A Baseline Study of Ontario Teachers' Views of Environmental and Outdoor Education

By Erminia Pedretti, Joanne Nazir, Michael Tan, Katherine Bellomo and Gabriel Ayyavoo

The research described in this report came about as a result of several converging factors in Ontario: a resurgence of interest in environmental and outdoor education (including outdoor education (OE) centres); recent publications supporting environmental and outdoor education; and curriculum revisions across subject areas that include environmental education (EE) outcomes.

Despite the surge of interest in EE, a variety of theoretical perspectives on the subject, and the growing abundance of teaching resources, it is still unclear how EE is being enacted in classrooms. As far back as 1996, Hart identified the lack of existing empirical studies tracking teachers' views and pedagogical practices of EE. A search of academic literature more than a decade later revealed little change. We were unable to find any substantial studies mapping Ontario teachers' knowledge, views and practice of EE or its link to OE. This study was designed in response to this gap, to act as a baseline study of environmental and outdoor education in Ontario.

Environmental and Outdoor Education in Ontario

EE and OE have established, linked histories in Canada (Passmore, 1972). In the year 2000, Russell, Bell and Fawcett described EE in Canada as consisting of a "diversity of narratives" (p. 207) with many possible avenues of practice. Traditional courses, advocacy activities, media programs and outdoor-/nature-based programs are some of the avenues they identified through which EE was being enacted across the country. Sauvé (2005) reaffirmed this portrait of EE, as a vaguely defined discipline with multiple avenues of pursuance, by identifying 15 currents or different ways of conceptualising and practicing EE. Several of Sauvé's currents link learning in the outdoors with EE. For example, the naturalist current is concerned with connecting children to nature by employing experiential strategies to immerse them in the natural world, while the bioregionalist approach aims at developing people's relationships with the local or regional environment or nature, and fostering a sense of belonging and place. (For a more detailed discussion of EE currents, see Sauvé, 2005).

Over the years, EE and OE have remained relatively low status topics in formal education. However, since 2007, a number of reports have been published that have resulted in a surge of interest in both areas within the province of Ontario. The first, *Shaping Our Schools, Shaping Our Future: Environmental Education in Ontario Schools*[1] (Working Group on Environmental Education, 2007), identified EE as a key issue in modern societies and recommended its immediate inclusion in all provincial school curricula. In response to this recommendation, the Ontario Ministry of Education in 2009 published the document *Acting Today, Shaping Tomorrow: A Policy Framework for Environmental Education in Ontario Schools* that sought to expand opportunities and provide support for EE in schools. Other government and non-governmental organizations have also taken up the challenge of providing EE by producing a plethora of resources, ideas and lesson plans for environmental educators to use in classrooms. A third document, *Reconnecting Children with Nature* (Foster & Linney, 2007), was commissioned by the Council of Outdoor Educators of Ontario (COEO). In addition to promoting OE in general, this latter report emphasizes the link between environmental learning and the outdoors:

> Early, sequenced and repeated experiences in the outdoors develop a kinship with nature that can evolve into an informed, proactive and lifelong stewardship of our natural environment (Foster & Linney, 2007, p.53).

One of the resounding conclusions of this report is that OE centres are important, unique venues for providing EE in Ontario.

Study Overview

The study consisted of an online survey followed by a series of in-depth interviews with survey respondents who volunteered for this aspect of data collection. The survey was developed over several months by the research team members who read through the literature and engaged in ongoing discussions about the matters most relevant to the Ontario context. The survey consisted of 93 items divided into nine sections: (a) demographic information, (b) personal beliefs about the environment, (c) classroom beliefs about and practices of OE and EE, (d) school context beliefs and practices, (e) gaps between beliefs and practices, (f) challenges to EE/opportunities for professional development, (g) personal beliefs about OE, (h) teachers' use of OE centres, and (i) an open response section. The majority of the questionnaire consisted of five-point Likert-scale responses ranging from *strongly disagree* (1) *to strongly agree* (5), *along with a neutral response* (3).The final instrument was validated through standard procedures of peer critique and pilot testing with a small sample of the intended test population. This instrument was posted online through a popular survey hosting platform. The call for participants was widely advertised across Ontario, through established teacher forums, popular teacher magazines and personal contact lists. The survey remained open for response by all teachers of all grade levels for eight months between November 2008 and June 2009. The online platform used to host the survey automatically collated the data and generated descriptive statistics. These descriptive statistics form the basis of the analysis presented in this paper.

