

A matter of prior knowledge: Canadian young children's conceptions about the future in the global community

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Abstract

Young Canadian boys and girls aged nine to eleven were asked to consider their personal futures, the future of their community and the future of the world. Mixed methods were employed for data collection and analysis. Responses were compared with those given by children in eight countries and the discussion focused on the importance prior knowledge, in this case, prior knowledge of global issues, holds for effective teaching and learning about global issues. Canadian children were optimistic about the future for themselves and their community but less so for the globe. More so than other children, Canadian children were concerned with issues of social justice, issues such as discrimination and racism, and with improving the environment, which might be attributed to the emphasis that is placed on these issues in their school curriculum. Assessing prior knowledge should be a priority for those considering development and implementation of global education curricula.

Keywords: Global community, young children's conceptions, prior knowledge

Introduction

Canadian curriculum standards in social studies, citizenship education and global education employ the language of constructivism, emphasizing that prior knowledge is of paramount importance for the design and implementation of effective teaching and learning activities for children. Learning theorists have long argued that teachers must first familiarize themselves with children's prior knowledge (Newmann, Marks & Gamoran, 1996) and this is a fundamental component of constructivist approaches to teaching and learning (see, for example, Chareka & Sears, 2005, 2006; Windschitl; 2002 and DeCorte, 1990). While various terms have been used to describe the concept of 'prior knowledge', terms such as 'prior conceptions', 'misconceptions' or 'naïve understandings' (Byrnes & Torney-Purta, 1995; Hill, 1995; Minstrell & Hunt, 1991), a common aspect of these

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terms is that prior knowledge should serve as a critical springboard for teaching and learning processes. Dochy, Segers and Beuelh (1999) define prior knowledge succinctly as “The whole of a person’s actual knowledge that is: (a) available before a certain learning task, (b) structured in schemata, (c) declarative and procedural, (d) partly explicit and partly tacit and (e) dynamic in nature and stored in the knowledge base” (p.146). Despite broad recognition that prior knowledge is important, there is no evidence that students’ prior understandings are taken into consideration in the construction of curricular standards (Peck & Sears, 2005; Peck, Sears & Donaldson, 2008).

This study was initiated to explore young Canadian’s hopes, fears and concerns about the future and about what it means to be an active citizen and to be a ‘good’ citizen in their local and global communities. Canada was invited to participate in a large international study led by Cathie Holden of the University of Exeter in the United Kingdom, but Canadian participation amounted to a pilot study in Atlantic Canada with a sample of 40 students - a larger, Canada-wide study is planned with a sample large sample of students from all the provinces and the three Territories in the near future as research funds are being applied for. Therefore, readers need to keep in mind that the sample size from which this paper is based is one of the major weaknesses and hence the generalizability and/or transferability of the research findings should be more focused to the target population at this school and province rather than Canada wide. However, despite the small sample size, this study did provide some foundation for comparing the hopes and fears of Atlantic Canadian children with those of their counterparts in the United Kingdom, Spain, Pakistan, Ukraine, Kyrgyzstan, Korea, South Africa and Gambia and also helped me to shape the proposed large Canadian study to be carried out soon.

Dean (2008) suggests that understanding the futures that children envision will help educators to develop the best ways to prepare children to work towards those futures (also see Barton, 2001; Holden, Joldoshalieva & Shamatov, 2008; Naval & Reparaz, 2008). Research on children’s views of the future is crucial, as the attitudes and prior knowledge they hold influences what they are prepared to contribute as active citizens both in school and in their community, now and perhaps in the future. In a changing world, with increasing access to technology and the media, are young children becoming more aware of civic and global issues? Merryfield (2008) also believes that today’s students need global awareness in order to survive. Moreover, she suggests strategies for increasing awareness of the outside world by encouraging students to see events from the perspectives of other cultures, listen to voices from other parts of the world, and investigate the impact of connections. .How do children see their future and what hopes and fears do they have for themselves, their local communities and the world in comparison to their counterparts and their level of civic

consciousness beyond national boundaries? (see also Merryfield, 1998; 2004; Merryfield, Tin-yaulo, Cho po & Kasai, 2006; 2008)

