ongoing Questionnaire (see Appendix E), which they returned to me by e-mail a week later.

Beginning with the orientation session, I kept a Provider Journal where I noted their thoughts, questions, and ongoing experiences with the language materials. After each session, I wrote some reflections about the session as well as thoughts I had about the future sessions. Initially, I planned to schedule an interview with a group of the teachers at the end of the study. Due to time constraints, it was not possible to activate this plan.

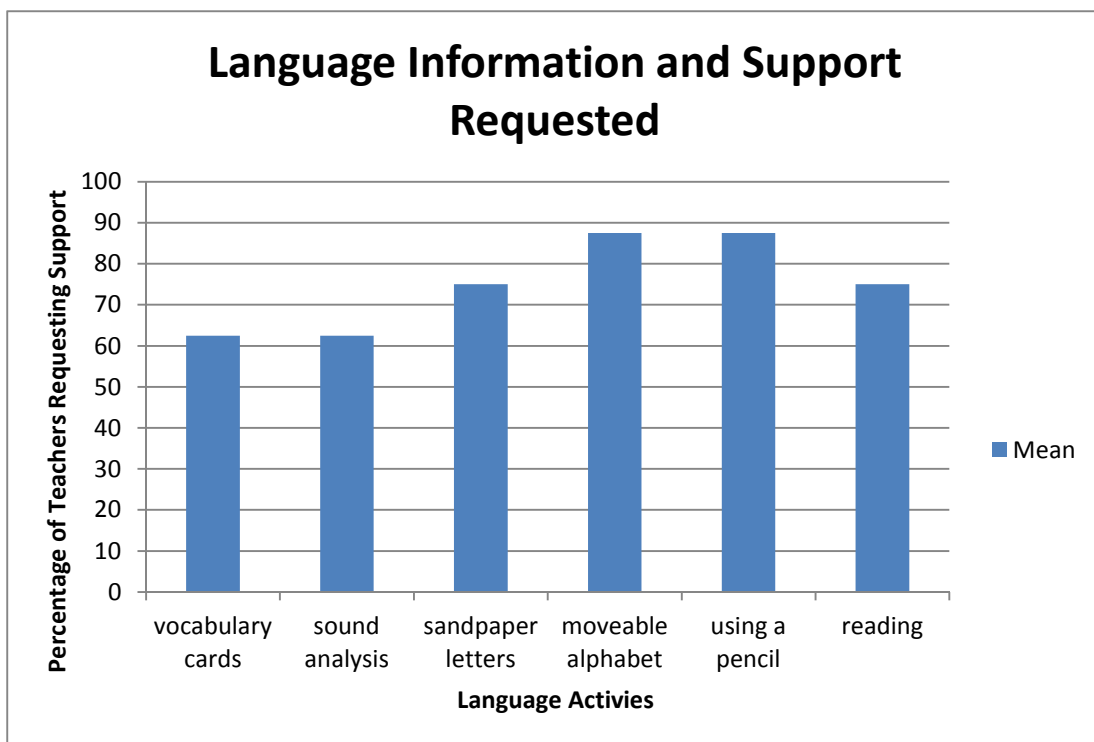
Analysis of Data

The aim of this research project was to investigate the effects of PD focused on Montessori Language materials have on practicing Montessori teachers. The research uncovered findings in two areas, the first being how the teachers used materials with the children. The second was which PD experiences were beneficial.

RELEVANT PROFESSIONAL DEVELOPMENT

I used the PD literature to identify best practices for the sessions. To develop the content of the sessions, I collected information from the teachers which identified the language activities for which they needed support. I gave them a Baseline Questionnaire (see Appendix A) at the orientation meeting which asked questions about specific language needs and also asked for them to tell me what problems they faced in the language area. The ensuing discussion demonstrated what they were concerned about: emergent readers, writing preparation, writing practice, progression from reading single letter phonetic words to words with phonograms, and the parents' understanding of the Montessori use of cursive writing.

Figure 1.



