An ecological perspective of teacher retention: An emergent model

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HIGHLIGHTS

- A new model of ecological school culture emerges which contributes to explaining teacher retention.
- This multidimensional model includes personal and environmental factors of teacher retention.
- Organizational practices constitute the most prominent factor in teacher retention.
- Mentoring, support and school management are vital for the retention of novice teachers.
- This study's findings may have a significant impact on teacher retention.

ARTICLE INFO

ABSTRACT

The aim of this study is to examine the characteristics of an ecological school culture conducive to the retention of novice teachers. Twenty novice teachers were selected randomly from 20 different schools in Israel. The qualitative research findings revealed that an ecological school culture conducive to the retention of novice teachers possesses a multi-dimensional framework characterized by categories such as organizational practices, peer communication, individual aspects, community, working conditions and teacher status. The research findings can contribute to reshaping guidance procedures and practices best-suited to novice teachers, which will ultimately aid in the retention of quality teachers.

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1. Introduction

Numerous studies have indicated that a significant number of novice teachers leave the schools in which they work during the first years of teaching (Schaefer, Long, & Clandinin, 2012). The present study focuses on identifying characteristics that arise from a multi-dimensional ecological approach which takes into consideration an array of factors for the retention of teachers within the close and distant environment of novice teachers. Previous studies indicate that various factors can influence the behavior of novice teachers (Dupriez, Delvaux, & Lothaire, 2016; Johnson, Kraft, & Papay, 2012), particularly their tendency to leave or remain in the education system (Borman & Dowling, 2008). In light of this fact, the main objective of this study is to examine an ecological school culture which may explain the retention of novice teachers in the

schools.

This study is unique in that it examines a multi-dimensional model through which it will be possible to ascertain the factors associated with the retention of novice teachers which stem from the individual, the school, and the school environment. The current study is an offshoot of Bronfenbrenner's (1979) ecological social model, examining and updating it into a model that allows the presentation of the various aspects associated with the world of novice teachers and their retention in the schools.

The following overview will focus on the characteristics of the attrition of novice teachers, school leadership as the key to retaining novice teachers, and the characteristics of an ecological school culture.

2. Theoretical background

2.1. Attrition of novice teachers

Ingersoll (2001) distinguishes between 'attrition' and 'migration' in school: attrition refers to leaving the profession completely,

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while 'migration' refers to moving to another school. Teachers' leaving is harmful to the school system regardless of whether teachers abandon it altogether or merely leave to work in another school. Studies indicate that a high attrition rate has a negative effect on students' achievements (Ingersoll, 2012), thereby further harming school stability and educational consistency. Attrition also impedes the principal's ability to properly maintain the school's teaching staff and lowers teachers' sense of satisfaction and commitment (Ronfeldt, Loeb, & Wyckoff, 2013).

Educational literature usually defines novices as teachers with a maximum of three to five years of experience. The reason for this is the challenging acclimatization that teachers undergo during this initial period. In addition, in many countries, teachers are granted seniority after three years of experience, after which they are no longer considered novice teachers (Ingersoll, 2001; Lindqvist, Nordänger, & Carlsson, 2014).

Studies conducted throughout the world reveal that 5%–50% of novice teachers leave during the first five years of teaching (Schaefer et al., 2012). According to Ronfeldt et al. (2013), 50%–70% of novice teachers in the United States leave the school where they began working after five years, and in Australia 10% of novice teachers leave within five years (Burke, Aubusson, Schuck, Buchanan, & Prescott, 2015). In Sweden, 13% leave within the first five years (Lindqvist, Nordänger, & Carlson, 2014). In Belgium, 44.9% of middle-school teachers leave, and 24.7% of primary-school teachers leave after five years (Dupriez et al., 2016).

The phenomenon of teacher attrition exists in Israel as well. According to Israel's Central Bureau of Statistics (2016), each year approximately 35% of novice teachers leave the school where they began teaching. Around 22% go to teach in a different school at the end of the first year, while the remainder — an average of 13% — leave the education system altogether. It is important to note that these studies did not distinguish between teachers who left by choice and those who were forced to go, unwillingly, due to constraints or dismissal by the education system.

The workplace and the profession must be attractive in order for teachers, in general, and novice teachers, in particular, to be inducted and retained in their place of work. An attractive profession usually provides professional prestige, suitable wages, and opportunities for advancement and professional development. According to these criteria, the teaching profession is often perceived as unattractive both by teachers and their surrounding community (Glennie, Mason, & Edmunds, 2016). A study conducted by Rots, Aelterman, Devos, and Vlerick (2010) indicated that the factors that render the teaching profession attractive will encourage novice teachers to remain in the system.

Nonetheless, it is also important to note that leaving the workplace or the profession is not necessarily a negative step. Moving between jobs and changing professions is not uncommon in today's world of employment, and the teaching profession is no exception. Accordingly, a low attrition rate among teachers can be positive, since it infuses new energy and novel ideas into the school and the teaching profession (Glennie et al., 2016).

2.2. Retention of novice teachers

Retention of novice teachers refers to those teachers who have completed their education studies, begun teaching in a school, and remained there (Glennie et al., 2016). Retaining teachers positively affects the school. Teachers who remain in the system accumulate more experience, attain expertise, and improve their teaching ability during their first years of teaching (Manuel, 2003). Buchanan et al. (2013) found that teachers who remained in the school at the end of four years reported that support, guidance, and professional development were the main factors that had

contributed to their decision to remain. These teachers described their teaching experience during the first year as a survival struggle followed by increased satisfaction as they accumulated more experience and succeeded in coping with various challenges. Interviews conducted by Manuel (2003) among novice teachers in Australia revealed possible solutions for the retention of novice teachers: lessening their workload, holding meetings for their professional development, and providing emotional support.