At present, the world is a rapidly-changing place with many new technologies, increased global conflict and important political, economic, social and environmental changes taking place at a rapid rate. There is need for young children to understand other perspectives as Merryfield (2004) argues that without understanding of locally and globally, issues, young children cannot make sense of issues that affect their lives and also cannot make informed economic, political, and environmental decisions as future citizens, hence, the paramount importance and significance of this research. The study of young Canadian children was initiated to explore how children are responding to those changes: 1) to describe the hopes and fears of Canadian children with regard to personal, local and global futures; 2) to describe Canadian children's understanding of local and global issues; 3) to describe the extent to which Canadian children feel their schooling has helped them to understand local and global issues and their role as active citizens who can work for positive changes and 4) to compare our study of Canadian children with the results of studies conducted in eight countries.

A summary of key facts about Canada, particularly Atlantic Canada where the study was conducted, is provided here to describe the context within which the conceptions and prior knowledge study participants expressed were developed:

Atlantic Canada has a population of 2,331,900 (July, 2006) living in four provinces. The official languages are English and French and the economy was relatively strong in Canada in 2006 when this study was carried out. The Gross Domestic Product was growing by 2.7% and much of the strength of the economy was and still is attributed to the growth of the economy in the province of Alberta, where the energy sector boomed with the development of oil sands in the northern part of the province. This development in the western part of the country produced the largest inter-provincial movement of people since 1972. Many people from Canada's Atlantic provinces took advantage of employment opportunities in Alberta by moving there for work. The average total income for a family of two or more people in Canada was \$83,500 and the unemployment rate in the country was 6.3%.

Education

Education is a provincial responsibility in Canada, although some federal Canadian standards have been established. Within, Atlantic Canada, much of the curriculum has been developed for use in all four Atlantic Canadian provinces. The education system in Atlantic Canada has three levels: elementary grades primary to grade four (5 to 10 years of age); middle school grades five to eight (10 to 13 years of age); and high school grades nine to twelve (14 to 18 years of age). Two systems of education, private and public, are in operation with the majority of Atlantic Canadian children

attending the public school system - this study was conducted at a public school.

While a formal curriculum covering citizenship education and global awareness has not been developed for Atlantic Canada, elements of these topics appear in several areas of the curriculum, especially in Social Studies. Students are encouraged within English Language Arts programs to explore and to discuss their thoughts, ideas and experiences, and to consider and listen critically to others' opinions and ideas. Students are also expected to identify examples of prejudice and stereotyping in oral language. In Health Education, students are encouraged to demonstrate proactive strategies for enhancing the social and environmental health of the school, while they are encouraged to discuss various aspects of friendship and relationships. Citizenship is also defined in the context of the school community. In Music, students are introduced to and learn about music of other cultures, while in Science students are introduced to habitat conservation, conservation of energy through use of efficient home lighting, noise pollution and the effects of wind, water, ice and natural phenomena on the landscape. In Social Studies, students learn about the human landscape of Canada, the Canadian federal government and the symbols of Canadian heritage (Nova Scotia Department of Education, 2004). It should also be noted that Canada is one of only two nations, with Australia, that have implemented an official Multiculturalism Policies. These policies, with respect to multicultural education, tend to focus on racism, while diversity issues, social justice and equity concepts are infused across the curricula. In addition, there is quite a strong focus on environmental issues in Atlantic Canada where the provinces have a well-established and strict system for recycling and composting and where schools are becoming more and more integral in the process of educating students on environmental issues.

Sample

As mentioned earlier, the Canadian sample was the smallest for studies conducted in countries participating in this study as it was planned to be a pilot study. A total of 40 children in grades three and four participated in this study while researchers in other countries worked with a minimum of 100 to a maximum of 200 children. As in other countries, Canadian Children were aged between 9 and 11 years and included 27 girls and 13 boys. All children in the Canadian sample attended the same public school.

