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Enabling positive change in primary school: learner-led research in a Scottish context

ISLEAN GIBSON, AILEY CLARK, HAMISH DUNNIGAN and DIANNE CANTALI

The relevance and value of increased learner participation in effect change research is increasing in its significance and importance across the education sector, guided by current national governance and the move of local authorities to implement action research models to drive improvement. This paper reports on a study led by primary seven pupils in a remote rural Scottish primary school, working collaboratively towards planning, developing, implementing and evaluating learner-led research. The pupil researchers created their own initiative, introducing dogs to the classroom, which was designed to increase self-esteem and self-efficacy for all learners in their school. Through the implementation of the initiative, they were observed to develop their own social and emotional well-being as they engaged in the process of interviewing, results analysis and subsequent resource dissemination. This article discusses the collaborative and supportive relationship alongside the desire to bring about positive change that must underpin genuine collaboration.

Key words: primary school, learner-led research, self-efficacy, self-esteem, dogs.

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Introduction

In the context of Scottish education, there is a focus on developing opportunities to raise pupil voice (Scottish Government, 2017) and to involve learners in effective and consistent levels of improvement consultation. This is a move away from the previous advice of *How Good Is Our School 4* (Education Scotland, 2015) which advocated that this role be firmly placed with school staff and partners, resulting in an almost *done to*, not *done with* approach. In order to triangulate these evidence sources, a high level of research and subsequent analysis is required. By placing leaners as central to this collaborative enquiry, the results gathered can lead to a more accurate, honest and tangible self-evaluation for genuine and lasting school improvement.

Burton *et al.* (2010) model of learners as co-researchers, where pupils answer questions about a set area for improvement, is often cited. Yet learners hold a distinctive perspective that needs to be brought to the forefront of any school self-evaluation processes because of their current experiences of their childhood that lead to a widely different set of priorities over those posed from school staff, families and key school partner agencies (Parsons *et al*., 2016). If educational governance requires schools to create a picture of the impact of school life for individual learners, then surely the best placed researchers to build this are the pupils themselves. In giving learners, the freedom to seek, retrieve, review and set improvement steps and their role and rights are brought to the forefront of their daily experiences (United Nations, 1990). Herein then lies that inequality that schools need to embrace in order to build strong, inclusive, driven, ever evolving and improving school communities, and the gap that governmental guidance is only beginning to address (Scottish Government, 2018). The rationale of this study was to purposefully address this gap, giving learners the ownership of and responsibility to develop and deliver improvement research to address a learner identified school improvement priority. This gave an open invitation for learners to drive forward evidence-based improvement and experience the issues, challenges, problems solving and realities that collective research entails (Graham *et al*., 2015). The project which arose from this was named ‘Kool K-9s’.

The setting for this research was a small, remote Scottish primary school. Pupils come from a diverse range of backgrounds, and an extremely varied catchment area, which includes isolated farmland and a small village, yet all face the same reality of experience limited by geographical location. As a whole school
community, there is a strong and passionate desire to ensure these elements do not affect the provision on offer, instead build more relevant life experiences and connectivity in more innovative ways than may be on offer in more traditional school settings without leaving a gap in confidence building and social skills development that required to be built to ensure a positive experience when they moved on through their educational transitions.

Method

Across the school community an ambitious newly designed mechanism to gauge improvement ideas and potential solutions had already been introduced, based on the work of Rushton and Suter (2012). This offered learners, families, staff and partner agencies opportunities to share opinion, generate ideas and give solution preferences through utilising a learning cycle approach to school improvement. The pupils had used this mechanism to state that they felt if they had dogs in school this would improve how they felt about school life on a daily basis and help them build skills around responsibility that they would need as they move through their educational transitions. For parity, research into other possible solutions or programmes that could reach the same outcomes was included. A key group of P6 pupils were identified to take ownership of this learner-led initiative, which lasted for their final two years. Firstly, the practicalities of having dogs in school was explored, and secondly the improvements that the learners thought they would see due to introducing the dogs into school. An action research model was then developed to plan the progression of how the dogs would be used to support pupils, what they wanted to measure in terms of impact and how they would address any practicality hurdles, such as risk assessments, consents and resources. At all times, there was a clear agenda set to ensure that the pupils leading this research followed their own ideas and pathways and were not just given data gathering roles, meaning their participation and ownership across the duration of the research did not fade in any way (Ergler, 2017). Learner researchers, jointly with school staff, utilised real-life experiences to provide understanding in relation to the complex traits of self-efficacy within a set local context through the research of specifically measured phenomena (Borko et al., 2007; Teddlie and Tashakkori, 2012). The research was jointly planned, and potential practice model was generated using a mixed methods methodology, which ensured concurrent inquiry from within this study’s quantitative investigation, bolstered alongside by qualitative statements (Cohen et al., 2011; Sarantakos, 2013). It focused on the importance and impact of building confidence, self-esteem and
self-efficacy for all learners as central to their personal school learning journey. The focus for the current paper is on the impact of a specific intervention on the development of self-efficacy and self-esteem traits for learners, and the role of learner-led research in the intervention.