The mean was used to display this data, and indicates that 87.5 % of the teachers were interested in gaining more information about the moveable alphabet and writing with a pencil. The teachers were given an Ongoing Teacher Log of Language Material Interactions with the Children (see Appendix B) to record the number of times a week they worked with children on

RELEVANT PROFESSIONAL DEVELOPMENT

the language activities listed in Figure 1. In order to see the frequency of weekly language lessons given at the beginning and end of the study, I averaged the number of times the group of teachers gave presentations in each category at the end of the first week of the study and at the end of the last week of the study. The largest gain score (1.7) occurred for sound analysis. The only negative gain score was for the use of the phonetic reading cards (-1.1). This was the only category that the teachers gave fewer presentations at the end of the study compared to the beginning of the study. In all other categories, there was an increase in the number of presentations, which facilitated the children's use and understanding of the materials.

Table 1
Language Lesson Gain Scores

Tasks	First Weekly Log	Weekly Log for Last Week	Gain score
vocabulary cards	3.5	4	.5
sound analysis	2.3	4	1.7
sandpaper letters	4.3	4.5	.2
moveable alphabet	2.5	2.3	.2
pencil use	4	4.2	.2
first object box	2	2.5	.5
phonetic reading cards	2.8	1.7	-1.1
second object box	1	1.5	.5
phonogram reading cards	1.7	2.5	.8
three part cards/books	3.2	3.7	.5

Note. The negative gain scores are in boldface.

The teachers also gave information about the benefits that they experienced as a result of the PD sessions on the Ongoing Questionnaire (see Appendix C). One of the questions asked if

RELEVANT PROFESSIONAL DEVELOPMENT

they had experienced a change in attitude about using the language materials. There were three choices: no change in attitude, negative change in attitude, and positive change in attitude. All respondents checked positive change in attitude. Below that, they were asked to explain their change in attitude in connection with their ongoing PD sessions. The qualitative responses are listed in Table 2 below.

Table 2. Question: Explain your change in attitude in connection with your ongoing PD experiences.

Response	Initial Coding	Focused Coding
More information and knowledge of extension exercises gives the children more opportunities to use language materials.	knowledge information	theory
Children are fascinated when they are presented a material in a completely different way. I like learning new ways to use the materials. The children are independently choosing the sound analysis, sandpaper letters, and making their own words with the moveable alphabet.	children's joy more independent work	benefits for the children
I feel refreshed and supported with language. It is like a refresher. The excitement to apply helps a lot.	refreshed excited	joy in our work
I remember more and am more confident. There were some things I became unclear with through time	renewed confidence	self-worth

RELEVANT PROFESSIONAL DEVELOPMENT

that I am understanding better now.

Just a more encouraging and positive view/outlook. I feel my attitude is really positive with all the information I am receiving.

encouraged
feeling positive

looking forward to the future

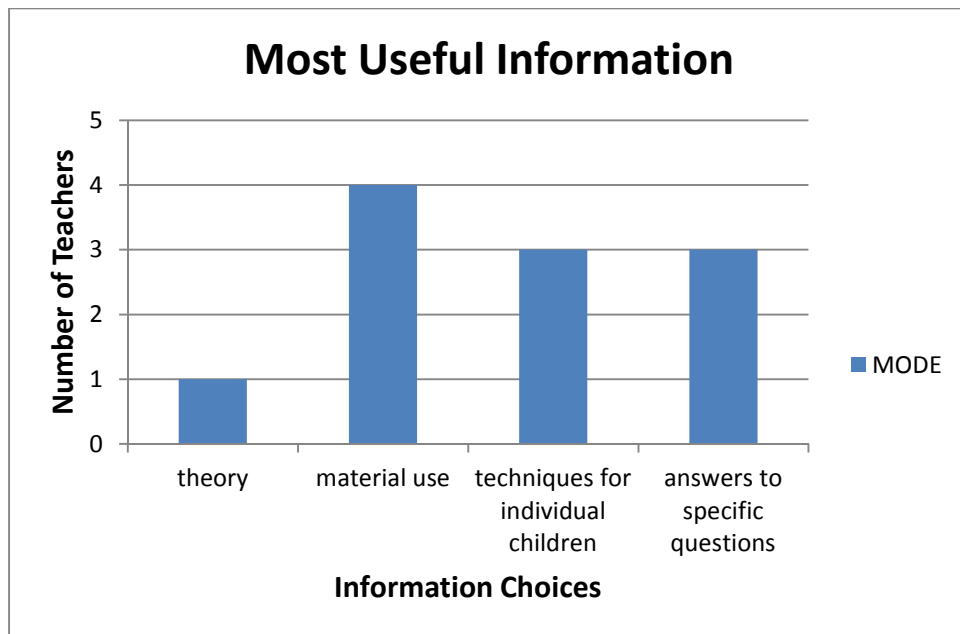
I have been reminded about what I can do with the children that will bring more joy and excitement with the language materials.

