

Title: Integrating health education in academic lessons: is this the future of health education in schools: a commentary

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This commentary makes the case for a systematic review examining the potential of interventions that integrate health education into other school subjects. Many schools are reducing their provision of personal, social and health education (PSHE) lessons in the UK and fewer teachers are being trained in teaching this subject.¹⁻⁴ Similar marginalization of health education has been noted in other countries such as the USA.⁵⁻⁷ This reduction has occurred in the UK partly because PSHE is not a statutory requirement—the UK government recently rejected advice that it should be.⁸ Furthermore,, the process of ‘marketization’ of school admissions with parents using local league tables of academic performance to inform the choice of schools for their children, has led schools to neglect activities that do not contribute to these metrics.⁹ This marketization and focus on a narrow range of metrics are also not unique to the UK. Public education systems throughout Europe and North America are subjecting students to more ‘high-stakes’ testing, with governments using the resulting data to manage schools’ performance and help parents choose schools. All of this is driven by the salience of international metrics of attainment as used, for example, by the Programme for International Student Assessment.^{10,11}

The decline of PHSE is of particular concern because there is strong evidence from systematic reviews that school curriculum-based health education is one key element in strategies to reduce outcomes such as alcohol consumption,¹² smoking,¹³ drug use,¹⁴ violence,^{15,16} and teenage pregnancy.¹⁷ As well as improving health, students value health education,¹⁸ which provides them with practical life skills.³ The importance of educating young people about health is enshrined in the United Nations Convention on the Rights of the Child.¹⁹

In this context, some schools are delivering health education in other subjects, integrating it with academic learning.²⁰ For example, in Liverpool, the Ariel Trust is educating students about alcohol within mathematics lessons.²¹ Students learn about statistics by exploring examples focused on alcohol such as summarizing patterns of alcohol consumption and exploring the risks associated with different levels of this. In the United

States, many educators have acknowledged the potential value of integrating health and academic education.²²⁻²⁵ and the pressures to do so particularly following the 2001 No Child Left Behind Act, which emphasizes standardized academic testing for all students.²⁶

Even without the marginalization of PSHE, integrating health and academic learning may be an effective strategy to give health issues greater space in the school timetable, providing for larger intervention 'doses' than would otherwise be possible in specific health classes.^{20,27} Classes not overtly labelled as health education may also be less prone to student resistance to health messages.²⁸ If integrated into mainstream academic curricula, there is also potential for greater synergy in and reinforcement of health messaging across different academic lessons.²⁹ Some educators suggest that integrating learning across subjects is more effective than when offered as a single subject in isolation,³⁰ developing students' cognitive flexibility.³¹ Integrating health and academic education might also increase student engagement with school because addressing health, unlike some academic learning, makes learning feel more relevant to students' lives,³² which is a benefit in itself as well as being an important protective factor for a range of health outcomes operating at the level of individual students³³ and schools.³⁴ The theory of human functioning and school organization³² as well as the social development model^{35,36} both suggest that students who are committed to school are less likely to engage in risky behaviors.

However, there are also risks in moving from providing health education in discrete lessons to integrating it into other academic subjects. For example, if the primary focus of a curriculum is to teach mathematics, without a stand-alone lesson on health, classroom time may focus on health-related knowledge but neglect the development of skills, such as peer resistance skills, which have been shown to positively impact decision-making for health.^{12,37} Integrating health and academic education within complex school systems may also risk negative or unintended consequences such as hampering academic learning and attainment or adding to the teachers' workloads. Those teaching academic subjects may also lack the training or commitment to provide good teaching of health education. Furthermore, it is likely that to achieve the greatest gains, this integrated approach should be one element of

broader multi-component interventions in schools,^{38,39} which also include modifications to school policies, the social environment, and educational policies.⁴⁰

Hence, there is a need to examine how integrating health and academic education is theorized to work, how well it is delivered in practice and its effectiveness in promoting student health. However, at least in the UK, lessons integrating health and academic education^{21,41} have not been informed by theory or evidence. The UK can learn from work in other countries.

