In the Footsteps of Matthew Lipman: Dialogue among Peers and Dialogical Thinking

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Introduction

Matthew Lipman was a great philosopher and a great man; a man deeply committed to the Philosophy of Education and to the worldwide advancement of the Philosophy for Children (P4C) approach he developed. His philosophical approach adapted to children sparked tremendous changes in the way philosophers engaged in philosophy and educators regarded child education.

Based on Lipman's work, my innovation was to adapt P4C first to mathematics (Daniel *et al.*, 1996), and then to violence prevention among children (Daniel, 2002). However, the legacy I would like to focus on in this paper concerns my years of research on the concepts of philosophical dialogue and critical thinking. In the mid 1980s, when I was facilitating P4C sessions together with teachers from Quebec and elsewhere, I noticed the teachers would sometimes confuse conversation with dialogue, and simple thinking with philosophical or critical thinking. On my side, I was able to observe that pupils were discussing during the P4C sessions, but I was not able to ensure that they were dialoguing in the Lipmanian sense of the term; and even though I was able to observe that the pupils were thinking, I was questioning whether their thoughts were spontaneous or reflective.

My questioning was justified since the concepts of dialogue and critical thinking are the essence of Lipman's approach. If dialogue and critical thinking are not actualized in classroom discussions, then the approach loses its specificity, its meaning, its purpose. During the 1980s and 90s, many educators and philosophers ignored and even rejected P4C; they claimed it was a "waste of time" both for pupils and teachers, or an "insult" to "real" philosophy. That is why, during that period, I undertook empirical studies on the impacts of P4C on the discursive and cognitive development of children, in Quebec and in other countries.

The first section of this paper relates to discursive development in children; it centers on the concept of dialogue. I present five types of exchanges that emerged from the analysis of children's discussions when they are engaging in philosophical praxis, illustrating each type of exchange with examples.

The second section of the paper focuses on the cognitive development of children, seeking to provide some answers to two research questions: Are pupils in kindergarten and primary school capable of mobilizing critical thinking when they philosophize? Further, are age and schooling sufficient for the development of critical thinking in adolescents? The results are presented in three parts: a) a theoretical description of a new concept, named *Dialogical* critical thinking, that emerged from analysis of discussion transcripts (its components and its scaffolding movement through philosophical praxis), b) empirical findings concerning philosophizing children, c) current empirical findings concerning non-philosophizing adolescents.

The final section of the paper is a general discussion of the research results and the P4C approach.

1. Philosophical Dialogue

From the philosophers of antiquity, we know that *philo-sophia* is either an internal deliberation or an external dialectic. Its praxis can be either self-reflective or dialogical.

Lipman and Sharp consider that, if left unshared, whatever one constructs in isolation remains latent. They wrote that dialogue within a community of peers is the reflective method that best represents the path of philosophical inquiry. Philosophical dialogue is an active and a critical method of communication. It differs from conversation in that it calls upon complex cognitive and social skills, and in that speaking and listening include reciprocity, tolerance, respect, and surpassing of oneself in a quest for meaning and valid justifications. Dialogue presupposes a horizontal relationship (versus hierarchical) between two or more people who are united in a community of inquiry (Lipman, Sharp, Oscanyan, 1980).

Philosophical Dialogue: A Typology of Exchanges

Do pupils spontaneously engage in dialogue when they participate in a P4C session, or is dialogue a competency that requires apprenticeship? And if apprenticeship is required, how does it develop in the classroom? Thanks to a Social Sciences and Humanities Research Council (SSHRC) research grants, and to a team from Quebec (Professors Louise Lafortune and Richard Pallascio), I qualitatively studied transcripts of exchanges within groups of philosophizing pupils aged 9 to 12 years and, subsequently, within groups of pupils aged 4 and 5 years. To ensure the objectivity of our analyses, data was collected in different cultural, pedagogical and linguistic contexts (Quebec, Australia, Mexico and France).

Results indicated that during P4C sessions, philosophical dialogue did not manifest itself as soon as pupils began exchanging with peers. Rather, it manifested itself after months, even years, of philosophical praxis. Whether pupils were 9 to 12 years old (Daniel *et al.*, 2005) or 4 to 5 years old (Daniel & Delsol, 2005), philosophical dialogue unfolded according to a similar typology of exchanges. In the following paragraphs, I discuss the five components of this learning process: anecdotal, monological, non-critical dialogical, quasi-critical dialogical, and critical dialogical exchanges.

What we refer to as an **anecdotal** exchange was observed in most groups of pupils just beginning P4C praxis; in other words, when pupils "talk" without co-constructing their ideas or allowing themselves to be influenced by the interventions of their peers. They speak in an "I" / "my" voice and specifically address the teacher rather than their peers. They do not attempt to understand the concept that is the agenda for the day, nor do they try to identify a common goal; instead, they relate anecdotes and personal experiences linked to the question's subject.

