Can Education Programmes Effect Long Term Behavioural Change?

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ABSTRACT

In the area of free choice education there has been a continual development in the ideas and theories that underpin the evaluation and purpose of programmes. Moving from a mandate of merely providing information towards more inclusive initiatives that promote action, providers of free choice education have had to constantly refresh and renew their programmes. This paper examines some of the underlying research driving these changes and asks the question, can participating in an education programme alter the way people behave? Has any education programme ever been successful under these terms? While the evidence is scant, it does exist. Therefore, what does this mean for people designing such programmes today?

Keywords: education, programmes, behavioural change

INTRODUCTION

DEFICIENCIES IN THE DEFICIT LEARNING MODEL

The historical doctrine of education has been one of deficit learning; a teacher imparting knowledge to a less well-versed underling. Modelled on classical education theories this model naturally extended out to areas of informal learning including museums, science centres, education centres and environmental hubs. As these institutions blossomed there was little concurrent evaluation of the relevance or appropriateness of these techniques for several years. Then in the late 1970s and early 1980s several researchers began to question whether this top-down, deficit model was meeting the aims and needs of either the learners or the providing institutions. The entire model was called into question as a means for enthusing, educating and empowering learners (Gregory & Miller, 2000).

Free choice learning

Free choice learning encompasses the spectrum of education that takes place outside the formal education system, within participant's free time (Falk, Storksdieck, & Dierking, 2007). It is a particularly challenging area to work in as it borders both entertainment and educational goals. Organisations such as museums strive to provide high quality learning environments while maintaining a responsibility to boards and funding bodies. This creates a tension whereby it becomes necessary to prove the "worth" of an education programme and demonstrate key outcomes (Gilmore & Rentschler, 2002). Ranking highly amongst the outcomes desired by free choice learning institutions and funders is the desire to show that participants can change behaviour, this is particularly evident within the environmental sector

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where providers are often seeking to promote messages such as “Reduce, Reuse, Recycle” for the greater good of the planet, animals or indeed humans (Ballantyne & Packer, 2011).

Therefore, a wider examination of the impact and effectiveness of environmental education programme began to emerge in the research literature. This was led partially by organizations such as the UN and also by independent researchers. For example candidates attending the Tbilisi Intergovernmental Conference on Environmental Education (1978) proposed that all environmental education programmes should include a range of target outcomes for participants including raising awareness, sensitivity, attitudes, skills, and participation (Tbilisi, 1978). This goes beyond the mere provision of information as had been focussed on previously. The aim of environmental education is extended to include an attitude and behavioural change coupled with the development of skills to facilitate such a change. These are ambitious goals.

What influences learning behaviour?

In 1990, Hungerford and Volk conducted a meta-analysis of data examining the relationship between learner behaviour and environmental education (Hungerford & Volk, 1990). The resulting paper outlines the development of the learning model from the late 1970s through to the early 1990s and clearly demonstrates the range of factors that are relevant when trying to model learner behaviour. Instead of the provision of information being regarded as sufficient, suddenly it is apparent that factors such as personality, attitudes, perceived degree of control over the problem, knowledge of possible action strategies, sufficient personal aptitude to undertake the desired action and overall environmental sensitivity also contribute to the final decision on whether to act (Hungerford & Volk, 1990). These complexities are evident in hindsight but acting to address all these factors remains a challenge, even close to twenty years later.

In the subsequent years further theories have developed to discuss the issue of influencing behaviour for a beneficial environmental outcome. Many of these do not raise further factors, above and beyond those identified in the 1990s, but seek to explain them in new ways or with new analysis. There has been a growing acceptance that humans are not linear and rational beings. Despite people being given the best information, becoming emotionally involved in a topic, seeing relevant and easy pathways to action and having sufficient environmental sensitivity to report a willingness to act, often they don’t. Interestingly, these same people will self-describe as environmentally aware and active regardless of the fact that they will refuse to alter their behaviour in a new situation or given new information (Heimlich & Ardoin, 2008). Even with in-depth analysis of data from a variety of disciplines, the actual underlying reasons for these anomalies remain unexplained in a scientific manner. However, we would suggest that it is obvious to anyone conscious of their own behaviour that these inconsistencies are instantly recognisable as being very much human.

