

Improving research quality: how good is the literature on the impact of education on HIV and AIDS?

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The UNAIDS Inter-Agency Task Team (IATT) on Education was established in March 2002 in recognition of the need to improve and accelerate the education response to HIV and AIDS. In order to establish an evidence base that would help inform programming and advocacy responses in the education sector, more information was needed in terms of what studies existed, their quality and any gaps in the evidence. In response, ODI was commissioned by UNAIDS to carry out a stocktaking review of research on HIV and AIDS in the education sector and assess the quality of evidence in documents.

Key steps in the assessment included:

- A comprehensive literature search of over 300

documents. The search used databases (e.g. Web of Knowledge, ERIC – Education Resources Information Center – and Pubmed), the UNESCO HIV and AIDS Clearing House and suggestions from members of the UNAIDS Inter-agency Task Team on Education.

- Documents were categorised into four types: situation assessments, intervention evaluations, literature reviews and 'others'. A sub-set of documents (see Table 1) were then assessed for their focus, methodology, analysis and conclusions and given a score. See Table 2 for the assessment criteria and scoring system.
- Analysis of the documents was carried out using an excel spreadsheet and basic cross-tabulations.
- The resulting recommendations included suggestions around further research themes as well as ways in which to make the research more rigorous, targeted and useful for policy-makers and programmers.

Table 1: Document types

Type of document	Purpose	Predominant evidence source	No. of documents assessed
i) Situation assessments	To provide a baseline or overview of a situation	Primary	57
ii) Intervention evaluations	To capture impact of a particular intervention, project, policy or other	Primary	37
iii) Literature reviews	To bring together and review evidence from other sources – later analysis divided these into being for situation assessment or intervention evaluation	Secondary	16
iv) Other	To support and improve quality of practice and policy-making	Secondary	Not assessed
Total			110

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Table 2: Assessment criteria and scoring system

	Points structure	Key elements to look for
1. Focus Maximum 3 points	(0) Unfulfilled – not enough information to make a judgment (1) Rudimentary – basic background information provided but missing more than one key aspect (info and consideration about pop, intervention, previous studies, outcomes) (2) Satisfactory – information on at least 3 elements but without great depth (3) Comprehensive – all elements covered with sufficient depth, particularly with clear aims and outcomes for the work	Adequate information on <ul style="list-style-type: none"> • Population studied • Intervention or situation under observation • Previous studies/theory • Outcomes considered
2. Method Maximum 6 points (2 parts)	Explanation of methods (0-3) Unfulfilled – not enough information to make a judgment Rudimentary – methodology was addressed but only briefly without adequate detail Satisfactory – information about methods of study supplied (largely descriptive) Comprehensive – rationale for choice of tools provided and limitations considered etc. Choice and suitability of tools (0-3) Unfulfilled – sampling not purposeful or of adequate size, approach not suited to question (or not enough information) Rudimentary – some relevant tools employed but without sophistication Satisfactory – approach suited to question, most key elements considered Comprehensive – tools employed cover all key elements and show sensitivity to the context	<ul style="list-style-type: none"> • Research methods were appropriate for question being asked • Study sample selected in purposeful way • Adequate sample size, response rate and/or participation • Employed measures to minimise bias
3. Analysis Maximum 3 points	(scored 0-3) Unfulfilled – not enough information to make a judgment (just results and no analysis, or analysis and no results) Rudimentary – results presented with basic analysis, without use of analytical tools (qual./quan.) or awareness of bias factors Satisfactory – clear results with good analysis (may not take into account wide range of influencing factors or account for gender sufficiently) Comprehensive – thorough reporting of results disaggregated and analysed by range of relevant factors. Employing measures to account for bias etc.	<ul style="list-style-type: none"> • Different sources of knowledge and understanding of the issue were explored • Used appropriate qual./quan. analytical tools • Employed measures to account for bias • Thorough reporting of key findings and results
4. Conclusions Maximum 3 points	Unfulfilled – not enough information to make a judgment – no conclusions made or only weakly based on evidence Rudimentary – Basic conclusions made based on evidence, little consideration of implications or limitations Satisfactory – more robust conclusions, some consideration of limitations and implications Comprehensive – strong conclusions with considerable consideration of limitations and implications plus clear identification of areas for further study	<ul style="list-style-type: none"> • Sufficient evidence to justify relationship between evidence and conclusion • Discussion of study implications for policy or programming • Discussion of study limitations • Identified areas for further research

0-4 points = very weak; 5-8 points = contains significant weaknesses; 9-12 points = strong in parts; 13-15 points = strong in all areas

