

Chronotope, Ecology, and Eco-system in the Narrative of Teacher Education

This study explores the education narrative that has developed during one year in a clinical model of a teacher education program - academia class program. The study aims to describe the nature of the education process by monitoring the chronotope according to the narrative model conceived by Bakhtin, as well as assessing the references and contexts encompassed in a multi-voice narrative – in an ecological prospective. The findings indicate four different narratives that occur within one framework narrative. The analysis of findings according to the eco-system principles have resulted in the consolidation of a 5C type ecological model: context, continuity, characteristics, change, and coherence. The narrative model and the ecological model proposed in this study enhance the understanding of the nature of the education process, and offer rethinking the way policymakers shape the dimensions of time and space in teacher education, and their price in relation to processes of this kind.

Keywords: Teacher education, chronotope, ecological prospective

Acronyms:

PST- a pre-service teacher (PSTs in plural)

CT – a collaborating teacher (mentors the pre-service teacher during practicum) (CTs in plural)

TE – a teacher educator (supervises clinical practicum at school and at the college)

AC – Academy Class, a clinical model that was launched by the Ministry of Education

HEI – Higher Education Institution (HEIs in plural)

ITE – Initial Teacher Education

Introduction

In the last decade, alternative pathways of teacher education have proliferated. The growing number of alternative teacher education programs raises concern regarding the content and pedagogies that alternative programs include (Cochran-Smith & Villegas, 2016; De Marrais & Suggs, 2011; Zeichner & Sandoval, 2013).

In this study we focused on one pathway of teacher education and looked at the core components of a narrative within initial teacher education (ITE) through the concept of chronotope suggested by Bakhtin (Steinby, 2013). The aim was to identify reciprocal linkages between time – chronos - and place – topos - in the narratives of those involved in a specific teacher education program, and through the concept of the eco-system in order to look at linkages between the narratives. There is no time that is disconnected from place, and there is no place that does not comprise time.

In order to understand the global narrative of teacher education in this in-depth context, we have to consider that, on the one hand, we examine the education narrative in one field of view and one time, and on the other hand, different clocks and different spaces are ticking simultaneously in every narrative.

Comprehension of this type is similar and is different at the same time from the attempt to describe the broader narrative of teacher education through the ecological prism. It is similar since it deals with the synergy between time and place, and is different because it elaborates the existence of different narratives. The question is what is the nature of the chronotope in the teacher education narrative, i.e., in relation to synergy processes between the wide narrational context with reference to time and place, as well as which clocks are ticking in this space. That is, which narratives and which synergies exist between the different narratives. Hence, the literature review aims to indicate several properties in this context. The first is reference to synergy between the different narratives, and the second is reference to the dimension of time and space. The third property is references and links between time and place, and the fourth is the attempt to examine the entire link setup of the context and of all the narratives – the intra by means of the eco-system model in teacher education process.

The Teacher Education Narrative and the Issue of Synergy

Ecology is a core concept in life sciences. In social sciences, a symbolic and semantic meaning is attributed to *ecology*. Bronfenbrenner, (1979, 1994) focused on people and particularly on children’s development from an ecological perspective, emphasizing the interplay between people, society and the environment. Even the metaphor of *rhizome*, developed by the philosopher Deleuze, that characterizes the postmodern and post structural thinking, does not replace the ecological conception and, simply put, is also complexity centered. In any event, an ecological developmental perspective in teacher education places PSTs at the center of a process in which many partners, events, and situations shape their identity as future teachers. The big question is what kind of practical models are derived from the former theoretical approach. Cochran-Smith and Villegas (2016), in their meta-analysis of research in the field of teacher education for more than a decade, shed light on the unforeseen and the unique teacher education ecology. They produced a call for renegotiating the established teacher education practices/programs by understanding the rich potential of the synergy between all participants in the education field. As a baseline for this insight, the literature (Cochran-Smith & Villegas, 2016) offers a rich repertoire of processes involving cognitive understanding, interwoven with social or relational dimensions or contexts, shaping new experiential connections that are constitutive to learning. Despite the existence of ecological perceptions in the processes of teacher education, their application raises the question: Are teacher education programs, based on an ecological eco-systemic approach, a state of the art or wishful thinking?

Teacher education in the United States has been conceptualized as a national matter of policy (Cochran Smith, 2004), and as a top-down policy process of policy makers (Datnow & Park, 2009). Hence, in a traditional hierarchical model, policy makers would expect the position holders in the field, such as higher education institutions (HEIs) and colleges, principals, teachers and PSTs to

implement the policies (Bell et al., 2018). In the US, teacher education programs vary, may define different goals and perspectives, and state policies change (Bell & Youngs, 2011; Cochran-Smith & Zeichner, 2005). Institutions of higher education that implement state policies regarding teacher education and certification, may design their own interpretations to state policies. Administrators rely on social human capital for the assimilation of policies, ask colleagues to serve on committees, try new curricula, and generate changes or reforms (Spillane et al., 2003).

