

Changing early childhood education by developing leaders through reflection and research

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ABSTRACT

This qualitative case-study explores the ways in which an innovative M.Ed. program facilitated the development of future ECE reflective leaders. Using case study methodology, it presents the transformational process two recent graduates underwent during their studies. The findings indicate four main sources that initiated the deep student reflection and introspection which influenced the development of their professional identity and leadership abilities: creating safe spaces for research, building a conceptual framework for research, learning and teaching as an integrative process and inquiring into their practice.

The discussion presents three insights drawn from the findings: during the program parallel processes of transformation between the researcher and the graduates took place; using a holistic approach and accepting simultaneity are crucial for leading change; and the effect of leadership is based on reflective practice. An implication of the study is that only after practitioners are able to inquire into their own practice, reflect on it and model it, are they ready for the upper stratum of their profession. At this stratum, they are in a position to educate the next generation of ECE teachers and to unsettle the status quo by changing the traditional system of ECE education.

Keywords: teacher education, early childhood, reflection, action research, leadership.

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INTRODUCTION

There is a consensus among researchers about the need for a critical sustainable mass of education leaders-policy makers, practitioners and researchers-in order to lead meaningful reform in education. Thus, a top priority is developing the next generation of system leaders by nurturing and expanding capabilities and talents across all levels of the educational system (Fullan, 2005; Harris, 2009).

This need is particularly salient in Early Childhood Education (ECE) because despite its complexity, there is a lack of leadership development programs which results in a dearth of ECE educators with both ECE and leadership skills (Bricker, 2000; Aubrey, Harris & Briggs, 2004). The ECE system has to recognize the importance of developing leadership, aim at a broader conceptualization of leadership and its associated skills, and move beyond reliance on individual leaders towards the creation of a wide community of diverse leaders (Rodd, 1998; Goffin & Washington, 2007).

With this in mind, an innovative M.Ed. program was initiated four years ago at a college of education. This master's program integrates extended knowledge based on current developmental research as well as managerial-organizational and educational leadership knowledge aiming to advance ECE on a national level by developing ECE leadership (Mevorach & Miron, 2011a).

The aims of this paper are, first, to present the transformation of the participants as they developed into reflective practitioners, initiated improvements and sustained change and, second, to demonstrate the ways in which the program facilitated the development of future ECE leaders.

Context of the Study: The Master's Program

The primary foci of the new master's program are the education and developmental advancement of children and the optimal management and leadership of the ECE institution. The program is comprised of six components: general education; research methods; advanced developmental studies; educational leadership; management of ECE institutions; and a final project.

The objectives of the program are to expand participants' knowledge in the areas of child development and ECE organizations and management, and to develop their abilities as reflective practitioners and as leaders of change in ECE (Mevorach & Miron, 2011a). This research builds on the foundations of a previous study that explored the complex process that participants experienced with respect to their professional identity over the course of two years during which they studied for their master's degree. The findings of that study revealed a change in the participants' perceptions of their professional identity in their multidimensional roles and in their conscious ability to declare their importance as managers and educational leaders in ECE. That study concludes that the students became self-researchers capable of examining their practices and professional beliefs (Mevorach & Miron, 2011b). The present case-study aims to bring to the forefront two central aspects of the process of change by focusing on the emergence of leaders and reflective practitioners during the program. Namely, it tries to understand more deeply what stands behind the words of the students when they said they felt that they had become reflective practitioners and leaders, and what conditions and means afforded those feelings. To achieve this goal, the study focuses on two main components of the program: the educational leadership section and the final research project.

THEORETICAL BACKGROUND

The theoretical background is focused on two main components of the program which the study highlights: reflective practice through action research and leadership in communities of practice.

Reflective Practice through Action Research

Critical reflection, which is the interconnection of thinking and action as well as the ability to reflect honestly and courageously on one's practice and into oneself, is a core activity of most professional practice. In the context of education, the essence of reflective practice is the analysis and meaning making from teaching experience including constructing understanding of the complex nature of particular contexts (Aubusson, Griffin & Steele, 2010; Loughran, 2002). Through such reflection, practitioners develop a repertoire of ideas, strategies, actions, perspectives and approaches upon which they can draw in order to improve their practice (Schön, 1983).

Researchers claim that reflective practice can and should be taught and modeled explicitly, directly and thoughtfully (Russell, 2005). However, the context and mode of expression determine whether practical reflection or a more abstract level of reflection is the outcome of teaching. Thus, there appear to be two anchors operating to inform and enrich reflection: contextual anchors where the practitioner's thinking is connected and informed by the context of the experience, and conceptual anchors where the practitioners' thinking is framed by philosophy, theories, and principles. When reflection is taught, the importance of the connections between contextual and conceptual anchors to promote interplay between ideas and teaching experience should be emphasized in order to resolve problems arising from their teaching experiences (Aubusson et al., 2010).