2.3. School leadership and its context in retaining novice teachers

Various levels of school leadership (department heads, school counselors, homeroom teachers, vice-principals, and principals) assume an important role in the retention of novice teachers. For example, a study conducted by Peters and Pearce (2012) based on interviews with first-year teachers revealed several characteristics of school leadership that are significant in retaining novice teachers. These included personal relations, taking an interest in novice teachers' professional development and welfare, setting a personal example, relationships based on trust, help and partnership, guidance of novice teachers, and placing an emphasis on the novice teachers' self-image, skills, and knowledge.

School leadership is capable of significantly impacting the optimal induction of novice teachers, yet other factors in the teacher's environment can explain why a teacher decides to stay or leave the school. Recent studies (Mason & Matas, 2015; Schaefer et al., 2012) support this notion and describe the need for multi-dimensional assessment. Only this type of assessment - which encompasses both the individual and contextual factors - can properly express the complexity of the factors responsible for retention. In light of this, the current study is based on a social ecological model that allows an examination of all the factors that contribute to the retention of novice teachers.

2.4. An ecological school culture

The original social ecological model (SEM) focuses on the child's biological and psychological development (Bronfenbrenner, 1979). The SEM has been broadened to help understand the multifaceted and interactive effects of personal and environmental factors that determine behavior in various fields. Thus, researchers from different research areas such as economics (e.g., Schlüter et al., 2017), public policy (e.g., Simplican, Leader, Kosciulek, & Leahy, 2015), public health system (McCormack, Thomas, Lewis, & Rudd, 2017; Sharma, Scafide, Dalal, & Maughan, 2019; White, Stallones, & Last, 2013), health education (Langille & Rodgers, 2010) and education (Xiao, Jingmin., & Kaixiang, 2019) elicit from Bronfenbrenner's original model (1979) a new model with new interpretations and definitions of the subsystems around the individual depend on the study context.

In all these studies, the number of model layers are equal to the layers in Bronfenbrenner's original model (1979) and the meaning of these layers (individual, interpersonal, organizational, community, and policy) correspond to the layers of the original model (individual, micro, meso, exo, macro). However, the interpretation of each layer changed based on the study context (e.g., education, public health system, public policy).

Fig. 1 illustrates the common subsystems in all these studies. This ecological model may facilitate the description of social constructs between the novice teachers and their environment, with adjoining subsystems influencing each other. Following, we will explain Fig. 1 in the study context. The novice teachers' development finds expression in the following manner: the *individual* layer includes the teacher's characteristics such as gender, age, and professional qualifications; the *interpersonal* layer describes the
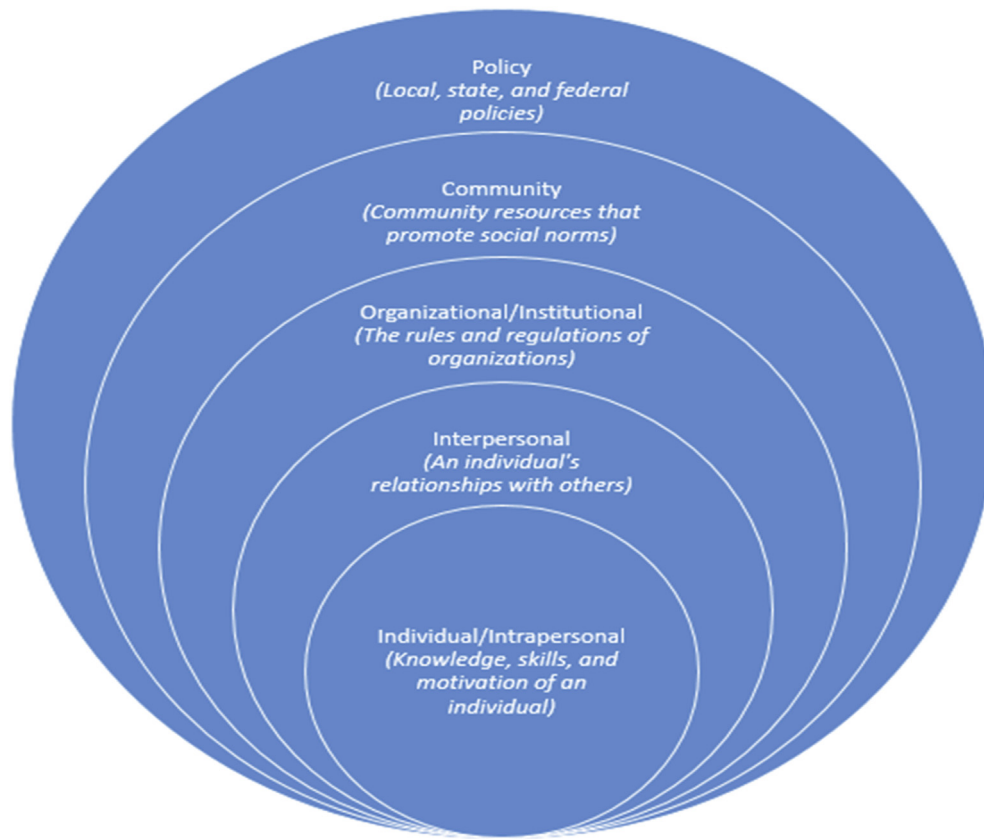
relationships between the teachers and their close circles such as family, peers, and students; the *organizational* layer consists of the relationships between the teachers and the school administration; the *community* layer describes relationships between the teachers and their students' families; and the *policy* layer refers to the socio-cultural aspects within which the teacher functions, such as rules, regulations, and norms (McCormack et al., 2017; Sharma et al., 2019; Xiao, Jingmin, & Kaixiang, 2019).

In summary, numerous studies have examined the factors that account for retention and attrition of novice teachers, but few have simultaneously assessed the complete array of relevant factors thought to be responsible for the retention of teachers. In light of this fact, the current study is unique in that it focuses on the question: What are the characteristics of the ecological school culture that arise from the social ecological model which may explain the retention of novice teachers in the schools?

