Chapter 6

The value of evidence-based life skills education

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Summary

- Extant and new formal life skills education and harm minimisation programmes must be subject to formal evaluation for efficacy.
- Where justified, programmes must be provided by appropriately trained teachers/mentors. It is necessary to identify programmes designed for universal use and those for high-risk populations; given the situation of high teenage morbidity in New Zealand, such programmes would be a priority.
- They must be provided in an age-specific manner, be validated, continually monitored and shown to be effective in the New Zealand context.
- Consideration should be given to introducing more intensive and formal nutritional education as the evidence suggests that it is effective with respect to the obesity epidemic.

1. Introduction

At a number of points in this volume, reference is made to the value of providing formal educational assistance either within or outside the school system, with the intent of assisting the development of better skills to enable young people to cope with the challenges of life – we shall term this formal life skills education (FLSE). This can encompass a broad range of topics including nutritional education, civics education, financial skills, sex education, parental skills, relationship education, dealing with drugs and alcohol, and personal health.

While the intent behind such programmes is laudable, the evidence to support their widespread use in most domains is limited. Indeed under some circumstances there is

evidence that some programmes may produce results counter to what is desired. An example is that of driver education in formal high school programmes which is discussed later in this chapter. This therefore underscores the importance of proper evaluation by experts of claimed benefits of interventional programmes. A recent report into early childhood and parenting programmes prepared for the UK government [1] demonstrates how formal programme quality evaluation can be conducted.

Because the goals and objectives of different components of FLSE vary, and the societal attitudes to some components will be important in policy formation, this chapter both dissects out the general principles and reviews the domains where effort should or should not be focused.

2. General issues surrounding FLSE

There is considerable variation within OECD countries as to how many of the key FLSE domains are handled in the school years. Whether the subjects are covered or not reflects the lack of clarity and understanding of the needs of young people in the education system. There is a complex balance between the perceptions of the role of the State and the role of the family in teaching some of the more values-based life skills. The timing of when life skills education should be implemented in schools is also challenging, especially when the developmental stages of young people can vary widely among individuals; knowledge must be accompanied by the appropriate level of metacognitive skill to enable effective application during decision making.

It is important that young people have the necessary foundation of knowledge on which to base their actions and life choices. This can be done without the overlaying of values which imply social engineering or imposition of a particular religious or political bias, by encouraging young people to develop their own values as they consider the values of others in their homes, classroom and in their communities, including the media community. There is some limited evidence that values-free information transfer to young people allows them to develop healthy attitudes to the inevitable challenges they face [2]. Other evidence has shown that information on its own will not change behaviour.

Beyond the accusation that providing life skills education to young people is 'social engineering' – which if provided in the appropriate way is not the case – the other opposing argument is that such education is a parent's responsibility. Many of the challenges that young people face today are beyond the comprehension or coping ability of many parents. The increasing pace of technological change means that dealing with text bullying and internet pornography can be challenging. If parents did not learn about puberty changes themselves and did not have a parent role model of how to speak to young children about menarche and emerging sexuality, then it becomes very difficult especially when girls are experiencing puberty changes at an earlier age. It is equally hard for parents to cope with the stress and strain they are going through themselves to then be able to help their young people learn how to cope with the increased pace and overabundant choices of modern life. Furthermore, the sad reality is that those most at risk often come from family and social backgrounds where such support and mentoring may be absent; the intergenerational nature of disadvantage may well be reinforced by society not assisting in life skills information transfer.

FLSE promotes adaptive, positive behaviours that equip the child or adolescent to competently handle the challenges and demands inherent in the transition to adulthood. They include interpersonal relationship skills and executive functions such as

communication, respect, leadership and empathy, and intrapersonal skills such as self-awareness, assertiveness, decision making and problem solving abilities. The underlying philosophy is that an adolescent well equipped to make good choices, to sustain positive relationships with others and to handle peer pressure is more likely to be self-assured and emotionally competent, and therefore handle the transition to adulthood more easily and not end up as another statistic of adolescent morbidity. By strengthening the social and psychological foundations established during the pre-school and primary school years, it is hoped to help preempt the development of overly risky adolescent behaviours, or at least confront such behaviours before they become too deeply rooted. Some programmes are provided to all pupils within a school, irrespective of gender, socioeconomic status or ethnicity – essentially a public health approach that endeavours to improve the wellbeing of the entire population of youths; others target children or adolescents whose life circumstances suggest that they may be at higher risk of a generational cycle of impaired health and development. The utility of life skills programmes is well recognised by the WHO [3].