Time and Space in the Chronotope of Teacher Education

The issue of time and space in teacher education is associated with the way the education process is perceived: is it an instrumental way, namely a list of contents and basic skills that should be inculcated to PSTs, or an identity-shaping process, namely a process of clarifying a holistic identity and establishing relationships between self-identity and professional identity. Thus, the issue of time has first of all a realistic meaning from the viewpoint of scope of education and reflection processes, continuity and delay being supported by the proposed scope. Perceptions of professional identity structuring, obviously require availability and long education period, in which there is room for a reflective examination of the meaning of contents and processes, creating synergies between the narratives of various partners to the process (Korthagen, 2014).

One of the pathways to teacher education offers "a quick route" that integrates theory and practice over a short period of time, lasting from a few weeks to one year (Cochran-Smith & Villegas, 2016). Such programs are privileged and funded by policy makers, yet there is no sufficient evidence for their superiority over traditional teacher education programs. An analysis of studies indicated that alternative education programs contributed to an increase in the diversity of PSTs (Cochran-Smith & Villegas, 2016; De Marrais & Suggs, 2011; Zeichner & Sandoval, 2013).

The advantages and disadvantages of quick programs in teacher education, related to dimensions of time and space, are important in the professional identity consolidation of teachers who are also agents of norms and values. The value-oriented discourse in teacher education constitutes a need and demand for thinking what is the right and worthy way of doing it. For example, the demand to train home-class teachers who have a critical and inquisitive way of thinking (Cross et al., 2018).

At the age of accountability, TEs teach PSTs standards and high-stakes testing (Cross et al., 2018). Teacher-educators reluctantly adhere to neoliberal policies (Harvey, 2005). They would rather focus on teacher identity. They are forced to navigate between the world of neoliberal accountability pressures and the world with justice, equity, diversity, and socio-cultural contexts of teaching (Cross et al., 2018). The question of the time dedicated to teacher education is tightly linked to the question of space where processes take place. Moreover, developments in teacher education, such as the increase of more school-based

approaches, require rethinking of "space" and the linkages they suggest between theory and practice.

In recent years, we have witnessed shift within ITE (initial teacher education) from the university-based optimal space for teacher education, to the school-based space (Mattsson et al., 2011; Zeichner, 2010). One example for this shift is the School Direct policy in England, where schools have assumed most of the responsibility for teacher education. Conversely, in Ireland, teacher education is university based, and PSTs place themselves at schools of their choice and are supervised by university lecturers. The notion of space is controversial, and it is suggested that the optimal teacher education space should be research-rich organizational culture of both schools and colleges of education (BERA, 2015).

As previously noted, a synergy exists between time and space (Steinby, 2013). There is no time disconnected from space and no space without time. Consequently, the optimal space in which teacher education should take place merits consideration.

References and links between time and place

One of the references between time and place enhances the question about the nature of knowledge and its positioning during the education process. This gives rise to questions associated with the depth of disciplinary knowledge, pedagogical knowledge, values, and social perceptions. For example, content knowledge (mainly of the discipline) is viewed as one component in teacher education, and the major contribution of schools or field placement in teacher education is in providing the conditions for the development of integrated teaching practices. University-based teacher education, prevalent in various western countries, is criticized for its over-emphasis of the discipline in relation to social views and its failure to satisfy the needs of schools in impoverished areas.

In any event, there is an ongoing interest of policy makers in education and researchers in placement and in ongoing improvement of teacher education programs, as well as in bridging the gap between the academic discipline taught in college programs and the practical aspects of teaching that are practiced in schools (Darling-Hammond, 2010; Phompun et al., 2013). It has been suggested to create links between colleges and schools in such respect, e.g., clinical teacher education (Burn & Mutton, 2015), and creating a third space (Zeichner, 2010). This is an alternative model to the existing implementation model, in which colleges present hegemony over knowledge, and schools are perceived as fields for practicing knowledge obtained in colleges (Zeichner, 2010). The implementation model is a top-down model, where information flows in one direction – from the academia to the field. The model of third space, on the other hand, stems from hybridity theory that implies crossbreeding of two entities to form a third 'hybrid' space. The third space may serve as a transformative setting, which is less hierarchical in nature. Thus, it encourages working more closely together and creating knowledge collaboratively, designing, developing and delivering teacher education with

jointly shared understanding and vision rather than working in parallel (Jackson & Burch, 2019). 1
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There are reports of attempts to put the notion of third space into practice in placement settings. One of these attempts (Heggen et al., 2018) shed light on the way different players in placement schools identify their schools as part of teacher education and the conditions for schools to be professional learning communities. A successful attempt to create a hybrid space between course work and field placements, involved mediated field experience of mathematics PSTs (Horn & Campbell, 2015). A reorganization of roles and ways of participating created new activities and outcomes that culminated in a third space. The following principles were implemented: a. complexity – PSTs experienced the complexity in teaching; b. collegiality; c. focusing on students’ learning over time in a process that integrated learning and instruction and contributed to pedagogical judgment; and d. transparency, which was practiced by in-service teachers and college lecturers who worked collaboratively in order to foster pedagogical judgment. In fact, a large part of the principles of this model indicated the need for viewing the education process through an ecological prism that emphasized eco-system properties. 3
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Eco-system in Teacher Education