Methodology

As noted, this study was conducted in conjunction with an international study on the conceptions children hold about their hopes and fears for the future. Each student completed a questionnaire, which included closed-ended and open-ended questions. Closed-ended questions were answered using a three point or a five point scale while open-ended questions prompted participants to describe their thoughts in writing and even to draw pictures if they wished to do so. The questionnaire was adapted and

appropriately translated for participants in countries where English is not the primary language or the medium of instruction.

Students were asked closed-ended questions about their thoughts on how life would be for them, their community and the world in the future, how issues such as unemployment, conflict, prejudice, health, the environment and poverty would change and finally, how they act for change in terms of what they have learned in school about each topic. Two methods were used to analyze study data: descriptive statistics were prepared for responses to closed-ended questions and compared for gender and year group; responses to open-ended questions were coded for emerging conceptions or misconceptions - these codes were represented statistically in terms of the percentage of children who voiced these conceptions or misconceptions and then compared by gender and age group. All responses were compared with responses to these questions given by children in other countries.

Results

Canadian children were first asked to assess their own future, the future of their local community and the future of the global community using a five-point scale to indicate if they thought the future in general would improve, stay the same or be worse.

Table 1. *Canadian children's response on future life*

Response	Personal (%)	Local (%)	Global (%)
Much Better	46	31	21
A Bit Better	41	36	38
About the Same	10	21	18
A Bit Worse	-	5	13
Much Worse	-	5	8
No Response	3	2	2

Virtually all the Canadian children in this study are optimistic about their personal life in the future with 97% believing it would be the same or better as compared to the United Kingdom with 39% and Spain with 38%. Surprisingly 83% of children in a poor nation, the Gambia, believed that their personal lives would be much better in the future. Students from all countries visualize a slightly better future for their global community and local community, either indicating the future would be the same or improve. Canadian children's specific conceptions which emerged about their hopes and fears for the future are represented below.

a) Hopes

Using open-ended questions, students were asked to describe their hopes for, not only their own personal future, but also for the future of their local

community and the global community. Their responses are shown in Table 2, Table 3 and Table 4 below.

Table 2. *Canadian children's responses on hopes for personal future*

Response	Boys (%)	Girls (%)
Job Aspirations	58	74
Relationships	66	55
Material Possessions	50	37
Ambitions	33	26
Education	8	26
Health	-	11

Table 3. *Canadian children's response on the future of their local community*

Response	Boys (%)	Girls (%)	Total (%)
Environment	58	81	74
Local Facilities	100	52	69
Community Issues	25	37	33
Poverty	33	37	36
Violence and Crime	25	11	15
Health	8	7	8

Table 4. *Canadian children's responses on hopes for the global future*

Response	Boys (%)	Girls (%)	Total (%)
Poverty	67	63	64
No War	67	59	61
Environment	42	55	51
Relationships	17	37	31
Justice	-	15	10
Health	42	22	29
Education	0	7	8

It is clear from these responses that these young students have different conceptions of hope for their personal future, than they do for the future of their local area or the future of the world. The personal hopes of the students were expressed in relation to job aspirations or relationships. Interestingly, boys in this sample deemed relationships more important than girls did but this difference may be related to the small sample size. In terms of the local community, Canadian children's conceptions centre on the environment and the local facilities that they wish were available. Every boy in the sample made reference to at least one local facility that was desired. Generally, they were less likely to hope for reduction of crime and violence. Globally, these young Canadian children were most concerned with war and poverty and this group was quite unlike children in other countries as their responses created a new category of conception which was coded as

'Justice'. The 'Justice' category described comments by some of the Canadian girls who hoped for better laws, better human rights, more freedom, less discrimination and racism and more justice.

b) Fears

Students were also asked to describe their fears in relation to their personal future, the future of their local area, and the future of the global community. The results for each open ended question asked are shown below. Since each student was asked to choose three fears, the percentages total more than 100%.