The methodology of action research is a suitable match for self-reflective inquiry because it helps practitioners gain a deep understanding of their own practice and responds to the need for generating responses to their on-going questions (Elliott, 1991). Through reflection, practitioners co-construct knowledge, develop their self-understanding, sensitivity, self-criticism and professional competence. Thus, action research is a form of personal and professional evaluation which creates contexts for critical conversations in which all participants can learn as equals. Based on these conversations, it is anticipated that practitioners will modify their actions according to the changing contexts.

In addition to the demand for sustainable improvement of their own practice, teachers should also be active change agents in their educational environment. In fact, the transformational potential of action research can help them develop mental and emotional readiness for social agency. The cultural insights and deep understanding of the context in which they work enables them to become change agents and take action for educational, social and cultural transformation (McNiff, 2008; Montes & Schroeder, 2011). The willingness to accept responsibility for their own thinking and action, the awareness of the need for self evaluation and sustainable improvement, the readiness to give an account of themselves and be accountable for their professional practice would influence colleagues and the whole system (McNiff, 2002).

Leadership in Communities of Practice

Successful leadership emerges in professional communities where leaders learn and develop through daily activity of leading while providing and getting individualized support as well as intellectual stimulation. Leaders build their capacities to lead, develop visioning, efficacy-building, and context changing strategies and serve as appropriate models of leadership (Leithwood & Jantzi, 2008).

In communities of practice, ECE teachers take on the role of investigators in order to raise issues and concerns in varying professional areas, collect data and analyze and interpret them and negotiate their meaning within the professional community. In this framework teachers can thoughtfully reconsider and critically reflect on their practice (Roberts, Crawford & Hickmann, 2010).

From socio-cultural perspective, within communities of practice, people share tasks that construct meaningful knowledge and model appropriate beliefs, values and actions (Mitchell & Sackney, 2009). Meaning exists through a dynamic process of living in the world and is possible when ideas are jointly understood and enacted (Fleer, 2003). Moreover, the notion of community is seen as a state of mind, rather than something tangible; it is an acknowledgement of involvement, engagement and interdependence. The core of this notion is appreciating diversity and developing respect for specialization and individual difference as well as establishing high trust and safe space (Noble, 2007). Thus, within a community of practice, the ECE curriculum's abstract ideas achieve meaning and substance.

METHODS

This section presents the participants of the study, the research design, data collection and data analysis.

Participants

The participants were two veteran kindergarten teachers, recent graduates of our M.Ed. program. These two students were chosen for three reasons: a) both conducted action research as their final research project, b) both chose to investigate a subject which is a core area of the researcher's ideology and teaching subjects: Leadership within the framework of professional learning community and mentoring as expertise, c) both had experienced a transformational process during the period of their studies.

Henial investigated her new role as a tutor of kindergarten teachers in the Ministry of Education, after nearly twenty years as an ECE teacher. The title of her project was: "Transforming a group of kindergarten teachers into a professional learning community". The purpose of her study was to understand deeply how she could lead a group of kindergarten teachers into forming a professional learning community and how she could improve her leadership practice.

Nadine, an ECE teacher, was also a mentor of student teachers and interns in addition to managing a private kindergarten for more than twenty years, was also a mentor of student teachers and interns. Thus, she decided to investigate her role as a mentor. The title of her project was: "A process of mentorship: Self empowerment

¹ All names are pseudonyms

and professional development". The purpose of her study was to analyze the processes she had undergone and understand how she reconstructed her perception of the role of a mentor and reshaped her professional identity.

Setting

As a senior faculty member in the M.Ed. program the researcher is engaged with three main concerns which are reflected in her own research as well as in her teaching subjects: the first one is how to facilitate abiding reflective practice among students; the second is how to develop them into leaders and change agents in the ECE system; and the third one is how to deliver the message that mentoring children, colleagues, students or interns is an expertise one has to study. The three courses that the researcher teaches are: "Leading a multi-professional staff by building a professional learning community," "Mentoring children as well as students and colleagues," and "Leading change in ECE frameworks."

In each course the researcher encourages students to choose research topics or issues from their own contexts that concern them in order to combine their everyday experiences with major issues and dilemmas and with the theoretical studies. The core of the program is an applied research project that is conducive to their work, for which the researcher serves as faculty advisor.

Students initiate the final project toward the end of their first year of studies, and continue working on it during the second year, with the goal of completing it by the time they graduate. The students' courses assist them in the planning and execution of the project. Their research report includes a theoretical discussion of the topic, data collected by various methods, data analysis, a discussion and theoretical and professional conclusions drawn from the data. Emphasis is placed on the improvement of professional practice through systematic inquiry and project development undertaken in the workplace. In addition, they are expected to initiate and sustain change both individually in their own practice as well as generally within the organizations they head (Mevorach & Miron, 2011).

