Abstract
This paper describes the implementation of a study designed to assess the effectiveness of a dialogue-based Community of Inquiry approach in developing the skills and dispositions requisite for engaging in the processes of rational ethical justification. The intervention study involved approximately 250 South Australian students from a diverse range of social and educational backgrounds. Findings indicate that the program trialled is effective in developing students’ abilities and readiness to engage in the processes of rational ethical justification, and functional, in that it worked well within the constraints of prevailing educational structures.

Keywords: Ethical inquiry; community of inquiry; intervention

1 Introduction: rational ethical justification
The argument of this paper outlines one strand of an ongoing interdisciplinary research project, the ‘Cultivating Reason-Giving Project’, grounded in both philosophy and cognitive psychology. The project is aimed in part at the development of an educational programme for fostering the skills of rational ethical justification, as well as the disposition to apply these skills widely. One significant strand of this work has been the development of a dialogue-based ethical inquiry approach to teaching social and environmental education. This paper describes the implementation of an intervention study designed to assess the effectiveness of employing this Community of Inquiry approach in developing the skills and dispositions requisite for engaging in the processes of rational ethical justification.

Although there is continuing philosophical debate about the nature of these processes, we have argued elsewhere that there are well established procedures for engaging in rational ethical justification based on an understanding that ethics is grounded in good and harm (suffering); more over, that human beings and indeed all sentient beings, share common capacities for suffering and happiness. Further, we argue that it is necessary to weigh up suffering and happiness, or harm and good in the interests of all concerned (Knight & Collins, 2006). This understanding or insight provides an ethical yardstick, a principle which forms the basis of rational ethical justification. It does not in itself deliver a procedure for making ethical judgements or decisions. But we can also draw on some other well established elements of ethical justification, such as assessing arguments on the basis of truth and relevance, considering as fully as possible the consequences of one’s behaviour, taking circumstances into account, empathising with others, and ensuring consistency between one’s beliefs and between one’s beliefs and actions. While it is beyond the scope of the paper to discuss the complex interplay between these elements, it is important to note that these are necessary features of rational ethical justification.

We should note here too that our goal is not merely one of equipping individuals with the skills of rational ethical justification, but more than this, to foster a readiness to employ these skills widely. In other words, we are aiming at the inculcation of a disposition to engage widely in the processes of rational ethical justification. Moreover, the development of such a disposition depends not only on fostering the appropriate skills, but also on the development of certain epistemological understandings; more precisely, an understanding that justification of beliefs, including ethical beliefs, is both possible and necessary (that is, that such justification matters). How then should we set about fostering these crucial skills and dispositions?
2 The central role of dialogue
Theoretical and empirical work from within both philosophy and cognitive psychology (reviewed in Garcia-Moriyon et al, 2005 and Collins, 2005) points to the effectiveness of engaging individuals (of all ages) in dialogue with their peers about complex real world issues, including ethical issues, in fostering both the skills and dispositions required for engaging in the processes of rational ethical justification. The dialogue here is not mere discussion, but discussion disciplined by the procedures of rational, and in this case ethical, justification. Further, students’ attention is drawn to the procedures of reason-giving and evaluation; they are afforded the opportunity to apply and practise the relevant skills in the company of their peers and under the guidance of their teacher, so that they gradually come to understand and appreciate for themselves the power and value of rational ethical justification. For such an approach to work, participants must value and respect the contributions of others, even when these contributions run counter to their own. This does not mean simply accepting the opposing view, even when it is the view of an authority figure; nor does it mean adopting the attitude that all views are equally acceptable, equally likely to be true. It means instead focussing on the reasons participants advance for their views, and a commitment to assessing these reasons in the light of the criteria of rational ethical justification.