Table 5. *Canadian children's responses on fears for their personal future*

Response	Boys (%)	Girls (%)	Total (%)
Health	58	63	61
Success and Failure	67	59	59
Relationships	42	44	44
Being a Victim	42	11	20

Table 6. *Canadian children's responses on fears for the future of their local community*

Response	Boys (%)	Girls (%)	Total (%)
Poverty	50	63	59
Environment	58	63	61
Community Issues	25	22	23
Disasters	-	22	15
Violence and Crime	50	33	38
Health	8	22	18
Facilities	17	15	15
Traffic	-	7	5

Table 7. *Canadian children's responses on fears for the global future*

Response	Boys (%)	Girls (%)	Total (%)
Poverty	33	33	33
War	75	55	61
Environment	42	85	72
Relationships	-	4	2
Disasters	8	30	23
Health	50	4	18
Violence and Crime	17	22	20

Canadian children seem to share more fears than they do hopes for the future. On the personal level, children are worried about success and failure while at the local level children's fears were focused strongly on the

environment and poverty. It seems that children in this Canadian sample are more aware of poverty than their counterparts in other countries even if poverty does not directly affect their lives. At the global level, Canadian children are most concerned about the environment and war – boys were most concerned about war, while girls were most concerned about the environment. Again, as noted above, it is possible that the small sample size skews the results in favor of girls’ however, even with taking the sample size into account; boys mentioned health related fears much more often than girls did and the environment is certainly more of a concern for the female portion of this sample.

c) Concerns about specific issues

Once students had responded to questions that focused on their hopes and fears for the future, they were asked to talk about specific issues that they feel are affecting the world. Children were asked to indicate whether they thought there would be more, about the same, or less violence, unemployment, prejudice, environmental problems, poverty, and healthiness in their local community and in the world. The following graphs illustrate their responses.

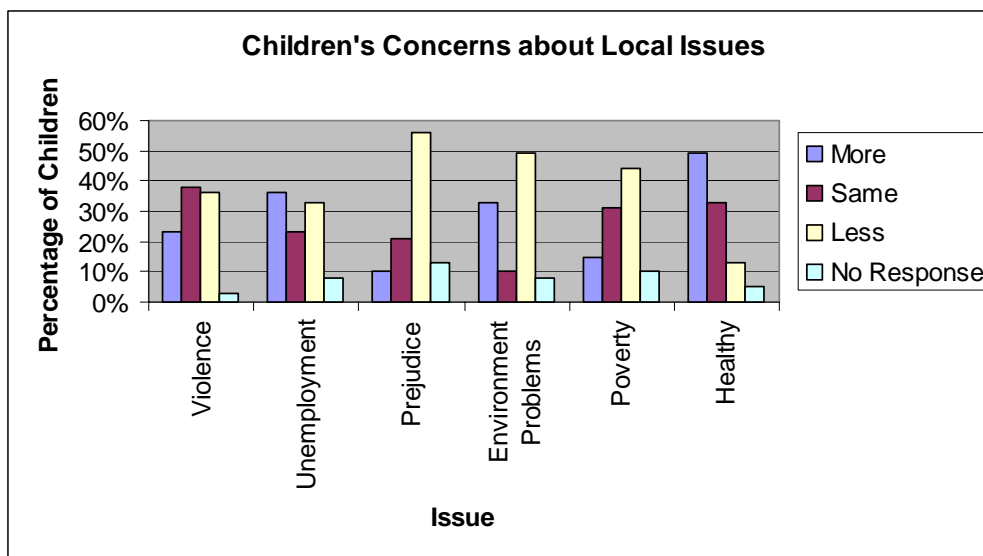


Figure 1. Canadian children’s concerns about local issues

Canadian children felt that violence would be about the same in the future and show little optimism with regards to unemployment in their local area. In other areas the children were extremely optimistic about the future predicting less prejudice, less poverty, fewer environmental problems and better health. Again, the responses with respect to environmental problems may be attributed to the girls’ optimism as female respondents more than doubled the males.