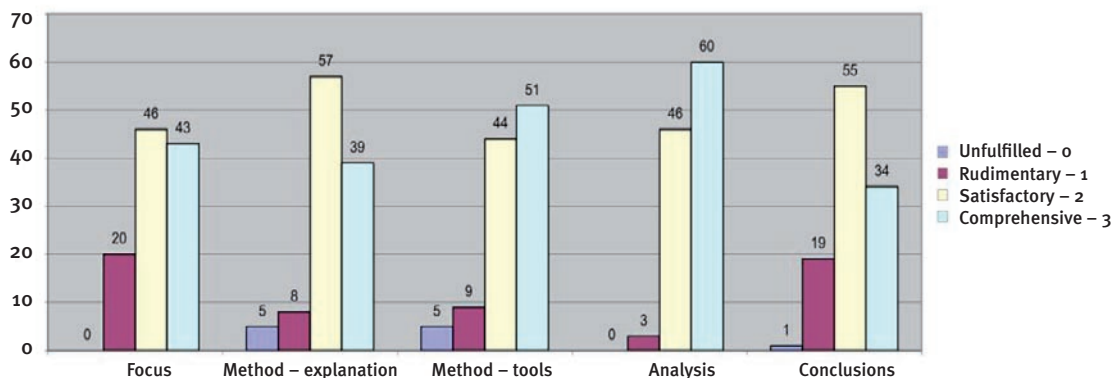
The following sections present key findings from the assessment as well as some gaps in evidence and research. Based on the framework used for the assessment, some practical guidance for conducting quality research is then provided. The Background Note ends with some suggestions on further research around the policy-research interface.

Findings

General

The majority of studies were situation assessments and focused on Africa, and in particular South Africa. Studies in lower prevalence and concentrated epidemic settings were less represented.

Most studies focused on the knowledge, attitudes and practices (KAP) towards HIV and AIDS of students and young children (versus teachers and parents/communities); and, among these, the majority used quantitative survey methods. Almost all studies relied on self-reported behaviour, captured through questionnaires or focus group discussions, with only nine studies using biological markers; proxy indicators were used as an alternative to self-reported behaviour and biological markers. Despite variations in scores, 86% of studies were found to be strong in part or all areas. Situation assessments and literature reviews accounted for the largest proportion of the reports that were weaker.

Figure 1: Assessment scores by criteria

By assessment criteria

1. *Focus*. Those who scored high in terms of *focus* (e.g. Biddlecom et al., 2007) (see Figure 1) outlined the relationship of the study to a wider body of research, introduced the target group and context and, in addition, identified an intended outcome and audience for the report. Studies scoring low provided only rudimentary information about the purpose and focus of their research; they lacked detail about the country or target group of the research and offered little or no consideration of how the study related to other research findings or aimed to meet an established need.

2. *Methodology*. Those who scored high (e.g. Maticka-Tyndale et al., 2007) provided a strong link between the research goal and data collection and analysis tools chosen. Any potential bias generated through the sampling strategy was identified clearly and addressed. Cultural considerations were also taken into account, with ethical considerations highlighted. Documents that scored weakly used small sample sizes, lacked a comparative group and employed potentially ineffective data collection tools. The majority of evidence available is statistical rather than descriptive, with overall marks for qualitative studies being weaker than those using a quantitative approach. However, of the few studies that combined qualitative and quantitative methods, three of the eight studies awarded overall maximum points came from this group (e.g. see Visser-Valfrey's 2004 study).

3. *Analysis*. Analysis of evidence was the most consistently well-addressed section of the reports, with 55% providing 'comprehensive' analysis of their findings. However, it was noted that findings were inconsistently disaggregated by available socio-demographic information. Gender, although understood to be a significant factor in HIV risk by authors, was addressed only briefly or ignored within analyses sections, despite the availability of data collected on both males and

females (e.g. James et al., 2006). A number of studies also provided overly scientific statistical descriptions that tended to obscure findings for lay readers.

4. *Conclusion*. The conclusion criteria saw the fewest studies receiving top scores suggesting that less importance may be attached to this area by the authors. Vague and insufficiently supported recommendations were common. Studies with strong conclusions were clear about the implications of their findings and relevance to a wider research field (including awareness of limitations) and presented recommendations relevant to their intended audiences (e.g. Boler, 2003; Kirby et al., 2006).

Research gaps

Through a process of systematic assessment, the study found a number of areas where current research is performing well, and areas where more attention may be required. It offers, therefore, a useful system for the measurement and strengthening of future research.