Learner researchers wanted to build a fuller picture of how learners perceive the importance of developing social characteristics as part of the ongoing learning journey. They felt strongly that social and emotional development needs of individual learners could be met through the introduction of dogs into the classroom environment by tailoring their inclusion in learning opportunities match ways to nurture personalised social skills development (Education Scotland, 2015; Whitcomb, 2018). The introduction of dogs into different learning situations was reviewed, based on surveyed self-esteem and self-efficacy traits, and if the dogs had any effect, gaining wide scope for understanding both the context and the issues arising from a ‘child’s eye view’ (Thomson and Gunter, 2006).

Learner researchers worked in partnership to evaluate examples of self-efficacy/self-esteem scales. This included the work of Bandura, cited by Pajares and Urdan (2006), and that of Schwarzer and Jerusalem (1995). A self-efficacy questionnaire was produced by the learner researchers, formatted around quantitatively graded questions for collation, with open questions to gather qualitative narrative for interpretation alongside the scored enquiries. Pupils were assessed three times during the study, against key traits, attitudes and skills in relation to self-efficacy linked with self-esteem (Panc et al., 2012). This was a key attribute that drove the subsequent learner designed School Improvement focus of the Kool K-9s initiative; namely the introduction of dogs to support increased use of self-efficacy traits during social interactions, a noted common beneficial finding of animal assisted therapy initiatives (Palley et al., 2010).

The baseline and middle questionnaire responses allowed the researchers to tailor a distinct focus for nurturing activities with the Kool K-9 that aimed to develop the specific self-efficacy traits as identified in individual learner questionnaire responses. This methodology prompted more focused discussions when working with learners as researchers, ensuring their pedagogic voice (Fielding, 2007), and, as Elmaci and Cevizci (2015) discuss, animals can act as transitional objects, allowing non-judgmental bonds to be created through social interactions and efficacy traits that can then be extended to ensure a more secure bond with people (Blazina et al., 2011). This precedent was utilised to develop the Kool K-9 team’s working pattern, either to support an individual need or a group experience to
develop the specific self-efficacy traits identified by the questionnaire results. Activities planned with the Kool K-9s could be changed with acknowledged trends observed in the middle questionnaire responses; bringing validity, credibility and authenticity to the information gathered, both for the researchers and the participants (Creswell and Miller, 2000, cited by Yilmaz, 2013). The end questionnaire gave the participants an opportunity to reflect on how they feel they had progressed during the duration of the initial study.

From the outset, the learner researchers identified that they would be potentially working with sensitive and personal information about their peers, and they requested that all data should be gathered anonymously. By involving learner researchers in the processes of consent, confidentiality and anonymity, they could appropriately and comfortably interact with those involved in their research (Kirby, 2004). Learner researchers chose to use dog breed names for participating pupils, coded by initials, for all questionnaires and subsequent intervention activities, with only the lead researcher holding the names of participants. They felt that by ensuring this level of anonymity it would allow them to analyse the returns without prejudice, therefore offering more opportunity for in-depth review. Cohen et al. (2011) discuss this, stating that the researcher is interested in the behavioural patterns, not the person exhibiting these. The flow of the research process highlighted that by following the use of anonymised questionnaire results to plan the use of the Kool K-9 initiative, detachment can reduce the judgement exhibited by learner researchers based on their known relationships (O’Leary, 2017).