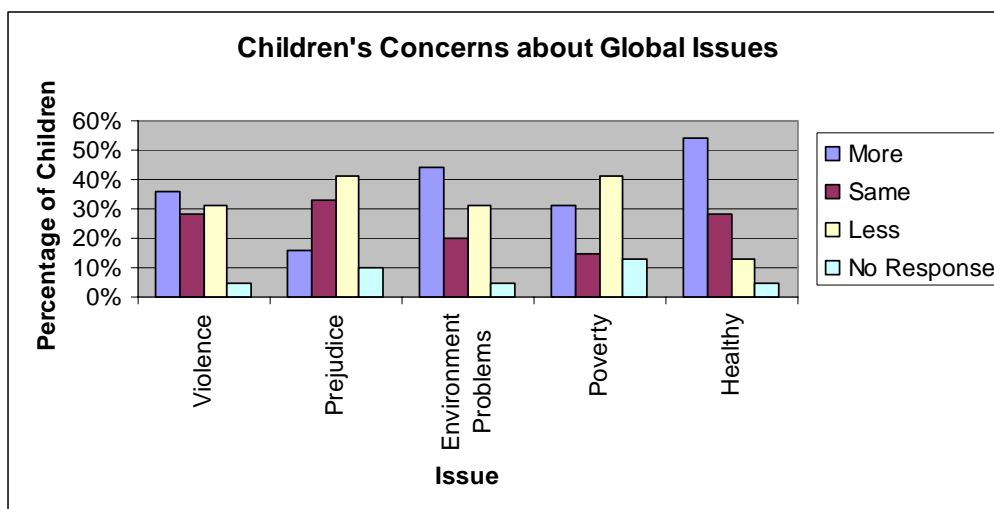


Figure 2. Canadian children's concerns about global issues

For the most part, Canadian children were more optimistic about global issues than they were about local issues. Globally they felt that there would be more violence but that locally there would be the same levels of violence. The children also believed that there would be less prejudice and less poverty in the world, but are much less optimistic about these issues than they were when considering their local community. Like their vision for their local community, the children felt that people in the world would be much healthier in the future - health is the only issue that elicited relatively similar responses for the local and global levels. Canadian children's conceptions about global environmental problems are pessimistic as most felt that environmental problems would be more prevalent in the world in the future.

d) Action for Change

In addition to probing for hopes and fears and local and global issues, the questionnaire also asked students for their plans for action. How many of these students are involved in local or national organizations? How important do they think the issues are and how much have they learned in school? To gain an understanding of Canadian children's prior knowledge of global issues, the students were asked if they thought it was important to learn about global issues at school. 64% indicated that it was very important to learn about global issues at school and 28% indicated that it was important. However, when asked how much they have learned about global issues at school, only 15% responded that they had learned a lot. Most girls responded that they had learned a little, with 67% of the children responding that they had learned only a little.

Given that students felt that they had learned only a little about global issues at school, it could be assumed that they did not engage in many activities at school that were related to global issues. When asked to

give examples of things they had done at school, the children replied overwhelmingly that they had been involved with environmental-type activities such as keeping the school litter free, recycling and learning about global warming, rainforests and the environment. The children also indicated that they had learned about beliefs and values in their school, stating that they had covered topics such as racism, poverty and bullying. The students also remembered learning about health issues and news events such as war, tsunamis and the flood in New Orleans. In terms of action, the students indicated that they had raised funds and supported the food bank. Again, in the minds of these children the environment is the issue that they encounter the most in school.

Children were also asked if there was anything that they could do to help make the world better. All except five percent of the children responded that they believed that there was something they could do, they were divided however as to whether there was a little or a lot that they could do. Despite believing that they could do something, when asked if they were involved in any local or national organizations, 20 of 39 students indicated that they were not members of any organizations, while 16 students did not respond. Assuming that the children who did not respond do not belong to any organizations, less than 1% of this sample is involved in any organization that might challenge these students to work on a practical level on the issues that were of concern to them.