The assessment also brought out some specific gaps in relation to the literature on the effects of education on HIV and AIDS. These include the following:

- Since evidence is strongly weighted to Africa, and in particular to South Africa, new research should consider focusing on less well represented concentrated epidemic settings.
- More impact evaluations are needed, as most studies focus on identifying challenges or needs for HIV and AIDS education, rather than evaluating the impact of interventions.
- Within intervention evaluations, more studies are needed to address the factors that affect successful implementation, such as teacher training, access to related services through schools and the community, or parental attitudes to HIV and AIDS education.
- More longitudinal studies are needed to reveal the complex relationship between the impact of education on HIV; similarly, more research is needed

to measure social change at the broadest level, not just at the individual level.

Recommendations to improve the quality of research

Using the framework developed for the assessment as the basis, this section presents some recommendations for improving the quality of research. The boxes provide some examples of good practices found in the literature reviewed. While it is not comprehensive, the list suggests possible aspects to take into consideration when planning and carrying out research.

1. Focus. During every stage of the research process: from concept note phase, moving on to the full research proposal stage, to data collection, analysis and write up, and finally communication and dissemination, the research needs to be clear about:

- what the research questions and objectives are – they should be clear and focused; they should not try to answer too many questions; they need to link to outcomes, relate to outputs and have programme/policy implications
- the intended outcomes of the study – what is the goal of the study, what effect or impact is it likely to have?
- how it fits into a wider body of research, why it is necessary and what additional information/insight it will bring to this body of research
- who the target group(s) are – including their involvement in the study, e.g. should they be involved during design phase, analysis phase and/or final dissemination phase?
- the audience(s) for the report – there may be overlap between target group and audience, this will also affect the ways in which findings are communicated and disseminated.

See Boxes 1 and 2 for good practice examples.

2. Methodology. The following bullet points list some issues that can be considered when designing a research study. The issues are linked and some may be more relevant than others depending on, for instance, funding, time and capacity constraints. Many issues listed here go beyond the scope of the specific studies assessed, but the list draws on other work by the authors and recognised approaches and standards for carrying out quality research. From the outset, the research study needs to identify:

- the kind of study that is being carried out – including whether it will have control/comparison groups (<http://bit.ly/scicontrol>), whether it is operations research (<http://bit.ly/opsresearch>), action research (<http://bit.ly/actres>) or an evaluation. Justification is needed for each

kind of study, and a methodology should be designed accordingly

- the overall research design of the study – whether it is retrospective/cross-sectional/prospective; uses a cohort; collects data longitudinally; is experimental or quasi-experimental; uses a step or dosage design; includes pre- and post-intervention surveys (baseline and follow-up); or uses case studies. Details of different kinds of studies can be found at <http://bit.ly/ortoolkit>
- what methods are most appropriate, why and when – a clear justification for choosing qualitative and quantitative methods and tools is needed, including when they will be used, i.e. sequencing. Based on the evidence presented above and in other research, both rigorous quantitative and qualitative (including participatory) methods should be included if possible, as one builds, triangulates and helps to explain or expand the other
- a sampling strategy – for both qualitative and quantitative data collection, explaining the form of sampling that will be undertaken (e.g. random or purposive) (<http://bit.ly/samplestrategy>) and whether it will be statistically representative and, if not, a justification for this

Box 1: Good practice example

The following extract from Biddlecome et al. (2007) (<http://bit.ly/Biddlecome>) demonstrates good practices in terms of providing an understanding of how the project fits into wider debates, the target groups and audience for the research and the intended outcomes: ‘The project seeks to contribute to the global fight against the HIV epidemic among adolescents... It also seeks to communicate new knowledge to a broad audience (including policy-makers, health care providers and the media) in each country, as well as regionally and internationally, and to stimulate the development of improved policies and programs to serve young people.’ This clarity of intention influenced the style of the entire report, which, true to its intended audience, contained a balance of detailed information and easy to understand facts, with recommendations tailored to those the report sought to influence.

Box 2: Good practice example

The article by Jacob et al. (2007) (<http://bit.ly/jacobuganda>) situates the research clearly, has a clear identified target audience and clear questions that it aims to answer, as this extract shows: ‘Our main intention in this article is to answer the following questions from Ugandan youth: Does the school community offer sufficient HIV/AIDS instruction to students? What are ways to help youth better understand and learn more about HIV/AIDS? How do parents, the community, administrators, teachers, and other students react to HIV/AIDS/STD education? What recommendations do students have for improving HIV/AIDS education?’