As part of the open response section, survey respondents were invited to volunteer for an in-depth interview, intended to allow them to expand on answers given in the survey and provide opportunities for the emergence of ideas that may not have been anticipated by the instrument. Twenty-four interviews (mainly telephone interviews) were conducted with teachers and outdoor educators from across the province. These interviews were analyzed for salient categories and themes relevant to OE and EE using standard qualitative analysis procedures. The reporting of direct quotes is followed by a pseudonym and subject area, while responses to open-ended survey questions are identified by a respondent number.

There are a few limitations to note about the study. First, although there was a seemingly large response to the survey (N=377), the actual responses represent but a small proportion of the total number of Ontario teachers.[2] Second, participants in the study do not constitute a statistically representative sample of Ontario teachers since participation in the survey was self-selecting and voluntary. Based on these two points, caution is advised regarding the extent to which generalizations can be made to the entire Ontario teaching population. Third, the study combines elementary and secondary data. It is worth noting that the needs of elementary and secondary teachers are often different, as are the contexts in which they operate. For the purposes of this report, the choice was made to present a broad picture of the Ontario landscape. Subsequent reports will provide more fine-grained analyses. Furthermore, a complete reporting of all data is beyond the scope of this paper. In spite of these limitations, we believe that our study provides a reasonable and helpful portrayal of what is going on in the province with respect to EE and OE. More importantly, our research provided a forum for teachers' voices across the province. Below we highlight some of the findings from our study.

Study Participants

Of the 377 respondents to the survey, 69% identified themselves as female. The majority of respondents possessed both an undergraduate degree (81.6%) and a Bachelor of Education degree (82.2%). A significant minority possessed a graduate degree: 27.1% at the master's level and

2.8% at the doctorate level. In terms of age, the majority of the respondents (60.1%) were between 31 and 50 years old. Many were experienced teachers, with 56.5% reporting more than ten years' teaching experience, and 25% reporting five to ten years' teaching experience. Only 18.5% of the respondents were beginning teachers with less than five years' teaching experience.

The survey was open province wide but 36.3% of the responses came from the City of Toronto (not surprising since Toronto has approximately 42% of Ontario's population). Responses came from 43 different cities and towns in Ontario, including Barrie, Brampton, Cambridge, Dryden, Guelph, Kingston, London, North Bay, Oshawa, Orillia, Pembroke, Port Colborne, Sarnia,

Table 1: Teachers' Beliefs and Practices

Statement	Rating Average*
The Environment	
The dangers of environmental degradation are often overstated	2.00
Environmental action at an individual level is futile	1.60
Corporate expansion is a major cause of environmental degradation in the last 50 years	3.89
Governments should do more to alleviate environmental degradation	4.38
Technology can reduce the environmental impact of economic development	3.61
I am aware of environmental issues affecting my local community	4.32
I consider myself an ally of environmental causes	4.29
Environmental Education	
Environmental education is a high status topic for me	4.09
Environmental education is generally well implemented in my classroom	3.54
I am successful in getting my students concerned about the GLOBAL environment	3.40
I am successful in getting my students concerned about my LOCAL environment	3.55
In classrooms teachers should advocate a particular stand with respect to environmental issues	3.43
Environmental education should include a social justice perspective	4.20
Environmental education should include an action component	4.36
Outdoor Education	
Fieldtrips and activities outside the classroom area essential to environmental education	4.46
I make opportunities to be close to nature	3.87
I frequently use Outdoor Education Centre visits to promote environmental awareness	2.85
Visits to Outdoor Education Centres should be an essential component of environmental education	4.47
Outdoor education should be about connecting children to the natural environment	4.58
Outdoor education should be about helping students to understand the role of nature in their lives	4.58
Outdoor education should be about helping students to make choices about socio-political action	4.03

Temiskaming Shores, Timmins, Welland and Woodstock. Overall, 58% of the respondents identified their school as urban. Sixty-eight percent of the respondents worked within public English school systems, 23.3 % within Catholic English schools and 5.2% in independent schools. A slightly greater proportion of secondary level teachers (54%) chose to respond to the survey than those at the elementary level (46%).

