

# DOWNLOAD PDF THE PROBLEM OF COST EFFECTIVENESS IN EDUCATION

## Chapter 1 : cost-effective education “ The Shield

*effectiveness in education and health projects is relatively rare and, when applied, is often misconstrued as a simple cost analysis or as a cost-benefit method capable of judging the potential worth of a single intervention.*

To make further progress in health, meet new challenges, and redress inequities, resources must be deployed effectively. This requires knowledge about which interventions actually work, information about how much they cost, and experience with their implementation and delivery DCP2, chapters 14 and Why Use Cost-Effectiveness Analysis? The edition of Disease Control Priorities in Developing Countries Jamison and others was among the first efforts to guide choices about public health policies in developing countries by systematically combining information about effective interventions with information about their costs. It was motivated, in part, by a sense that developing countries were neglecting numerous opportunities for improving health and that better allocation of scarce resources could achieve better health outcomes. The publication presented cost-effectiveness analysis as an important tool for identifying these neglected opportunities and redirecting resources to better use. Cost-effectiveness analysis helps identify neglected opportunities by highlighting interventions that are relatively inexpensive, yet have the potential to reduce the disease burden substantially. For example, each year more than a million young children die from dehydration when they become ill with diarrhea. Oral rehydration therapy ORT does not diminish the incidence of diarrhea, but dramatically reduces its severity and the associated mortality rate. The scientific evidence that ORT can save lives was an important step in identifying this as a neglected opportunity for improving health. It demonstrates not only the utility of allocating resources from ineffective to effective interventions, but also the utility of allocating resources from less to more cost-effective interventions. The study investigated different ways of allocating these funds and found that the number of life years saved could be doubled if resources were reallocated to more cost-effective interventions DCP2, chapter 2 , box 3. DCP2 tells a similar story. It identifies dozens of interventions for a wide range of diseases and risk factors that are costly relative to the health gain they provide. These include hospital-based interventions, such as surgery for recurrent stroke, and community-based interventions for schizophrenia and bipolar disorder. Other interventions that are not particularly cost-effective include treating latent TB infections with isoniazid and regulations aimed at reducing alcohol abuse. If a country were to reallocate funds and efforts from these kinds of interventions and instead apply them to relatively more cost-effective interventions, substantially more people would be able to live longer and healthier lives. If reallocating funds from less cost-effective interventions is not feasible or appropriate, perhaps future increases in spending can be directed toward activities that will yield more health gains. DCP2 has benefited from this expanding literature and has aimed for consistent comparisons across diseases and interventions. For example, wherever possible, the cost-effectiveness analyses in DCP2 have used the same price units, health indicators, and definitions of included costs box 3. This chapter introduces the basic concepts and methods of cost-effectiveness analysis, considers some of its limitations, and explains how it has been and can be put to use. The chapter also considers some of the other contextual factors that must complement cost-effectiveness analysis in the decision-making process if policy makers are to make the best use of the findings provided in DCP2. Units for Cost-Effectiveness Ratios The editors of DCP2 asked the authors of the individual chapters to adopt a common method of cost-effectiveness analysis and to use consistent parameters. What Is Cost-Effectiveness Analysis? Cost-effectiveness analysis is a method for assessing the gains in health relative to the costs of different health interventions. It is not the only criterion for deciding how to allocate resources, but it is an important one, because it directly relates the financial and scientific implications of different interventions. The basic calculation involves dividing the cost of an intervention in monetary units by the expected health gain measured in natural units such as number of lives saved. By measuring cost-effectiveness in terms of lives saved, all lives are treated equally regardless of whether the person is an infant who might live another 80 years or a middle-aged person who can expect only