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The attempt to create an inter- and intra-synergy exists in the eco-system model of teacher education. Eco-system is an essential facet of the ecological approach. It is relevant to this study, since orientations, perceptions, and practices are linked to one another in ecological system, enabling us to study the relationships between them by means of ecological principles (Heikkinen, 2020). The education system is a multilayered system of networks that are augmented and nested in one another, are inter-dependent, and at the same time, allow for variability and difference within the system. When the ecological principles are applied to the education system (Bronfenbrenner, 1979), one can see that teacher education is set down in a complex system of education, pre-service, novice in-service, educational policy. and administration. They are embedded in assessment and accountability in education, as well as in research. The practices of PSTs teacher training, for example, are augmented within the practices of teacher education and teachers’ professional development, embedded in education and educational policy. Such practices might affect external or secondary practices. 23
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It appears that although the literature points to the potential in putting hybrid, ecological notions into practice, authentic data relating to implementation are meager. Hence, this study focuses on a clinical teacher education program, on stakeholders and on addressees of this program, namely policy makers, principals and CTs, position holders in the academia and PSTs. This study describes the narrative of education in an Academy Class model from the perspective of all the partners, based on the narrational model conceived by Bakhtin (Steinby, 2013) that focuses on time and place. Furthermore, this study assesses the quality of 38
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processes that transpire in the education narrative by means of the eco-system principles, with reference to the model of Heikkinen (2020).

Methodology

Research context

The Academy Class program is based on the rationale of a clinical model in ITE and the partnership between schools and colleges aimed at teacher education that was practiced in professional development schools (PDS model). The clinical model involves a process of inquiry, reflection, and meaning making of students' specific needs (Burn & Mutton, 2015). In the partnership model between schools and teacher education colleges all stakeholders revise their plans, frameworks, and practices for the purpose of achieving a better teacher education, improved teaching practices for the benefit of students, and professional development of teachers. The context included clinical experiences in teaching in schools (Haselkorn & Hammerness, 2008), as well as promoting collaborations between all stakeholders involved in teacher education (MOFET Institute, 2021).

Method

This study is a qualitative phenomenological in form, in which the phenomenon of a clinical teacher education program is explored from the perspective of all the players who act in the examined phenomena (Denzin & Lincoln, 2018). Adopting a phenomenological approach supports the notion of this study as it enables us to uncover the unique chronotopes of all the players from their perspective. Identifying the multi-perspectives of the players may assist in shedding light on the synergy process which subsists in the program as an eco-system.

Participants

In compliance with the explored phenomena, four groups of participants took part in this study (N=101): 81 PSTs, six collaborating teachers, five principals, and nine teacher-educators. Below is the description of the participants' characteristics.

PSTs

The qualitative study included five schools in which were placed 80 second-career pre-service teacher candidates who were also enrolled in an M.Teach program at a teacher education college in Israel were placed. Career changers present unique qualities as PSTs, such as experience in various fields, knowledge of disciplines acquired in previous studies, and attitudes and beliefs that are associated with maturity (Bar-Tal et al., 2020). The motivation for career change

was a combination of economic factors, such as career stability and salary, and personal social factors, such as the wish to transmit one's values to the next generation (Alharbi, 2020). Previous careers were beneficial, especially in managing chaotic social situations.

Most of the PSTs still worked part-time in their former occupations and dedicated two days a week for practicum in teaching and for courses at the college. Most of them were raising families, had financial liabilities, and wished to learn and develop academically and professionally. Due to the circumstances described above, most of them had limited time resources. School placement was done according to the partnerships the college had created previously with schools and was mostly at the center of Israel, in the vicinity of the college. This meant that some PSTs had to travel long distances in order to reach placements and the college in order to attend courses.

Collaborating teachers

Collaborating teachers were mostly chosen by the principal or by a TE with whom the CTs had previously worked. A meeting with the TE and the CT was scheduled and goals and expectations were determined. Most CTs were experienced teachers, and some were school subject coordinators or held a position in the school management team. Due to their additional roles at school, for most of them time resources were limited.

Principals and School Coordinators

In most cases, the principals were experienced and were in previous partnerships with the teacher education college. They were, therefore, informed of the new clinical teacher education program – Academy Class - and expressed a wish to take part in it. They were involved in choosing the school coordinator who acted as the link between the school and the college and was involved in the choice of the CTs. The principals and school coordinators attended meetings that were held in school with CTs, PSTs, and TEs several times per year, in order to reflect and assess placement and cope with challenging situations.