While not involved in any type of organized group, respondents did give examples of things they could do to help make their community and the world a better place. Students indicated three main categories of world-improving activities; the environment, actions and relationships. They mentioned picking up litter, recycling, composting, donating money and being respectful and cooperative with others. Students also mentioned keeping fit, not smoking or taking drugs and getting a good education. All of the children in the sample mentioned at least one thing that they could do to improve and protect the environment and to build relationships. When it came to actually doing something, however, very few had done the activities they suggested.

Discussion

As reminder to the reader, it should be noted that the generalizability and/or transferability of this study is limited in particular to the sample and the school target population as the sample was small and meant for the Canadian pilot study. However, although this study involved a small sample of young Canadian children from one school, the children involved in this study have provided much insight into the prior knowledge they have with respect to their hopes, fears, concerns, and actions in the local area and the global community. Much of the data speaks directly to the environment these children live in and the information they are gathering from those around them. More than students in other countries, this group was

concerned with environmental issues. And, more than children in other countries, these children could give examples of activities they were doing at school to improve the environment. The strong focus on the environment for these children may be a result of local efforts in Atlantic Canada to reduce waste and to encourage people to participate in recycling programs. In Canada's Atlantic Provinces, the curriculum has a particular focus on environmental practices ranging from conservation of energy and reduction of waste to weather-related issues and global warming. These students are not only learning about these environmental issues in school, they are provided opportunities to act on their concern at school, at home and in the local community. This study shows that there is a strong tendency for these students to participate in environmental activities, especially to participate in activities related to recycling.

Despite their strong interest in the environment, some of the Canadian children seem to hold misconceptions or naïve theories in their thinking and understanding about the environment and the things they can do to improve the environment. Their understanding seems to be limited to the environment within the school walls and their back yard and focused simply on picking up litter and recycling at home and in the community. Most of them did not perceive that their life style might be detrimental to the environment. For example, when asked to envision their future as adults some children drew pictures of their family of four people (father, mother and two children-boy and girl) each with full bathroom, air conditioner, fridge and other electrical gadgets in each one's bedroom. In some cases, children envisioned that the father would have a large truck, the mother a big Sports Utility Vehicle and each child would have a car.

Globally, respondents were concerned about poverty, war, the environment, racism, discrimination and acts of injustice. Though aspiring to be 'good' citizens and having a clear conception and some prior knowledge of these issues, they seemed to lack vision about their own abilities to become involved with these issues. Perhaps, living in an affluent country contributes to this misconception in their way of thinking. The results from this school in particular, indicate that teachers should move beyond teaching citizenship education at a theoretical/factual level and begin to help students to envision practical solutions to issues that concern them. Teachers could help these students to think beyond the little acts they might engage in at school and help students to see how they might contribute more substantially.

Importantly, a new code was developed for this study for the concept "social justice". The Canadian participants in this study indicated very strongly and clearly that there should be neither discrimination nor racism in their local communities nor in the global community. They were strongly pro-diversity, pro-social justice and pro-equity. This was an outstanding conception for these Canadian children to identify given that these children live in a small community and may not experience discrimination or racism.

The prior knowledge about discrimination and racism shown by these Canadian children indicates that Canada's Multiculturalism Policy and diversity issues are being taught at this school and that the message is having an influence on the way these children approach the world. It would be interesting to explore how these children would react to scenarios depicting discrimination and racism and to follow these children as they grow to see how they face discrimination and racism and promote social justice and equity in the future.