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another 40 years of life. This measure treats each additional year of life gained from an intervention as equal. It sums the number of years of life that would be saved by an intervention. The cost of an intervention divided by the resulting change in health status. The choice of currency units for measuring costs and the health units for measuring impact may vary. Because the future is uncertain, common but not universal practice is to discount both health gains and costs in distant years. DCP2 uses a discount rate of 3 percent per year, which has the effect of making 80 years of life expectancy at birth worth about 30 discounted years. Interventions that incur costs now but provide gains only years later look less cost-effective under discounting than when gains accrue immediately, but interventions whose costs and health benefits follow the same time pattern are all affected equally and their relative cost-effectiveness is unchanged. Nevertheless, averting death or prolonging life is not the only goal of health interventions. Investigators have proposed other measures to differentiate between a year of life in perfect health and a year of life with some health impairment. One of the more commonly used measures that addresses this issue is the disability-adjusted life year. A DALY measures not only the additional years of life gained by an intervention but also the improved health that people enjoy as a consequence. It assigns a value of 1 to a single year lived in perfect health. Any health impairment or disability is assigned a disability weight that describes the magnitude of the impairment, with a larger weight if the impairment is severe and a smaller one if the disability is modest. The value of a year lived with a disability then gets a value of 1 minus the disability weight, which measures the remaining degree of health. Researchers have assigned disability weights to various chronic conditions, pain, disability, and loss of bodily functions using a variety of methods, including international surveys that ask individuals to compare the quality of life under different health conditions. Some health interventions are aimed directly at reducing mortality, but many are aimed at reducing the severity of illness and improving the quality of life. With DALYs, these different interventions can be compared against a common standard. One of the advantages of using cost-effectiveness ratios is that they avoid some ethical dilemmas and analytical difficulties that arise when attempting cost-benefit analyses. Applying the alternative analytical technique of cost-benefit analysis requires assigning a monetary value to each year of life. By foregoing this step, cost-effectiveness analysis draws attention exclusively to health benefits, which are not monetized. When an intervention leads to health savings, the costs should be subtracted from intervention costs when compared to health outcomes. Many health interventions yield benefits beyond the immediate improvement of health status. For example, healthier parents will be able to provide better care for their children, healthier workers will be more productive in the workplace, and healthier families may avoid falling into poverty. Some health interventions can induce virtuous cycles. For instance, preventing the death of a parent may mean that a family has more income to provide nourishment for growing children. Other health interventions provide important ancillary benefits that are valued independently. For example, the cost-effectiveness of water and sanitation services in reducing gastrointestinal diseases is low, but piped water and sanitation services are valued in and of themselves as a convenience and an environmental improvement. The values people place on nonhealth benefits are quite high as demonstrated by their willingness to pay for such services, but cost-effectiveness will not measure additional nonhealth-related benefits. Therefore comparing interventions according to cost-effectiveness criteria must be done with a clear understanding that it compares interventions only in terms of their efficiency at improving health, and if nonhealth benefits are going to be introduced into a debate, then they should be considered for all the interventions under discussion and not for a select few. Cost-effectiveness analysis also requires comparable units for measuring costs. For domestic studies, the cost units in domestic currency will have a clear meaning. In the absence of unit prices of the inputs into interventions, for comparison across countries, DCP2 authors were provided costs for each World Bank region in a widely used currency, usually U. The main question involves whether to use market foreign exchange rates to convert domestic currency costs and compare them to the value of imported and importable inputs expressed in dollars, or whether to use a different conversion factor based on studies of the relative purchasing power of the domestic currency. Because market exchange rates are easier to understand and correspond better to actual financial constraints,