Teacher-educators

Teacher-educators were experienced in broadening disciplinary and pedagogical knowledge of PSTs, and in transmitting the college and the Ministry of Education's educational policies. Most TEs were previously teachers in the school system, and a few of them kept their teaching positions in high schools when they assumed the position of a teacher-educator. Traditionally, TEs perceived themselves as committed to PSTs, the shaping of their teacher identity, education, and preparation to their role as novice teachers. Some had previous experience with college-school partnerships. Thus, they understood the extension of their role from teaching PSTs to leading processes of professional development, in which all stakeholders including PSTs were involved.

Data Collection, Analysis and Ethics

Three main instruments were applied for the data collection. Semi-structured interviews were conducted with the principals and the CTs. The interviews included question such as "please describe your experience with PSTs", "could you point to benefits and/or challenges in placement or in the AC clinical program? Focus groups were organized with the PSTs, focusing on their experiences in placement, challenges and gains, while the teacher-educators were asked to write a reflection about their perceptions of the AC clinical program in a free manner.

Thus, the corpus included transcriptions of meetings with large groups of PSTs in four focus groups at the college, conducted at different times; written reflections of TEs; interviews with five principals and six CTs. The interviewees were chosen based on personal communication, they lasted about half an hour each, and were transcribed. All documents obtained through the above-mentioned research instruments were content analyzed (Creswell, 2013).

All the participants agreed to participate and could withdraw from the research at any stage. Their anonymity was ensured. Moreover, this study was formally approved by the College Institutional Ethics Committee (certificate no. 2022092901).

Findings

The research findings indicate that, side-by-side with the realistic chronotope, according to which all the research participants shared dimensions of time and space in the capacity of "co-being of being", there were realistic and symbolic chronotopes unique to each of the participant groups. Obviously in each group there were sub-groups and unique narratives. However, we focused on understanding the chronotope of the PSTs, TEs, CTs, and principals as examined groups.

The Chronotope of PSTs – "Learning by doing"

The main dimension of time that has been preoccupying the PSTs is the near future – the teacher I am going to become. Thus, we can understand their expectations for an emphasis on the practical know-how, as well as comprehend the high positioning of the class space compared to the academic space. Time spaces of the presence and place-academia spaces are included in the narrative as supporting role players.

PSTs wished to acquire pedagogical practical know-how by experiential learning through teaching, and by learning from an expert - the CT: *"I'd like to learn the material I have to teach by observing the experienced teacher teaching it first, and then I want to teach, as much as possible. I didn't come here to be a babysitter, or to assist individual students"* (M, a PST). PSTs asked the

collaborating teacher questions in order to acquire practical know-how as reported by a CT: *"a PST observes, provides comments, asks questions: How did you do it? How did you shift from that exercise?"* (M, a CT).

PSTs viewed collaborations between PSTs and the CT as most essential in the eco-system of placement, since it was a building block in their future identity as professional teachers who are team members in the school space: *"collaborative planning, planning a lesson together, my idea, her idea, we discuss it, construct it. A teacher thinks alone, there is nobody to help me. Nobody. Thinking together helps teamwork"* (K, a PST).

From the PSTs' point of view, school placement was an optimal arena to reduce anxieties pertaining to their second career. The school provided multiple opportunities for learning and facing challenges that would prepare them for managing better the complexity of teaching in the following year. In order to better handle the challenges of the teaching career, PSTs immersed themselves in school activities: *"I expected to take part in everything, to become an integral part of the staff, yet I only get to teach when the pedagogical advisor from the college gets to school to observe me teach"* (M, a PST).

Conversely, another PST stated that the school placement served her wish to be better prepared for her teaching role in the following year. The eco system within the school provided the conditions for ongoing relationships among position holders; i.e., the CT, the staff, and the opportunity to be treated as a staff member, as an equal partner in a school ecology: *"The CT is great. I'm invited to meetings with parents, teach regularly, parents call me, a warm welcome at school, I feel like a staff member, involved. There is education for entering teaching in school"* (O, a PST). The meaningfulness of place and time-future for PSTs was validated by a CT: *I think she's deeply into it, high gear, her level of ethics is something I haven't seen before, constantly wishing to learn more"* (N, a CT).

The PSTs viewed the college on a lower status, compared to school placement, yet managed to integrate reflective tools, acquired at the college, with practicum: *"I learned the reflection tool in the pedagogical course at the college and had to submit lesson plans and reflections for a grade, but then I found out that I keep using the reflection tool following my lessons. It is an integral part of my teaching"* (S, a PST). One can witness the development of teachers' identity as a reflective practitioner through the integration she had made of the two spaces involved in teacher education.

When PSTs were placed in a JH rather than in a HS, they felt that placement was inappropriate for their future needs. Since they designated themselves as HS teachers, placement should have served that purpose on a one-to-one basis, and there was no room for learning in another context: *"It upsets me to practice teaching in a JH rather than in HS. We are supposed to teach in HS"* (B, a PST). The PST presented a solid identity of a high school teacher and showed no flexibility regarding the context of education. Even in cases when the placement matched the PSTs' expectations, they expressed a need for a variety of role models and contexts for practicum that would prepare them for diverse future learning and

instruction contexts: “*Why should we stick to the same CT for a whole year? I’d like to accompany another one in the middle of the school year*” (S, a PST).