Example from an exchange between 5 year-old children at the beginning of the school year:
Teacher: What difference is there between a doll and a person?
Pupil 1: The other day, my friend had a doll. It walked. It even had a little fork and it could eat.
Pupil 2: My doll talks.
Pupil 3: I've seen a doll that could pee.

Example from an exchange between pupils aged 9 to 10 years old at the beginning of the school year:
Teacher: In the story, why doesn't Ramon like math exams?
Pupil 1: I become nervous during exams.
Pupil 2: Because sometimes, I, because I worry.
Pupil 3: Because I am *nervous.*

To help pupils move beyond an anecdotal exchange, teachers can ask them questions that try to evoke a generalization from their statements. For example: "*Can what you're saying about yourself be applied to all children? Can it be applied to everyone?*" or "*Can what you say about your dog be applied to all dogs? To all animals? To all living beings?*"

What we call a **monological** exchange was the type of exchange most often observed in P4C sessions. In this type of exchange, interventions are more generalized ("they" / "their" voice). Pupils reflect on the question they are asked; however, their thinking is oriented toward the search for a "correct" answer, one that satisfies them at the moment, or one that is likely to satisfy the teacher. When constructing their ideas, the pupils do not take their peers' points of view into consideration; instead, they aim to add their own.

Example from an exchange between 5 year-olds after several months of philosophical praxis:
Teacher: Why do children get diseases?
Pupil 1: Because sometimes they don't get vaccinated.
Pupil 2: Because sometimes they go outside without a scarf.
Pupil 3: I know why you catch diseases in hospitals, it's because people are sick, and they drop germs around.

To help pupils move past a monological exchange and attain one that is dialogical, teachers can remind pupils that, in an exchange, one must first listen and try to understand the points of view of peers before expressing oneself: "*Could you rephrase what X just said? How could you tie in your point of view with what was just said?*" or "*Who wants to help complete his or her idea? Who could add something to expand on X's idea? Who can provide an example to clarify X's point of view?*"

It was also observed that pupils exchanged dialogically after a few months of P4C praxis. An exchange is called **dialogical** when pupils begin to form a community of inquiry that is, when they

actively listen to each other, question each other and build on their peers' interventions to construct their own. Nevertheless, when analyzing transcripts, it became apparent that a dialogical exchange was not inherently philosophical or critical; it could be non-critical, quasi-critical or critical.

Non-critical dialogue presupposes a process of reflection and co-construction of points of view, but in a manner that is predominantly convergent. In other words, non-critical dialogue builds on and enriches peers' points of view—but without analyzing or evaluating them. This type of dialogue is greatly praised by today's schools since it is non-conflictual and characterized by socially desirable values such as respect, open-mindedness and acceptance of differences.

Example from an exchange between 5 year-old children:
Teacher:(…) we will write actions that help your body heal.
Pupil 1: Wearing gloves (… helps your body heal).
Pupil 2 to Pupil 1: Why gloves?
Pupil 1 to Pupil 2: Gloves so you don't catch a disease in the hospital.
Pupil 2: And gloves are also useful to keep you from hurting your hands with splinters when you work.

Example from an exchange between pupils aged 9 to 10 years:
Teacher: Why do you say geometry is an interesting subject?
Pupil 1: Because it is part of our daily lives.
Pupil 2: That's true because at school, for example, we learn to measure figures and when we're older and we will want to buy some land, we will know how much land we have.
Pupil 3: I agree with Pupil 2. And also because with geometry, for example, architects can build schools, buildings and all, stores and all that we need in our lives like Pupil 1 said.

Despite its dialogical nature, and notwithstanding the reflective thinking inherent in pupils' points of view, a non-critical dialogical exchange does not contribute to an examination of peers' points of view and is not enough to help young people initiate critical reflection about ideas, values, behaviours, traditions. Because of non-critical dialogue's convergence, in some cases it may even reinforce negative biases, undesirable values, discrimination, and so forth. Therefore, teachers should encourage pupils to dialogue critically by asking questions such as: *"Who can provide a counter-example? Who can bring some nuance to…? What are the advantages and disadvantages of x (action, tradition, value)? Among the reasons we have just mentioned, which one seems most appropriate, most useful to …? What would happen if everyone did this? Is this x (point of view, behaviour, rule, value, etc.) acceptable in every context? What could be the consequences of x (point of view, decision, behaviour, etc.) on you? On others? On society?* These questions encourage pupils to transcend their initial thinking; they aim to create doubts and uncertainties in their minds; and when posed regularly, they are likely to motivate pupils to engage in a critical thinking process—one that should assist them in making enlightened choices.

The critical dialogue learning process is complex; it takes time before it is established in a group. This is probably why we observed an intermediate dialogical exchange in classrooms, which we named **quasi-critical dialogue**. In a context of interdependence, some pupils are sufficiently critical to question peer statements, but others are not critical enough to hear their peers' criticisms, or to be influenced by them.

Example from an exchange between pupils aged 9 to 10 years:
Teacher: Can we speak of a perfect cube?