3. Methods

3.1. Participants

The participants in this study included 20 novice teachers (14 women and 6 men) from 20 middle schools and high schools in Israel. The sample was representative of schools from the various districts and sectors (both secular and religious government schools) and portrayed the gender ratio among teachers and educators in the Jewish sector (Israel's Central Bureau of Statistics, 2016). The teachers varied in their professional and demographic backgrounds, and their average age was 30.7 (SD = 7.1). A novice teacher was defined as a teacher with up to three years' seniority in which the internship period was counted as the first year. The three-year criterion is derived from previous studies and from the Israeli context whereby teachers are granted tenure after three years (Ingersoll, 2012; Israel's Central Bureau of Statistics, 2016).

3.2. Data collection and ethical consideration

After receiving permission from the Ministry of Education and approval had been sought from our university ethics committee, we contacted the 20 school principals at random. After explaining the study aims, we requested permission to interview one novice teacher from their school. All the principals gave their consent and asked the school office to provide us with a list of novice teachers. We then randomly contacted one teacher from each list. Approximately 80% of the teachers responded affirmatively after receiving a detailed explanation of the study and volunteered to participate. No direct monetary or in-kind compensation was offered in exchange for participation. This was done in order to ensure that informed consent and participation will be based on the participant's interest and desire to discuss his or her experiences in school.

Each teacher was identified by a numeric code associated with his/her name. All participating teachers were guaranteed anonymity and signed their consent to be interviewed. The consent form included details about the study goals, the procedure, privacy policy and rights of the participant to withdraw at any time during the process without any consequences or any need do explain.

The hard copies of documents and voice recordings were saved on our password-protected computer using codes of each document in order to insure the confidentiality of participants.

The study was designed to apply as little pressure as possible on participants, making sure they volunteer and agree to share their knowledge under no exogenous motives. For example, before the study start, no relationship exist between us and participants, and during the study the relationships was based only on professional aspects considering the research. By this way, we ensured that no hierarchical relations were existed between us and the participants which reduced the potential bias and influence during the study.

A semi-structured interview (see Appendix) was used to examine the array of individual and environmental factors related to the retention of teachers. Each interview lasted approximately 90 min while we recorded the interviews with digital voice recorders. The questions related to each layer of the ecological model. For example, on the *individual* layer, participants were asked questions about demographic aspects associated with the retention of teachers, and on the *interpersonal* layer they were asked about their personal and professional relationships with colleagues at work. Questions about the *organizational* layer dealt with aspects related to the various levels of school management and leadership. Questions about the *community* layer related to relations with their student' parents, while questions pertaining to the *policy* layer dealt with teachers' status and reforms that impact their work. To summarize, during the interviews, teachers were asked to describe their demographic background, their process of induction into the school, the part the school administration had played in their induction, the support offered by the school, and how they coped with challenging incidents.

3.3. Data analysis

The participants' names were altered in the presentation of the findings to maintain their anonymity. The analyses were performed using a three-stage process (Blair, 2015). During the first stage, open coding was performed on the units of narratives that had been collected. These were then grouped into sub-categories according to their common properties. For example, the narrative units that dealt with "mentoring teachers during their induction process", "manner of support", and "peer support" were grouped into the sub-category titled "horizontal processes of mentoring and support." The second stage consisted of axial coding, in which the sub-categories were grouped into categories. For example, the sub-categories of "relations between peers" and "horizontal processes of mentoring and support" were placed in the category of "peer communication". "Vertical processes of mentoring and support", "guidance of novice teachers by the school administration", "autonomy for novice teachers", "partnership and inclusion of novice teachers", "conditions that enable success", and "focusing on students vs. achievements", were all grouped into the core category of "organizational practices." The third stage entailed selective coding, whereby the sub-categories were grouped into broader, more-inclusive core category. For example, the categories of "individual aspects", "peer communication", "organizational practice", "working conditions and teachers' status", and "community" were grouped into the core category of "ecological school culture contributing to teacher retention."

The coding stage was performed by the two lead researchers (ourselves, the authors) and two research assistants who were doctoral students of education. The researchers performed the coding independently and separately and then met to discuss the core category, categories, and sub-categories that had been formulated. There was 90% agreement among all researchers.

4. Findings

4.1. An ecological school culture in the context of novice teacher retention

Five main categories were derived from the interviews. The most dominant category that the teachers referred to was "organizational practices" (59 narratives), followed by "peer communication" (35 narratives), "individual aspects" (25 narratives), "community" (16 narratives), and "working conditions and teachers' status (10 narratives).

Fig. 2 [below] presents the characteristics of an ecological school culture that explains teacher retention. The model consists of an inner circle that includes five main categories and an outer circle containing the sub-categories belonging to each category. The frequency of the narratives is shown in parenthesis next to each category and sub-category. The area of each category and subcategory in Fig. 2 corresponds to the relative number of narratives in each category and subcategory.

The following dimensions (categories) and sub-categories were found in this study. These are listed in descending order, from those most frequently cited to those least frequently cited.

4.1.1. Organizational practices

The first example presents the subcategory that expresses *vertical processes of mentoring and* support by the school administration (16 narratives).

> "There was an incident in which I taught the material incorrectly, and I told this to the head Bible teacher and some members of the administration. The feeling was that it's not so bad, that it's possible to change things, and to reteach the lesson. I had a positive feeling that nothing had happened. I taught the lesson again from a different angle, but the main thing was to carry on and not to give up. This difficulty actually made me stronger" (Liav, male, 28 years old, a high-school Bible teacher, 1 year in school).

Liav describes how an accepting, patient, and instructive response on the part of the school administration improved his feelings about an unsuccessful lesson and motivated him to continue teaching. He claimed that the experience enabled him to improve himself in the future.

In contrast, novice teachers sometimes feel that they do not receive sufficient mentoring and support from the school administration. For example:

> "We work very hard, and then the principal comes and says we are moaning. We are part of an extremely intelligent and opinionated staff, and therefore we say what we think. We get the feeling that the principal doesn't want to hear it, […] It's very painful for me because the complaining comes out on Facebook [posts] and in the teachers' WhatsApp groups, where it gets to the point of resentment" (Roni, female, 35 years old, a high-school English teacher, 1 year and 8 months in school).

Roni claims that the school administration does not allow teachers to speak their minds for fear of negative criticism of the administration's conduct. This situation creates a great deal of frustration among novice teachers.