However despite the meritorious goals of improving these skills, the issue remains: what programmes have demonstrated value and thus merit consideration by the policy maker? In practice there are many programmes that have been introduced into schools worldwide that aim to reduce adolescent morbidity and mortality by targeting specific risky behaviours, such as substance abuse or imprudent sexual activity, or conversely encouraging the cultivation of salubrious habits such as good nutrition and exercise. It has been argued that the most effective of these generally incorporate a wide range of life skills within the curriculum [4], and the evidence suggests many programmes that tackle specific domains without regard for the holistic social, mental and physical wellbeing of the adolescent are less effective. We shall consider several of these domains in the remainder of this chapter.

3. Nutrition education

The issue of obesity in childhood, adolescence and throughout life is a major concern to all countries [5], creating the burden of non-communicable disease for the individual and a capacity and fiscal challenge for the health system. There is no doubt that a major factor – and the one most amendable to intervention – is good nutrition. Here the evidence that properly designed programmes starting in childhood have sustained value at least for several years is substantial. For example nutritional education provided within the US Headstart programme for preschool children have been shown to reduce obesity [6, 7], and full day attendance appears to have a greater effect than half a day of participation [8]. A similar result has been noted for the Planet Health programme for primary school girls [9].

There is also growing evidence from controlled studies of the intermediate effectiveness of nutritional education provided in schools at reducing unhealthy eating practices [10], overweight [11, 12] and biomarkers associated with later risks of diabetes and heart disease [13, 14]. Relatedly, systematic reviews of school programmes aimed at improving the level of physical fitness or physical activity in students suggest that they can be effective in increasing energy expenditure and in improving some physiological parameters [15, 16].

Key factors in the success of such programmes are appropriately trained teachers, placement of considerable value on parental involvement, and the evidence-based nature of the programmes (best started in a controlled fashion then scaled up) which

are appropriately monitored. Programmes need to be able to address the issues at multiple levels, from early life development through to the home, school and community. Importantly, the data suggest that there is greater effect on prevention than in changing bad eating behaviours that have already been established [12]. These studies highlight the importance of appropriate life skills education starting at the preadolescent phase.

Despite nutritional education clearly not being values-laden education, and the rising cost of obesity, such education receives little focused attention in New Zealand schools because of the devolved nature of the school curriculum. The value of contextualised learning, in which students are challenged to engage skills developed in life skills education to apply factual knowledge across complex social contexts, has been underestimated. So too has the importance of professional support for educators to effectively inculcate such an approach [17]. In nutritional education, understanding of the science underlying concepts in healthy living may reinforce positive behaviours. Indeed, evidence is mounting that the better that children understand their own biology, the more likely they are to make safer lifestyle choices [2]. Provision of information that is free from dogma and political or religious bias is likely to receive the greatest level of acceptance, since it avoids the values-related concerns described above. There is also evidence that influencing childhood understanding of nutrition influences broader with-in family understandings and changes family diet [18]. Thus the economic justification for such information being provided extends beyond the individual child into wider society.

4. Driver education

A systematic review of studies in the US and Australasia has provided considerable evidence that formal driver education at high school has no effect on – or in some cases even increases – the accident rates of young people because it leads to early driver licensing and greater risk taking, due to over-confidence in people who are already at a stage of their lives when they are at greatest risk of such activities [19]. Data from New Zealand show a detrimental effect particularly in females [20]. This may seem counter-intuitive but the objective data are clear and the result is compatible with scientific understandings. The data do not even support driver education as a rationale for shortening graduated licensing systems [21]. This is a classic example of where an evidence base is needed and programmes must be evaluated because *a priori* it would be assumed that adolescent formal driver education would be of value, and well-meaning advocacy could lead to greater investment with adverse consequences. Indeed, the evidence suggests that graduated driver licensing, and education programmes that place more emphasis on general risk reduction and building resilience, may be effective in reducing crash rates among young people [22, 23]. The study of the responses to the findings of a null or adverse effect are themselves interesting because they demonstrate the importance of independent scientific review of the data by experts – there were vested interests and lobby groups in the US that wished to deny the evidence of a null effect and acted aggressively, making policy formation difficult [24].

5. Drugs and alcohol

There is an extensive literature dealing with the effectiveness of school based drug prevention programmes. These have been subject to recent systematic review [25]. The problem is many drug and alcohol prevention programmes are started by well-meaning advocates without a strong scientific or pedagogical base for their effectiveness – or if they are indeed effective, what it is that makes them so. Unfortunately New Zealand

does not have a strong culture of formal evaluation of the variety of programmes in use, which is a recipe for investment in dogma rather than in effective programmes, and as a result it is likely that the desired effects are not being achieved for many young people. Inappropriate programmes may actually do harm. A first step must be to embark on an assessment of the current range of programmes with a view to proceeding only with those with demonstrable effectiveness, at least internationally, and developing monitoring regimes to ensure quality in the programmes offered.