In terms of theory, interventions that integrate health and academic education might work via a number of mechanisms: by developing social and emotional skills such as self-awareness, self-regulation, motivation, empathy and communication⁴² by fostering healthier social support among students^{43,44} by promoting knowledge of the costs⁴¹ and consequences²¹ of health risk behaviors and how to avoid them; by developing media literacy skills around the advertising of tobacco, alcohol and other health-harming substances; and by modifying students' social norms about health promoting and health risking behaviors.^{28,29,41,45,46} Interventions may generate developmental cascades whereby students' progress in accomplishing distinct, seemingly disparate educational and developmental milestones influence one another over time.⁴⁷

Research has started to examine the impact of integration. For example, the "4Rs" (Reading, Writing, Respect and Resolution) program is delivered in American elementary schools to children aged 5–11 years. The program aims to integrate the teaching of social and emotional skills with that of language and the arts. Teachers use children's literature as a basis for educating students, not only in language and literature, but to develop skills and understanding in the areas of anger management, listening, assertiveness, cooperation, negotiation, mediation, building community, celebrating differences and countering bias. The intervention focuses on themes such as conflict, feelings, relationships and community. A randomized trial of 4Rs has reported significant reductions in aggression and improved academic attainment.^{43,44} However, a review and synthesis is required to assess the overall weight of evidence for such interventions across a range of health outcomes.

However, while theorization and empirical evaluation is underway there is a need for synthesis. No systematic review has to date examined the evidence concerning interventions of this type. The reviews cited above,¹²⁻¹⁷ some of which are now quite old, focus on school-based interventions but the interventions included are overwhelmingly those focused exclusively on health and delivered in traditional health education lessons. Some of these reviews do include some interventions integrating health and academic education but they omit important studies and do not analyze or draw conclusions about the effects of this specific category of intervention. Furthermore, these reviews have not synthesized evidence on intervention theories of change or process evaluations and so cannot provide information about the feasibility and acceptability of interventions or possible unintended consequences for school systems. As such, there is a need for a systematic review that synthesizes: theories of change to examine the mechanisms by which these interventions are intended to work; process evaluations to assess what factors relating to interventions, providers, participants and school contexts affects the implementation of these interventions; and outcome evaluations to determine the effectiveness of such interventions.

Empirical research and evidence synthesis can examine the implementation and effectiveness of interventions that integrate health education into other school subjects and can thus provide useful information for those deciding how to promote health in schools. However, empirical research cannot determine such decisions since it is unlikely to provide information about the long-term consequences of taking an integrated versus a non-integrated approach or about questions of values. However, we would argue that while not sufficient, a synthesis of evidence would nonetheless be extremely useful in informing what must ultimately be political decisions.

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References

1. Personal, Social and Health Education Association. *Comments on the national curriculum proposals published in February 2013 from the PSHE education Strategic Partners' Group*. London: Personal, Social and Health Education Association; 2013.
2. National Association of Schoolmasters Union of Women Teachers. *English baccalaureate survey summary*. Birmingham: National Association of Schoolmasters Union of Women Teachers; 2011.
3. Fletcher A, Bonell C, Sorhaindo A. "We don't have no drugs education": the myth of universal drugs education in English secondary schools? *Int J Drug Policy*. 2010;21(6):452-458.
4. Shepherd J, Dewhirst S, Pickett K, Byrne J, Speller V, Grace M, et al. Factors facilitating and constraining the delivery of effective teacher training to promote health and well-being in schools: a survey of current practice and systematic review. *Pub Health Res*. 2013;1(2):1–208.
5. Centers for Disease Control and Prevention. *SHPPS 2012: school health policies and practices survey. Trends over time 2010-2012*. Atlanta: Centers for Disease Control and Prevention; 2012.
6. Demissie Z, Brener ND, McManus T, Shanklin SL, Hawkins J, Kann L. *School health profiles 2012: characteristics of health programs among secondary schools*. Atlanta: Centers for Disease Control and Prevention; 2013.
7. Personal, Social and Health Education Association. *PSHE Association annual survey responses summary 2014*. London: Personal, Social and Health Education Association; 2014.
8. Ofsted. *Not yet good enough: personal, social, health and economic education in schools*. London: Ofsted; 2013.
9. Gillborn D, Youdell D. *Rationing Education: Policy, Practice, Reform and Equity*. Buckingham: Open University Press; 2000.