Pupil 2: I say maybe it's possible to have a perfect cube, because if you take 4 squares and if you look at them, then with a blade, you take a little bit away…You keep on taking away little bits until they become equal…
Pupil 3: At the end, you're going to need instruments that are too small to do something.
Pupil 4: You'd have to be lucky […].
Pupil 3: No. I don't think that if you measure the centimeters… After, you have to come to millimeters, then you come to hundredths of mm, then to thousandths of mm, you keep going like that. You'll never be able to make a perfect cube if you measure […]
Pupil 2: You could take geometry blocks.
Pupil 5: Yes, but geometry blocks aren't all equal. [… the makers] make them as equal as possible, the most perfect possible, but that doesn't mean they're perfect, perfect, perfect. They may seem perfect to us, but…
Pupil 2: I say it might be possible to have a perfect cube.

Questions such as: "*How can X's point of view be linked to yours? Would you like to modify or develop your point of view based on the points of view your peers have just shared?*" encourage pupils to actively listen to peers, to self-correct, and help them understand that changing their point of view is an integral part of philosophical thinking (rather than demonstrating an error, as many pupils believe). It is also essential for a pupil to realize that a criticism is a "gift" given by one's peers; it indicates that the pupil's idea is sufficiently meaningful for others to set aside their own ideas and focus on that pupil's idea in order to better understand the concept they are discussing.

Finally, **critical dialogue** underlies a quest for inter-comprehension, which presupposes that pupils ensure they understand their peers' ideas in order to co-construct common meanings and representations. When analyzing transcripts, the following characteristics of critical dialogue, which may be manifested to different degrees according to the pupils' ages, came to light: explicit interdependence between pupil interventions, an inquiry process, research focused on construction of meanings (rather than on truth), calling into question the initial point of view (by way of criticism, questions, nuances), a search for alternatives, justifications of viewpoints, ethical concerns, and self-correction. After a critical dialogical exchange, a transformation is observed in the group's perspectives.

Example from an exchange between 5 year-old children at the end of one year of philosophical praxis:
Teacher: Here is the situation: Jojo doesn't like the candy her aunt gave her, but she eats it anyway because she doesn't want to disappoint her aunt. According to you, is this a good solution?
Pupil 1: I think it's a good idea (…) because she won't be sad.
Teacher: Does anyone agree or disagree with Pupil 1's idea?
Pupil 2: I don't agree (…) I would take the candy and drop it in the garbage and say I finished the candy (…)because I don't want to eat mints I don't like (…) This way, she won't know I didn't eat them.
Teacher: Do you agree with the ideas that were just expressed?
Pupil 3: I don't agree with Pupil 2 because if my aunt gave me some candy I don't like and I threw it away, when she throws something away, (then) she will look in the garbage and see the candy and she would be angry with me.

Pupil 2: If we put them way, way, way down in the bottom and put some stuff over them and then close the lid ?
Pupil 4: Well, I would eat them even if I don't like them. If I really, really, don't like them, (then) I'll give them back to my aunt without telling her I don't like them.
Pupil 5: I have another idea. All you have to do is tell your aunt, "could you change the candies?"

Example from an exchange between pupils aged 10 to 12 years after a few years of P4C:
Teacher: Last week, we looked at the order of animals and the order of maths, which ones you thought were higher. Can one of you (…) take up the discussion where we left off?
Pupil 2: I would place humans in fourth or third place or maybe second because I don't think we deserve to go at the top for what we've done to all those animals and how we've had wars. And like animals don't care, I mean they have wars sometimes but it's when they need to be in the higher group to be respected more. (…) So I think that animals are a higher level than humans but they respect other people and we tend to be selfish.
Pupil 4: I think that humans are the only ones that can do math, because it's like English: Humans invented English. And math is just like another language that we invented. We use it to understand things, to do the things we have to do well, to understand the reasons behind things. Like why the sky is blue and why we can't float or fly. So we invented maths to explain these things. (…) But the animals they just think sky and they don't really think about it, because they've got one main instinct which is eat and reproduce.
Teacher: And how does that affect the order of things?
Pupil 4: Oh, well if it's the order of how smart they are, I think humans would have to be at the top.
Teacher: Humans would have to be. Why? What criteria are you using?
Pupil 4: On how complex they are. And that we've got other intelligences, like I said yesterday, empathy and sympathy and stuff like that.
Pupil 5: I agree because if I had to rank any of the animals in a higher order or whatever, I think I'd put humans on the top as well because (…) we do things for our own pleasure and usually we do them of our own accord. We usually do whatever we want because we've got better resources for it and we've created more things. It's just our brain power is larger. I don't know if it is but I think that our brain power is larger.
Pupil 6: I disagree with Pupil 5 when he said they don't build things. They build nests, they build burrows, they have got to work out how to build them, that's not really easy. And they only kill what they need.
Pupil 5: […] I think I sort of changed my mind. I sort of agree with Pupil 6 (…). Then there are like two different paradigms.
Pupil 6: Yes, there is the intelligence to think how to make things and the intelligence of how to use these things. We are both the most stupid and the most intelligent.