- who the respondents are – different categories of interviewees need to be identified with broad themes/questions to the specific respondents; sex, age and other ways of disaggregating respondents should also be considered
- how respondents will be recruited – a recruitment strategy needs to be developed identifying how and where people will be interviewed – alternatives include using a snow-balling approach, going from house-to-house and health centre or other forms of exit interviews
- who will collect the data – capacity issues need to be considered (is training needed?) as well as ensuring an appropriate mix (age, sex) of interviewers
- how the data will be stored to ensure, among other things, ease of access and confidentiality
- a time-line for the study, which will include key outputs and milestones, key dates for the sharing of (interim) findings with different stakeholders (see also below)
- an informed consent process to ensure that ethical procedures are followed
- finally, documents should include an explanation of the methodology used, with a section on limitations.

See Boxes 3 and 4 for good practice examples.

3. Analysis. From proposal phase, the team needs to have a clear analysis plan, including:

- what analytical methods are used and appropriate. For quantitative data statistical analysis should be carried out using software packages (STATA, Epiinfo/Epidata, SPSS), basic statistics, regression; for qualitative data analysis can be done manually – carrying out content analysis, exploring narratives and expressions for instance – or using software packages (Atlasti, Nvivo)
- how data will be disaggregated – data collected by sex, age and other socio-demographic variables need to be analysed and presented in a disaggregated form
- how the analysis will be presented in terms of language, according to audience and visual aids
- focusing on context, including an explanation of how context may affect findings and/or interpretation
- who needs to be involved in the data analysis – if action, operations or policy research, it would be good to involve implementers, programmers and policy-makers in the analysis to help explain and build ownership of the findings; early knowledge of findings will also anticipate potential effects on programmes or policies.

See Boxes 5 and 6 overleaf for good practice examples.

Box 3: Good practice example

Dupas (2009) used a randomised experiment in Kenya to test the extent to which teenagers responded to risk information, in comparison to the national abstinence-only curriculum. As well as having a randomised design, the study used various methods including both self-reported behaviour and pregnancy rates to measure changes in unprotected sex and other risky sexual practices. This shows the use of multiple methods to obtain and triangulate information – studies often stop at self-reported behaviour.

Box 4: Good practice example

The 2007 article by Kabiru and Ezeh (<http://bit.ly/KabiruEzeh>) clearly identifies the country contexts, the participants in the study and the study design. The authors also explain how existing data sets were used and how data was both quantitative and qualitative. A rigorous informed consent procedure was also followed and care was taken to gender match interviewers to respondents. ‘The study involved focus group discussions and in-depth interviews conducted with adolescents, parents/guardians, educators, and health professionals, as well as national surveys of adolescents... Informed consent was obtained from all eligible adolescents. In addition, parental or guardian consent was obtained for adolescents younger than 18 years. Due to the sensitivity of the information sought from respondents, interviewers were gender matched to respondents whenever possible. Further, care was taken to ensure privacy during interviews.’

4. Conclusions/implications. By way of conclusion, all studies need to have:

- clear implications of findings
- clear and actionable recommendations tailored to specific audiences.

See Boxes 7 and 8 overleaf for good practice examples.

5. Communicating findings. For findings to have the most affect and reach there needs to be:

- identification of different kinds of outputs in appropriate languages, formats (including visual displays) and lengths, e.g. policy briefs, research articles, conference presentations
- a communication and dissemination plan targeting different audiences, including the sharing of interim findings and identification of events where study findings may reach large audiences and have greatest impact
- easier access to findings; key/influential studies should be made available free of charge on the internet, not only in peer reviewed journals to which there may be limited access – this will also help to bridge the gap between the scientific community and policy-makers.

See Boxes 9 and 10 overleaf for good practice examples.

Box 5: Good practice example

An example in which the analysis is presented in an accessible and visually-friendly format is the ActionAid report prepared by Hargreaves and Boler (2006) (<http://bit.ly/HargreavesBoler>). This makes extensive use of charts, tables and diagrams to present and summarise key issues in the analysis. It has a useful executive summary. At the end of each chapter it summarises the key points, and at the start of each chapter it highlights a finding from the analysis. For example, at the start of the Results chapter it states: ‘Findings suggest that the impact of girls’ education on HIV is changing as the epidemic evolves. The evidence shows that, as the epidemic matures, the impact of girls’ education reverses and starts having a positive impact.’