The collaborative nature of this dialogue is important too. Reason takes the form of dialogue; reasons are advanced, counter examples raised, reasons modified in the light of counter examples. This process can be carried out by an individual, but as Vygotsky (1978) has shown, the process is more fruitful when it becomes a dialogue between peers, or as philosopher and educator Mathew Lipman (2003) puts it, between members of a Community of Inquiry. Importantly, cognitive psychologists, Kuhn and Udell (2003) report that extended engagement in Community of Inquiry style dialogue, even in the absence of further instruction, appears to be sufficient for the improvement of individuals’ justificatory reasoning. Building on this research effort, our goal was to develop a dialogue-based ethical inquiry driven educational programme which would be effective in developing students’ abilities and readiness to engage in the processes of rational ethical justification. We turn now to a description of an intervention study designed to trial this approach within the context of primary level social and environment education.

3 The classroom intervention
Ten upper primary level teachers agreed to join the study. Their professional backgrounds were diverse, as was their degree of familiarity with the notion of rational ethical justification. Five of these teachers, each working in different schools across the metropolitan area of Adelaide volunteered to take an active part in implementing a newly developed Society & Environment (S&E) programme (Collins & Knight, 2006). The S&E programme was designed to actively foster the skills of rational ethical justification through Community of Inquiry methodology. In each case, their students agreed to act as participants in the study.

The research project took the form of a matched intervention study, that is, each of these five classes was matched with a control group from within the same school. We will focus here on the experimental group classes only. The student participants ranged in age from ten to twelve years and were enrolled at either year six or seven level. Their school settings were socio-economically diverse in terms of the families they served, ranging from low, to middle, to high socio-economic status. While students from across the five schools were largely of Australian-European or Australian-Asian background, in one class there were a number of Aboriginal Australian students, as well as several students who spoke English as their second language. There was also considerable variation across the population in relation to students’ literacy levels.
Implementing this newly developed (and in many ways, radically different) *Society & Environment* curriculum in five schools by way of a six-month intervention afforded many challenges for all involved. It demanded considerable commitment on the part of the participating teachers, who were required to undertake an intensive professional development programme and to work collaboratively with the researcher in planning and implementing two term-length units of work, while at the same time adopting a methodology markedly different from their usual approach to teaching *Society & Environment*. The students too found themselves in unfamiliar territory, participating in the lengthy pre and post testing procedures and being actively involved in discussing ethical issues with their peers, their teacher, and the visiting researchers.

The intervention took place in the first two terms of the school year, during which time students were engaged in up to four *Society & Environment* lessons per week; these included both research-based lessons and at least one or two weekly whole class ethical inquiry discussions. The Community of Inquiry discussions typically lasted for around one hour, although at times they were extended when student interest and engagement levels seemed high. For eight weeks of the first term, students from all five classes studied the same specially written unit of work on the topic of ‘The Treatment of Animals’, which incorporated several exercises and discussion plans from Lipman & Sharp’s (1985) ‘Ethical Inquiry Manual to Accompany Lisa’. In the second term the programme comprised activities and discussions drawn from five diverse, specially written units of work, the topics of which varied from class to class, and ranging from ‘The Ancient Greeks’ and ‘Federation’ to ‘Antarctica’ and ‘Ecologically Sustainable Development’ to the then emerging issue of ‘Reality TV’.

4 The evaluation

While empirical work from within both philosophy and cognitive psychology points to the effectiveness of engaging individuals in dialogue with their peers about complex ethical issues, the research effort to date has been hampered to some degree by lack of an efficient standard instrument to measure ethical justificatory reasoning abilities. In response, we developed and trialed a questionnaire suitable for use with upper primary aged students.

The first section of the questionnaire attempts to identify possible changes over time in relation to this aspect of participants’ justificatory reasoning ability, and in particular, their ability and readiness to evaluate reasons and arguments presented in support of opposing views on a number of ethical issues. The issues selected here were based on contemporary Australian social and environmental issues which would be familiar and hopefully, of interest to the participants and included: whether the Australian Prime Minister should apologise to indigenous Australians for past treatment; whether whaling should continue; whether mining (in relation to a particular example) should be allowed; and whether wild animals that have killed a human being should be hunted and killed.