If society strives for responsible education (in the Deweyan sense of the term), it follows that critical dialogue must be further stimulated in schools and during P4C sessions. Indeed, this type of exchange implies a quest for equality and community empowerment; it underlies and encourages values such as cooperation and mutual support. In sum, critical dialogical exchange, practiced on a regular basis and from the earliest age, is likely to lead to a habit of dialogical critical thinking in children, without which democracy is likely to erode. The praxis of critical dialogue can be considered a form of protection against minority oppression, racial discrimination, sexism and other types of exclusion; it represents a means to transcend individualism and foster social commitment.

In sum, while the typology of exchanges that emerged from our analyses was in line with Lipman's and Sharp's ideas, it focuses on the philosophical dialogue learning process in preschool and

elementary school pupils. Empirical research has shown that dialogue is not spontaneous; that P4C is not a magical approach that simply requires providing pupils with a space-time in which to express their points of view in order to engage in dialogue. We maintain that teachers not only have the responsibility to help pupils acquire knowledge in language, arts, mathematics, history, and so forth, but they also have a responsibility to help them learn to engage in dialogue in a critical manner. In that sense, teachers must be vigilant during the facilitation of P4C sessions. To allow children to speak spontaneously about personal anecdotes and to unconditionally accept their ideas does not necessarily lead them to engage in a philosophical dialogue with their peers. Teachers must ask children challenging questions to nurture their active involvement in the dialogical critical process.

2. Critical Thinking and *Dialogical* Critical Thinking in Children

Given that speech is the manifestation of thought, it is when exchanges among pupils are of a dialogical critical nature that critical thinking is mobilized. In the following paragraphs, I address the concepts of critical thinking before discussing *dialogical* critical thinking (DCT).

2.1. Critical Thinking: A Recognized Tool

Influenced by Dewey and Vygotsky, Lipman considers that critical thinking occurs within and because of peer interactions. According to Lipman, individuals need critical reflection to help them differentiate, among all the information they receive, that which is most relevant according to their goals. His definition of critical thinking is based on three fundamental characteristics: the use of specific criteria; sensitivity to context; and self-correction. According to Lipman, critical thinking presupposes reasoning skills and creative craft (Lipman, 1988). In his later writings, Lipman focused on the concept of higher-order-thinking or complex thinking, which includes caring and metacognitive thinking (Lipman, 2003).

There is an urgent need to foster critical thinking in pupils. Over the past decades, educational systems of industrialized western societies have been increasingly influenced by neo-liberal tendencies. School is no longer the focus for stimulating ideas. School is slowly becoming an instrument subjected to economic values such as efficiency, performance and individualism (among others, Lenoir, 2016; Martin, 2016). When individualism becomes radical, the concerns of individuals focus on “I”, “me,”, “my” and they focus on individual rights (Taylor, 1992) rather than on “we” or “our”, which value social responsibility (Rorty, 1989, 1991).

UNESCO (2015) maintains that education, as a tool for social transformation, must surpass its current utilitarian and productionist purpose, which is essentially oriented toward learning to know and learning to do, and must focus on the development of learning-to-be and learning-to-live-together. The *Convention on the Rights of the Child*, ratified in 1990 by a majority of member countries, recommends the stimulation and development of children’s thinking to allow them to become citizens in their own right, that is, rational actors, which is central to the notion of human dignity.

With this in mind, it is important that schools teach young people to question knowledge provided by society and data gathered from social media; teach them to oppose negative values and

ideas and to argue dialogically with a view toward a common good; teach them to actively participate in the transformation of the common culture. In other words, in addition to transmitting cultural heritage, schools must teach youngsters to think in a responsible and critical manner about the information they are being taught, about their life experiences, and about the society in which they live.

In sum, critical thinking is a competency that could and should be encouraged in schools. Yet most empirical studies on critical thinking are conducted among young adults attending college and university. Data are usually collected using quantitative methodologies, through individual interviews or written tests aimed at evaluating thinking skills (Winstanley, 2008) related to the rules of formal logic (Kwak, 2007).

Unlike the current tendency to favour a type of critical thinking centered on the development of formal logic (among others, Kpazaï, 2018; Lenoir, 2016), Dialogical Critical Thinking[1] (DCT) values social constructivist orientations, where critical thinking is considered an evaluative praxis that aims to develop critical consciousness. According to Freire (1970), critical consciousness is stimulated through a quest for plural meanings rather than a quest for a single truth, and optimally, it occurs within a context of dialogical interactions among peers.