children's joy and excitement

looking forward to the future

In the fourth week, the teachers ranked the kinds of information they received in the PD sessions from most useful to least useful.

Figure 2.



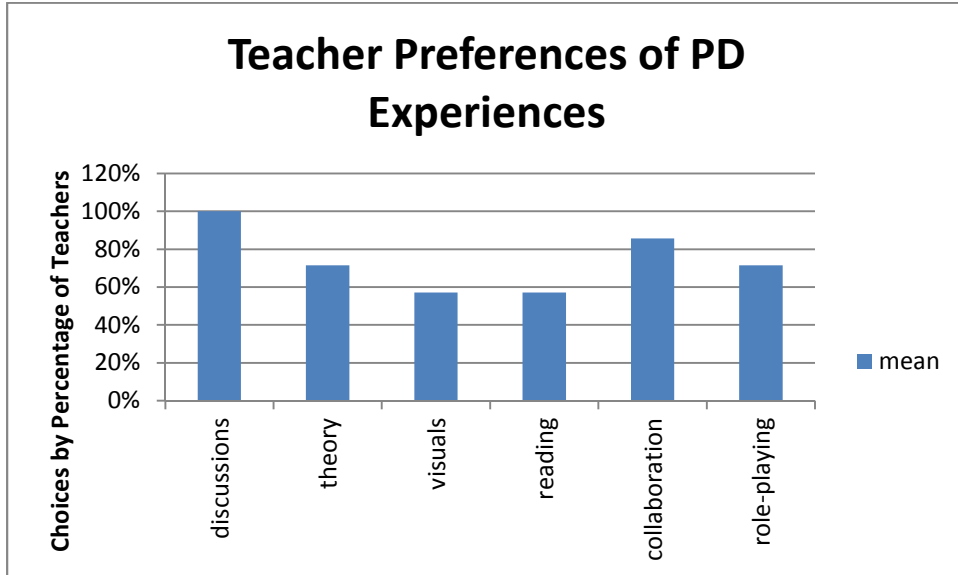
The mode was used to process this data, and material use emerged as the most frequent choice.

RELEVANT PROFESSIONAL DEVELOPMENT

In addition to the questionnaires and logs, I started each session by asking the teachers to talk about their language experiences with the children the previous week, and took notes in my Provider Journal. This was a valuable tool, as it allowed me to hear about their successes as well as the details of topics they hoped would be addressed. One teacher said, “The children are really excited about using the vocabulary cards. After they learn the words, they are having conversations with other children about what they learned.” The teachers had parent conferences during our sessions, and one teacher reported, “I now feel confident telling the parents that we are introducing cursive writing, and providing them with the reasons why it is the best option.” Another teacher told the group, “The children are fired up about writing on the chalkboards, and doing a lot more cursive practice.” This information that I received at the beginning of each session further aided me in planning and executing the current and future PD sessions.