The eight ethical issues (four in the pretest and four in the posttest) were presented in a standard form:

Firstly, a scenario was introduced in which a number of children were discussing the issue at hand. Within the scenario, a brief overview of the issue was given in which two main opposing views were presented. The ‘Whaling’ issue from Form A serves as an example of the scenarios:

*A group of students was discussing a brochure they’d read about whaling. Some people from countries like Japan and Norway want to hunt and kill whales. It is part of their tradition and culture; they have always done it. They use all parts of the whale for food, oil, soap, ornaments etc., some for themselves, others for exporting. On the other hand,
some environmental groups say that whaling is wrong. They are concerned about the effect it might have on the natural balance of the ocean. The teacher asked the students to give reasons for their views on whaling. Their responses are listed on the following two pages. How do you rate these reasons?

It was then explained that the following pages contained a list of the reasons given by each of the children in support of their view on the issue. The following examples are drawn from the pre-test questionnaire: Fran says [whaling] is wrong because her older brother says so; Veronica says [whaling] is not wrong for her because she doesn’t care about whales, but it is wrong for people who do care about whales; Lee says [whaling] is wrong because if whale numbers decrease, the ecosystem will be harmed, and the well-being of living things (including us) will be at risk. The reasons presented as items in this section reflected several different kinds of fundamental principles (or ethical yardsticks) that individuals commonly employ when attempting to justify their stance on an ethical issue. (The examples above reflect, respectively, an appeal to a perceived moral authority, a relativist claim, and a principle focussed on considering and weighing possible consequences.)

The participants were then asked to rate the strength of each of the reasons on a five-point scale ranging from ‘not really a reason’ to ‘an excellent reason’. The data gathered from this section of the questionnaire were statistically analysed through application of factor analysis and various semantic analyses.

The second section of the questionnaire invited students to write a brief argument in relation to one of the previously raised ethical issues. This crucial written component of the questionnaire was included as a means of gathering and analysing data (from participants’ written arguments) to identify whether the intervention had impacted positively in terms of transfer of the disposition to engage widely in the processes of rational ethical justification; that is, whether the skills and dispositions developed as a result of the intervention would transfer to a context other than the dialogue-based context in which the skills and dispositions had been fostered.

Drawing on previous work from within cognitive psychology, we developed a relatively simple three-step coding system in order to analyse participants’ written responses in terms of justificatory reasoning (or argument) quality (Anderson, Nguyen-Jahiel, McNurlen, Archodidou, Kim, Reznitskaya, Tillmanns & Gilbert, 2001; Kuhn & Udell, 2003; and Reznitskaya, Anderson, McNurlen, Nguyen-Jahiel, Archodidou, & Kim, 2001). In brief, the system was based on identifying the number and complexity of reasons provided and on assessing the quality of the participants’ overall argument. As indicated earlier, there are also several key elements which contribute to effective justificatory reasoning about ethical issues, among them, the need to consider and weigh consequences for all concerned, and to be empathetic when considering the needs of others. Again, we devised a relatively simple two-step coding system to identify possible changes in participants’ use of these two particular aspects of ethical justificatory reasoning. The relevant major findings of the study are summarised and discussed briefly below.

5 Relevant findings and discussion
Several significant findings emerged from the statistical analyses. Very briefly:

A highly significant treatment effect was found on the first section of the questionnaire; that is, following the intervention, participants in the experimental group improved in their ability to evaluate reasons presented in support of opposing views in relation to ethical issues, compared to participants in the control group. (ANCOVA: \( F (1,247) =12.2, p<.001 \))

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A significant effect was found on the posttest score in the number of relevant reasons participants offered in their written arguments; that is, following the intervention, participants in the experimental group provided more relevant reasons than did the control group students. (ANOVA: \( F(1,78) = 8.7, p = .004 \))

A significant effect was found on the posttest score in the complexity of reasons participants offered in their written arguments; that is, following the intervention, the experimental group participants’ reasons were found to be more complex than did the control group participants’ reasons. (ANOVA: \( F(1,78) = 4.9, p = .003 \))