The Chronotope of CTs – Here and now

While the PSTs’ narrative was mainly situated in the near future the CTs’ narrative was mostly rooted in the present and in the school space. CTs expressed a need for sharing the workload, and for novelty in pedagogy, both related to the school context. The partnership with the PSTs was perceived both technically as a helping hand, and professionally as an opportunity to learn and try out new pedagogies, as a CT attested: “*Perhaps differentiated instruction, I do something differently, I use it as a resource for groups. Exploiting resources is most meaningful. What I do in a lesson when she is there (the PST). Her plan of thinking is different. Less frontal. We work in groups, she takes one and I take another*” (H, a CT). Another CT added that the benefit for students during small group sessions provided added value in the school ecology by catering to the students’ specific needs: “*The partani (small group session) receives additional support*” (Y, a CT).

A CT described the PSTs’ extent of involvement and valued the partnership with the PST: “*Complete partnership in everything, talks with parents, parent teacher meetings, organizing the class for learning. It’s a win-win situation for both parties*” (F, a CT).

The CT saw personal benefits in the partnership with PSTs. She described the mutual professional development of the PST and herself, and the ripples in the classroom: “*I am supposed to lift myself. Someone is looking at me, sees me, it if for my benefit.*” (H, a CT). Transformations in practices that are internal within the classroom were brought about by PSTs through their fresh ideas, online classes, and ICT: “*She has taught an online class. It was a nice idea, another way of thinking, an idea I haven’t thought of. It brings about a somewhat new spirit*” (H, a CT). The CT attributed her relationships with the PST to her personal growth: “*It makes me grow. It stretches me to the places I have to stretch her. It makes me rethink my practices, someone to think with, shift from my place and make my most*” (H, a CT). The personal benefits to the CT were reflected in acquiring new skills: “*A PST taught me the Power Point skill. I asked her to help me teach the skill to students and she agreed*” (I, a CT). Learning from the PSTs was validated by the PST’s report: “*V (a CT) says she learns from me, also from comments. She suddenly sees things she has not thought of or forgot*” (K, a PST).

Another evidence for their views of the present – here and now – was reflected by the CTs’ engagement in the issue of their status. CTs were concerned with their status in the school where they worked and with the compensation for their position as CTs. CTs who assumed the responsibility for tutoring PSTs and collaborating with the TEs from the college, were financially rewarded much more than teachers who were not enrolled in the Academy Class Program and tutored PSTs once a week. The topic of the increased reward status among teaching staff was often brought up: “*The bottom line is that with teachers a lot has to do with*

the financial aspect. When it comes to that it is not a good place" (M, a school coordinator).

The Chronotope of Principals – Future Workforce

The principals have a wide and systemic picture of the school they manage, rather than that of the education program. Regarding the education program, their narrative mainly encompasses the school space and the dimension of time in the future. In their picture of the future, the clinical process of practicum serves as a response to the school needs: finding good teachers in the various disciplines and convince them to join the teaching staff.

Principals and school coordinators who mediate school placement are educationists and those who lead school management teams. They represent the ethos of the school as well as standard educational goals that are issued by the Ministry of Education. In recent years principals have received a greater amount of freedom in the choice of new teachers. One of the preset goals of principals upon entrance into the Academy Class program and placement is professional development for all teachers by creating conditions for pre-service teachers to practice teaching, integrate into the school staff, and become teachers in that school where they were placed for practicum. The fulfillment of such a plan would maintain the continuum of professional development that should benefit the teachers as well as the students. At the end of practicum schools regularly hire one or two PSTs.

The motivation of the school coordinator (deputy-principal) to join the program and train PSTs is to acquire knowledge through the practicum of PSTs, improve school pedagogies, offer benefits to students in a specific class, and promote the professional development of all teachers at school:

"They bring a lot of know-how with them and a variety of methods that can promote school pedagogy, promote a specific class, see points that the homeroom teacher sometimes overlooks. A collaboration creates a higher-level discourse between teachers and PSTs when one provides feedback to a lesson, a certain terminology is spoken. This brings about a higher level of awareness among all" (M, school coordinator).

The school coordinator adds: *"We have incorporated ICT, games they (PSTs) bring, there are a lot of innovations, including the curriculum. They (PSTs) have opinions that also help" (M, school coordinator).*

Another school coordinator lists the benefits to the school due to placement of PSTs: *"assistance, the technological aspect, music, creation, it is a cultivating reciprocal collaboration that yields results" (YA, a school coordinator).*

It appears that from the coordinator's perspective, the major motive for training PSTs is the benefit for the students in the school: *"with the help of a PST I can reach, if not all, more than I could possibly reach, socially and learning wise" (H, a school coordinator).*

The staff can learn from PSTs, as the school coordinator states: *"Our teachers can learn from PSTs. They can learn from them. There are new tools. There are*

new things constantly. They can learn how to create learning centers" (A, a school coordinator). The principal would like to bring about changes in school, new opportunities for staff learning: *"Rotation is required, mobility of PSTs among CTs for the purpose of breaking the imitation model and creating opportunities for reciprocal learning"* (T, a principal).