Another limiting factor of the human condition is an inability to process large amounts of information, particularly conflicting information, and to assimilate complex systems (Smyth, 2006). The psychological literature asserts that the untrained human brain cannot deal with systems composed of more than eight separate elements (Haber, 1992). While this may or may not hold true for individuals it is noticeable to those working in the media and communication fields that complex information is often ignored or mis-represented by the wider public (Gregory & Miller, 2000). This poses an obvious challenge within the field of environmental education where the problems are often very complex and also poorly understood, even by the “experts”. The end result of this is to routinely simplify problems in an attempt to identify a clear causal relationship between one element and one problem (Smyth, 2006). While this does not necessarily hold true to the science, it does allow the learner to see a clear path of action and perhaps simplify the recommended course of action.

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One result of this analysis is the production of increasingly complex diagrams and strategies to explain the relationship between education and action. An example of one of these diagrams is included below (Fig. 1). Adapted from Bamberg and Moser (2007), it clearly shows the variety of factors and the level of interplay between these factors that are currently accepted as influencing behaviour. One important thing that can be noted from this diagram is that information provision remains a critical component of any education programme. Without an awareness of the problem that needs to be addressed, no further action will be taken (Lee, 2005). It is reasonable to conclude however that information alone will be insufficient to change a behaviour pattern. Therefore we can presume that the deficit, just provide some information and people will act, model is well and debunked.