Teachers' Beliefs and Practices

Table 1 summarises respondents' main beliefs and practices with respect to the environment, EE and OE. From these results it is clear that respondents hold decisive opinions about the issues under study.

Notably, the teachers surveyed possess an urgent sense that the environment is deteriorating, and are of the opinion that multi-level action is needed to address the problem. Overwhelmingly, study participants consider themselves allies of environmental causes (rating average= 4.29) and agree that EE is a high status topic for them personally (4.09). They also believe they are doing a good job at implementing EE in their individual classrooms (3.54), specifically reporting fair levels of success in getting students interested in the global (3.40) and local (3.55) environment. Figure 1 provides more detailed information on the self reported frequency of EE in classrooms. It shows that 92% of the respondents engage in some form of EE in their normal teaching practice. However, this engagement is of variable frequency, with only 47% percent reporting that EE occurs at least once a week in their classrooms.

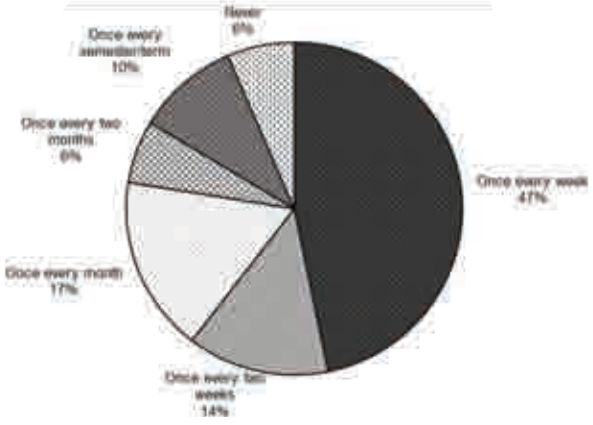

Figure 1: The Frequency of Environmental Education in Classrooms

The study data also indicates that respondents have many ideas about the ideal nature of EE and how it should be practiced in schools. Table 1 demonstrates some of these beliefs. Most conspicuously, teachers surveyed believe that, in classrooms, teachers should advocate a particular stand with respect to environment (3.43); EE should include social justice (4.20) and action components (4.36); and outdoor education is an essential component of EE (4.46). OE is viewed as necessary for connecting children to the natural environment (4.58); and helping students to understand the role of nature in their lives (4.58).

Participants passionately expanded on their beliefs in their open ended comments and interviews. For example,

> This [the environment] is the most important issue of the coming century. Though I'm concerned about desensitization through repetition and hypocrisy (Respondent 330).

> . . . to me, the most important part of environmental education is developing students with the skills so that they do something as they get older to help improve the environment or work with the environment, or be aware of the environment (Interview with Julian, Geography Teacher).

> I believe that if the teacher feels passionate about environmental issues s/he can pass on their sentiments to their students. As a holistic educator I believe in transformational learning. Through their learning experiences students need to be transformed into better human beings who can be stewards of the environment. Through my involvement in environmental committees, I have provided opportunities for students to become sensitized to environmental issues (Respondent 123).

Based on the results reported above, it is reasonable to infer that the study participants support the inclusion of EE in schools. On the issue of who should be responsible for teaching it, 60% of educators felt that EE is a cross-curricular component and thus the responsibility of all teachers, not the domain of a subject specialist or a standalone course (see Figure 2). Interestingly, of the 5% who felt that EE should be taught through a subject, science and geography were the most common choices.

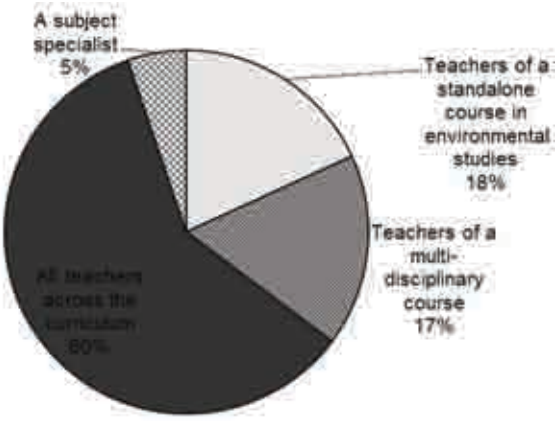

Figure 2: Who Should Be Responsible for Environmental Education?