2.2. Dialogical Critical Thinking: Description of an Emergent Concept—its Components and Movement

In order to assess to what extent preschool and elementary school children are able to engage in a DCT process, I conducted empirical research, thanks to two subsidies from the Social Sciences and Humanities Research Council of Canada, together with experts from various countries (Professors Louise Lafortune, Richard Pallascio and Mathieu Gagnon in Quebec; Laurance Splitter and Christina Slade in Australia; Teresa De la Garza in Mexico; and Emmanuèle Auriac-Slusarczyk in France), within groups of philosophizing pupils aged 4 to 12 years who came from different cultures (Quebec, Ontario, Mexico, France, and Australia) and who expressed themselves in different languages (French, English, and Spanish).

Analysis of the groups of pupils' exchanges concerned the "form" of their discourse (e.g.: Is this statement a counter-example? Does it include a justification?) that is, the manner in which pupils' meanings and representations were constructed and expressed. The analysis did not focus on the "content" or the matter of their discourse (for methodological details, see: Daniel, 2018; Daniel *et al.*, 2005; Daniel & Gagnon, 2012).

Firstly, in analyzing transcripts of pupils' exchanges, we observed that DCT involved more than just logical reasoning and creative thinking; it manifested itself through four thinking modes: logical, creative, responsible and metacognitive; each of these modes reflects a different facet of pupils'

[1] We named it "dialogical" critical thinking (DCT) because, within the context of P4C, critical thinking develops through pupils' dialogical exchanges.

thinking. **Logical thinking** reflects coherence of ideas and arguments. **Creative thinking** questions certainties and leads to cognitive disequilibrium, the first step toward critical thinking. **Responsible thinking** demonstrates a balance between the right to express oneself and the responsibility to do so with empathy; it reflects the fact that pupils root their argumentation in a negotiation process with a view toward a common good. **Metacognitive thinking** illustrates a reassessment of one's own opinions, beliefs and biases (and those of the community of inquiry) in order to improve them.

Subsequently, we noted that each of the four thinking modes could be mobilized by pupils in a simple or a complex manner. For example, giving one's own opinion is simpler than producing a negotiated argument (logical); providing a specific example is simpler than co-constructing divergent relationships with peers (creative); talking about a personal behaviour is simpler than assessing social values (responsible); and narrating a particular task one has just accomplished is simpler than making an evaluative judgement that leads to self-correction (metacognitive).

As the following description of epistemological perspectives will indicate, epistemological sophistication occurs through processes of decentering and abstraction. In other words, epistemological sophistication occurs progressively as pupils learn, through dialogical praxis, to transcend their own individual experiences and begin to generalize these experiences in order to think about situations that relate to their peers and to the world that surrounds them. The process of increasing sophistication in DCT was made operational via six epistemological perspectives[2]—from the simplest to the most complex—which refer to the groups' representations of themselves and of the world they live in. Following is a summary of these six epistemological perspectives.

Egocentricity is characterized by the expression of concrete units (vs. relationships) tied to personal and specific experiences (e.g.: *me, my…*). **Post-egocentricity** is expressed through specific and concrete units tied to close relatives (e.g.: *my brother…*). **Pre-relativism** is manifested through units situated in a familiar environment; it shows the beginnings of generalizations (e.g.: *friends…*); points of view are not justified. **Relativism** implies simple and convergent relationships (not mere units) with peer statements; these relationships are grounded in a somewhat generalized experience of known others and it also presupposes simple reasoning or an attempt at justification (e.g.: *I agree with … because children…).* **Post-relativism** is manifested through divergent relationships that are anchored in the generalized experience of distant others and relationships imply more accomplished reasoning and are justified by "good" reasons (e.g.: *I don't agree with… because people… nevertheless…).* **Intersubjectivity** is manifested in conceptual and evaluative relationships related to a common good; in intersubjectivity, pupils participate in negotiated argumentation and in the transformation of perspectives; they categorize behaviours into values and engage in correction in pursuit of the community's better understanding (e.g.: *I am questioning our criteria… I wonder if… maybe… humans/societies… if/then… because on one hand/on the other hand… I changed my mind…*).

[2] In our work, the analysis of "groups' epistemological perspectives" differs from that of "individuals' epistemological postures" (as used in cognitive psychology). Epistemological perspectives rather refer to "relational epistemologies" (Thayer-Bacon, 2003) since our analysis are situated within the P4C context, which is essentially a social approach.

Finally, our analyses showed that epistemological sophistication in pupils' DCT does not occur linearly or sequentially as maintained by traditional models of critical thinking. Instead, it progresses as a "scaffold"; it is marked by a recursive process (see Vygotsky's zone of proximal development, 1985). Recursiveness means that continuous interactions occur between epistemological perspectives. During these interactions, the thinking extends and draws back; it attempts a leap into the unknown and regains a foothold in what is known; it gradually integrates the representation of the generalized "we/they" without permanently leaving the comfort of the possessive "I" and the well-known "you". Integration follows verbal interactions with peers and is linked to a transformation of comprehension.