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DCP2 has used such rates for such conversions. Cost estimates are affected by prices and prices can vary considerably between, and even within, countries. The authors of DCP2 were unable to collect unit prices of the inputs into interventions in every country, so instead they were provided with average unit prices in each of six developing regions: In the most complete analyses, the authors multiplied these regional unit prices by the estimated quantities of inputs required for each intervention and then divided by the estimated health effect to derive the cost-effectiveness ratios. In cases where the authors could not find disaggregated information on inputs but some cost-effectiveness measures were reported, they made extrapolations. In some cases, input ratios were available for one region and the authors extrapolated these to other regions see, for example, DCP2, chapter 3. To conduct a cost-effectiveness analysis, researchers also need to specify the health intervention in some detail. Such interventions can be defined relative to adverse health events, such as being involved in an accident, contracting an infection, or suffering from a malignant tumor. Primary prevention seeks to avert an adverse health event, while secondary prevention aims to keep an adverse health event from recurring or causing a related problem once it has occurred. Following an adverse health event, interventions can also fall into several categories of case management, including cures, acute care, chronic care, rehabilitation, and palliation box 3. The figure illustrates how interventions are related to a health event. The definitions of these categories are given below. Population-based interventions all aim at primary prevention as defined below, are directed more Characterizing an intervention fully also requires defining the level of care at which it is delivered; the particular supplies and processes involved; and the types of health care workers and any associated services required, such as laboratory tests. The more detailed and accurate the analysis, the more readily investigators can assess whether it is similar to or diverges from how that intervention is characterized in other contexts. For example, health interventions might be provided by a less specialized facility or involve more visits in one country than another. The scope of the costs included will also affect the cost-effectiveness analysis. Researchers may choose a narrow definition of costs and focus exclusively on the direct variable costs of providing a service; that is, they may only include the costs of additional materials and staff that are required and exclude costs associated with the use of existing infrastructure or installed capacity. In other cases researchers may use wider definitions of costs by apportioning some share of the fixed costs of facilities and administration to the costs of the service. The DCP2 authors were asked to follow the latter approach. In some studies, researchers include other costs, such as the value of the time patients and family members spend in obtaining a service or the cost of transportation to reach facilities. When more costs are included, the cost per unit of health gain will be higher and the intervention will appear to be less cost-effective. If the interventions that are being compared have similar characteristics, such as all being offered at a similar facility, then including these other costs will not alter the ranking of interventions, but comparisons across interventions that are dissimilar could yield different results if the ratios are otherwise close. To be consistent, DCP2 chapters use only direct costs, because estimates of these other costs are both difficult to obtain and rarely consistent across studies. Though the basic cost-effectiveness calculation appears to be simple, choices about units of measurement, definitions of interventions, scope of costs, and prices to be included not only will alter the numerical results but also will affect the interpretation of the cost-effectiveness ratio. In many cases the differences are so large that refining the underlying analyses is unnecessary. For this reason, readers of DCP2 are encouraged to pay attention to different orders of magnitude, distinguishing extremely or moderately cost-effective interventions from those interventions that are not cost-effective. When cost-effectiveness ratios are within a similar range, policy decisions become more difficult. In such situations, closer scrutiny of the cost-effectiveness ratios may be warranted to improve confidence that the measures are close. This would entail verifying whether the units of measurement, the definition of interventions, and the scope of costs that are included were similar. Note also that the quality of the evidence available to assess cost-effectiveness varies, especially given the wide range of interventions being looked at. DCP2 notes that the best evidence comes from studies with randomized controls or systematic overviews and that the next best available evidence comes from nonrandomized studies that

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were nevertheless able to use rigorous statistical methods. The weakest evidence comes from limited case studies or surveys of expert opinion. However, a lack of evidence does not mean that an intervention is not cost-effective. It simply means that researchers do not know how cost-effective the intervention is. Nor does it mean that readers should ignore the cost-effectiveness numbers. Rather, readers should be cautious, should not rely heavily on point estimates, and should pay attention to orders of magnitude and quality of evidence. Cost-effectiveness analysis can offer no help for many important policy-making tasks.

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## Chapter 2 : Ten Cost Effective Strategies for Bullying Prevention | Texas School Safety Center

*Measures of cost and value in simulation are required to provide information about the viability and sustainability of simulation education, enabling simulation education in health care to demonstrate its worth.*