Another sub-category that emerged was the *guidance of novice teachers by the school administration* (15 narratives). For example:

> "There was no preparation before I entered the special-education classes. It was like jumping into the deep end.
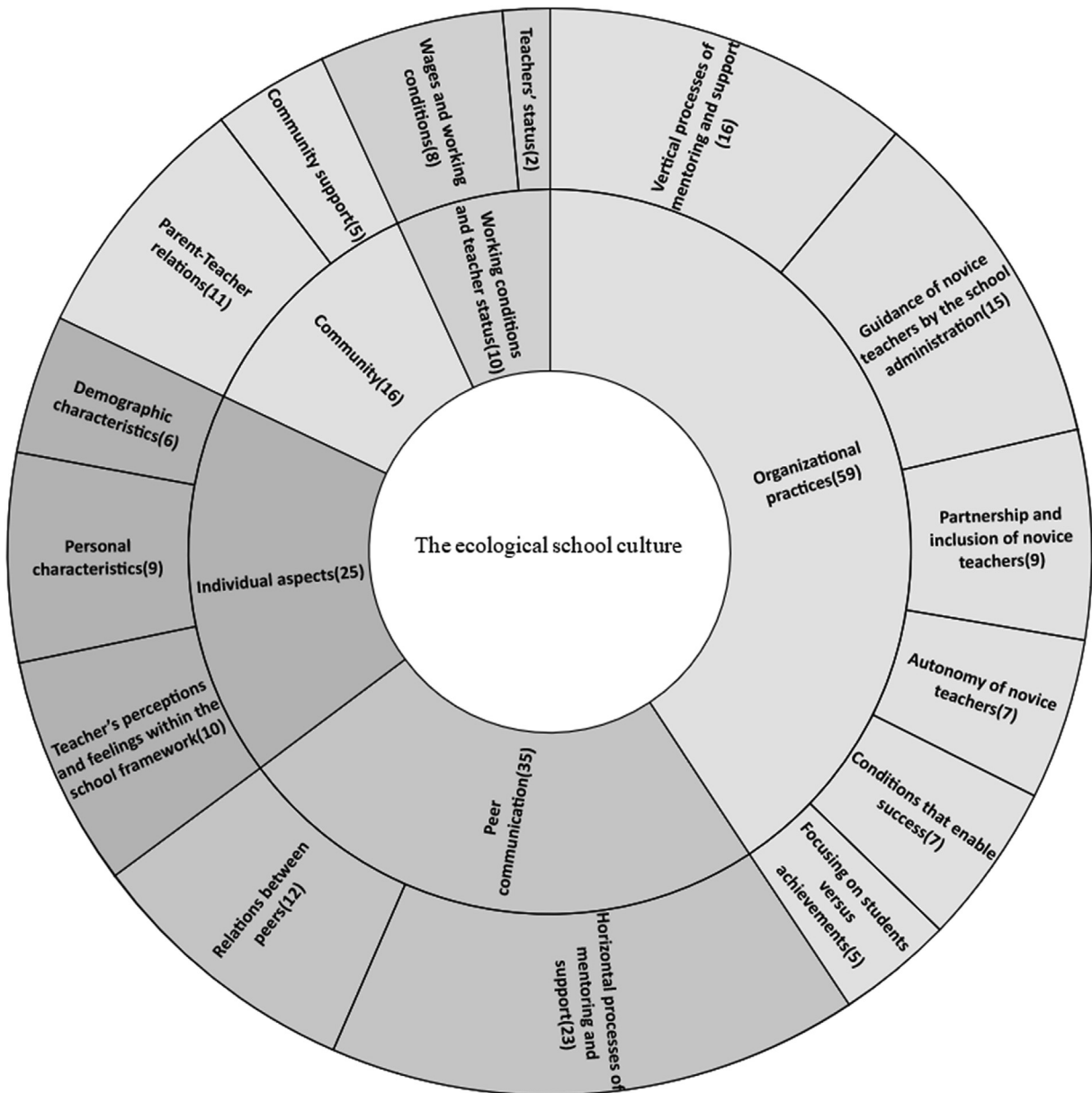
Fig. 2. An emergent model of teacher retention from an ecological perspective.

Group A [the top-level group] required less preparation, but the special-education class was very challenging. I didn't know what I was doing with them, what they know, or how to work with them. Even now, I still don't really understand what special education is or how to deal with it. When I ask, I'm told: 'Whatever you do with them is just fine.' It's terribly frustrating. I don't know what is expected of me or what they [my superiors] expect I'll succeed in doing with them" (Esther, female, 25 years old, a middle-school language teacher, 6 months in school).

Esther's remarks show that she was not sufficiently prepared for working in the challenging classrooms. In addition, the guidance she received was insufficient and she received unsatisfactory answers.

Another sub-category that was discussed in the interviews was *partnership and inclusion of novice teachers* (9 narratives). Many

teachers felt that the extent to which they were included in school processes contributed to their sense of belonging to the school. For example:

"Our school began an initiative whereby the staff was divided into teams. Each team received a discussion topic. The aim was not just to complain how hard things were, but to propose programs. For example, if someone was not happy with the bell schedule, fine! Let them propose a new bell schedule. And that's what happened! There began a trend of improvement. At first, I didn't want to attend because I'm a novice teacher, but a colleague told me: 'No, come … be a part of it'" (Uri, male, 26 years old, a middle-school English teacher, 5 months in school).

The following example presents a sub-category that deals with employment with *conditions that enable success* (7 narratives). This refers to conditions during induction. Among other things, these

include designating the teacher's schedule, assigning teaching subjects, and assigning teachers to classes with student composition and levels for which they have been trained. For example, Narkis described the difficulties that many novice teachers experience when they begin teaching in classes with discipline problems that stem from their lack of experience.