Taking into account DCT's recursive process is of great importance in research and in pedagogy. It reflects (and allows recording of) not only the group' predominant epistemological perspective (i.e.: the group's actual competency), but also the group' competencies that are about to be left behind and those that are about to emerge (if stimulated by the teacher).

Dialogical Critical Thinking: Empirical Results Concerning Philosophizing Children

The developmental model that emerged from the analysis of exchanges was subsequently used as a grid to analyze pupils' exchanges (see Daniel, Gagnon, Auriac-Slusarczyk, 2017).

Concerning the four thinking modes inherent in DCT, our main findings were as follows (for details, see Daniel & Gagnon, 2012):

i) Pupils were able to engage to different degrees in all four modes of thinking, and their age did not affect the percentage in which these modes were mobilized.

ii) Logical thinking was predominant in most groups, whether pupils were 5 or 12 years old.

iii) The creative thinking mode was the second most-used by pupils. Analyses showed that creative thinking was often a complement to the logical thinking mode. When pupils were unable to justify their point of view by giving a "good reason", they provided an example.

iv) Responsible thinking was much less mobilized in P4C sessions. Responsible thinking required teacher stimulation. Pupils, whether they attended preschool or the end of elementary school, were not inclined to analyze the consequences of their words or actions on their own; they did not tend to evaluate the values and principles that guide our actions.

v) Metacognitive thinking was scarcely mobilized in the groups. This mode of thinking also required teacher motivation. Pupils were not inclined to notice peer mistakes or to self-correct for self-improvement purposes.

Regarding progress on epistemological levels (without differentiating among thinking modes), our main findings were as follows (for details, see Daniel & Gagnon, 2011):

i) Even groups of preschool children were able to engage in the DCT process when they experimented with P4C. The epistemology of these 4 and 5 year-old children was not confined to egocentricity, but was able to reach pre-relativism, a more complex epistemology, in 62% of pupil interventions (see Table 1).

ii) The epistemology of groups of pupils in preschool and elementary school progressed with age and schooling (although these factors did not influence mobilization of thinking modes). In groups of preschoolers, the predominant epistemology was situated in pre-relativism (62% of pupil interventions); in groups of first graders, the predominant epistemology was also situated in pre-relativism, but by a stronger percentage (68% of interventions); in groups of fifth graders, the predominant epistemology was more complex as it was situated in relativism (41% of pupil interventions). Percentage results revealed by the scaffolding or recursive process also illustrated the influence of age and schooling on pupils' epistemological progression: in preschoolers, 20% of pupil interventions were situated in post-egocentricity; in first graders, 20% of pupil interventions were situated in relativism; in fifth graders, 27% of pupil interventions were situated in post-relativism (see Table 1).

Table 1. Predominant Perspectives within the Scaffolding Process

GROUP/ EPISTEMOLOGY	PRESCHOOL	1st GRADE	5th GRADE
Egocentricity	13%	6%	0%
Post-Egocentricity	20%	6%	7%
Pre-Relativism	62%	68%	25%
Relativism	5%	20%	41%
Post-Relativism	0%	0%	27%
Intersubjectivity	0%	0%	0%

iii) Pupils who experimented with P4C for two years mobilized complex epistemologies (related to relativism, post-relativism, and intersubjectivity)[3] in 68% of pupil interventions while those who had no experience with philosophical praxis manifested complex epistemologies in 18% of interventions. Without any P4C praxis, pupil epistemologies remained simple (related to egocentricity, post-egocentricity and pre-relativism) in 82% of interventions (see Table 2).

Table 2. Grouping of Perspectives in Fifth Graders With and Without P4C

Epistemological perspective	Fifth grade (2 yrs. P4C)	Fifth grade (without P4C)
Simple	32%	82%
Complex	68%	18%

As shown in our findings, age and schooling were important factors in influencing pupils' epistemological progression. Were these two factors sufficient to stimulate the development of DCT in adolescents, or was a dialogical approach like P4C necessary? To answer these questions, we

[3] Epistemologies are considered complex when they underly complex thinking skills and are considered simple when they underly simple thinking skills. Based on Bloom's taxonomy, there is a consensus in the literature on associating enunciation, identification, memorization, etc. with simple thinking skills, and analysis, reasoning, divergent relationships, argumentation, synthesis, evaluation, etc. with complex thinking skills (among others: Smith & Szymanski, 2013).

analyzed manifestations of DCT in non-philosophizing adolescents. The following results have not been previously published.

Current Empirical Findings: Epistemological Perspectives in Non-philosophizing Adolescents

Through a quite recent subsidy from the Social Sciences and Humanities Research Council of Canada, we initiated a research project in 25 classrooms situated in France, Morocco, and Quebec. Participants were aged 10 to 19 years and attended classes from the fifth grade in elementary school to the end of college[4].