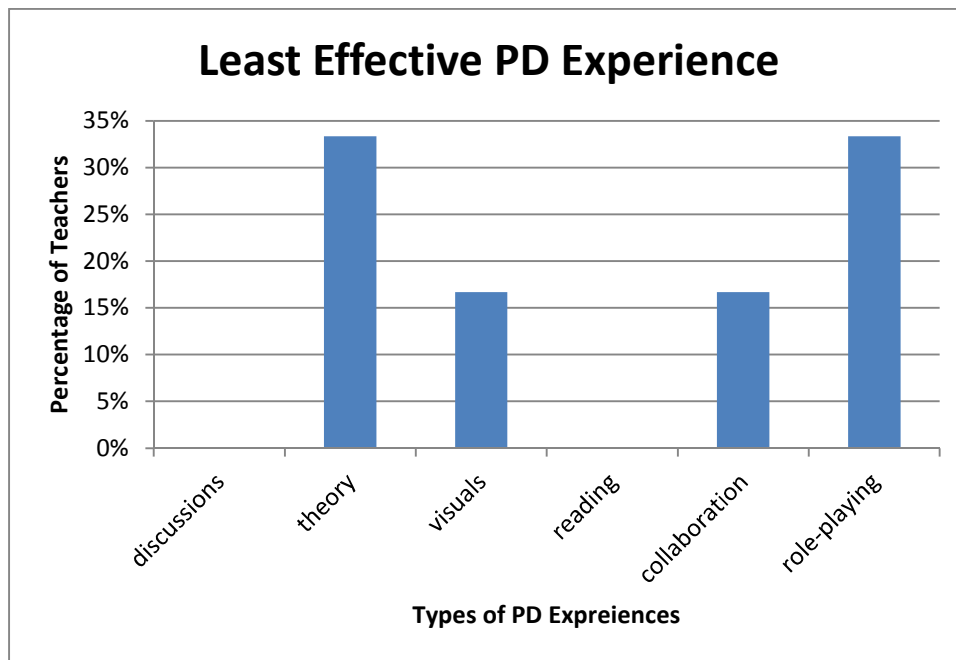
The second finding identified was the teachers’ responses to the different techniques and experiences of the PD sessions. The Ongoing Questionnaire (see Appendix C) from the second week of the sessions gave me insight as to what kinds of presentations or experiences were most effective for the teachers. I used this data in planning the kinds of activities that I incorporated in future sessions, as shown in Figure 3.

Figure 3



The mean was used to analyze this data, and 100% of the teachers preferred the group discussions and brainstorming sessions over all other options. The least popular techniques were the visual presentations (57%) and the assigned reading (57%). At the beginning of the fourth week, I gave the participants a Revised Questionnaire (see Appendix D), in which I asked them to identify the least effective PD technique used in our sessions. They identified two techniques as least effective: theory lectures and role playing, which are displayed in Figure 4.

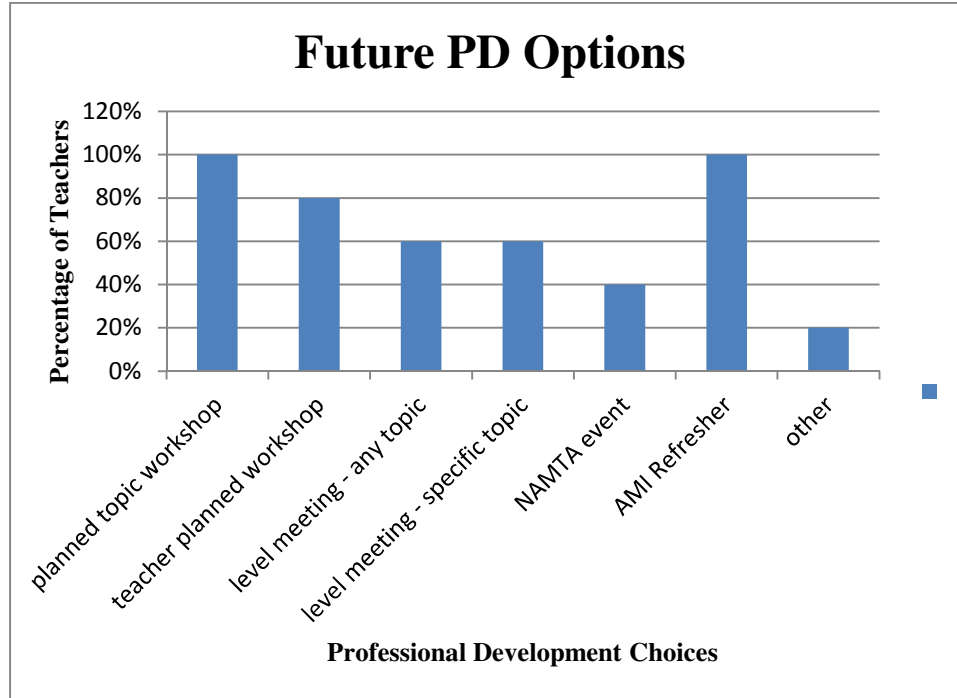
Figure 4.