**Findings**

As the Kool K-9s initiative became embedded into the daily life of the school, learner researchers continued to reflect upon how the Kool K-9s supported pupils in working towards reaching their self-efficacy trait targets, gaining a valuable body of knowledge from a genuine learner perspective (Kellett, 2010). Graham and Fitzgerald (2010) note that by being active participants in their own research learners can potentially gain key benefits to their own social and emotional well-being when involved in the research processes, an aspect noted in the evaluative feedback from the learner researchers involved.

The researchers worked together to record and collate the quantitative data gathered in the participant questionnaires (baseline, middle and end assessments) in
Microsoft Excel spreadsheets, offering clear and simple presentation of the trends. Graphs and tables were then produced to address whether both the quantitative data and qualitative statement methodologies highlighted the same information and perceptions of self-efficacy and social interactions. By ensuring learner researchers actively quality assured the baseline, middle and end assessments, this ensured that the lead researcher stayed mindful of the learner researchers’ perspectives on the research agenda and process (Kirby, 2004).

The key themes that emerged following data analysis in relation to the research focus on self-efficacy and self-esteem traits draw attention to an increased awareness of personal and social skill supports, purporting in an overall increase in self-efficacy beliefs as seen in Figure 1. When the baseline assessment was administered, the substance of the self-efficacy traits and their characteristics were reviewed by the lead researcher, with school staff and the learner researchers, in terms of developing their understanding and in how they would support pupils in completing the questionnaire. School staff were present to support pupils

![Summary of Self-Efficacy Scale Responses for Cohort](image)

**Figure 1.** Summary of self-efficacy scale responses for cohort [Colour figure can be viewed at wileyonlinelibrary.com]
with Additional Support Requirements to fully access the questionnaires to ensure their inclusion in all aspects of the research, as well as offer decoding support for learner researchers to reduce any potential for researcher bias influences (Mitchell, 2010; Smith and Nobel, 2014).

Further reinforcement was delivered by the lead researcher to clarify what each area covered. It is through this introduction of Bandura’s Children’s Self-Efficacy Scale (Pajares and Urdan, 2006) that pupils and staff developed a greater understanding of what each self-efficacy trait and its associated characteristics truly meant, thus increasing their overall perception of personal self-efficacy and self-esteem, and therefore heightening accomplishment and personal wellbeing (Bandura, 1997).

The compiled baseline assessment responses were analysed for individual support requirements and self-efficacy trait characteristics that could be grouped by relationship (Deal and Anderson, 1995) for support from the Kool K-9s. From the outset it was evident that extensive data was being gathered, and that it would be pertinent to focus on one or two aspects of self-efficacy with the Kool K-9s initiative, to ensure substantial time coverage with the dogs for pupils on a key focus. For the first stage of the Kool K-9 initiative, 54% of participants returned scale responses of 50 and below (from a scale of 0–100) in Self-Efficacy in Self-Regulated Learning. Certain pupils were grouped because of this factor and the Kool K-9s were utilised with them to target settling down to tasks, concentration and focus; as well as an incentive to remember to have everything organised for a task so that the pupils could work with the dogs. Three pupils were given specific individual input with the Kool K-9s as a result, which involved having one of the dogs with them to complete specific tasks, including reading and number activities, as well as ensuring these pupils checked in with the dog at several points during the dog’s time in class. The learner researchers were involved in all aspects of the placement of the Kool K-9s.

Interventions in place from the baseline assessment brought the respondents scale responses to a position of higher return for the cohort (Figure 2), indicating the success of the use of the Kool K-9s in raising Self-Efficacy in Self-Regulated Learning. This specifically highlighted which of the key characters did not require further input in this area in the next stage of the Kool K-9s intervention.

After the middle assessment results were collated, it was noted that there had been an exceptionally large increase in scale responses for Self-Regulatory Efficacy;
particularly in relation to controlling temper and personal control (Figure 3). Individual qualitative responses indicated that the dogs in class made them feel happy, with one learner indicating this as a real positive with scores moving from 0 to 100 on the scale. Another indicated that the presence of the dogs in class made them feel calmer, noting an increase in score from 50 to 100 in terms of self-control. On investigation, it was found that a key group of pupils all returned higher middle assessment scale responses, yet two showed substantially decreased scale responses. On discussion with the learner researchers, they felt very strongly that more time with the dogs should be directed to these two pupils to try and help bring their personal perception and subsequently their self-efficacy scale scores to a higher level.