"The first lesson was in the 9th grade, and my first hour was with the weakest remedial group. It was a nightmare — a baptism by fire. I couldn't get a word in edgewise. It was a horrible lesson. I never told anyone about it. I didn't succeed in teaching a thing. I took roll call and that's about all. The next day I taught the higher-level class and it was better. It took me a while to get acclimatized" (Narkis, female, 29 years old, a middle-school science teacher, 2 years in school).

The next example in which a teacher expresses satisfaction with the freedom of pedagogical action that she received at the school illustrates an additional sub-category called *autonomy of novice teachers* (7 narratives).

"What works in a good school is that they give teachers a lot of freedom. On the one hand, it's positive, while, on the other hand, it throws you into a maelstrom. The positive side of this is that you have genuine freedom of action. I don't have to stick to the textbooks. […] There's complete autonomy. I can decide that in one class I work one way and in another class, I work another way (Liron, female, 31 years old, a middle-school mathematics teacher, 2 and a half years in school).

Another sub-category that arose in the interviews was *focusing on students versus achievements* (5 narratives). Many teachers underscored the importance to which the school administration placed on significant educational and learning aspects rather than striving for good grades. This is expressed by Gal:

"The entire educational approach of the school administration is very compatible to my educational conception which sees the students, not the grades. This was very, very important to me" (Gal, male, 28 years old, a high-school science teacher, 1 year and 8 months in school).

From Gal's remarks we can learn not only about his perception of the teaching profession but also his perception of his compatibility to the school. It is important to him that the school uphold an educational approach similar to his own.

4.1.2. Peer communication

This dimension refers to communication between novice teachers and the school staff. The first example presents a sub-category that expresses *horizontal processes of mentoring and* support offered by other teachers or by the novice teacher's professional team [direct colleagues who teach the same subject (e.g. math, language, science etc.)] (23 narratives).

"There is a weekly staff meeting where we can receive help and consult about everything. At first, I spoke at almost every meeting and asked questions because I had to understand how things worked. I also had a lot of discipline problems with the class. To tell you the truth, my team did not really know how to address the discipline problems. Despite their seniority, they themselves still struggle with discipline problems … They told me I could come to them with any problem" (Liron, female, 31 years old, a middle-school mathematics teacher, 2 and a half years in school).

Liron received assistance from her professional team during her induction period. The connection that the teaching staff made between her and the various school functionaries helped her understand that the entire educational faculty is also coping with the same problems with which she is dealing.

Another sub-category, titled *relations between peers* (12 narratives), described the relationships between novice teachers and the rest of the teachers in the school. For example, Nurit explained:

"You feel that you are really alone. You enter the classroom, sit down, and no one knows who you are. Even the guard once asked me why I wasn't wearing the school uniform. If you are a novice teacher, no one talks to you. It's unpleasant, but you have to take this into account when you enter a new framework. Only in my second year did I feel a part of the faculty" (Nurit, female, 26 years old, a middle-school science teacher, 2 years and 3 months in school).

Nurit describes her first year as one of loneliness during which novice teachers are socially isolated from their fellow teachers. These remarks and others that arose in the interviews reveal a picture of gradual socialization during which novice teachers feel loneliness and sometimes even alienation, while their only social contacts take place only with the small department-team with whom they work and, in certain cases, with other novice teachers.

4.1.3. Individual aspects

This category includes individual factors associated with the retention of novice teachers in the school.

The first sub-category in this section describes *teacher's perceptions and feelings within the school framework* (10 narratives). For instance, many teachers described their satisfaction as being a primary factor in their remaining in the system.

"You can see that I am happy to come to school. I am truly happy here. The children are lovely and so are the faculty. Clearly, there are difficulties and days when I return home feeling exhausted because a couple of students came to class in a bad mood. But all in all, I feel that things are quite good" (Neta, female, 27 years old, a high-school English teacher, 1 year and 4 months in school).

In contrast, feelings of burnout already arise during the first year of teaching:

"I barely survived the first two years. I felt as if I had already been teaching for 30 years. I felt tired, exhausted, and completely burned out from all the running around and trying to teach children who don't want to learn …" (Hagit, female, 36 years old, a high-school English teacher, 2 and a half years in school).

The second sub-category refers to teachers' *personal characteristics* (9 narratives). The interviews indicated that activeness and assertiveness contributed to teachers' retention in the school.

"I'm far from being shy by nature. If I want something, I go and ask for it, or even demand it. I think that whoever is not assertive has more difficulty surviving the students and the system" (Nir, male, 25 years old, a middle-school language teacher, 2 years and 8 months in school).

Another characteristic that was described as helping novice

teachers carry on working in the school was their tendency toward cooperation.

"You have to cooperate and be a 'team player'; otherwise when you need something you won't have anyone to turn to. This comes easily to me, and I feel that the more I give the more I receive. My first year was very successful thanks to this give-and-take and partnership" (Rina, female, 30 years old, a high-school chemistry teacher, 2 years and 5 months in school).

In addition, withstanding pressures that stem from classroom interactions constituted another characteristic which the novice teachers described as being important for remaining in the school. For example:

"During my first year everything made me tense and I thought that I wouldn't survive the classes I'd been given. Despite the positive feedback I received, I felt that the material I was teaching was not good, and that I was teaching it badly. As soon as I calmed down, I sensed less pressured and felt I was doing a better job" (Liat, female, 28 years old, a high-school Bible teacher, 1 years and 6 months in school).

Innovative thinking is also a central characteristic that arose among teachers who tended to persevere in the school:

"It's hard not to get bored in a math lesson, but I try as much as I can to interest them, if not through the learning material, then with things that are closely related to it, interesting stories and all kinds of anecdotes that will break the monotonous routine of math lessons" (Shai, female, 26 years old, a high-school mathematics teacher, 1 and a half years in school).

The findings also indicate that adhering to their personal values helps novice teachers overcome challenges at school. For example:

"Many teachers are quite 'in shock' during the first and second years of teaching. They are confused and don't always find their way. This was not the case for me. I was very organized from the start. I made lists, prepared suitable lesson plans, and swore that no pupil of mine would receive a grade of less than 80. Only one pupil received a lower grade, and he arrived in the middle of the school year" (Tal, female, 31 years old, a middle-school chemistry teacher, 2 years and 8 months in school).