The mean was used to calculate this data, showing the least effective experiences as well as demonstrating that group discussions and brain storming sessions along with assigned reading were not deemed ineffective.

Throughout the sessions, I had informal conversations with the participants. Two of the teachers indicated that they would appreciate ongoing PD sessions, and they thought that the staff had valuable information to share among themselves. They appreciated the leadership I gave, but said that they thought regular meetings of the same level staff members would be extremely helpful. They both said that they would speak to their administrators about this. It is noteworthy that one of the administrators attended four of the five sessions and participated in all of the group work. As a result of these conversations, I prepared a Final Questionnaire (see Appendix E) for the last session which addressed the kinds of PD options they would like available to them in the future. Figure 5 graphs their responses.

Figure 5.



The median was used to process this data. It shows that 100% of the teachers wanted to attend future presenter planned workshops and AMI refresher courses.

My research question was: What effects will PD focused on Montessori Language Materials have on practicing Montessori teachers? One effect was the increased use and comfort with the language materials. The first task was to provide PD content that was identified as important by the teachers. The literature demonstrated PD that addressed the teachers' needs in content and context was more effective than seemingly randomly chosen topics (Dever & Lash, 2013; Han, 2013; Patton & Parker, 2015; Trivette, Raab, & Dunst, 2014). That was addressed in the Baseline Questionnaire (see Appendix A), and continued to be addressed throughout the sessions using the Ongoing Questionnaire (see Appendix C) and the information recorded in the Provider Journal. The sessions focused on the following language materials: vocabulary cards, sound analysis, sandpaper letters, moveable alphabet, pencil use, the first object box and

RELEVANT PROFESSIONAL DEVELOPMENT

phonetic cards, the second object box and phonogram cards, and reading. Following the information collected in the Ongoing Questionnaire (see Appendix C), the topics and length of time spent on them were adjusted during the four weeks of PD sessions. For example, sound analysis was covered in the first session, but it proved not necessary to spend any more time on it. Conversely, the use of a pencil and the preparation for writing was addressed in some form in all 4 sessions, because of teacher interest. Comparing the first and last week's Ongoing Teacher Logs of Language Material Interactions with the Children (see Appendix B) the data showed more instruction and interaction taking place in the last week in every category of language materials except phonetic reading cards (Table 1).

Another finding was the identification of the types of PD experiences that best supported the teachers in their work with the children. Patton, et al. (as cited in Patton & Parker, 2015) states that an informal social experience within the framework of PD opportunities creates trust and bonds between staff members. The administrator of the school provided inviting refreshments for each session, and the teachers began by having something to eat and drink and time to socialize, which made a relaxed, informal environment. The Ongoing Questionnaire (see Appendix C) revealed that they valued the group discussions and brainstorming sessions and role-playing more than the other experiences offered (Figure 3) . The Ongoing Questionnaire (see Appendix C) continued to be a reference throughout the sessions, and I chose the activities for each session based on the teachers' preferences.