Figure 2. Summary of self-efficacy in self-regulated learning responses for cohort [Colour figure can be viewed at wileyonlinelibrary.com]

Figure 3. Summary of self-regulatory efficacy responses for cohort [Colour figure can be viewed at wileyonlinelibrary.com]
These pupils were also given access to one of the Kool K-9 dogs during break-times as these times of the school day were the most likely times that an incident of loss of control or temper could occur. One pupil responded in the end assessment that they enjoyed having the dogs out at playtime, and another noted that the presence of the dogs made them feel calmer, indicating that the continued overall increase of self-regulatory efficacy linked back to the company of the dog having a positive effect. It was noted that the pupils had different reactions to the two dog breeds that came into school and this could be a contributory factor in the increase. Palley et al. (2010) infer that an individual animal will exhibit and cause different levels of effect and interaction with different people. In choosing to have the younger of the two Kool K-9s as the predominant dog for breaktimes, who was more able to play alongside the pupils, thus negating the opportunities for interactions that could potentially cause loss of control or temper, this may be a considerable factor in the increase of the overall and individual scale responses. Overall, the cohort continued to improve in this self-efficacy trait.

The end assessment was utilised to gather a final, overall pupil perceptive of having the Kool K-9s as specific interventions to nurture the development of self-efficacy and self-esteem traits and whether this raised awareness of the key social and emotional health and wellbeing traits that pupils perceive as of key importance as they move through their personal learning journeys. It contributed to the School Improvement triangulation of evidence (Education Scotland, 2015), allowing the research to indicate whether there has been perceivable improvement across the nine self-efficacy traits. Using this assessment structure and results presentation helped all stakeholders to see that the overall results were exceptionally positive with an approximate 10% improvement in the scale scores returned (Figure 4). Each self-efficacy trait showed an overall improvement and increase (Figure 1) apart from Self-Efficacy for Leisure Time and Extra-Curricular Activities, which increased at the middle assessment with a slight fall at the end assessment.

The quantitative data summary (Figure 4) signposts that there was an increase in self-efficacy and associated self-esteem; yet it is the qualitative statements returned by individual pupils that convey the powerful potential of this initiative. One pupil noted that having the dogs made them feel braver and more confident, whilst others commented that the dogs helped them to learn and to relax. Another noted that the Kool K-9s made the whole school a better place, with two others indicating that this was because the dogs helped them to overcome any unhappiness they felt. All pupils used the words ‘like’ or ‘love’ in conveying their opinion of their overall impact, words not often directly linked with School Improvement.
The overall collation of the assessments showed that for some individual responses the results recorded at the baseline assessment presented as higher than at subsequent assessments. During discussions with the learner researchers, it transpired that those pupils were not fully aware of what each area really meant despite the aforementioned inputs. This reflection was corroborated by individual scores increasing in subsequent assessments as pupils more readily understood what the questions meant; a phenomenon also observed by staff supporting pupils and learner researchers in completing this aspect of the research. Bandura (cited in Pajares and Urdan, 2006) emphasises that this type of scoring incident can illustrate known discrepancies between how an individual sees themselves and their actual performance in those areas and, had staff knowledge been factored into this research, this hypothetically could have corroborated the higher scores that some pupils returned in all 3 assessments.

The results also showed a higher than expected degree of variance for the trait of Self-Efficacy for Academic Achievement and Self-Efficacy for Leisure Time Skills and Extra-Curricular Activities. Those subjects that were being predominately taught at the time, for example, a focus on Social Subjects, scored higher in all three assessments in comparison to those that were not at that point in the school year, for example, computer skills. There was also direct correlation if the Kool K-9’s were working with individual pupils in these subject areas; therefore, score returns were sporadically lower if the dog was not with an individual pupil when that subject was taught most recently. Bandura (cited in Pajares and
Urdan, 2006) notes that this type of incidence can occur if a person completing the scaled assessment is particularly focused on one aspect of a trait or has had a recent achievement in that area.