In addition, *demographic characteristics* (6 narratives) such as age also contribute to novice teacher retention, as in the following example:

"In my opinion, the fact that we entered teaching at a young age has great significance. When you are older it's very hard to integrate into the complex school framework with its demands that change from one day to day, and, more than that, to cope with the difficulties of teaching teenagers with all their energy and hormones" (Yogev, male, a high-school civics teacher, 2 years and 3 months in school).

Another example is the teachers' place of residence. Several teachers mentioned that there are fewer employment alternatives available in the periphery than in the center of the country. For this reason, many teachers who live in the periphery stay in teaching because they have no better alternative:

"Listen, I don't have a lot of alternatives in this area. Try and find a workplace here with good conditions, hours that are suitable

for a mother, and even a possibility of advancement. Moving to another school is problematic. There are not many schools, and there are more teachers than there are job vacancies" (Limor, female, a high-school English teacher, 2 years and six months in school).

4.1.4. The community

This category deals with relationships with the surrounding *community* that can explain the behavior or feelings of novice teachers. The first sub-category that emerged was *parent-teacher relations* (11 narratives).

"Generally speaking, issues involving parents require a lot of assistance. Even during the first year of teaching, there were not many conferences with parents, but the few that did take place were not easy. During the second year, I was made a homeroom teacher, and my relationships with the parents were very intensive. There were many instances in which I phoned the principal very late in the evening because I didn't know how to deal with a parent who had just spoken to me. I sensed the meaning of the cliché: 'My door is open any time'. During the first year when I was a homeroom teacher, I received very strong support" (Ravit, female, 32 years old, a middle-school homeroom teacher, 2 years and 7 months in school).

Ravit refers to the complex nature of communications between a young teacher and parents and the need for mentoring and support in responding to complex parental requests and demands.

The second sub-category that arose was *community* support (5 narratives). Several interviewees described available sources of support in the community such as additional resources that were allotted to teachers and the school by the local authorities and support of organizations that aid and assist teachers. For example:

"I feel that the public appreciates us, at least in my town, and this encourages and empowers me. This is expressed by bonuses provided by the local authorities, by organizing 'Teachers Day' devoted to us, and even resources that are donated by nonprofit organizations. Last year four computers were donated to the school, and at the beginning of the year, each teacher received a pen and notebook as a token of appreciation. It was a modest gift, but it's encouraging to know that people are thinking of us" (Esther, female, 25 years old, a middle-school language teacher, 6 months in school).

4.1.5. Teachers' working conditions and status

The first sub-category contains issues pertaining to *wages and working conditions* (8 narratives)

"The administration is out of touch with us teachers. […] Our principal is always calling enthusiastically for new projects: "Come on, let's do another project." It's too much. Initiatives are really nice, but the homeroom teachers are more connected to school spirit than the teachers who teach specific subjects. We come to teach English, and all these lovely projects simply don't interest us, because we are barely surviving within the narrow niche of our subject and our tiny salary. I feel that thinking about projects is to be out of touch with the field and with the teachers' harsh feelings" (Roni, female, 35 years old, a high-school English teacher, 1 year and 8 months in school).

Roni claims that her working conditions do not allow her to take

part in her school principal's spirit of initiative and innovation. She describes her heavy workload and a sense of survival in her subject together with a salary that does not justify doing anything above and beyond what she already does at school. She feels that the administration is out of touch with the professional team's sentiments.

Some teachers claimed that their physical working conditions are inadequate.

"There are no [free] rooms at school. I don't have anywhere to conduct a conference with parents [in privacy]. There is no physical space to hold a meeting. It makes things very difficult and, in my opinion, it makes us look unprofessional" (Ran, male, 28 years old, a high-school English teacher, 7 months in school).

Many teachers emphasized the heavy workload that is placed on the shoulders of the novice teachers. For example:

"The amount of paperwork and pages that I print and save is simply insane, and the hours don't end when the students go home. I am still working after my children go to sleep. Part of this is because I'm a novice teacher. The others don't need to do so much preparation. I'm still not familiar with the textbooks, and I only received the textbooks a month after school started. The students received their textbooks before I did!" (Liora, female, 28 years old, a high-school math teacher, 7 months in school).

The second example presents a sub-category expressing aspects of *teachers' status* (2 narratives).

"I sense that other working mothers in my social circle perceive the teaching profession as a part-time job with a lot of vacations, a job that's lots of fun and easy to do. Nothing could be farther from reality. I don't work less than anyone else: in fact, I probably work more. If I'm with my husband it's even worse. People tell him: 'You're lucky your wife is at home,' or 'Your wife is home all summer." But it's not like that at all. In August there are meetings to prepare for the new school year, and my husband is forced to take time off work to be with our children. No one understands how much work I invest" (Neta, female, 27 years old, a high-school English teacher, 1 year and 4 months in school).

Neta claims that the people in her social circle perceive teachers as having a low status. She feels that teaching demands great investment and sacrifice, even on the part of her husband.

5. Discussion

Previous studies revealed various factors that contribute to teacher retention in schools applying theoretical models that focus on individual or conceptual aspects of novice teachers. This study went a step further by utilizing updated ecological models elicited from Bronfenbrenner's (1979) multi-dimensional ecological model that combines both individual and contextual aspects. The study was based on semi-structured interviews with novice teachers designed to examine their induction process during the first years of work in the school. The study attempted to identify the characteristics of the school ecological culture that explains teacher retention.

The research findings led to the emergence of a new model comprising different cultural dimensions. The most dominant of these were *organizational practices* and *peer communication,* followed by novice teachers' *individual characteristics, the community* and *teachers' working conditions and status.* These dimensions are expressed simultaneously as factors responsible for teacher retention. This model is supported by previous studies that underscore the importance of a multi-dimensional examination of all the contextual and individual factors involved in the retention of novice teachers in the schools (Mason & Matas, 2015; Schaefer et al., 2012).