Discussion

This research demonstrated the need for PD support and review of the following language materials: vocabulary cards, sound analysis, moveable alphabet, pencil use, use of the first and second object boxes with reading practice, and the leap to reading independently in books. I used PD literature to determine the best practices for planning and executing the PD sessions. The literature supported the teachers' input into the content of the sessions, and that planning was done using a baseline questionnaire and an ongoing questionnaire. The teachers sought support in every category of language materials listed above. The content varied from week to week depending on the requested details the teachers identified in their ongoing questionnaire. The PD literature was consulted to determine the delivery of the material in each session. The delivery methods were altered with each session which reflected the teachers' answers to questions on the ongoing questionnaire. As a result, every session had at least one segment where the teachers had small group discussions or brainstorming sessions on the focus of that time period.

It was obvious from the teachers' responses that one of the benefits to them was to have some input into the content and the details of that content for each session. For example, when we spoke of reading, they let me know that they were interested in ways to support emergent readers, develop reading practice, provide language information for parents. This information that concerned content input by PD participants changed the way I view PD experiences, and offered a new challenge to incorporate it whenever possible when offering PD to experienced teachers. Specifically, I am challenged to devise ways to receive teachers' input before writing the material that will be offered for PD. The teachers' clear appreciation for group discussions also changed the way I plan to work with teachers in the future. It made me aware of the

RELEVANT PROFESSIONAL DEVELOPMENT

complexities of planning PD experiences when it becomes obvious that some theory must be provided as a review before meaningful group discussions can take place. Overall, this study allowed me to see how both the planning and execution of PD experiences best serves the teachers if the content and delivery are fluid. The adjustments to both content and delivery affected the benefits the participants experienced. The teachers were open and honest with me about all aspects of the PD sessions, and I found that helpful and refreshing. At the end of the study, I asked them if they thought they would benefit from ongoing PD. The answer was clearly affirmative, and they named several ways that PD could take place on an ongoing basis. I suspected this was needed in the Montessori community, and this experience confirmed that.

Taking this information into account as future PD events are planned will benefit practicing teachers who attend these events. It means that a change needs to be made in the presenter's planning process. One possibility is to provide a place on the PD registration form where individual teachers may write their specific concerns or questions concerning the topic. That way, the presenter would have information about how to organize the content to meet at least some of the specific needs of the audience. In addition, it was clear that the number of sessions on a specific topic allowed the teachers to delve deeper into the subject. This could also be incorporated into future PD experiences by offering a series of workshops on the same theme. A series of PD experiences on one topic would also give more time and information to determine which adjustments needed to be made for the specific group. Finally, incorporating small group discussions or brainstorming sessions into PD events would further enhance the experience. Including these elements and experiences in future PD events makes it more likely that the participants will benefit from more insights, learn more, and have a positive attitude about future PD opportunities.

RELEVANT PROFESSIONAL DEVELOPMENT

The variables that possibly affected the research were: the teachers were in different stages of professional development, all the teachers were AMI trained, all the teachers volunteered to attend, and all but two of the teachers were trained at the same AMI training center. The teachers' experience varied substantially. Most of the teachers graduated from the same AMI training center, so their understanding of the use of the language materials was similar, regardless of the year they finished training. If there were a mixture of training backgrounds, instead of all the teachers being AMI trained, the study might have had different outcomes. AMI directly supervises and verifies all the training in each AMI training center, and other kinds of training often allow more freedom to alter the curriculum. Another variable that might have affected the study's outcomes was that all the teachers choose to come to these PD sessions. They all displayed positive attitudes about participating and expressed appreciation for the information and experience. This might have been different if the sessions had been mandatory. The teachers from the AMI centers different from where the majority had been trained offered information and suggestions that were new to the others, and this indicated that if participants came from more AMI training centers, it could positively affect these kinds of experiences.

Future study is needed on planning and executing PD events which include the participants input on the content and details of the material to be presented. More information is needed about combining different types of Montessori training, and/or teachers from various AMI or other centers in the PD groups. A study that divides the teachers into PD groups relating to their years of teaching experience would also be interesting. Beginning teachers have different needs than teachers in the middle or at the end of their careers.