Research Design

Flyvbjerg's assertion (2006) that true expertise is reached via a person's own experiences as practitioner of the relevant skills led the researcher to choose the methodology of case study and place herself within her professional context as a teacher educator in ECE master's program. Two "exemplars" were identified which are paradigmatic cases that highlight more general characteristics of the themes in question and focused on real-life situations to test views directly in relation to phenomena as they unfold in practice (Flyvbjerg, 2006).

The case study methodology was selected because the cases exemplify the process of change students undergo during their M.Ed. studies. The object of the study is the analytical focus of reflection and leadership that crystallizes, thickens, develops and serves as a means of interpreting the phenomena in their complexity. The instances of the learning process of two ECE teachers provide an analytical frame—an object—within which the study is conducted and which the study illuminates and explicates (Thomas, 2011).

An interpretive phenomenology approach was selected for analyzing the data because the study investigated the impact of action research projects embedded in fieldwork and accompanied by theoretical studies (Creswell, 2007). The goal of the

phenomenological approach was to gather data from participants about their conscious awareness of lived experiences in their workplace and to search through this process for a deep understanding of them. Such a phenomenological study demands self-reflexivity, willingness to talk about experiences gained in this process, an ongoing conversation about the experience while acknowledging the values of the participants, constructing interpretations of the experience and questioning it. The use of in-depth description of complexities of experiences and interactions are embedded in the data and the final text (Montes & Schroeder, 2011; Laverly, 2003).

Data Collection

The data were drawn from various sources: (a) electronic correspondence between the researcher and the participants (advice, comments on drafts, encouragement, recommendation of literature, etc.), (b) transcripts of feedback meetings between the researcher and participants, (c) reflective journals of the participants, (d) transcripts of group discussions and presentations during the classes in which the students' cohort reflected on and made recommendations for the participants' action research projects, (e) final action research projects of the participants, (f) transcripts of two interviews with each participant, one towards the end of the second year of their studies conducted by the head of the research department of the college and the second one conducted by the researcher a year later. Both of the interviews were semi-structured and mainly focused on the change process the participants had undergone during their studies.

Data Analysis and Validation

All transcripts, journals, final projects and correspondence were analyzed qualitatively using open coding (Corbin & Strauss, 2008) that involved four processes:

- Reading through the corpus of data and searching discretely within each participant's materials for evidence and descriptions of reflective practice and leadership.
- Sorting the data and categorizing them into themes concerning reflective practice and leadership that converged among participants.
- Choosing four main categories through a dialectical process between the data and theory.
- Interpreting the categories and presenting salient examples and citations for each category.

Validation of the findings involved triangulation of all sources by means of:

- A dialectic between data and theory dealing with the process of developing reflection and leadership.
- An evaluative review from an outsider researcher.

FINDINGS

Through analysis of the data and a dialectic process between data and literature, four main categories that initiated the deep student reflection and introspection which influenced the development of their professional identity and leadership abilities were identified: creating safe spaces for research, building a

conceptual framework for research, learning and teaching as an integrative process and inquiring into practice through action research. Each theme is divided into subcategories. The following section describes the processes in each of these areas; first, the researcher presents her input and agenda concerning each theme followed by the students' thoughts and actions relating to them. At the end of the section the students' perceptions of their professional identities as ECE leaders are described. Although the processes are presented in a linear fashion, their occurrences were far from linear. Rather, they were intertwined, overlapping and inseparable.

Creating Safe Spaces for Research

While planning her teaching and mentoring, the researcher is aware of the importance of building safe spaces that enable and support students' research and afford deep learning. Such environments mean, first and foremost, allocating time and space for engaging in practice, learning and teaching, reflecting and planning collaboratively through dialogue. Building a safe space requires creating trustful relationships among the students and between them and the researcher, respecting adult learners' needs, tolerating the various views and developing personal regard and integrity. In this endeavor the researcher's efforts were shared between the collective safe space and the interpersonal one.

A community of practice.

In her various courses the researcher tried to create such a safe space by applying some of the principles of social learning in communities of practice for active social participation of the students. The main principles underpinning these spaces were placing practice at the center of the process and utilizing literature as a means for understanding, interpreting and reflecting on practice. Another principle was allowing freedom and space for students to choose their topic and supporting them in initiating, shaping and conducting their research as well as writing it. Thus, the researcher's role was to create as many opportunities as possible for the students to reflect on their practice, to present their difficulties and discuss them with colleagues and to make meaning of their learning while coping with obstacles as well as with uncertainty.