Box 6: Good practice example

Van Dyke’s (2008) paper also provides a good explanation on how quantitative and visual data was analysed. ‘An in-depth content analysis was done on the open-ended questions as well as on the children’s drawings, and the recurring themes were identified. Two coders were presented with pre-constructed themes and categories for analysing the answers to open questions. Inter-coder reliability was checked by asking both coders to code the same sample of questionnaires (10%), and they agreed 90% of the time. Interesting individual responses were retained and are quoted to illustrate the findings. The closed questions were coded and analysed, and basic statistical analyses were performed on the data using the Statistical Package for the Social Sciences (SPSS) software. Tests were two-tailed and level of significance was set at 1%. Because the sample was large, the effect of sample size or the strength of relationships for (mainly) chi-square analysis was calculated using Cramer’s phi-coefficient (!) (see Coolican, 2004); this gives a sense of whether the significance of a finding is small, medium or large in effect.’

In addition, Van Dyke analyses findings disaggregated by different age groups: middle school years foundation phase (6-9 year olds); middle school years intermediate phase (10-12 year olds); adolescents- senior school phase (13-16 year olds); and adolescents Further Education and Training (FET) school phase (16-19-year-olds).

Box 7: Good practice example

The conclusion in Kirby’s 2008 article is useful and concise: he shows how his results suggest important conclusions about abstinence and comprehensive sex and STD/HIV programmes in the US. He ends with four important and compelling points: ‘When comparing recent studies on the effectiveness of abstinence and comprehensive sex education programs, the following conclusions are dramatically evident:

1. Some evidence (but no strong evidence) currently supports the supposition that any particular abstinence program is effective at delaying first sex for adolescents.
2. Abstinence programs are not more effective at delaying initiation of sex than comprehensive sex education programs
3. Abstinence programs are not sufficiently effective to eliminate teens’ sexual risk or to eliminate the need for comprehensive sex education programs.
4. Much strong evidence supports the supposition that comprehensive sex education programs can both delay initiation of sex and increase condom or other contraceptive use among youth.’

Box 8: Good practice example

The last paragraph in the article by Johnson et al. (2009) provides a succinct and useful conclusion to his article, also pointing towards policy and programme implications emerging from the findings: ‘The explanation for the growing gap between educated and less educated women, in terms of HIV risk, is not completely clear but there are several policy implications: First, there is a need to reduce rates of school dropout and to strengthen existing school HIV/AIDS life skills programmes. Second, social marketing programmes may need to develop materials more appropriate for less educated individuals with low literacy, and it may be appropriate to introduce special campaigns in communities with low levels of education. Last, measures to improve the socioeconomic status of women may be appropriate in empowering women to reduce their exposure to HIV risk.’

Box 9: Good practice example

Boler’s 2003 (<http://bit.ly/Boler>) study represents a good example in terms of communicating findings. It uses an array of techniques and tools that make the overall layout and design of the document visually pleasing and easy to read: it uses different size fonts, boxes, tables, graphs, photographs, narratives and quotations. It also summarises findings and recommendations around three identifiable themes: ‘placing HIV/AIDS education in the context of the community’, ‘Silences in communicating on HIV/AIDS’ and ‘A wider crisis in Education’. The executive summary contains a short account of key findings and recommendations and is sufficiently detailed for the reader with limited time to grasp the main issues of the study and become aware of its significant and importance to future practice and understanding.

Box 10: Good practice example

The Horizons Research Update in which Kiragu et al. (2006) (<http://bit.ly/Kiragu>) present their findings is a useful example of a short document that is easily accessible. It is available online, is short (just 10 pages) and is visually pleasing. It is clearly laid out, with key findings in bold or italicised, and contains a range of devices including tables, a photograph and a set of quotes from interviewees.

Conclusion

The first part of this paper summarised some key findings and gaps in research identified from the assessment of literature on the impact of education on HIV and AIDS. Building on the framework developed for the assessment, the second part of the paper draws out some recommendations for conducting high quality research, using some of the reviewed literature to provide examples of good practice.

While the recommendations identify implications for policy and communications as key aspects of carrying out quality research, the assessment did not in itself explore in great detail the relationship between quality research and its impact on policy and pro-

gramming. Indeed, recommendations for carrying out impact studies, and particularly in relation to policy impact and change, would require identifying specific sets of issues, approaches and tools (see Young and Mendizabal, 2009).

A next stage of the process would, therefore, be to identify the impact of these studies, perhaps comparing their rigour against their effectiveness in prompting or supporting changes in thinking and practice.

The key areas to be addressed through such a process would be whether the studies are answering the questions that policy-makers and programme designers want answered, and whether there are identifiable characteristics of studies that are successful in influencing policy, programming or further research.

Case studies and vignettes were excluded from this assessment. But it would be interesting to include them in an assessment, to see whether their more personal approach, whilst less rigorous, is more effective in communicating ideas and issues and having an ultimate impact on policy and programming.

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