Prior to data collection, these young people had received no explicit training associated with critical thinking or with P4C[5]. We used the model of the developmental process of DCT to analyze their exchanges relating to the topic "*What does it mean to be free?*". The one-hour exchange was facilitated in the P4C manner. To illustrate the analysis results, we use the example of the groups of pupils in Quebec[6]:

i) The epistemology of these young people did not progress significantly during nine years of schooling, despite increasing age and growth in knowledge acquisition (see Table 3).

ii) The predominant perspective in 7 of the 9 groups was situated in pre-relativism. Relativism, which is more complex, was predominant in only two groups, appearing in 35% of pupil interventions in the first year of secondary school, and in 50% of interventions in the fifth year of secondary school (see Table 3). As a reminder, and as illustrated in Table 1, relativism was the predominant perspective of philosophizing fifth graders (manifested in 41% of interventions).

Table 3. Predominant Epistemologies in Non-Philosophizing Children and Adolescents

Grade/ Epistemology	Gr. 5	Gr. 6	Sec. 1	Sec. 2	Sec. 3	Sec. 4	Sec. 5	Coll. 1	Coll. 2
Egocentricity	1%	6%	6%	6%	7%	2%	1%	5%	4%
Post-egocentricity	28%	14%	25%	23%	11%	22%	4%	14%	15%
Pre-relativism	53%	54%	34%	44%	42%	40%	35%	34%	45%
Relativism	17%	25%	35%	27%	36%	33%	50%	33%	33%
Post-relativism	1%	2%	1%	0%	3%	3%	10%	13%	5%

[4] In Quebec, children from fifth and sixth grades in elementary school are 10 to 12 years of age; pupils from secondary 1 to 5 are aged 13 to 17 years; and students from college 1 and 2 (pre-university) are aged 17 to 19 years.

[5] Although students from "college" in Quebec (and its equivalent "lycée" in France and Morocco) were attending *traditional* philosophy classes during data collection, we considered the groups to be non-philosophizing pupils, since these classes were delivered as lectures (rather than through dialogical praxis), and because their content as well as the teaching strategies used were not explicitly oriented toward the development of philosophical/critical reflection.

[6] Results from data collected in France showed a quite similar profile (Daniel & Fiema, 2017).

Intersubjectivity	0%	0%	0%	0%	0%	0%	0%	0%	0%

iii) The clustering of all manifested epistemological perspectives (to take into account the recursive process of DCT) from every group of non-philosophizing pupils indicated that, in 8 of the 9 groups, epistemologies were simple (see Table 4). Of note is that with two years of P4C, 68% of philosophizing elementary school pupils' epistemologies were situated in the complex epistemological perspectives (see Table 2).

Table 4. Grouping of Perspectives in Non-Philosophizing Children and Adolescents

Grade/ Epistemology	Gr. 5	Gr. 6	Sec. 1	Sec 2	Sec. 3	Sec. 4	Sec. 5	Coll. 1	Coll. 2
Simple	82%	74%	65%	73%	60%	64%	40%	53%	64%
Complex	18%	27%	36%	27%	39%	36%	60%	46%	38%

Concerning these last results, it might be useful to add that, in the DCT model, simple epistemological perspectives are not a-critical. They are part of the thinking process itself, in adults and children alike. According to Dewey (1960), it is not possible for a person to have precise representation of a new concept right from the start. Individuals clarify and refine their representation when their thinking goes back-and-forth between their specific experience and the new concept they are attempting to grasp, or when, from time to time, they go back to the safety of acquired beliefs, rather than remaining in the discomfort of critical thinking.

Yet this Deweyan consideration does not mean that simple epistemological perspectives should be accepted as the outcome of the thinking process of adolescents during their pre-university schooling. A philosophical education, using an approach such as P4C, is strongly recommended since it proved to enable pupils aged 10 to 11 years to reach complex epistemological perspectives.

Discussion

According to Lipman, Sharp and Oscanyan (1980), a dialogue is considered philosophical when the pupils, rather than merely relating personal anecdotes, inquire with their peers about the meanings of concepts, listen carefully to each other, give their opinions and justify them with good reasons, identify similarities and distinctions, give counter-examples, discover relationships between means and ends, share constructive criticisms, self-correct, and so on. Thus, the objective of the dialogue within a community of philosophical inquiry is not situated in intra-subjectivity, but rather in inter-subjectivity. It aims to stimulate pupils to reflect critically with their peers on concepts, principles, and situations related to their experiences and their world.

The values implicitly contained within P4C dialogue are, among others, respect for oneself and others, genuine communication, human rights, critical reflection, personal and social responsibility, and engagement within one's community. These values converge toward those advocated in the *Convention on the Rights of the Child* (American Bar Association Center on Children and the Law, 1990).

Articles 3 to 5 and 12 to 15 of the *Convention* state that pupils should not be taught what they should do in a given situation, but rather they should learn to deliberate together, within a democratic and respectful context, in order to determine adequate behaviors to adopt and to assume their respective consequences.