Data analysis indicated that the students learned to appreciate the safe space in the courses and especially came to value collaborative learning with their classmates. Nadine described her experience in the courses:

In our course people presented various approaches, highlighted my way and caused me to look at myself in a different way. Only in such a safe space can you expose yourself and be open minded to criticism which was not simple at all, but you feel that your colleagues established a learning community that share a common language, know the various approaches and aim to support you (Nadine, interview, 1.2012).

During her studies, Nadine, who had worked alone for many years, experienced the merit of sharing and consulting with colleagues. She understood the benefits of collegial learning in a professional community and appreciated it. This discourse also stimulated her to introspect and reflect on her practice. She often recalled her new-found capacity to listen to criticism without being offended and relating to it as an opportunity for growing.

Henia, who had been an ECE teacher for many years as well as a tutor of ECE teachers, also discovered the power of a professional community:

I have never had such collaboration in learning at such a level, I was alone as a teacher and as a tutor, and now we have sustainable relationships with the community of the ECE teachers (Henia, interview, 12.2011).

Henia, like Nadine, appreciated the community that had been established with her classmates and, for the first time, experienced the meaning of not working alone. The classes she experienced in the program affected her work to a great extent.

Interpersonal relationships

In addition to the safe space the researcher tried to create in her courses, she also accompanied the students in their final research project, supporting them and facilitating their process of investigation. Building relationships of trust with the students was not easy; in fact, their attitude towards her at the beginning was ambivalent. On the one hand, her requirements and expectations were high, and the work load was heavy; on the other hand, the support they got and the growth they felt through the process helped them enormously. Henia described this ambivalence:

At the beginning I was offended by your [the researcher's] written comments and oral remarks... However, our conversations were very significant for me and took me to another place, to different thinking, to meta-cognitive thinking. Instead of thinking all the time about what I was doing in my practice, I first studied the context and then tried to understand it and then think about planning... (Henia, interview, 5.2010).

It took time to make the students relate to the researcher's feedback as a lever for improvement rather than as evaluation and judgment. Her endeavors to make them reflect about their practice and her hard questions about their assumptions undermined their traditional way of teaching and learning. However, after the initial stress and fear, they started to trust her, understand her intentions and utilize her feedback, as Nadine said:

The fact that you enabled me to change the focus of the research at such a late phase of the writing and encouraged me increased my motivation... Your quick response was very helpful... Two days after sending a draft I got it back with your feedback. Who would do it for me? ... (Nadine, meeting, 10.2011).

The main strategies the researcher implemented concurrently were pressure for the highest level the students' ability permitted and the most intensive support she could provide. However, this safe space was a necessary but not a sufficient condition for students' researching their practice and making meaning from learning. Another critical component was building a conceptual infrastructure for creating an inquiry stance.

Building a Conceptual Framework for Research

The students, who are veteran ECE teachers, came to their graduate studies with a definite professional identity, educational world-view and a set of principles and assumptions that they had consolidated during their past professional experience. In many cases they were not acquainted with contemporary theories that take into account not only the individual learner but also the complexity of knowledge and systems. Thus, it was not only important to help them build a conceptual framework for learning by researching their practice and presenting new approaches, but also to

cause them stop and rethink their practice, and shake their educational ideology and basic assumptions. Therefore, the first and foremost mission was to establish a conceptual framework based on updated research literature in order to help them shape an inquiry stance and create the foundation for teacher research based on principles of social learning.

Transformation in conceptions: Social learning

The researcher's research and teaching are based on social learning theory and the principles of constructivist theories that honor authentic, purposeful, self-reflective learning leading to meaning making. For this sake the courses and the students' ongoing assignments as well as the individual meetings are designed as integrative and incremental from which they learn by acting. Building on the conceptual framework of inquiry, the participants were introduced to constructivist theories of social learning. During these processes, the researcher also taught and modeled various mediating strategies which awakened a cognitive dissonance between the theories and methods they had been used to and the ones they were being introduced to. She modeled and used the strategy of asking provocative and thoughtful questions which, while capturing students' responses, elevated them to a higher level of thinking. Students' mistakes and misconceptions were turned into learning opportunities. These strategies were implemented in the researcher's teaching and tutoring and in parallel processes in the students' teaching and mentoring; thus, the students experienced them as students and as teachers. Henia described her experience of this process:

It taught me how to act and how to write. The concrete examples helped me to reach my group differently. I need examples. It was wonderful; it gave me ideas how to approach things, to go in other directions from what I was used to. Vygotsky's book and the strategies of mediation that you modeled, each of these helped me connect all of them into a big picture (Henia, journal, 5.2010).