Some school-based prevention programmes are structured to facilitate interactions among participants that support development of understanding of issues, whereas others are more didactic and simply provide educational information. There is also a need to be clear whether the target is licit (tobacco, alcohol) or illicit (marijuana, cocaine etc) as programmes may be effective against one but not the other. The issues relating to the efficacy and value of such programmes is explored in depth in Chapters 19 and 20. In general their outcomes are very disappointing. However, there is a consensus that some programmes may be more effective in preventing licit drug use if implemented sufficiently early in adolescence such that drug experimentation is still a minority experience [26]. The key element in the effective prevention of licit drug use is the use of intensive and interactive programmes at a sufficiently young age [25], such as the culturally-based 'Keepin' It REAL' programme that promotes anti-drug norms and the development of skills in risk assessment, decision making and resistance [27]. Such programmes can be broadly based, whereas in older adolescents specific approaches to alcohol or smoking are required for efficacy.

With respect to illicit drugs, interactive programmes led by mental health counsellors that focus on developing executive functions and social competencies are most effective in reducing marijuana usage, or at least delaying the age of first experimentation [28]. However in general most programmes focused on illicit drugs do not have any significant effect, or at best have a short lived and minimal effect [29]. A review of 58 studies on school-based drug prevention intervention programmes for the determinants of effectiveness found that those which involve mentoring, knowledge dissemination and focus on teaching generic life skills such as decision making and communication and coping are more likely to be effective than those focused solely on one of these domains, but that low risk youths are more likely to benefit from the educational component [25]. This is the conundrum of life course approaches – those at lowest risk often benefit disproportionately, and this reflects the multifactorial nature of how behaviours develop and the importance of the physical, social and family environment in which the young mind develops. The key issues that then arise are what programmes work in high risk environments, and what additional elements need to be present for a greater likelihood of success.

Indeed, 'the devil is in the detail', to quote from the title of an important recent review of what is and what is not effective [30]. In particular, there seems to be little evidence to support programmes which focus on social awareness (e.g. effect of peer pressure) and promotion of refusal skills [25]. Project DARE is an example of such a programme which, despite an understandable popular bias that it should work, does not and in some subgroups may even increase drug use [31].

The overall conclusion is that interactive programmes delivered at a high level of intensity and implemented during early adolescence are likely to be more effective [32]. Specifically, tackling licit drug use appears to be of benefit. It is clear that programmes that do not involve interactivity and that are aimed at older children are unlikely to have any substantive effect. It may also be important that such education aims to minimise

harm rather than focus on abstinence and delayed use (which has been the focus of most US-based research); there is some evidence that a focus on harm-avoidance may lead to somewhat greater effect sizes [33].

Perhaps the most extensively evaluated model is the Botvin LifeSkills Training (LST) programme, which has been implemented in many schools in the US and worldwide since 1995 as a preventative measure against substance abuse and violence [34]. The program consists of age- and developmentally-appropriate classroom sessions spanning the elementary to high school years that teach resilience-building psychosocial skills, and empower students to resist societal pro-drug influences. Randomised controlled trials, the quality of which has been independently verified by the US National Registry of Evidence-based Programs and Practices [34], have demonstrated the efficacy of the programme for a range of ages, ethnicities and geographical locations. For example among junior high school students receiving LST, significantly lower alcohol, tobacco, marijuana and combined drug use was seen 6 years post-treatment, with up to 66% fewer poly-drug users [35]; 50% fewer middle school minority students indulged in binge drinking at the 2 year follow-up point [36]; and 7th grade students had significantly lower substance, cigarette and marijuana use initiation 5 years after intervention [37]. In addition, compared to students who received a standard health education curriculum, LST participants exhibited significantly decreased verbal and physical aggression, involvement in fights, and delinquency 3 months after treatment [38]. Effects tended to be stronger for students who completed a greater proportion of the curriculum.

Although LST is designed as a universal preventive programme, there is also evidence to show its value in its specific use within at-risk populations: middle school students predicted to be at high risk of substance use, as determined by low academic achievement and associations with substance users, showed less smoking, alcohol consumption, inhalant use and poly-drug use after one year compared to high-risk youths who had not undergone any interventions [39]. In another study, students who were existing or past drug users, or who identified with other known risk factors, showed more pro-social beliefs and attitudes towards substance use [40]. Finally, 7th graders participating in LST who had prior experience with substance use showed significantly lower levels, and lower rates of increase, of monthly marijuana use, and monthly or more frequent poly-drug use [41]. The cost-benefit analysis of adopting this program is particularly compelling, with the expenditure:savings ratio estimated at less than 1:25 [1]. Also notable is the durability of the positive effects.