The final phase of this research involved a post research questionnaire which was purposefully split into P1-5 pupils, P6 and 7 pupils, and learner researchers. The trend in response to those areas of self-efficacy that the learners thought aided them on their learning journeys mirrored those presented in their individual assessments (Figure 5). This was namely that Self-Efficacy for Enlisting Social Resources, Self-Efficacy for Academic Achievement, Self-Efficacy for Leisure Time Skills and Extra-Curricular Activities, Self-Assertive Efficacy and Self-Efficacy for Enlisting Parental and Community Support gave a return of 60% or higher in pupil responses as being the most important traits required in any educational learning journey for those pupil groupings.

This is particularly interesting due to the Kool K-9s being particularly involved in developing Self-Efficacy for Self-Regulated Learning and Self-Regulatory Efficacy, and the end questionnaire results showed the pupils felt they are not of as much importance in educational transitions, despite the focus on them. However, when asked for comments about any other aspects of self-efficacy or self-esteem they felt pertinent to this, many referred directly to overcoming anger,
sadness, building confidence and concentration and how the dogs have helped them feel better when upset has happened (Renck Jalongo and SpringerLink, 2018). All younger pupils reported a positive response to having the Kool K-9s to help build confidence, self-efficacy and self-esteem, with the older pupils giving a more mixed reply.

All of the focal objectives of this research have shown validity in their own right, but also the beginnings of an interconnected state that can only potentially increase as the Kool K-9s initiative continues in school. The quantitative data clearly shows an increase in the pupils’ perceptions of their self-efficacy, with the qualitative statements supporting this and emphasizing the effect of the Kool K-9s on their self-efficacy, self-esteem and confidence; an aspect echoed by school staff and the dog owners themselves. Jalongo et al. (2004) compel us to recognize that dogs used in this type of role exert powerful and positive influences on self-esteem and the building of social relationships for children, and the evidence gathered in this study supports this position (Beck, 2015). The senior pupils in the school have more than adeptly taken on the role of researcher and their involvement has raised their profile in the school and its wider community, as well as putting them in the privileged position of delivering real impact for their peers (Bland and Atweh, 2007). Their positive response to their involvement, and making links themselves between their researcher role and the building of self-efficacy and self-esteem, has been highly valued by everyone in the school; indicating this is a way of working that they would like to see continued, though the P7 researchers requested less paper work and assessment. This evidence also raises the question of the impact on peer relationships. The positive gains learners can experience for themselves and their peer group has been noted, however there now needs to be follow up research into the direct impact this.

All learners and school staff are now more aware of the key social and emotional wellbeing traits pupils must hold to underpin successful learning journeys, with Self-Efficacy for Self-Regulated Learning and Self-Regulatory Efficacy central for this particular research. Koshy (2010) emphasises that this type of action research study can offer more representative data to interpret, making the results extremely pertinent not only to the original school context, but potentially applicable and replicable in other school settings (O’Leary, 2017). The introduction of a new, interactive and tactile initiative through the Kool K-9s has shown that a specific intervention can nurture and develop self-efficacy and self-esteem traits for learners; their qualitative responses showing only the tip of the iceberg in terms of how much they have got from this intervention. As staff at the school
aptly put it, this is just the beginning of a potentially wider impact for children as learners engaging in the whole educational picture and environment of school.

**Discussion**

Throughout this research there has been an open and fresh way of looking at an issue that affects every school, that of emotional health and wellbeing; something Weare (2011) establishes as an area of education requiring urgent and practical responses to ensure the promotion of well-being for children across the school system. Since the introduction of Literacy, Numeracy, Health and Wellbeing as a responsibility for all practitioners (Education Scotland, n.d.), and the National Improvement Framework (Scottish Government, 2017), the importance of pupil health and wellbeing has never held more prominence; especially in relation to mental, social and emotional wellbeing (Weare, 2011). This educational shift for schools and their staff into the role of mental and emotional health promotors and educators has required a substantial change in the way this area has been thought about, taught and engaged with (Spratt et al., 2006). By engaging with a workable self-efficacy scale this study has addressed this aspect, utilising straightforward tools that practitioners can use alongside learners as researchers, as strong predictor in relation to self-efficacy it showed clear indications of where intervention was required (Sarantakos, 2013). This means derived support and immersion can be targeted for individual needs; a guiding call of the effective practice needed to ensure that children and young people are offered significant and impactful ways to develop the social and emotional wellbeing they require to support their success in school and beyond (Education Scotland, 2015).