As one of the main principles of social learning is learning by doing, the students gradually learned the new theories and strategies while reading about them and implementing them concurrently. Learning the methodology of action research through conducting their investigations, they gradually took on the role of teacher researchers and consolidated an inquiry stance. Nadine described the transformation in her conception of her role as a mentor:

What has been changed basically is my conception... I realized that my role as a mentor is not to explain to her again and again what the "correct" approaches and conceptions are, not to dictate to her what to do, not to be judgmental but to facilitate her rethinking of her practice... today I know that in every future design of mentoring I'll use action research. I'll analyze what I'm doing in real time and modify it according to what happens in the field (Nadine, feedback meeting, 11.2011).

Nadine described the transition in her conception of her role from being a dominant all-knowing mentor to being a facilitator who worked collaboratively with her mentee in order to help her improve her practice. She applied a new routine of planning each meeting on the basis of what had happened in the previous one instead

of planning every detail in advance. "...It demanded that you check all the time. If the plan was not appropriate I had to change it. I wrote and rewrote dozens of times following my self-reflection". Through her action research, Nadine applied the routine of the learning cycles of collecting data, analyzing them, evaluating and re-planning according to the modifications suggested by the data.

Henia also learned during her action research to act differently, as she described:

If there is something I have taken from you it is the deepening, delving into difficulties, not to reach implementation so quickly, but instead to ask many questions... the studies sharpened the profundity for me, not to give up.... one of the things I learnt is staying there when it is difficult: this is something ECE teachers run always away from, cut corners on: we run into the "how" and don't stay in the "what" and "why" (Henia, interview, 12.2011).

Holistic approach and leadership

Another transition in the students' conception was from thinking and acting on each component separately to thinking holistically about the context and practice while taking into account the numerous components of each specific situation. Henia, who became a clinical supervisor in a college of education, adopted a holistic approach:

I developed my interpersonal skills and the capacity to look at different contexts and interpret them. I learned to look at things holistically and to be able to divide the big picture into small parts and to prioritize. It is a tool I use all the time to decide where to start, what to delve into..... This is what I'm doing with my students; I tell them all the time that I want them to relate to all the elements holistically... (Henia, interview, 12.2011).

Not only was Henia able to reflect on her own practice holistically, but she also felt the need to influence her students and cause them act in a similar way. In contrast to her previous experience, she could see the big picture and felt competent enough to lead change.

The core of holistic perspective is the vision of all elements as interconnected and interrelated, creating an environment that affords relationships among people and elements. Both students indicated that their stance moved from just acting instrumentally to asking questions, examining the situation, reflecting on their practice and only then acting thoughtfully. Thus, after a long journey, they realized that in order to achieve sustainable improvement in their practice they had to persist learning by inquiring into their practice.

Learning and Teaching as an Integrative Process

Learning through acting is a main principle of social learning. However, not less important is the principle of constructing practical knowledge while reflecting on practice. Thus, another shift in students' conceptions was their realization of being learners and teachers concurrently.

Being a learner and a teacher simultaneously.

One of the main notions that the researcher modeled and talked about was being a life-long learner and teacher simultaneously. However, it was not simple for the students to wear the two hats at the same time, as Henia indicated:

After the class concerning framing change, I had the insight that being a teacher and a learner simultaneously is not a simple thing. Many times I feel that I am only on one side of the fence; as a tutor of a group, I teach, but in the classroom as a student, I learn. All week I thought to myself that this is my aim now in the group to identify the two hats, to be conscious that I am on both sides in both contexts (Henia, journal, 2.10).

Learning your students' needs as well as translating your expertise into curriculum design and facilitating strategies is a concern that bothers the researcher and her students. With Nadine this process was even more dramatic as she described it as a turning point:

The moment I understood that my research was a two-way street was a significant turning point. The process occurred while writing the data section in which the retroactive reflection guided me to the meaningful insight of being a mentor and mentee simultaneously. We come all the time to teach, but we forget how important it is to learn..... From this moment the research got depth and another professional layer. I understood that I am not only writing on a subjective process of mentoring but I am also researching mentoring as a discipline (Nadine, research presentation, 12.2011).

The insight of being a mentor and mentee simultaneously was indeed a turning point in Nadine's research. She decided, at a very late phase of the research, to describe the change process she underwent as a two-way street because "the process of being mentored by you [the researcher] was not external to my mentoring process with my mentee. It was very significant and it must be represented in the findings as well as in the discussion..." Then she went back to the findings section and condensed it and analyzed this reciprocal process in her discussion.

Thus, playing two roles at the same time required not only learning from practice but also relating it to relevant theories and updated professional literature.

Intertwinement of practice and theory.