Issues relating to the raft of programmes offered in New Zealand are discussed in detail in Chapters 19 and 20.

6. Sex and biological education

Sex education is discussed at length and with respect to broader societal and philosophical aspects in Chapter 10. What is obvious is that many children are now gaining knowledge of sexuality through electronic media and their peers. Many parents are ill equipped to cope with juvenile sexuality exhibited at much younger ages than they themselves had experienced. It would seem to be intuitively important to ensure that all young people learn about their bodies and how they function. There is no evidence to show whether this kind of information helps to affect behaviour. However, there is evidence that health literacy and learning about where to go for health advice, especially about contraception, may aid healthy behaviour.

7. Parenting

There is little or no evidence to support formal parenting education at school as being effective.

8. Relationship to other aspects of the school curriculum

The responsibility for FLSE in New Zealand schools usually falls across a range of learning areas, principally Health, Science and Social Studies. The *New Zealand Curriculum* [42] is not a prescriptive document. Rather it is a framework that provides guidance to schools as they each design a curriculum appropriate to their community. Within this curriculum framework there are clear statements pertaining to the importance of the development of Key Competencies that students need to "live, learn, work, and contribute as active members of their communities" (ibid. p 12). These competencies, adapted from those identified within the OECD Defining and Selecting Competencies Project [17], support development of key behaviours and attitudes such as critical decision making, resilience, engagement with society and an understanding of self. These behaviours and attitudes, combined with knowledge of biology, health, economics and civics, and applied within appropriate social contexts are integral components of life skills education.

The breadth and relevance of contexts appropriate for life skills development, alongside the often interdisciplinary nature of knowledge required to engage in social contexts, have exciting potential for meaningful cross-curricula learning within schools. However alongside this potential is the challenge of the development of professional knowledge and capability to enable meaningful teaching and learning about, and within, complex social contexts. Furthermore each student will bring their own personal and differing life experience to the context, influencing their engagement with the learning process. The relative freedom of the *New Zealand Curriculum* provides opportunity for schools to develop a meaningful life skills programme relevant to their communities. This is challenging; programme development and evaluation are necessary. As part of this, professional development pertaining to key competencies, understanding the value and challenge of social contexts in learning environments, and the cross-curricular nature of life skills education are essential.

9. Embedding programmes in schools

In Chapter 22 a Prevention Science approach to moving from evidence to policy is described, the last stage of which is taking effective programmes to scale. This is arguably the most difficult of the stages, especially if the programme is based in complex open systems like schools or hospitals [43, 44]. Doing this well requires at least three components. The first is the recognition by those delivering programmes that some adaptation is inevitable, especially when programmes require judgements based on detailed knowledge. This means that the last stage needs to determine the conditions in the systems that are a threat to treatment integrity and the extent to which local adaptation can occur without undermining treatment integrity and effectiveness. Embedding programmes so that they are sustained in the face of local changes (e.g. demographic and economic) and without being dependent on the level of resourcing in the original implementation is a second component of taking programmes to scale. This requires building some capability in the application sites to maintain the programme including being able to monitor and evaluate effectiveness over time. In part this also means being able to monitor how the programme

can fit with other activities being carried out and in the case of schools being able to cut those additional programmes that do not add value. The third is having a staged roll out so that implementation resources are not undermined and ongoing research and development can occur into the factors associated with success in the first two components.

10. Conclusions

The evidence suggests that certain life skills programmes integrated within the educational curriculum can target some risk taking behaviours. Where efficacy can be demonstrated, their value to society – both in terms of individual outcomes and social benefit – likely justifies the investment. However, it is imperative that any programmes considered for adoption have a strong evidence base; in the US, one of the most popular middle school substance abuse prevention programmes (Project DARE) has had no demonstrable efficacy, yet continues to enjoy widespread implementation, possibly because it is intuitively perceived as effective [45]. The criteria for determining effectiveness are complex (see Chapter 22 and [1]) and require professional independent development. The experience with driver education – which seems logical, has strong public support and had considerable advocacy – demonstrates that intuition, anecdote and dogma are not grounds on which to invest in risk-minimisation programmes. Rather it is crucial to focus on rigorously assessed intervention programmes, either universal or targeted, to ensure the best outcomes and value for public money.

11. References

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