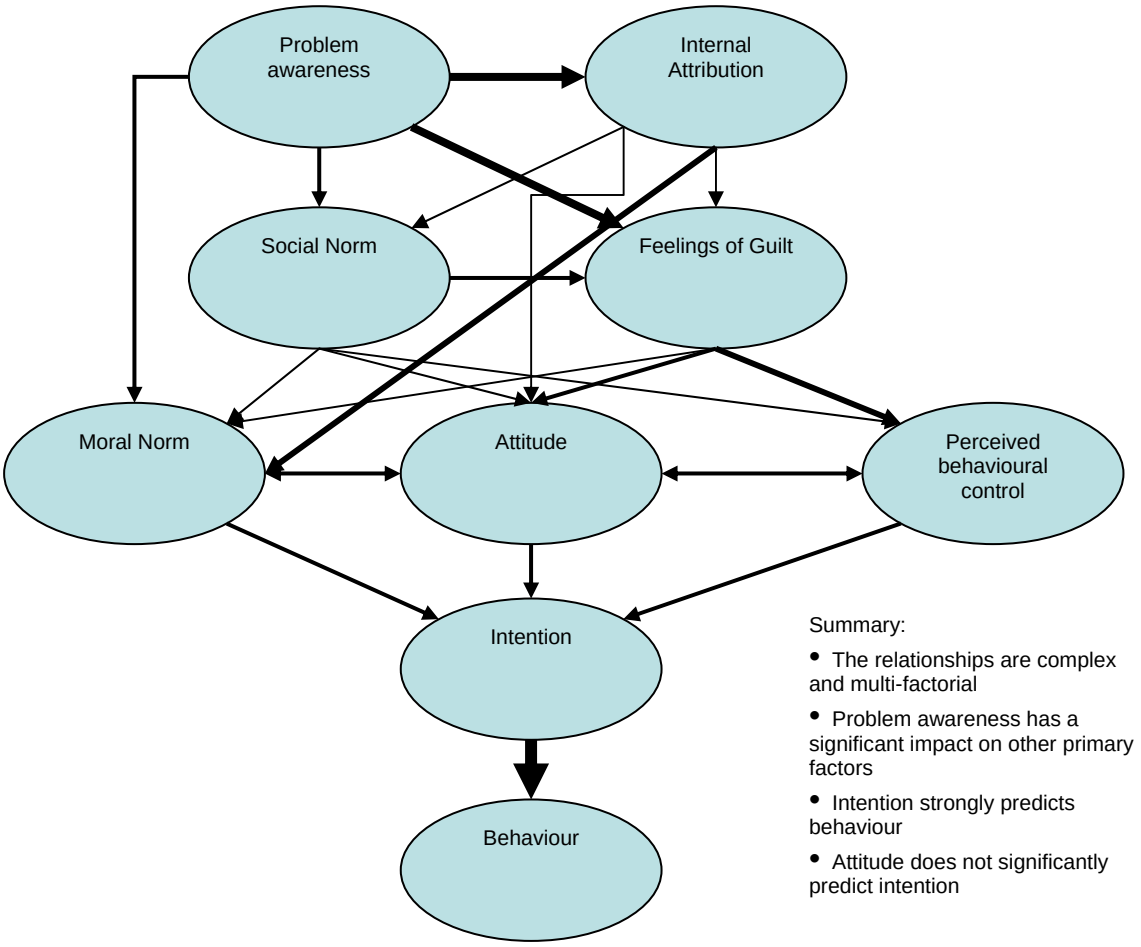

Figure 1: Factors proposed to affect the decision to act on a perceived problem. Adapted from Bamberg and Moser (2007).

The weight of the line denotes the strength of the relationship between the two factors. The heavier the line, the greater the reported chi-squared value for the influence of one on the other.

In response to these studies and analyses there has been a growing concern, particularly from the more formal classroom setting, as to whether behavioural change is an appropriate endpoint. Is it ethical and desirable to seek to change the way a person acts, even if it is for the so-called good of the planet. It has been argued that instead of seeking an action outcome at the conclusion of an education programme, educators should aim to enable participants to critically evaluate information and act according to their own internal judgement. Several authors support the aim of developing citizens rather than encouraging

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a particular action (Courtnay-Hall & Rogers, 2002; Ballantyne, Connell, & Fien, 2006; Jensen & Schnack, 2006). At the conclusion of any given education programme the participants should be better equipped to understand the problem at hand and evaluate the degree of action required on their part (Courtnay-Hall & Rogers, 2002). Whether this is fundamentally different from the other proposed models will largely depend on the individual point of view. The fact that action is not directly related to the provision of information but is also dependant on internal personality factors is a recognisable part of all the models of learner behaviour that have been published. Instead the argument here appears to centre on the choice of evaluation targets that are stated and that the programme is measured against, rather than a radically different point of view.

DISCUSSION

EVALUATION OF ENVIRONMENTAL EDUCATION PROGRAMMES

So all this theory leads to the question of whether there can ever be a successful environmental education programme. One logical conclusion is that success is entirely dependant on the criteria that you use to measure the programme and that a number of education endeavours can be judged a success for a wide variety of reasons. However, if we narrow the field of view to an examination of educational programmes that have resulted in a change in participant behaviour subsequent to engagement with the programme, have there ever been any successes? Encouragingly the answer is yes, but very few. However, it is very rare that a programme needs to demonstrate a behavioural change in participants in order to be considered a success but this analysis has been undertaken in a few isolated cases.

Case study evaluation

One of the best studies, in terms of outcomes and relevance to environmental education, comes from the tourism sector. Orams (1997) surveyed tourists visiting a resort in Australia that allowed personal interaction with wild dolphins. From a given date the resort instituted an education programme designed to highlight the various threats to wild dolphin survival and identified easy ways for people to act including picking up beach litter and donating to a relevant charity. Surveys were conducted before the education programme was instituted to form a control group and then again with a cohort that had participated in the educational sessions. One particularly interesting result from the study is that there was very little difference in the groups immediately following completion of the programme. Both the control and education groups had high awareness of the factors that are negatively impacting on wild dolphin populations and what they personally could do to act. Participation in the education programme did not seem to have an immediate effect. However, this was identified as likely to be a skewing effect due to the fact that people electing to interact with the dolphins were also more likely to be environmentally aware. Interestingly the results of a three month follow-up interview showed that despite both groups stating a high intention of acting to protect wild dolphin habitats immediately after interacting with them, a significantly higher proportion of people that had participated in the education programme actually followed through on their commitment. In the control group 13.6% of people had attempted to gain further information on dolphins since leaving the resort (despite the fact that 59% of this group had stated that they intended to source information at a later date). This is compared to the education group where 53% agreed they intended to source further information and 42% actually followed through with this intention. Similarly, three months after the resort visit only 6.4% of the control group had become actively involved in environmental issues as compared to 32.0% of the education group (Orams, 1997). This study clearly shows that an appropriately designed educational