10. Visscher A. Public school performance indicators: problems and recommendations. *Stud Educ Eval.* 2001;27:199-214.
11. The Organization for Economic Cooperation and Development. *PISA 2012 results in focus: what 15-year-olds know and what they can do with what they know.* Geneva: OECD Programme for International Student Assessment; 2012.
12. Foxcroft DR, Tsertsvadze A. Universal school-based prevention programs for alcohol misuse in young people. *Cochrane Database Syst Rev.* 2011;5.
13. Thomas RE, McLellan J, Perera R. School-based programmes for preventing smoking. *Cochrane Database Syst Rev.* 2013;4.
14. Faggiano F, Vigna-Taglianti FD, Versino E, Zambon A, Borraccino A, Lemma P. School-based prevention for illicit drugs use: a systematic review. *Prev Med.* 2008;46:385-396.
15. Farrington DP, Ttofi MM. School-based programs to reduce bullying and victimization: a systematic review. *Campbell Systematic Reviews.* 2009;5(6):1–147.
16. Vreeman RC, Carroll AE. A systematic review of school-based interventions to prevent bullying. *Arch Pediatr Adolesc Med.* 2007;161(1):78-88.
17. Oringanje C, Meremikwu MM, Eko H. Interventions for preventing unintended pregnancies among adolescents. *Cochrane Database Syst Rev.* 2009;4.
18. Tanton C, Jones KG, Macdowall W, Clifton S, Mitchell K, Datta J, et al. Patterns and trends in sources of information about sex among young people in Britain: evidence from three national surveys of sexual attitudes and lifestyles. *BMJ Open.* 2015;5(3):e007834.
19. United Nations. *Convention on the Rights of the Child.* New York: United Nations;1990.
20. Formby E, Coldwell M, Stiell B, et al. *Personal, Social, Health and Economic (PSHE) education: a mapping study of the prevalent models of delivery and their effectiveness.* Research report DFE-RR080. London: Department for Education; 2010.

21. Wright G, Ainsworth P. *Plastered evaluation*. Liverpool: Liverpool Culture Company/Ariel Trust; 2008.
22. Elias MJ. Social-emotional and character development as academics as a dual focus of educational policy. *Education Policy*. 2009;23(6):831–846.
23. English M, Mclure M. *Drug education through literature: an annotated bibliography for grades 7–12*. Washington, D. C.: Western Regional Centre for Drug-Free Schools and Communities, Department of Education;1991.
24. Hinitz Blythe F, Stomtay-Stitz A. Peace education and conflict resolution through the expressive arts in early childhood education and teacher education. Paper presented at the Annual Conference of the Eastern Educational Research Association 1999; South Carolina.
25. Hurd P. Ways of knowing in science series. In: *Transforming Middle School Science Education*. New York: Teachers College Press; 2000.
26. United States Congress. No Child Left Behind Act of 2001. Available at: <https://www.congress.gov/bill/107th-congress/house-bill/>. Accessed May 10, 2016.
27. Pearson M, Chilton R, Woods HB, Wyatt K, Ford T, Abraham C, et al. Implementing health promotion in schools: protocol for a realist systematic review of research and experience in the United Kingdom. *Syst Rev*. 2012;1:48.
28. Kupersmidt JB, Scull TM, Benson JW. Improving media message interpretation processing skills to promote healthy decision making about substance use: the effects of the middle school media ready curriculum. *J Health Commun*. 2012;17(5):546-563.
29. Bier MC, Zwarun L, Fehrmann Warren V. Getting universal primary tobacco use prevention into priority area schools: a media literacy approach. *Health Promot Pract*. 2011;12(6 Suppl 2):152S-158S.
30. Bereiter C. Situated cognition and how to overcome it. In: Kirshner D, Whitson J, eds. *Situated Cognition: Social, Semiotic, and Psychological Perspectives*. Hillsdale: Lawrence Erlbaum; 1997.