Tensions and Opportunities

In addition to clear positive indicators supporting the viability of EE and OE for schools, the study data also revealed tensions and possible opportunities for intervention concerning these issues. Four of these are highlighted below:

Environmental Educators: A Marginalised Minority

While study participants were confident in their support for environmental and outdoor education, they were equally certain that in schools they exist as a marginalised minority, that is, many of their colleagues do not support EE. Their responses converged around the opinion that they are commonly caricatured as "weird, tree hugging idealists" by students and fellow teachers. For many, this unflattering portrait is a source of disenchantment and disempowerment. According to one interviewee,

> I find many of the staff at the school where I work, don't really seem to care very much about environmental issues. And they are not role modeling, because they don't care; they're not really very good role models to the students. I still see teachers throwing pop cans in the garbage and not recycling their paper. . . . With my green team I've put reuse boxes for paper that's only been used on one side pretty much in every classroom and every office space in the school. But I can't convince people to use one-sided paper in their printers. I feel that I'm the only one that goes collecting one-sided paper for my printer. I don't have a lot of support at my school from the other staff. So that's hard, because you feel you're one person against everybody and trying to change people's views (Interview with Flora, Teacher/Former Outdoor Educator).

Additional studies need to be done to verify this phenomenon. However, if it is true that environmental educators are perceived as a marginal group, a possible direction for professional development would be to support and nurture them, perhaps by increasing the number of networking opportunities, action research projects or other forums known to bring educators together and assist in building strong communities of practice.

More Basic Environmental Education for Teachers

Across the study a number of items were included to investigate the barriers to effective EE and OE. Participant responses indicated the perennial challenges that educators generally face: an overcrowded curriculum, lack of curriculum resources, and difficulties in aligning EE with existing official expectations. However, one set of results that were particularly noteworthy, and offered a possible entry point for intervention, came from an item

designed to explore the sources of teachers' environmental knowledge: as shown in Figure 3, a majority of participants (over 75%) attributed their EE to personal studies rather than professional development sources. Indeed, professional teacher education opportunities, such as Additional Qualification (AQ) courses and Preservice courses, were cited by only 10–12% of respondents as a source of EE.

Teachers' disappointment with current professional educational opportunities for EE was further indicated by their response to a survey item that asked them to identify topics in which they needed additional education. A wide range of topics received high positive rating averages, including content knowledge (3.78), pedagogical strategies (3.96), assessment techniques (3.71), curriculum development (4.09) and the use of OE facilities (3.97). When asked about the kinds of professional development they would like to see, 30% of respondents chose "time at school to plan with colleagues;" 38% wanted a "full day in-service workshop;" 21% indicated they would like an opportunity to "visit an OE centre;" and 11% chose "action research."

Our results suggest that teachers who are passionate about the environment generally believe they are acting in isolation, and primarily use personal knowledge to provide EE. They believe they are doing their best in the face of very little professional support. However, they seem to hunger for appropriate educational opportunities that allow them to grow in their knowledge and practice of EE. Going further, these results may also indicate one reason why EE is not more widely practiced in formal education. Many teachers may simply lack basic knowledge and/or pedagogical strategies about environmental issues and education. Faculties of education and teacher professional development bodies may consider supplementing their programs and expanding opportunities for EE in their offerings in the light of these results.

The Gap Between Beliefs and Practices

A section of the survey was dedicated to exploring the relationship between teachers' ideal beliefs about EE and their practices in classrooms. The results revealed a clear gap between what respondents believe EE *should be and what it is* in actuality. Figure 4 illustrates the gap.