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programme can have long lasting effects on behaviour but that these effects are unlikely to be identified immediately at the conclusion of the programme and that participants should be given the time to develop these behaviours as they see fit.

Various other programmes have also identified positive effects resulting from participating in an environmental education programme. Urama and Hodge (2006) conducted an in-depth analysis of a programme run in Nigeria focussing on whether or not participants would be more likely to pay to conserve a river basin eco-system as compared to a control group of villagers that had not been exposed to the material. They report moderate success; people who undertook the education programme indicated they placed an increased monetary value on the river system at the end of the study. The authors identified that this success lay in the focus of the programme on increasing critical thought about the wider issues associated with the river. Similarly in Taiwan, Hsu (2004) report limited success for a programme that focussed on training high school students in environmentally-related problem solving techniques. The results from this study showed that two months after completing the programme the participants had an increased awareness of environmental issues as compared to a control group. However, there was no additional evidence that they acted on this increased awareness. A Dutch study (Staats, Harland, & Wilke, 2004) summarised the ongoing effects of an initiative to affect a range of household behaviours to support a more sustainable way of life. The authors concluded that the programme was a success with an average of 7% savings on water consumption and 32% on solid waste deposition. The programme that was designed was intensive and required a great deal of buy-in from the whole community. It appears that the successes that were obtained were largely due to the increased social pressure on households to live in an identified sustainable way. Ongoing feedback with regard to progress was also seen as a key factor (Staats, Harland, & Wilke, 2004).

CONCLUSIONS

RECOMMENDATION FOR DESIGNING EDUCATION PROGRAMMES

These studies demonstrate that it is possible to engage learners in a programme and to effect change. It is interesting that this change is often not discernable until two or three months after the completion of the programme. This poses a problem for evaluation as gathering responses over a longer time frame is both difficult and expensive. Perhaps one recommendation that could be taken from this analysis is that some proportion of the resource allocated to the programme should be set-aside for a long-term evaluation study. This is not likely to occur every year but should be undertaken regularly for example every three years, depending on the frequency of the education programme and the number of participants.

Design

Another key point is that the design of the educational programme is extremely important. A clear definition of purpose will clarify under what terms the programme can be judged a success and will also allow for a balance of approaches. The theoretical work informs practice through demonstrating the worth of information provision but highlights that this cannot stand alone to achieve behavioural change. Monroe, Andrews and Biedenweg (2007) have provided a succinct synopsis of the important principles for consideration when designing a new educational programme. They suggest defining different strands of environmental education according to their purpose: convey information, build understanding, improve skills, and enable sustainable actions (Monroe, Andrews, & Biedenweg, 2007). Each of these strands is important and will be taken up at different times, in different places, by

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different learners. Working to provide clear statements allows for rational thought about the overall programme as well as the component parts and should also inform the resulting evaluation strategy.

Hope for the future

The end result of this enquiry is that behaviour can be changed and people do modify their way of life is response to new information and threats. It is also obvious that the factors that cause people to change their behaviour are both individual and multi-factorial. Recognising that there are multiple influences on a decision allows us to factor for these where possible and accept that no one programme will change 100% of participant behaviour, nor should it aim to. It is possible to facilitate behaviour change but a conclusion is that it would be foolish to include this as a stated and measurable aim of any educational programme. Instead, success should be evaluated against the degree of complexity that participants can appreciate and should reflect an increased knowledge of the range of variables that individual behaviour can influence. Furthermore, any evaluation regarding whether or not the programme has been ultimately effective should be undertaken on a longer time frame than simply at the conclusion of the education programme.

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