The research findings yielded a unique model of ecological culture intended to explain the retention of novice teachers, which fills the gaps that exist in previous studies (Bronfenbrenner, 1979; Langille & Rodgers, 2010; McCormack et al., 2017; Sharma et al., 2019; White et al., 2013; Xiao et al., 2019). The ecological models appearing in these studies demonstrate hierarchic structure with several layers between the external and internal layers, and, as such, it is difficult to evaluate relationships that are far-removed from novice teachers. In addition, these models fails to show which dimensions stand out in comparison to others, which makes it difficult to apply the model. The model that emerged from this study simultaneously and measurably describes all the dimensions with which novice teachers interact on a daily basis. It also enables us to understand which dimensions are dominant in relation to others and to focus on them when developing and designing mentoring programs for novice teachers.

During the course of the research, several aspects recurred within the various dimensions. The most prominent of these was *mentoring and* support, which was perceived as the foundation for the induction and retention of novice teachers. Professional mentoring and support are provided, first and foremost, by the professional-subject team and by the mentor, with whom the teacher works on an almost daily basis. The mentor's necessity as a significant factor in teacher retention in the education system was found in previous studies (Buchanan et al., 2013). Our study, however, shows that many teachers receive, or at least expect to receive, guidance and mentoring from the school administration throughout the year too. Most of the teachers participating in our study described the processes of guidance and support they received from their professional team as satisfactory but felt that what they received from the school administration was minimal to unsatisfactory.

Another significant factor for teachers is *partnership and inclusion.* Teachers maintained that openness and the possibility of sharing their hardships as novice teachers were extremely important in their communication with their peers, the professional team, and the administration. They also needed to feel partners in the school processes, including making decisions pertaining to the anticipated changes and objectives they were expected to attain.

We will now present the various dimensions from the most to the least dominant.

Organizational practices *(equivalent to the organizational layer)—* The interviews with novice teachers revealed that the organizational layer found in previous studies is manifested by the school administration's practices when the relations formed between the administration and the novice teachers.

The first factor in this dimension is *vertical processes of mentoring and* support — i.e., processes initiated by the administration. Many teachers emphasized initiatives of the school principal such as an "open door" policy for novice teachers or dedicated WhatsApp groups for novice teachers in which the principal participated. However, in most cases the principal was rarely available, and many teachers therefore preferred to seek out their department heads or mentors. Nonetheless, the possibility of talking with the principal, even if only occasionally, generates a positive sense of support.

Another factor that was significant for retaining teachers in the school is *teacher guidance processes.* Many teachers felt they

received insufficient guidance before and during their induction into the school and received inadequate preparation to enable them to cope better with the demands of teaching. Many underscored a lack of pedagogical and didactical knowledge, teaching aids, unfamiliarity with school practices, and a lack of classroom management skills. This difficulty arose mainly among teachers who were assigned challenging classes or classes that integrated special-education students. These teachers felt that proper advance preparation could have prevented their great frustration.

Another factor that emerged within the dimension of *organizational practices* was *employment conditions that enable success.* This factor refers to employment conditions that *enable* the retention of teachers, such as assigning teachers to suitable classes, a fair allotment of teaching hours, compatibility between teachers' training and their class assignments, and addressing their needs. All interviewed teachers indicated that they had been assigned to difficult classes beyond their regular classes. The response to what teachers termed "jumping into the deep end" differs from one teacher to another. Some referred to this as a "baptism by fire" that helped them in the long term because they were forced to quickly comprehend how to cope independently and creatively. Others did not view this favorably, claiming that it is wrong to place new, inexperienced teachers in challenging classes, and that this places an additional burden on teachers who are already coping with the difficulties of adapting and surviving.

Another factor that helped the teachers is *autonomy for novice teachers.* Many teachers were satisfied with the degree of autonomy that the school affords them within their job framework. Previous studies revealed that autonomy contributes positively to teachers' function and enhanced their feelings of self-efficacy (Fernet, Guay, Senécal, & Austin, 2012). However, the teachers emphasized that autonomy which is not accompanied by guidance is not at all helpful. Freedom of action should be granted, but it is also essential to provide advance preparation, clear-cut objectives, and a working framework in which teachers can operate freely and receive help and solutions whenever necessary.

As noted above, *partnership and inclusion of novice teachers* were significant in their retention in the schools. The opportunity to participate in decision-making processes, to feel that there is someone who is coping with similar difficulties and someone who is attentive and attempting to apply their suggestions for efficiency instilled a sense of commitment and satisfaction with the school.

Communication with peers (*equivalent to the interpersonal layer*) − This dimension expresses the everyday contacts of novice teachers in the school. The interviews indicated that this dimension refers, for the most part, to connections between the teacher and his students, other teachers, and the professional team in their department. Two major factors for the retention of teachers emerged within this dimension: *relationships between teachers* and *horizontal mentoring and* support by the professional team or by fellow teachers such as homeroom teachers, coordinators of each grade, department heads, or school counselors.

Relationships between teachers in the school were cited repeatedly during the interviews as a factor that can lead to a sense of partnership, belonging, and support, on the one hand, and a sense of loneliness, particularly during the first two years in the school, on the other hand. However, a majority of the teachers emphasize that this loneliness dissipates after the first year or two, at the most. Principals in many schools have initiated unique social outlets for novice teachers such as WhatsApp groups or weekly group meetings to create a platform for sharing and venting their difficulties and solving problems.

Teachers described the *processes of mentoring and* support that they received during their induction process as constituting an extremely significant factor for them. A mentor, who was assigned to novice teachers in all the schools, accompanied them during their first steps in the school. Mentors often continued to accompany novice teachers for three or four more years. Many new teachers reported that were it not for their mentor, they would have experienced great difficulty, and their acclimatization would have been virtually impossible. These findings are supported by previous studies that indicate that the quality of mentoring and the availability of the professional team for accompanying and supporting novice teachers constitute significant factors in retaining them in the schools (Pogodzinski, 2015; Zhukova, 2018).