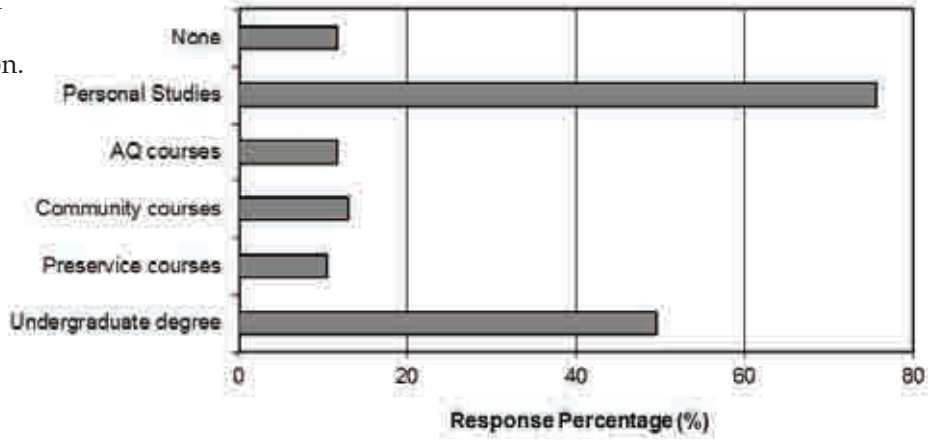

Figure 3: Sources of Teachers' Environmental Education

From the graphic, it is clear that teachers have higher expectations for EE than what usually occurs in classrooms. It is also clear that, while raising student awareness about the environment is important, teachers also believe that other aspects—such as critical thinking, the influence of technology, the effect of global trade flows and environmental activism—should receive greater emphasis in practice.

The existence of gaps between what teachers believe and what they do in practice is not, in itself, surprising; the existence of theory–practice gaps is well established in education research literature about teacher praxis. Understanding why specific gaps exist is necessary to suggest how they might be bridged. The nature of the gaps identified in this study indicates, among other things, the complex nature of EE. Teachers' visions of

EE often involve complex and controversial components. For example, incorporating activism in classrooms is a compelling idea, but achieving it within the confines of the traditional classroom is a conundrum well-established in existing educational literature (e.g., Alsop & Bencze, 2010; Roth & Calabrese Barton, 2004; Pedretti et al., 2008). Additional work is needed to explore these gaps in more detail and to assist teachers in developing practical pedagogical strategies to bridge them.

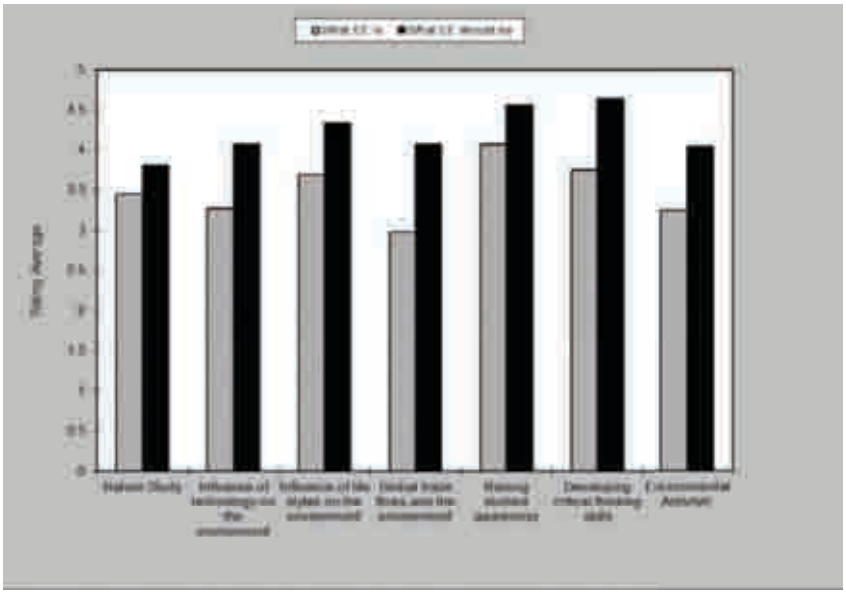

Figure 4: The Nature of Environmental Education in Schools

The Link Between Environmental and Outdoor Education

As discussed earlier, survey respondents believe there is a strong link between OE and EE (see Table 1). In addition to the statistical data summarized in Table 1, in-depth interviews provided considerable evidence to support this link. According to one teacher,

> I think part of environmental education is getting kids to be comfortable in nature. Having them understand that they can enjoy being in nature, they don't have to be afraid of it. That it's a place where they can have fun, outside, enjoying the shade on a hot day, or learning the names of plants, or growing a garden and watching things change, or looking at animals. Just sort of giving them that experience, outdoors. And helping them understand a bit about their relationship with nature, like for instance, a food web, or an energy pyramid (Interview with Allison, Kindergarten teacher).