Moreover, principals express a wish to tighten the link between the school and the college through the mediator between the school and the college – the TE. The principal expresses her motivation and prospects for the CTs: *"I would like to say something about the academia, I think that the TE is the central figure, the connecting link between the academia and the field in this context, and I think that the process of development of the CT as TE is correct"* (Y, a principal).

The school coordinator would like to see the contribution of the TE to the CTs, so that the TE would function as a scaffold for school improvement at present: *"There is a problem of partnership with the academia. I don't see that their involvement is as it should be. They are not involved. The TE comes once a month. There should be significance with CTs. One must sit with them and with the PSTs, put everything on the table, what needs to be done, what to improve"* (A, a coordinator).

The principal sees PSTs as a resource in school, part of a team in the aspect of individualized instruction and catering to the needs of all students: *"I want a resource, want differentiated instruction"* (R, a principal), and another principal lists the benefits of PSTs to the school: *"the school benefits a lot, another teacher in class, individual and group response"* (G, a principal).

The principle of continuity in teacher professional development (Barak-Orland & Wang, 2020) is a component in principals' view of future needs: *"She (a CT) is teamed with PSTs, when there is no chance that they will stay here, because one lives in Netanya and another in Karkur, and another elsewhere, so you invest and count on them staying, and eventually they don't stay, so what have we done it for?"* (R, a principal). The principal is disappointed when PSTs do not pursue their career at the school where they have been placed, since there is no future benefit to the school from PSTs who will not join the staff in that school.

The Chronotope of Teacher-educators – Integration-oriented

Teacher educators move through times and spaces and attempt at creating a synergy between time and space. The TEs are aware of learning processes whereby knowledge of the past and the PSTs' intuitive concepts undergo a renewed structuring through a dialog with the scientific concepts. TEs understand the importance of academic-theoretical knowledge, especially when intertwined with practical know-how, and aim to integrate the types of knowledge.

One of the TEs had a vision, a pre-set goal to make a change in the curriculum through her work with PSTs and the CTs: *"My goal in teacher education has always been to create a change in teaching Bible, turn instruction into meaningful instruction, interesting, challenging, make students want to learn and PSTs want to teach, and mainly influence the instruction of school teachers"* (G, a TE).

The TE further described the impact of her work on teachers and students, and the expansion of the cycle of TEs' responsibility for PSTs: *"The CTs were happy because they witnessed how students participated in class, even students who were not heard during lessons previously. This is the beginning of convincing teachers to change instruction"* (G, a TE).

The TE perceives herself as a scaffold for professional development of herself, the CT and the PST: *"We meet mainly for feedback sessions, and only during those sessions does shared learning of all of us (TE, CTs and PSTs) occur. I think the problem lies not in the clinical model of AC, but in the absence of preplanning (Z, teacher-educator).*

The TE relates to the disciplinary benefits of the AC clinical model to the CT: *"There is no conceptual reasoning and no mathematical discourse in CTs' lessons"* (B, teacher-educator). The TE means that through the partnership with the TE conceptualization is added in Math lessons. Though the aim of TEs is to create a high level of classroom discourse in Math lessons the implementation of it is rare due to technical obstacles. When the TE discusses lessons and points to opportunities for changes in classroom discourse the CT teaches lessons according to the school timetable and the PSTs benefit from the academic discussion with the TE in the absence of the CT. The outcome of such situations is that professional development does not reach CTs and the TE benefits PSTs only – thus preserving a traditional model of teacher education. A TE who goes from one school to another in order to observe PSTs rather than joining a group of PSTs in one school, made it impossible to lead ongoing learning of CTs and PSTs in one school:

It appears that the planning of creating a professional learning community and sharing knowledge of all stakeholders is missed. Overall I feel that my resource is scattered and spent, because when I get to school in the worst case, I will observe a PST and have a chat with the CT, and in the best case I will be able to sit with both of them for one hour. Additional PSTs in another school do not have the opportunity to join us, observe and take part in the feedback, and are excluded from constructing disciplinary and pedagogical knowledge following the discussion of issues that were raised in the lesson we observed (D, a TE).

PSTs and CTs also perceived the TE as a scaffold for professional development, yet her visits to the school were less than expected: "*The teacher-educator does not come often*" (I, a CT), "*we are a little disconnected from the academia. A TE hardly comes to school*" (M, a PST).

Discussion

The art of teaching is a process of managing complexities through the individual, group, culture, and system. The process of teacher education in the Academy Class clinical model gives rise to the multi-voice education narrative leading to the question: What is the meaning of many chronotopes in one narrative? As mentioned above, one goal of effective teacher education is the creation of synergy between all the partners to the process in a way that stimulates and nurtures a complex, deep, and informed thinking (Cochran-Smith & Villegas, 2016).