RELEVANT PROFESSIONAL DEVELOPMENT

This study demonstrated the need for trained, practicing teachers to re-visit the theory and practice of the Language area. It also highlighted the benefits of PD which unfolded over time. This allowed the content and delivery to be altered to suit the needs of the participants, which supported in-depth understanding of the content. The importance of the social aspects of PD was apparent in this study. Each session began with refreshments provided by the administration, and the teachers enjoyed a few minutes of visiting and enjoying the food. The social benefit was extended by the small discussion groups or brainstorming sessions that were incorporated into each meeting. Lastly, all but one session of the study was attended by the administrator of the program. This demonstrated her support for the teachers as well as support for the PD experience that was being provided.

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Appendix A
Baseline Questionnaire

As we begin our Professional Development sessions in the Language area, it is important to collect some information that will help in the organization and content of our Professional Development sessions. Please answer these questions honestly and in detail, without identifying specific children.

1. Explain how interested the children are in the vocabulary cards in the environment. How often do they use them?

How frequently do they ask you to work with them with these materials?

What kinds of information or support do you need to assist the children in this development?

2. Describe the children's interest in sound analysis.

Explain how you observe them practicing sound analysis independently.

What kinds of information or support do you need to assist the children in this development?

3. Describe the children's use of sandpaper letters.

Give information about their request for lessons and any independent use of the material.

What kinds of information or support do you need to assist the children in this development?

4. When the children begin using the moveable alphabet, how do they make the leap from dictated words to independent work?

Do you see any difficulties the children have with the material? _____ Describe the difficulties.

What kinds of information or support do you need to assist the children in this development?

5. What problems do the children encounter when they begin using a pencil?

What have you done to solve these problems?

What kinds of information or support do you need to assist the children in this development?

RELEVANT PROFESSIONAL DEVELOPMENT

6. Describe the different levels of reading that you observe in your environment.

What reading strengths do you observe?

What reading weaknesses do you observe?

What kinds of information or support do you need to assist the children in this development?

Appendix B
Ongoing Teacher Log of Language Material Interactions with the Children

TEACHER LOG OF LANGUAGE MATERIAL INTERACTIONS WITH THE CHILDREN

List the dates that you used the following materials with any child during the week of _____

Material	Dates of use
ORAL LANGUAGE vocabulary cards	
Sound analysis	
WRITTEN LANGUAGE Sandpaper letters	
Moveable alphabet	
Pencil use	
READING First object box	
Phonetic reading cards	
Second object box	
Phonetic reading cards	
Three part cards or books	

Appendix C
Ongoing Questionnaire

Please complete this questionnaire about the skills and knowledge you are developing through your Professional Development experiences. It is important for you to be totally honest when you answer, as that will aid in the development of future Professional Development offerings. For the open ended questions, please provide as much information as possible.

Please answer these questions for the week of _____

1. Have you noticed a change in the way the children are using language materials or applying what they have learned? _____
Explain why you think the change occurred.

If you have noticed a change in the way the children are using the materials, check the box or boxes below that list procedures in your ongoing Professional Development that have contributed to the positive change.

- Group discussions/ brainstorming sessions
- Material or theory lectures
- Visual presentations (power point or video)
- Assigned reading
- Group collaboration on the focus of the session
- Role playing with the materials

2. Have you noticed a change in your attitude about using language materials? Check the box below that best describes your change in attitude.

- No change in attitude
- Negative change in attitude
- Positive change in attitude

Explain your change in attitude in connection with your ongoing Professional Development.

3. Has the ongoing Professional Development brought up more questions for you about the use of the language materials? If so, what are those questions? This information will be used to alter the Professional Development sessions to best suit your needs.

RELEVANT PROFESSIONAL DEVELOPMENT

4. When participating in the ongoing Professional Development, what kind of information has been most useful to you? Rate the following types of information from 1 (most useful) to 5 (least useful).

- Montessori Language Theory
- Use of Montessori Language materials
- Techniques for working with individual children who struggle with the materials or concepts
- Information given through my answers to specific questions
- Other _____

5. When participating in the ongoing Professional Development, which of the activities that we have done have been most beneficial for you? Check the boxes for all that have been useful.