Traditionally students learned theory in order to implement it in their teaching. However, in the process of learning and teaching, where the focus was practice, the literature played a completely different role. Literature served as a means to help students deepen their understanding and interpretation of their experience, to inform reflective practice, to provide alternative actions and to identify changes they could make to their teaching. Moreover, the capacity to draw on literature in order to resolve real problems and to cite literature that provided insights into students' own experiences became commonplace for them. Gradually the theoretical context became the knowledge base that informed students' practice and guided their growth and improvement.

Henia understood the significant role of theory in her practice and felt how useful the integration between theory and practice was. Literature became alive and became a relevant balancing aspect in her professional growth. Nadine also related to the role of theory in the discussion of her final research:

The broad exposure to research literature made me rethink my conceptions according to my role as a mentor as well as the patterns I used in my practice. Oralnd-Barak's review [2010] concerning the competing approaches towards mentorship guided me into changing my mentoring style from the apprenticeship-instructional approach to the reflective-collaborative approach. Moreover, I understood that mentorship is an expertise that I have to learn (Nadine's final action research, 1.2012).

The exposure to research literature informed Nadine's particular situation, helped her identify her mode of mentoring and gave her direction for changing it. Research literature encouraged students' broad reflection on the philosophy of teaching and mentoring and developed their ability to make generalizations from their practice at a higher level than just practical reflection.

Being a teacher and a learner simultaneously also meant adopting a research stance and sustainable investigation of their practice.

Practice Inquiry through Action Research

The students' action research was conducted over two years and writing the report was the culmination of their studies. The various courses assisted them in planning and implementing the final project as well as writing the research report. Thus, in each of their courses the researcher embedded strategies and tools that supported different aspects of the project.

Strategies and skills.

An important notion that the students were not used to was the ability to live in uncertainty. They were used to planning everything ahead, having the illusion that they had control over the context and the results of their actions. However, the researcher tried to convey the message that conditions were always in flux and there were numerous components that affected their actions and they had to be taken into account. Moreover, she used various strategies in order to create disequilibrium and shake their illusion of control. One strategy was asking provocative questions and another one was creating a cognitive dissonance in their thoughts. Nadine described this feeling:

One of the things that is engraved in my head is the sentence you [researcher] said often: 'During stressful and uncertain situations you learn a lot'. I did not like it; I love learning and it is not necessary to lead me to fuzzy situations. However, today I understand that when you are in an uncertain situation, something in the foundation is undermined and you have to go back and examine and read more and more in order to reach equilibrium (Nadine, feedback meeting, 12.2011).

The students gradually understood that the world in which they lived was not constant and nothing was certain; thus coping with uncertainty was an ability they had to acquire. They have also understood that context was a critical ingredient of their practice and they started relating to it as such.

A good example for querying what seemed to be obvious was the deliberation concerning the students' research topic and research question. Initially, both students were inclined to investigate an educational context that was very far from their daily engagement. In order to persuade them to choose a topic that was relevant to their own practice, a topic that burned in their bones, a discourse about this subject was conducted. The researcher gave them examples emphasizing the difference between investigating something outside compared with researching yourself, and provided them with research literature that stimulated them to investigate an authentic topic that really interested them.

Nadine realized that she had wanted to avoid introspection and investigation of her own practice because of the difficulty of raising and exposing weaknesses and unpleasant discoveries about herself. However, at the end of the research project, she retroactively understood the deep meaning of action research for her professional development, as she wrote:

Action research is the most meaningful tool that prevents you from looking only at your final aims. It takes you into an inward observation that is very unique. It causes you to continuously check the process toward the aim, to focus on each action and your thinking as well as on the context. I have been mentoring for many years but only now have I discovered the gap between what I know theoretically and what I do, between my self-concept and reality – a dreadful gap. Without the paramount instructional tool of action research I would not have reached the place I am in (Nadine's final action research, 1.2012).

Nadine realized that over the years her mentoring pattern had been top down instruction though she had espoused a collaborative approach. In retrospect, she promised herself that "every mentoring would be accompanied by action research while being transparent and introspective". Like Nadine, Henia also related to action research as an essential tool:

It is not easy to reveal things about yourself; it is difficult for me to cope with, but I think that the reflectivity I adopted and the final project caused me grow. It connected me to everything. Especially it taught me to conduct research ... I think that the methodology of action research is critical for every practitioner (Henia, interview, 12.2011).

While investigating their own practice both students gradually learned to appreciate action research as a way of life and as a means for sustainable reflection and introspection toward improving their practice.

In addition to various mediating strategies and skills, the students were exposed to various technical and psychological tools as well as different routines that they afterward adopted.

Technical and psychological tools and routines

Because of the researcher's belief in socio-cultural theories, one of the primary goals for her students was to be able to learn in an environment comprised of aids, tools and routines designed to broaden learning spaces and “perfect their minds” (Brown, 1994). There was ongoing reflection and introspection through journaling, documenting, reading and discussing in professional groups. While accompanying them in their action research, the researcher deconstructed the activities into several phases.