This study offers clear potential for replication and the chance for education practioners to see their pupils’ own viewpoints in relation to their personal self-efficacy and self-esteem to great effect (Stefanini et al., 2016). However, it is to be reiterated that the very nature of this education based subject matter sits within a very small pool of relevant literature and the uniqueness of the school setting may make results incomparable but no less relevant in a wider context. The finding of real understandings in the complex relationships that underpin self-efficacy would benefit from further identification and exploration in relation to this study. This would potentially explain more fully how the different phenomena uncovered came about and if this is related more to sociometrics study, the impact of unique school locality or from another factor. Limiting the hub of the initiative application to one self-efficacy trait was important to give real focus
to this research, but it raises the question as if to the self-efficacy scale used was too broad and perhaps should only have focused on a specific area.

The learner-led focus of this study was integral, offering pupils the chance to be real life researchers and influence change in their social and educational environment. This study underscores the reality of a proactive culture across a school setting and its associated openness towards learners leading research across any investigation following this path. Graham et al. (2017) reiterate the positivity and potential wellbeing boost this way of working can bring not only for the learner but the staff involved too. This study also reiterates the importance of the prerequisite to involve pupils in discursive and proactive research so that they can experiment with not only their role but the manner in which they choose to develop and explain their voice (Borko et al., 2007). Through the work undertaken here, it has shown that by submerging the children into every aspect of research, from the ethical considerations to the practicalities of administering assessments, they can gain real insight and prospective and be able to scaffold what they find out to their own experiences (Ergler, 2017; Graham et al., 2017). However, this is an area of the literature that does not hold examples of ways in which working with learners as researchers can be improved so as to avoid any potential learner researcher bias, a relevant issue to this study and an area requiring extensive inquiry.

The learner researchers truly brought their insider knowledge of their peers that was not fully known by the lead researcher or school staff (Bland and Atweh, 2007). This is potentially an area where more explicit teaching about researcher bias would have been of benefit for the learner researchers, as Graham et al. (2015) recommend. Whilst their intentions were highly commendable, the personally biased information they brought to the discussion at this time was not recorded by individual participants in their assessment questionnaires and so was not acted upon. It is an area of the research that does not hold many examples of ways in which working with learners as researchers can be improved so as to avoid any potential bias coming from the privileged positions learners as researchers hold.

Human mental health and animal health are inextricably linked (Blazina et al., 2011; Beck, 2015; Renck Jalongo and SpringerLink, 2018) and it is to be noted that this potential impact in an educational setting is an area lacking the research insight it fully deserves, both in this research study and in the available literature. Through further substantiation of this research, ascertaining the exact cause and effect is potentially ground breaking, a future research action denoted as essential.
by Palley et al. (2010). There is further research required into how animals are chosen to work within a school context and ascertain if the steps taken in this study to choose the dogs are universal enough to apply in other school settings. Renck Jalongo and SpringerLink (2018) reiterate the need for extensive, yet adaptive, protocols around which interactions with the dogs can be structured. This should come with as practical caution as being adaptive to the needs of the children in their experiences with the dogs. As this study has demonstrated, being able to adapt to working with the *Kool K-9s* outdoors as well as in the classroom can have positive increased effects on pupil self-efficacy and self-esteem. This is an area in itself which warrants further study.

**Conclusion**

In conclusion, involving dogs in the daily life of a school does have a quantifiable, beneficial impact for all stakeholders, and this study has shown that. It has also shown that learners are powerful and dynamic researchers in their own right. We, as education professionals, must be willing and active partners in building the confidence, self-efficacy and self-esteem of our learners, colleagues and ourselves. As Sagor (2000) reminded us, by striving to make our documentation and analysis of teaching and educational initiatives more public and accessible, it not only supports the improvement of our own practice but also increases the likelihood that the work will be useful to our professional peers (Borko et al., 2007). The General Teaching Council for Scotland (2013) puts great emphasis on the generation of sound, professional judgements about the impact of the work carried out in schools, and this research has shown that pupils, staff and community members can work integrally to ensure the school in this research was living up to the mantra Education Scotland hones, of ‘*How Good Can We Be?’*.

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Correspondence
Dianne Cantali
School of Education & Social Work
University of Dundee
Nethergate
Dundee
DD1 4HN
UK
Email: d.l.cantali@dundee.ac.uk