- Group discussions/ brainstorming sessions
- Material or theory lectures
- Visual presentations (power point or video)
- The assigned reading
- Group collaboration on the focus of the session
- Role playing with the materials

Appendix D
Revised Questionnaire

This is a **revised** questionnaire. It is important for you to be totally honest when you answer, as that will aid in the development of future Professional Development offerings. For the open ended questions, please provide as much information as possible.

Please answer these questions for the week of _____

6. As the Professional Development sessions continued, have you noticed a change in the way the children are using language materials or applying what they have learned? _____
Explain why you think the change occurred.
7. As you think about the individual children in your environment, are there any who are having difficulties with the language area? If so, please check the boxes that apply to their difficulties.
- Children are not very interested in the activities or materials.
Which activities or materials? _____
 - Children are not practicing the skills enough.
Which skills? _____
 - Children seem to feel pressure to perform in specific areas of language.
 - Children make many mistakes while participating in sound games.
 - Children make many mistakes with the moveable alphabet.
 - Children new to the environment do not know the sounds of the letters.
 - Children know the names of the letters, and are not very interested in learning the sounds.
 - Children need more reading practice.
At what level? _____
 - Children need more writing practice.
At what level? _____
 - Children seem to want to work with other children in the language area.
 - Other _____
8. When participating in the ongoing Professional Development, what kind of information has been most useful to you? **Rate** the following types of information from 1 (most useful) to 5 (least useful).
- Montessori Language Theory
 - Use of Montessori Language materials
 - Techniques for working with individual children who struggle with the materials or concepts
 - Information given through my answers to specific questions

RELEVANT PROFESSIONAL DEVELOPMENT

Other _____

9. When participating in the ongoing Professional Development, which of the activities that we have done have been **the LEAST useful** for you? **Please choose one.**

- Group discussions/ brainstorming sessions
- Material or theory lectures
- Visual presentations (power point or video)
- The assigned reading
- Group collaboration on the focus of the session
- Role playing with the materials

Appendix E
Final Questionnaire

This is our last week of Professional Development sessions. Please reflect on these sessions and frankly answer the following questions. This information will guide the planning of future Professional Development events. Please fill this in by Wednesday, scan it and send to me at pesoholt@stkate.edu

1. Rate the changes that you have observed in your environment relating to the children's use and interest in the Language materials focused on during the study.
 - No change in use or interest
 - Little change in use or interest
 - Substantial change in use or interest

2. Rate the changes you as a teacher have experienced using the Language materials with the children as a result of the Professional Development sessions. These changes could be in your confidence with the materials and presentations, your attitude about using the materials, or your interest in obtaining more information about the materials and their use.
 - No change
 - Little Change
 - Substantial change

3. Listed below are the elements of the Professional Development sessions offered. Please rate them as helpful (1) or not helpful (2).
 - ___1 ___2 Trainer lecture or demonstration of materials
 - ___1 ___2 Large group discussion
 - ___1 ___2 Small group discussions or brainstorming sessions

RELEVANT PROFESSIONAL DEVELOPMENT

___1 ___2 Question and Answer Sessions

___1 ___2 Assigned reading

___1 ___2 Group input on the topics and focus of the Professional Development (from
the ongoing questionnaire)

___1 ___2 Reflecting while filling in the questionnaires and weekly logs

___1 ___2 Handouts given at the Professional Development sessions

___1 ___2 Visual homework or presentations (photos or video)

___1 ___2 The time span of the Professional Development sessions

4. In the future, what types of Professional Development opportunities would benefit you?

- Planned workshops on a specific topic planned by the presenter
- Planned workshops where the presenter collects information about your interests and needs before preparing the event
- Informal level meetings held on a regular basis to discuss any topics that teachers need to discuss
- Informal level meetings held on a regular basis to discuss a topic agreed on in advance
- North American Montessori Teachers' Association (NAMTA) events
- AMI Refresher courses
- Other _____