While working on the various sections of their research simultaneously, they delivered beginnings of chapters of their research: theoretical review, methodology and findings. In order to strengthen the theoretical base of the students' research they used two tools: one was an analytical tool to help them read a research article critically, and the second one was an integration table to help them integrate the information from various texts. In order to facilitate their reading and writing the theoretical review, students learned to use the table and avoid relating to each study as a separate item. Nadine indicated this difficulty:

Only after few drafts and numerous comments like: 'integrate the studies; what is common to them, what is different? Write it in your own words; it suits the other sub-section', my frustration brought me to use the table. Suddenly I got a big picture like mosaics of fractions that I had to connect. Now I also use this table in my work with ADHD pupils... (Nadine, interview, 1.2012).

Scaffolding the process of writing the final report of the project was very important as it helped the students reach insights and conclusions they could not see before. In addition to the integration table, Nadine related to another tool that helped her in writing her research, my comments to her drafts:

I developed a kind of immunity to cope with your [researcher's] numerous comments and related to them as recommendations that stimulated my thinking. Your direction according to big ideas and dilemmas also helped me later to choose significant issues to elaborate in the discussion... (Nadine, interview, 12.2011).

After the first shock from the numerous comments, Nadine and Henia understood their value and adopted various strategies in order to utilize them to advance their research. While constructing their action plans, students had various opportunities to share their ideas, plans, strategies and findings with their colleagues and with the researcher during the group discussions in classes and in individual meetings. In each semester they also had a framework of presentations in which they displayed and discussed aspects of their research and consulted others about important issues and difficulties.

These tools and others helped the students broaden their skills and develop the ability to grow in confidence and expertise in the role of teacher researcher. No doubt, the ongoing reflection and introspection through journaling, documenting, reading and discussing in professional groups provided the foundation for teacher research and for reshaping their professional identity.

Shaping Professional Identity

Analysis of all these data brought to the forefront meaningful changes in the students' self-perceptions and professional identities. The parallel processes in college and in their fields facilitated the development of the students' leadership skills as well as the development of their abilities as reflective practitioners investigating their practice. They talked and wrote about the transformation in their conceptions and behavior as well as about the reshaping of their professional identities. Henia described this process:

I believe that my educational approach developed all the time; it changed, it was formulated... The studies helped me formulate my own way, concepts were sharpened and things became clearer. I broadened the circles and communicated with more people in a professional way (Henia, interview, 1.2012).

During their studies the students' self-efficacy increased and their confidence in their own abilities grew. They now also identified their leadership skills. Henia began to perceive herself as a leader:

The concept of leadership now has a totally different meaning.... in the past leadership was a kind of dominance to me, of prominence of people, I didn't think I had the capacity to lead and was not engaged in it... today I know I have the capacity to lead. I have a holistic view... I believe that I'll be able to create a learning community. When I got the new job as a clinical supervisor in the college I felt like I was realizing a vision, to help shaping educators in a different way, to make a change.... A vision of being more attentive, seeing the whole child, to relate to the context of the parents' groups, with the staff, the community... I want to change the culture and to really place the child in the center (Henia, interview, 1.2012).

Henia was already engaged, not only in her own practice, but also in looking at the big picture of ECE vision. She was open to thinking about leadership and redefining a new meaning of leadership. She was able to articulate a long term vision and was determined to generate change and to affect the various circles involved in the process. Moreover, Henia's self-confidence even gave her courage to confront her superintendent:

Today I can stand in front of my inspector and tell her that I can't 'run with the content or "transmit the program" because of lack of time' as she requires. I am in another place. I guided the workshop in my way and not according to her instructions. I felt good that I chose my way because it was the first time I dared as a tutor not to implement exactly what I was told to do but did it in my own way (Henia's journal, 2.3.10).

As opposed to her previous habit of being obedient to the superintendent, Henia was satisfied with her courage to stand face to face and choose her own way because she felt professional and had a rationale for her decision.

Nadine also started to think about her broad vision and became interested in her influence on the environment, as she wrote in her final project:

What changed were my conceptions, I started asking myself about my professional identity. Who am I, what do I want. Only when you look inside at your actions do you understand that the essence of this observation is your influence on the environment. The focus is on taking responsibility for the field, to be conscious of the interaction with your partners and to change myself and my mentee (Nadine, final project, 1.2012).

Both of the students realized that their roles had changed dramatically from all-knowing teachers that deliver knowledge and control circumstances to experts who construct knowledge collaboratively with their learners, act thoughtfully within complex contexts and create challenging environments for learning.

DISCUSSION

The four categories which have been described in a linear way are interrelated and many aspects as well as the evidence relate to more than one category. However, from this collage, three insights emerge: parallel processes of transformation; simultaneity and holistic approach; and the impact of leadership based on reflective practice.