Individual aspects − This dimension expresses the teacher's individual aspects. The sub-categories that emerged at this level in the findings are the teacher's *personal traits, demographic characteristics, and perceptions.* Findings indicate that novice teachers whose schools succeeded in retaining them reported personal traits of innovation, assertiveness, a tendency to cooperate, upholding values, and withstanding pressure.

The demographic characteristics of age and place of residence appear to play a significant role in teacher retention. Younger teachers report that their young age enables them to cope better with burnout in the profession. It is important to note that previous studies reported that young teachers have a higher tendency to abandon the profession as compared to older ones (Attracting, developing and retaining effective teachers, 2004). In his article Ingersoll (2001) describes a U-shaped correlation between age and attrition in which young teachers drop out more frequently, those who remain are assimilated into the system, while a high dropout rate appears again among teachers approaching retirement. The major reason that young teachers leave is the existence of numerous occupational alternatives. The interviews indicate that there are fewer such alternatives available to teachers living in the periphery.

The community − Parents were the key factor in the school environment that affected the acclimatization of novice teachers. One of the issues that emerged during the course of the study was the difficulty in conducting sensitive discussions with parents, which necessitated consultation with other school functionaries. Teachers also cited community support as a positive factor during their induction period, and the additional resources of the local authorities, and community recognition as contributing to their retention.

Working conditions and teachers' status (*equivalent to the policy layer*) − One of the major issues discussed was wages and working conditions. Many teachers complained that their salaries fail to sufficiently compensate them for their numerous difficulties such as heavy workloads, coping independently, lack of solutions on the part of the administration, and dealing constantly with discipline problems. In addition, teachers emphasized that their public status has declined, whereas, in contrast, they perceive teaching and their job as being highly significant.

6. Summary, research limitations, and recommendations for research and implementation

The high attrition rate of novice teachers is a cause for concern in many countries, including Israel. Numerous studies have attempted to identify the major factors responsible for the retention and attrition of novice teachers, with the objective of aiding the development of mentoring programs and implementing practices that will retain novice teachers in the schools. However, attempts to reduce the phenomenon have not been successful. One of the reasons for this, in our estimation, is that the various factors that contribute to teacher retention in schools have been examined from a much too narrow perspective rather than multi-dimensionally. This study employed a model of ecological culture

for the retention of teachers, which succeeded, for the first time, in identifying an extremely wide array of individual and contextual characteristics simultaneously, that may explain the retention of novice teachers in schools.

Interviews conducted in this study with novice teachers reveal that teachers' day-to-day perseverance clearly depends on the teachers themselves, their personality and characteristics. But it is also greatly influenced by numerous external factors such as coping in the classroom, relations with peers and the school administration, relationships with parents, and teachers' perception of their status and conditions of employment.

We realize that the factors associated with teacher retention in the school derive from the teacher's inner world and his working environment and that these are intertwined. Therefore, a multi-dimensional assessment and implementation of an ecological approach is essential for identifying the variety of factors for the retention of novice teachers. The findings of this study may help in the development of mentoring programs designed for the retention of quality novice teachers in the schools by placing an emphasis on the dimensions that emerged from this study.

This study has two main limitations. Firstly, one cannot generalize its findings in relation to all novice teachers and schools, since every teacher and every school feature different characteristics. Secondly, the teachers who were interviewed in the framework of this study were all actively employed in the education system at the time, while teachers who had left their schools were not interviewed. Consequently, the study dealt with teacher retention and not with attrition — for which the factors responsible may be completely different.

In light of the above, it is important to conduct further research to simultaneously examine the factors responsible for attrition and retention so as to gain a more comprehensive picture and to conduct a comparison between attrition and retention factors. In addition, we feel that it is essential to perform a quantitative assessment of the findings presented in this study to ascertain whether these factors indeed exist among the novice teacher population.

We propose that programs for training and development of novice teachers focus on the dimensions that emerged from this study and provide a comprehensive response as exemplified by the multi-dimensional model. It is essential that programs for professional development of novice teachers place an emphasis on creating a climate of partnership between teachers, the importance of guidance and mentoring processes and the needs of novice teachers including classroom management, time management, and communication with parents. Training programs for mentors must emphasize not only the pedagogical aspect, but teachers' emotional needs, personal traits, and the socialization process they undergo in the school while encouraging direct communication between novice teachers and the various echelons of school leadership. Finally, we recommend adapting teachers' evaluation and development programs to address the needs that emerged from this study. Teachers must have capabilities, not only in translating pedagogical knowledge, but mainly — and above all else — to know how to conduct themselves within the school system. They must be acquainted with school officials and the potential for their personal and professional development, and demand to receive guidance, resources, assistance, and feedback from their peers, mentors, and school administration.

Funding

Appendix 1. Examples of interview questions

Individual aspects

- Where are you from? What is your marital status? What are your professional qualifications?
- What makes you satisfied at school? What are the main difficulties facing a new teacher?
- What are the main reasons for your decision to leave teaching/continue teaching? Which aspects of your work provided feelings of satisfaction, and which aspects provided you with feelings of dissatisfaction?
- What are your strengths and weaknesses?
- As a result of your first teaching experience, did you learn new things about yourself that you didn't know in the context of your suitability for teaching? Please explain.

Interpersonal aspects

- Was a mentor assigned to you in your first year of teaching in the school? Was his/her instruction effective?
  Do you feel support and encouragement from the teaching staff in your work environment? Please explain.

Organizational aspects

- To what extent did you receive personal support and assistance from the principal/superintendent/school administration during your first years of teaching? Please explain.
- Did the school principal assign you easier classes when you began your work?

Community aspects

- Do the students' parents express toward you consideration and support as a new teacher? Please explain.
- What do you think about the school's community? Can you say it supportive or unsupportive; in what way?

Policy aspects

- How have the recent reforms helped or made difficult to retain a new teacher in school? Please explain.
- What do you think about the guidelines the school receives from the Ministry of Education? Are there any guidelines or policies that contribute to or make it difficult for novice teachers?
- What do you think about the status of teachers in the public eye?

Additional aspects

- Are there any more aspects that relate to your perceptions when considering novice teachers' retention?

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