Most of the children in this sample, regardless of gender, centre their personal concerns on job aspirations, relationships and material possessions which seem to reflect the focus in schools on developing positive relationships with others. Several of these children want to get married, have a family and have lots of friends. They also have specific job aspirations and were able to indicate exactly what they would like to become in the future. Even at a young age these children have begun to set a direction for their own futures. These Canadian children were more interested in the material possessions they would obtain in the future than were most children from developing countries possibly because they live in a wealthy country and are inundated by advertisements. While Canadian boys are more interested in obtaining material possessions than Canadian girls, overall, children from the United Kingdom are still at the top of the list in terms of wanting many material possessions (Holden, Joldoshalieva & Shamatov, 2008).

In keeping with their optimism, these children were not overly pessimistic about any issues in their local area, except regarding unemployment in the future. This may be because many Atlantic Canadians had migrated west to find work during the time of the study. Many respondents in this study were living in a situation where one parent was working in the west and returning home periodically, while many others were losing friends to the westward migration of Atlantic Canadian residents.

Several children were concerned about war and poverty perhaps because much media attention is devoted to wars occurring around the world. Canadians were more concerned with poverty than children from the United Kingdom, the other largely developed and wealthy country in the study. Again, the ability of these children to reflect on global issues might be due to the influence of teachers and the curriculum in Atlantic Canada, especially the foundation Social studies document which focuses on global education.

Interestingly children from war torn countries in Africa and Asia, children from Pakistan for example, were more optimistic about peace in the future at both local and global levels, than Canadian children. While Canadian children are concerned about war, poverty and environmental issues, they are considerably less concerned with crime and violence than

children from the United Kingdom and South Africa (Holden, 2008; Holden, Joldoshalieva & Shamatov, 2008). Canadian children's prior knowledge here may be limited because they are not affected by violence and crime in their local area, and thus do not consider violence and crime as threats in the world at large. Canadian respondents may view other issues as being more important than do their counterparts in other countries.

This study suggests that educators and parents in Canada, and particularly in the Atlantic provinces, are doing a formidable job of preparing children for the future, especially with regard to recycling programs and their impact on the environment. This study indicates that it is important to teach children about global issues in schools and that it is also important to reinforce and personalize those concepts at home. As Naval and Reparaz (2008) argue in a similar study they did with Spanish children, if school and family work together for this single purpose, then the education of children will be positively influenced and the students will become 'good' citizens, involved in society and focused on its needs and problems. Children need to be given opportunities to learn about and to grow as global citizens. Canadian children in this study have shown that they believe that global education in the school system is important but feel that they are too little to do anything. Perhaps it is time for Canada and other countries to develop curriculum devoted specifically to civic and global education.

A significant body of research also demonstrates that prior knowledge is a key factor influencing learning and is central to this study. Ausubel (1968) and Hartman (1991) point out that meaningful learning depends on organizing material in a way that connects it with the ideas in the learner's cognitive In other words how we think influences how and what we learn. Therefore, understanding students' prior knowledge is essential to good teaching and new learning. Learners come to any learning situation with certain prior knowledge, which, at times, might be misconceptions or naïve theories (Byrnes and Torney-Purta, 1995). Therefore, it is crucial that teachers understand their students' prior knowledge and build or refine instructional techniques and resources accordingly. In fact, Hunt and Minstrell (1997) argue that children's difficulties in learning occur when prior knowledge is not taken into account. This creates communication barriers between the students and adults (teachers). Learners suffer internal conflict if they are taught new material which contradicts their previous understanding. At times, existing schemata can be difficult to change.

In the field of constructivism, it is widely accepted that teachers should act as facilitator to students' experience in the world around them. Griffin and Cole, (1984) claim, "Instruction should be designed to support a dialogue between the child and his or her future; not a dialogue between the child and the adult's history. Adult wisdom does not provide teleology for child development." (p.1).