Furthermore, Articles 12 to 15 and Article 17 of the *Convention* explicitly advocate children's right to autonomous, critical and responsible exchanges with their peers. In these articles, the *Convention* recognizes that children have information to convey, experiences to share and ideas to communicate. In other words, it recognizes that children are not mere citizens-to-be, but full citizens; they are rational agents and they have rights. The *Convention on the Rights of the Child* asserts that society and its institutions must provide autonomy and freedom to children in order to assist them in fulfilling their social role as children, pupils and citizens, and in order to be capable of facing the challenges of daily life.

In agreement with the *Convention on the Rights of the Child* and with the P4C approach, our research results show that even young children have the capacity to express themselves in a respectful and critical way, and that this capacity develops through the praxis of dialogue within a community of inquiry. This is why I argue for the need to provide preschool children with the opportunity to dialogue critically with their peers on situations and concepts related to their world—rather than waiting for children to acquire a higher level of maturity before beginning this praxis. Children four and five years old take lessons in music, dance, language arts and more, and the appropriateness of such apprenticeships is never questioned. Why then should children not exercise their ability to dialogue critically within a community of inquiry as early as preschool?

The second section in this paper shows the need to introduce P4C in the classroom in order to stimulate the development of DCT in young pupils. According to Lipman, (1988, 1991) it is essential to stimulate critical thinking in pupils, as it protects individuals from being brainwashed into believing what others want them to believe without having the opportunity to inquire for themselves.

Although Lipman considers that there is continuity between critical and creative thinking, as they permeate each other in the formation of judgments, in his earliest works he points out the discontinuity between these two forms of cognitive processing. Critical thinking, he writes, involves reasoning and critical judgment and it seeks truth, while creative thinking involves artistry, craft, and creative judgment and seeks meaning (Lipman, 1988, 1991). In his later works, Lipman emphasizes the concept of higher-order thinking, which presupposes complex thinking—that is, more complex than critical thinking alone, as it involves both critical and creative thinking. And Lipman adds caring thinking (which means valuing, appreciating, and focusing on what is respectful, valuable and meaningful), as well as metacognitive thinking (which means being aware of one's assumptions,

methodology, procedures and perspectives, as well as being conscious of the implications—the reasons and evidence that support the conclusions) (Lipman, 2003).

The DCT model that emerged from analysis of pupils' exchanges consists of four thinking modes (logical, creative, responsible and metacognitive) and it reveals an increasing sophistication in the manner in which the pupils' representations and meanings are co-constructed during exchanges within a community of inquiry. In this sense, the DCT model is more than a concept, it is a developmental process that clearly illustrates the pupils' progression within the philosophical praxis. This progression in thinking can be observed through six epistemological perspectives that operate according to a scaffolding movement (*vs.* a linear progression, as in Piaget's and Kohlberg's models). This means that, during philosophical dialogue, pupils' thinking moves back and forth between simple and complex epistemological perspectives. An explanation of this recursive process can be found in the works of Pragmatist philosophers such as Bayles (1966), Dewey (1960) and Rorty (1989, 1991) who maintain that our actions and judgments are determined by our interactions with others, and, reciprocally, as persons, we are the starting point of judgments, initiatives, and representations which will influence others and society.

Regular praxis with the attitudes and cognitive skills related to DCT becomes a tool to defeat the indifference of individuals regarding situations and principles, and to favour involvement in one's society. Social involvement implies that individuals show an interest in what others think, say or do; that they dare to dialogue critically, that is, to question, oppose, argue and negotiate in order to improve the common good. Thus, mobilizing DCT becomes an individual social responsibility, and social responsibility represents a part of the requirement for human dignity as promoted by UNESCO and the *Convention on the Rights of the Child*.

It is essential that kindergartens and primary schools value and promote critical dialogue and DCT in children. As shown by our current findings, if adolescents have not already integrated the habit of critical dialogue or thinking critically at a young age, when they are confronted with the need to analyze a situation, fact or principle, they have a tendency to take refuge in passivity or, in other words, to choose recognition, description or explanation, rather than evaluation. Indeed, DCT not only calls on complex thinking skills, but also on intellectual attitudes such as courage, humility, open-mildness. If these attitudes are not exercised early on, chances are that, when eventually needed, their mobilization might be blocked by other elements of an emotional dimension such as risk aversion, fear of the unknown or of confrontation, aversion to effort, and a desire to self-protect and hold onto one's beliefs.

Conclusion

In conclusion, walking in Lipman's footsteps led us to conduct empirical research that revealed a typology of exchanges inherent in the apprenticeship of philosophical-critical dialogue. Also, walking in Lipman's footsteps led us to expanded on the concept of critical thinking to make the components and the recursive movement of the DCT process operational.

The research results demonstrate that critical dialogue and DCT are not innate, nor do they develop spontaneously with age and schooling. They rather are fundamental competencies that should be stimulated in children as early as kindergarten.

A comparison between the manifestations of DCT in pupils who benefited from P4C praxis and those who had not benefited from such praxis showed that P4C is a meaningful tool for mobilizing and developing critical competencies in pupils.

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