A highly significant treatment effect was found in the quality of participants’ written arguments; that is, following the intervention, the experimental group participants had significantly higher argument quality scores than did the control group participants. (ANOVA: \( F(1,78) = 52.8, p < .001 \))

Participation in the intervention’s ethical inquiry discussions then, lead to a significant change in students’ ability to both evaluate arguments and to produce higher quality arguments (in relation to the number and complexity of reasons offered in support of a claim and in terms of an overall quality score), thus bearing out our original hypothesis. Importantly, the findings also demonstrate transfer of the disposition to engage in the processes of rational ethical justification; that is, from participants’ engagement in ethical inquiry sessions, to their attempts at both evaluating reasons presented in support of opposing views in relation to real-world ethical issues and in producing’ written arguments about real-world ethical issues.

Moreover, the impact of the treatment which resulted in significant improvements in experimental group participants’ argument quality scores was shown to be totally independent of pre-existing literacy levels. That is, improvements in argument quality were demonstrated in participants’ written arguments regardless of their level of literacy at the outset of the intervention. Further, it was evident that the greatest gains on the posttest argument measure occurred in the case of those students who started at the lowest levels on the argument measure (that is, level 1 ‘poor’ and level 2 ‘OK’) on the pretest measure.

Clearly, students who have either low levels of literacy or low levels of justificatory thinking skills, should be afforded regular and ongoing opportunities to engage in ethical inquiry discussions as part of their curriculum-based lessons, particularly considering that it is these students who are most likely to benefit significantly from such opportunities, at least in the short term. These findings deserve the attention of researchers, educators and administrators concerned with the development of thinking well in all students.

A highly significant effect was also found for the ‘Consequences for all’ variable at posttest level; that is, the experimental group participants were more likely to consider and weigh consequences for all concerned in their posttest written arguments, than were the control group participants. (ANOVA: \( F(1,78) = 27.1, p < .001 \))

Finally, a significant treatment effect was found for the ‘Lack of empathy’ variable at posttest level; that is, a significant decrease occurred over time in the number of experimental group participants exhibiting a clear lack of empathy in their written arguments, a change not reflected in the written arguments of control group participants. (Chi-square test: \( \chi^2 = 6.05, \ 1\text{df}, p = .014 \))
Participation in the intervention’s ethical inquiry discussions then, led to a significant change in the participants’ ability and disposition to consider and weigh consequences for all concerned, and to be empathetic when considering the needs of all concerned, thus bearing out our original hypothesis. Here too, the findings are important in that they demonstrate transfer of the disposition to think well about ethical issues; that is from participants’ engagement in Community of Inquiry sessions to their attempts at producing written arguments about real-world ethical issues which take into account the weighing of consequences for all concerned, and the need to be empathetic in so doing. The empirical findings of the study were very encouraging for both the researchers and the teachers involved in the study. Importantly, the educational programme was also deemed to be functional in that it seemed to work well within the constraints of prevailing educational structures.

While space does not allow the inclusion of detailed qualitative reports of our experiences and observations in individual classrooms, it is worth noting that the verbal and written feedback (both formal and informal) we received from participating students and teachers, along with our own anecdotal observations from across the five classrooms, indicate clearly that the S&E programme was functional; that is, it fitted well within the constraints of prevailing educational structures. Moreover, four of the five teachers involved in the intervention continue to teach their S&E programme using the approach outlined here.

6 Conclusion

The findings of this interdisciplinary study indicate that a Community of Inquiry approach is effective in fostering the skills and dispositions requisite for wide engagement in the processes of rational ethical justification. Moreover, it appears that the Society & Environment programme developed, implemented and evaluated as part of the intervention study has been effective in this task, and in fitting well within the constraints of prevailing educational structures. The findings of the study are very encouraging for those of us concerned with the important role dialogue-based ethical inquiry might play in educating for a just democracy. Importantly, our current work in preparing and supporting both pre-service and practicing teachers to implement a Community of Inquiry approach in their Society & Environment curriculum is proving to be both successful and rewarding for all concerned.

References

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