However despite enthusiastic support for the connection between OE and EE, 52% of respondents indicated that they *do not* make use of visits to OE centres in their teaching. When asked to account for this discrepancy, teachers identified the lack of access to outdoor facilities and lack of professional knowledge about OE as major barriers to their use of OE centres. For example,

> Teachers could be more encouraged and trained on how to bring students outside for lessons in and about their communities. Outdoor education centres are wonderful additions to the classroom education, but environmental issues need to be an everyday issue in the lives of students and teachers. Outdoor centres isolate outdoor education to one or two special days a year and this isn't enough to have a significant impact (Respondent 11).

A search of the existing academic literature reveals a dearth of rigorous research about the benefits of OE, especially the work done at OE centres. The history of OE in Ontario suggests that the Ministry of Education is often ambivalent, viewing OE centres as quaint but expendable facilities in times of

organizational strain. In contrast, the results reported above suggest the existence of an essential role for OE centres and the need for further investigation into the connections between OE in general and EE. Such work may further corroborate the need for greater collaboration between outdoor and indoor educators and an expansion of existing OE opportunities for schools as part of the overarching future development of EE.

Implications and Conclusions

This study sought to establish a baseline of Ontario teachers' beliefs and practices with respect to EE and OE. Overall, it is extremely heartening that there exists a dedicated core of teachers who are passionate about EE and recognise its link to OE. However, a number of implications emerged from this study that warrant further consideration.

First, there is a need for more research of this type, especially exploring the gaps between teachers' beliefs and practices in EE and OE. For example, detailed studies are needed of why teachers do not include action or agency more frequently in their lessons when they clearly believe it to be a vital part of EE. More studies are also needed to explore the barriers to the use of outdoor centres since teachers believe outdoor experiences are intrinsic to environmental learning. Ideally such research should go beyond explaining the gaps, seeking instead to bridge them in ways that are realistic, praxis oriented and relevant to teachers.

Second, there is a pressing need for more professional education opportunities for teachers in the areas of EE and OE. The analyses indicate that most of the respondents' knowledge in these domains comes from personal studies/interest. Furthermore, the data suggests that various types of educational interventions may be necessary for different groups of educators; those who are not particularly committed to EE or OE will have different needs from those who are committed but need help in deepening their understanding and practice of EE and OE. For many teachers, opportunities are needed to come up with pedagogical strategies for intrinsic components of EE, paying particular attention to, for example, developing the necessary skills in decision making, critical thinking, action, and outdoor pedagogy.

Third, our study suggests that much stronger links between EE and OE would be beneficial. This could take many forms: working together in Professional Learning Communities that have diverse membership (i.e., teachers, environmental specialists, outdoor educators); providing teachers with opportunities to visit OE as part of professional development; and providing students with ongoing opportunities to attend OE centres while in elementary and secondary schooling.

Fourth, EE and OE need to be an important component of pre-service education programs. Again, there are many ways in which this can be accomplished (and in some faculties of education, some of these strategies are already in place): lobbying for EE as a teachable subject; integrating EE across all subjects in elementary and secondary programs in a coherent way; and offering environmental studies courses that are intense in content and pedagogy. The question of whether EE should be a stand-alone subject or integrated across the curriculum is still open to debate, although 60% of respondents in this study agree that EE should be the responsibility of all teachers across the curriculum.

What seems clear is that many teachers who are committed to EE have their own ideas about it. Although some ready-made plans and kits exist to assist teachers, they may not fully take into account teachers' ideas or the practical realities of schooling. As such, rather than providing more tailor-made resources, those interested in promoting EE should consider supporting research and educational opportunities to nurture the development of strong communities of environmental educators in schools. Teachers indicated that time in schools to work with colleagues and opportunities to develop curriculum are sorely lacking. If we are indeed to make significant strides

in EE, then we must provide teachers with more opportunities to work in collegial communities, develop curriculum, and examine practice.

Notes

[1] This report is commonly referred to as "The Bondar Report."

[2] For 2008–2009, the Ontario Ministry of Education reported that there were 114,872.91 full-time equivalent (FTE) teachers working in Ontario.

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Acknowledgements

The authors would like to thank all the educators who participated in the survey and volunteered to be interviewed. Without their passion and commitment this project would not have been possible. We are also grateful to Social Sciences and Humanities Research Council Grant #482799 for funding this work.

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