Is this the case of our narrative? We can examine it by the eco-system model (Capra, 2005; Heikkinen, 2020; Kemmis & Mutton, 2012). We have processed this model for the purpose of this study and for the obtained picture of the findings, and built an interpretive model based on 5Cs:

1. Context – reference to wide and focused contexts, related to principles of networks and inter-dependency.
2. Continuity – refers to movement and development and relates to principles of development by stages and circles.
3. Characteristics – refers to the characteristics of the action that transpires in the eco-system and is related to principles of nested systems, differentiation, and variety.
4. Change – refers to the result of the complex activity that transpires in the eco-system and is related to the principles of transitions, transformations, flow, and resilience.
5. Coherence – refers to the principles of affinities and relations in the picture, related to an organizing axis. In our context, the organizing axis is teachers' identity.

Context - The narrational model, conceived by Bakhtin (Steinby, 2013), enabled us to examine perceptions of time and space among the different partners through an in-depth hermeneutic reading that clarifies the context, a hermeneutic process that creates a reconstruction of the context. In our narrative the context refers to times of past, presence, and future, but also to wide and general time axes, e.g., the historical time axis of teacher education process and the understandings accumulated in this axis. These understandings raise questions, such as: What is the scope of an appropriate education? What teacher education could serve academicians in a second career pathway in the best way? Another time axis is the common narrative of the local education process, exemplified in this study by an

education year in an Academy-Class model. An additional time axis is that of each partners' group, as well as of every individual in the group.

The question is how we, as interpreters of this or that narrative, perceive the linkages between all the points of time? This study showed that a broad view of context did not appear in all the narratives. Rather, it was most prominent among teacher-educators. As representatives of the academia, they function by virtue of a policy that defines the duration of the education. At the same time, they constantly try connecting all the time and space axes and create the third space that links all of them. Yet, conditions for third space have not been met. Academic requirements are not yet synchronized with "field dynamics", and the connection between theories and practices, which create new knowledge (Phompun et al., 2013) is yet to be established.

Continuity – Assessing the third space synergy as having low intensity in our context was due to partners' insufficient cited evidence for understanding the nature and meaning of a common space that created the “Co-being of being”.

This gives rise to the question of the way by which inter-related spaces can be structured. This concerns continuous processes that lead to development by stages and draw a line of continuity, unlike interrupted and one-time processes. This principle of continuity emerged as a need in all the chronotopes. The interesting finding is the gap between awareness of the importance of continuous and consistent processes and its implementation in practice. All the partners to the process expressed this need, The PSTs wanted to see tighter links between theoretical knowledge and practical know-how in the field, and the teacher-educators appreciated the meetings with the in-service teachers, as did the principals. However, it is clear this process requires time and space.

Characteristics – What creates the difficulty in evoking processes of deep continuity? We face an additional principle of eco-system that deals with characteristics of every sub-narrative in the broader narrative. Our interpretive reading in the different chronotopes is associated with the points of view. For example, in narrational literary research it is clear that a research lens, manifested by the research question, defines broad characteristics of the narrative. In the language of the narrational model, a chronotope is the entirety of options for the occurrence of certain cases, doing certain acts, and experiencing certain events. All these together weave a plot. The large characteristics that we found here, referred later to space and time, as well as to the different motivations that simultaneously affected and were affected by time and space.

School placement for the purpose of professional development of pre-service and in-service teachers, provided the opportunity to identify motives and underlying perceptions of participants in the program. It provided a learning environment for exploring questions such as: Who decides? What are the interests of the academic institution? What are the interests of the school to take part in the program? What does the academic institution wish to give and receive? What does the school wish to give and receive? Are conditions for hybridity fulfilled?

Change – The three Cs described – context, continuity, and characteristics – elaborated questions associated with motivations of the plot in the different chronotopes. Moreover, they drew the directions of change in the broad process of

teacher education. Here, too, every protagonist in each narrative has a different line of development and, at times contrary to the protagonist in the other narrative. Generally speaking, the main change in the PSTs' narrative was in the practical know-how, i.e., the pedagogical practices. The focus of the collaborating teachers' change was in the teaching-learning experience in their class, and in the scope of their workload. Principals perceive the focus of change in the future picture of their school as far as the human resources are concerned, and the teacher-educators place at the focus of change the PSTs' identity as future teachers.

Placement becomes an arena for negotiations of interests that is partly explicit and partly implicit. It is within school's interests to embrace the apprenticeship model whereby PSTs serve as extra labor force, fill in gaps such as substituting absent teachers, and catering to the needs of specific students. On the contrary, the interests of the academic institution are partnerships at the macro level and collaborations at the micro level. Partnership and hybridity may not be achieved by apprenticeship. Teacher educators are experts in various fields of education, disciplinary and pedagogical. Teacher educators and principals perceive teachers' professional development as a process and view the school as a fertile soil for learning experience. Conversely, collaborating teachers are not interested in experts from the academia or in the process of enhancing pedagogical content knowledge or other. They perceive PSTs' learning as a process, yet they fail to recognize the importance of the process to their own learning.