Parallel Processes of Transformation

The researcher and her students experienced parallel transformational processes during their learning and teaching. The exposure to viable alternatives to the positivistic approach, which was and still is the dominant approach in the educational system, had taken the researcher in the past on an arduous journey of transition from the behaviorist learning theory to the constructivist one as well as from linear hierarchical thinking to divergent thinking. The two students underwent similar processes of reshaping their professional identities while being exposed to socio-cultural theories and new approaches during the program.

This transformation was multifaceted and included the four categories identified in the data analysis. In order to make internal transitions in conceptions as well as external changes in behavior and context, inquiry into practice through action research and self-study (Margolin, 2007, 2008) within an environment that provided a safe space for research had to take place.

In order to facilitate students' process of building their conceptual platform for inquiry, making research an integral part of their practice and reducing the gap between preaching and acting, the researcher investigated her own practice and worked on improving her teaching. In a parallel process to the students, she also critically reflected on her ways of teaching again and again and modified strategies and tools in order to match them to the students' needs. As modeling was her key strategy, being attentive to McNiff's (2008) suggestion to first evaluate your own practice to see whether you realize your own identity and only then support others, she modeled a life-long learning and teaching process while inquiring into her practice. This way of sustainable inquiry of her practice reinforces McNiff's concern about academic practitioners who need to engage with their own action research in order to make sound judgments about the quality of the work they are supervising and examining (McNiff, 2008).

Congruently with Russell's claim that reflective practice can and should be taught and modeled explicitly, directly and thoughtfully (Russell, 2005) the

researcher attempted to orchestrate environments that foster meaningful and sustainable learning within a professional learning community through collaboration and research. The parallel transformational processes were a paradigm shift that enabled the researcher to understand their difficulties, be empathic to the students and facilitate their research.

Simultaneity and Holistic Approach

One of the challenges in this process was adopting a holistic approach which obliged the students to view themselves as part of an ecological system. In such a system, people affect other people and components and are affected by them. The need to relate to their complex educational environment as a whole rather than a fragmented system and act simultaneously on numerous aspects was difficult for them. This difficulty was expressed through the demand to be a learner and a teacher concurrently in every situation, through the entanglement of the wider and specific context and through each educational occurrence. It also appeared through the conducting and writing of their research in its different parts: collecting data, interpreting them, writing journals, and reading the relevant theory, all simultaneously. Students had been used to linear thinking and working on each element separately, but in the program their ways of thinking changed to lateral and divergent patterns. The weave of theory and practice and the dialectic between them while learning was also new for them.

Data analysis surfaced many similarities between the researcher's transformational process and the students' process. It enabled the researcher to understand the students' difficulties, be empathic to them and support them in their coping with these new challenges. These actions empowered them and broadened their roles and horizons. Their self-efficacy increased and their world view changed drastically. Research was no longer an assignment that they had to do to complete their graduation requirements; it had become a significant component of their practice and it had come alive for them.

In parallel processes, no matter in which position, at what age or level of seniority, each educator is a teacher and a learner simultaneously during her entire career; thus she is required to inquire into her own practice sustainably in order to improve it. For this sake she needs appropriate conditions, such as a safe space, a conceptual framework and a professional community.

Implications: Leadership Based on Reflective Practice

It becomes evident from the data that in order to lead a professional community and generate change in ECE system, one has first to undergo a personal transformation. Until the students experienced a change process in their own stance and practice, they were not yet ready to be change agents. I cannot express this insight better than Quinn (1996):

.... this tortuous journey requires that we leave our comfort zone and step outside our normal roles. In doing so, we learn the paradoxical lesson that we can change the world only by changing ourselves (Quinn, 1996:9).

Indeed, the students indicated the rationale and benefits of action research and its support for their paradigm shift; they appreciated the contribution of collaborative reflection in a professional community to the meaning making of their practice and they viewed their roles as leaders in their complex contexts. Thus, the aim concerning

the development of the students' abilities as reflective practitioners who examine their work was achieved and widely analyzed. However, only after the personal transformation the students experienced would their abilities and skills as reflective practitioners enable them to become change agents and promote systemic change in their ECE organizations. Such insights and skills would enable them to construct complex systems of relationships within their organizational environment, and lead multi-professional teams in their contexts. The aim of developing the students as leaders of change who transform the cultural and social culture of the ECE system is still in its infancy. As the students are already able to inquire, reflect and model good practice, to articulate their wide agenda and vision clearly, and to analyze their mission holistically, they are starting to achieve the upper stratum of their profession. At this stratum, they are in a position to educate the next generation of ECE teachers and to unsettle the status quo by changing the traditional system of ECE education.

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