Students rely heavily on their prior knowledge when faced with learning new concepts. In fact, development of conceptual framework maps new learning situations via our experiences and what we already know in the world. It is a process of discovering reality in 'our world', interacting with it and transferring that understanding into the mind, forming internal representations that determine subsequent interactions with the environment around us. So if one is to teach effectively, one needs to assess and understand where the students' level of knowledge currently stands in relation to the concept to be taught. For example, Driver and Easley (1978) characterize learning scientific concepts as being initiated into ideas and practices of the scientific community that already exist (prior knowledge) and making these ideas and practices meaningful at an individual level. Therefore, before introducing new concepts, the teacher needs to find out whether the students are close to each other's level of understanding. At the same time, the teacher should also find out if the students hold preconceptions; these are ideas not yet fully understood, or misconceptions. In these cases students might have been taught formal theories but misunderstood them or misinterpreted them. Also, the teacher should find out whether the students hold alternative frameworks; that is when students develop their own concepts through imaginative efforts. Peck (2003) strongly supports this and sees it as fundamental to the process of teaching and learning. She contends:

As a teacher I have been advised on more than one occasion to take students where they are developmentally and teach them accordingly, seems a rational enough idea. I have come to realize, however, that before I can proceed with this advice, I first need to accomplish two tasks: 1) find out where students are developmentally-speaking, and 2) Explore ways to further their conceptual development, whether this implies a change of ideas or an extension of theories or both. (p.33)

The above thinking and assumption is very useful because it helps teachers to understand the schemata of their students. Schemata are always organized meaningfully, can be added as an individual gains experience in the real world. Schemata are then reorganized as new information is learned and restructuring of the concept. The schemata help in the formation of abstract and concrete concepts. The stored information is our prior knowledge and is the basis for new learning. It is essential for comprehending new information. From the above on-going discussion, understanding Canadian young children's prior knowledge on their conceptions, misconceptions or naïve thinking about the future in the global community in comparison to their counterpart is crucial in making consideration for future curriculum implications in Global Education and Global citizenship. Hughes and Sears (2004) present an analogy that is very useful in explaining prior knowledge:

Think of student's prior knowledge or, as some would call it, cognitive schema, as a modular bookshelf. The supports and the shelves help to structure the pieces of knowledge that are represented by the books on the shelves. As the person acquires new knowledge – new books – a number of things might happen. The knowledge might fit well with what they already know and that book slides neatly on the shelf

beside the others [Assimilation]. The knowledge might be something almost completely new and require a new shelf to accommodate it [Accommodation]. Another possibility, however, is that the knowledge is related to that on one of the shelves which already exists but does not seem to fit. It is like getting an oversized book which will not slide neatly on to the shelf. In this case the learner has some options. He or she can do what many of us might do with the oversized book and set it aside for the time being, perhaps putting it on the coffee table. They decide not to deal with the new knowledge, at least not for now. Another possibility is to turn the book sideways and slide it on the shelf that way [disequilibrium according to Piaget or perturbation according to Dewey]. In other words, not accept the knowledge in the way presented but manipulate it so that it fits. This often means distorting the knowledge, creating or adding to misconceptions. (p.264)

In conclusion, the children in this sample were repeatedly optimistic about several issues and the future in general. The majority of respondents felt that their personal, local and global futures would be the same, if not better. Unlike their counterparts in other countries, these children hold extremely high hopes for their personal future, and slightly less optimism for the future of their local area and the global community. Also, this study indicates that schools should move beyond teaching citizenship education at the theoretical/factual level and encouraging students to become involved in little acts intended to save the environment. They need to use the prior knowledge; conceptions and misconceptions, like those expressed by children in this study, and help students to envision practical solutions for the world they want. The young student's schemata would help systematize or sort out what people know, and provide a framework for arranging new information being learned or encountered. One's own knowledge is part of one's prior knowledge and this can include correct conceptions, misconceptions or naïve theories. The schemata grow and change as new information is absorbed in relation to the whole process of learning. Research on prior knowledge has both theoretical significance and practical importance as it can help curriculum designers, educators-teachers and policy and program developers to obtain a clear picture of children's schemata and help them to reshape, further develop or improve relevant citizenship, global education and multicultural education programs. Also in the proposed large Canadian study, I would also like to focus and explore the impact of Canadian children's cultural and social capital levels on their prior knowledge as crucial lens or variables too.



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