As for content in the disciplines of study, principals do not see a process of learning in school throughout the school year, whereas they view pedagogy and the development in pedagogy as a process. Overall, there is a complexity of paradoxes – on the one hand there is an instrumental approach of apprenticeship, and on the other hand, there is a holistic approach of an expert teacher as the outcome of an ongoing process of learning and improvement.

Coherence - A variety of studies explored the idea of coherence in the context of teacher education (Richmond et al., 2019; Sandoval et al., 2020). In the footsteps of Tatto (1996), many scholars defined coherence as a degree to which all faculty staff members concur regarding the vision and goals of the teacher education program, and the degree to which the structure of the courses reflects this concurrence. Incoherence between university-based PSTs courses and clinical experience seems to reduce the development of the PSTs' professional identity (Grossman et al., 2009). However, coherence should be defined as an ongoing process of negotiating alignment of various views among stakeholders regarding the goals of teacher education and the means to achieve them (Levine, 2022). Thus, coherence is a continuing process rather than a desired permanent mode. Conflict may be viewed as an unagreement on the shared vision and aims since the stakeholders in the teacher education program differently interpret the shared vision and aims. Consequently, conflict should not be considered as a negative aspect of the coherence as process, since through it the PSTs may become familiar with a variety of educational ideas and orientations, to educational pluralism in the eco-system and, thus better develop their unique professional identity.

As mentioned, all the narratives share a realistic chronotope and differ in the symbolic chronotope. In order to create a multi-voice education picture that is

simultaneously harmonious and coherent the axis that link all the narratives should be examined. In the context of this study, two axes that facilitate or disrupt coherence have been raised. The longitudinal axis between all the narratives is the axis of identity consolidation, while the latitudinal axis is where all the individuals are connected, creating a distinct language-a distinct culture.

Regarding the first axis that deals with identity, an exploration of the centrality of the process of identity consolidation of PSTs – in each of the sub-narratives is required. In its perception, coherence is an identity structure, rather than focused and instrumental. The linear instrumental concept advocates that contents and skills should be nurtured, creating a toolbox for the PSTs. On the other hand, the education process according to the ecological approach aims to develop a complex identity, whereby PSTs develop their identity through a constant and multi-directional dialog with all the partners.

The notion of professional identity is where theoretically one could identify a myriad of identities: a pedagogue, an expert in the content of the discipline, an educational practitioner who is an agent of norms and values, a curriculum expert and a researcher. In this study, the findings indicate a focus on one segment of the identity spectrum – a content expert in the discipline. This finding is not in line with a more complex perception of paradoxes, where the focus is on additional segments. PSTs may challenge in-service teacher's identity as an expert in pedagogy by suggesting different mediation strategies. Teacher educators may also be challenged by the identity of the in-service teachers as a content expert, since this is the forte of teacher educators.

The second axis that creates coherence is associated with all the aspects discussed above. It appears that there are two conflicting cultures here – the culture of the solo teacher versus the teacher as a team member whose classroom door is open for participation and team learning. Teaching is a process of managing complexities of the individual, team, culture. and system. Positioning is an integral component within school culture, and it is a complex issue. On the one hand, the in-service teacher longs for a partner, a co-teacher, a positioning of equity, companionship and sharing, while at the same time the in-service teacher has technical needs for an assistant. Catering to the latter needs ends in hierarchical positioning of expert and apprentice. In a successful hybrid model an in-service teacher skillfully manages the intricacies of culture and positioning away from the traditional culture of power relations into partnerships. In this study, we have not found evidence for acknowledging this complexity, notwithstanding managing it. The ramification of facing this complexity without thinking of ways of handling it, results in maintaining an existing traditional culture of positioning and hierarchies.

Conclusions

To sum up, this study focused on narratives of the participants in the process of a clinical teacher education program within the ecological context. It involved the academia – teacher education college, and the field – schools in which the PSTs engaged in their practicum. Looking at the interests of the college illustrates

external considerations, among them financial and budgetary, as well as the entrance into teaching of many teachers in a short time. Moreover, there are internal considerations, such as the nature of education, learning experience, and the learning goals in the teacher education process. This supports the empirical literature, according to which there is no linear process that is based on a single perception. Rather, the education process involves budgetary considerations that are not necessarily in line with optimal education that focuses on identity formation.

An interpretive analysis of the chronotopes by means of the 5C model indicated that this concerns an education process located on the continuum between a hierarchical traditional model that is learner-oriented and an ecological one. It is recommended to sharpen awareness of what is implied by having various narratives, driven by a myriad of orientations that co-habit in the ecological system of teacher education. Furthermore, this study proposes an applied model for examining the quality of processes, as well as for planning and acting in a way that increases the synergetic intensity of processes performed in the field by the distinct partners.

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