31. Spiro R, Coulson R, Feltovich P, Anderson D. Cognitive Flexibility Theory: Advanced Knowledge Acquisition in Ill-Structured Domains. In: Patel V, ed. *Tenth Annual Conference of the Cognitive Science Society Proceedings*. Hillsdale: Lawrence Erlbaum; 1988.
32. Markham WA, Aveyard P. A new theory of health promoting schools based on human functioning, school organisation and pedagogic practice. *Soc Sci Med*. 2003;56(6):1209-1220.
33. Resnick M, Bearman P, Blum R, Bauman K, Harris K, Jones J, et al. Protecting adolescents from harm: findings from the national longitudinal study on adolescent harm. *JAMA*. 1997;278(10):823-832.
34. Bonell C, Jamal F, Harden A, Wells H, Parry W, Fletcher A, et al. Systematic review of the effects of schools and school environment interventions on health: evidence mapping and synthesis. *Public Health Research*. 2013;1(1).
35. Catalano RF, Haggerty KP, Oesterle S, Fleming CB, Hawkins JD. The importance of bonding to school for healthy development: findings from the Social Development Research Group. *J Sch Health*. 2004;74(7):252-261.
36. Hawkins JD, Weiss JG. The social development model: An integrated approach to delinquency prevention. *J Prim Prev*. 1985;6:73-97.
37. Fagan AA, Mihalic S. Strategies for enhancing the adoption of school-based prevention programs: lessons learned from the Blueprints for Violence Prevention replications of the Life Skills Training Program. *J Community Psychol*. 2003;31(3):235-253.
38. La Bash HAJ, Vogt DS, King LA, King DW. Deployment stressors of the Iraq war: insights from the mainstream media. *J Interpers Violence*. 2009;24(2):231-258.
39. Langford R, Bonell CP, Jones H, Pouliou T, Murphy S, Waters E, et al. The WHO Health Promoting School framework for improving the health and well-being of students and their academic achievement. *Cochrane Database Syst Rev*. 2014;4.

40. Langford R, Campbell R, Jones H, Pouliou T, Murphy S, Waters E, et al. The World Health Organization's Health Promoting Schools framework: a Cochrane systematic review and meta-analysis. *BMC Public Health*. 2015;15(130).
41. British Heart Foundation. Money to burn: lesson plan. Available at: <http://teachers.theguardian.com/teacher-resources/15410/Money-to-burn-----lesson-plan>. Accessed December 10, 2016.
43. Jones SM, Brown JL, Hoglund WLG, Aber JL. A school-randomized clinical trial of an integrated social–emotional learning and literacy intervention: impacts after 1 school year. *J Consult Clin Psychol*. 2010;78(6):829-842.
44. Jones SM, Brown JL, Aber JL. Two-year impacts of a universal school-based social-emotional and literacy intervention: an experiment in translational developmental research. *Child Dev*. 2011;82(2):533-554.
42. Goleman D. *Emotional Intelligence*. New York: Bantam; 1995.
45. Flay BR, Graumlich S, Segawa E, Burns JL, Holliday MY. Effects of 2 prevention programs on high-risk behaviors among African American youth: a randomized trial. *Arch Pediatr Adolesc Med*. 2004;158(4):377-384.
46. Patton G, Bond L, Carlin JB, Thomas L, Butler H, Glover S, et al. Promoting social inclusion in schools: group-randomized trial of effects on student health risk behaviour and well-being. *Am J Public Health*. 2006;96(9):1582-1587.
47. Masten A, Cicchetti D. Developmental cascades. *Dev Psycho*. 2010;22:491-495.