However, without them, you stand to lose more than ever. One common take on the situation blames institutions of higher learning for effectively price gouging the American people. Higher education is more valuable than ever, and government aid that once came as grants have transitioned to student loans. Meaning higher education is almost 4. Though the cost of higher education has skyrocketed in recent decades, so too has the accessibility of higher education and the diversity of higher education students. Minority students are attending college at record highs, and women now account for a majority of undergraduate students nationwide. This tempers the conventional take that college prices are too high. Instead it seems that colleges are “in many ways” doing their jobs better than ever, even if they are increasing tuition and fees at an unsustainable rate. Though a number of colleges are combating rising tuition costs, or attacking increasingly unmanageable student loans, the majority of college costs continue to increase. Reason for the Rise Contrary to narratives featuring price gouging higher education institutions, much of the high price of higher education is a simple matter of supply and artificially inflated demand. Contrary to narratives featuring price gouging higher education institutions, much of the high price of higher education is a simple matter of supply and artificially inflated demand. The availability of student loans, and the expectation “ever more prevalent over the last half century” that most kids have a chance of attending college have provided colleges with a glut of applications. In earlier years, government aid after WWII helped colleges to adjust to increasing demand, building new buildings, creating programs, recruiting talent. In recent decades, however, demand has continued to rise without as much government aid to help with college growth. The GI Bill of Rights was the first large enabler of higher education for the middle class. Enrolling 8 million veterans after , the program exceeded its expectations ten fold. As states focused on building education infrastructure, the federal government continued aid for families to make college affordable. As the economy and double-digit inflation took hold, college tuition and fees climbed rapidly to match or exceed inflation. With less subsidization from government sources, colleges turned elsewhere to pay for educations: The Sticker Price As a country, student loan levels are approaching crisis levels, and many entry-level wages are also stagnating. One point that is often misconstrued, however, is that this is due to price gouging from higher education institutions. A distinction that needs to be made in these discussions is that while sticker prices for universities seem to have jumped rapidly with student debt burdens, the actual average price paid by students has not. While there are a number of ways to reduce costs, more often than not financial aid channels are hard to navigate, and fitting external scholarships can be hard to find. While some schools have taken steps to reduce tuition and fees, and highly-ranked schools often guarantee loan free financial aid, more often than not tuition bills that increase yearly are passed to students. Private schools, however, are where the potential to go into debt has really skyrocketed. While a number of the best schools particularly liberal arts schools are private, attending a private institution is avoidable if rising education costs are a problem, as there are many excellent public schools in almost every region of the United States.

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## Chapter 3 : Cost-Effectiveness Analysis - Priorities in Health - NCBI Bookshelf

*the efficiency and effectiveness of education spending, the pressures of the No Child Left Behind Act and of state high-stakes accountability requirements have led to an increasing focus on how education dollars are being spent.*

Rashid, and Laurent Elder Pan Asia Networking, IDRC, Canada Abstract Despite improvements in educational indicators, such as enrolment, significant challenges remain with regard to the delivery of quality education in developing countries, particularly in rural and remote regions. In the attempt to find viable solutions to these challenges, much hope has been placed in new information and communication technologies ICTs , mobile phones being one example. This article reviews the evidence of the role of mobile phone-facilitated mLearning in contributing to improved educational outcomes in the developing countries of Asia by exploring the results of six mLearning pilot projects that took place in the Philippines, Mongolia, Thailand, India, and Bangladesh. In particular, this article examines the extent to which the use of mobile phones helped to improve educational outcomes in two specific ways: Analysis of the projects indicates that while there is important evidence of mobile phones facilitating increased access, much less evidence exists as to how mobiles promote new learning. Mobile phones; mobile learning; distance learning; educational outcomes; information and communication technologies; new learning Introduction For quite some time, the international development community has emphasized the paramount role of education in bringing about sustainable socio-economic development in the South. Goal 2 of the United Nations Millennium Development Goals MDGs aims to achieve universal primary education for children everywhere, boys and girls alike, by Significant challenges remain, however. Similar challenges confront secondary and tertiary education. Inequalities in access to education continue to pose major barriers in the developing world, and the delivery of cost-effective and quality education remains a persistent problem. In the attempt to find viable solutions to these problems, much hope has been placed in new information and communication technologies ICTs. It is believed that ICTs can empower teachers and learners by facilitating communication and interaction, offering new modes of delivery, and generally transforming teaching and learning processes. Of the many different forms of ICTs, mobile phones are thought, for several reasons, to be a particularly suitable tool for advancing education in developing regions. First, mobiles phones are the most prevalent ICT in the developing world, and the penetration rate is rising rapidly. In Asia, mobile penetration has doubled within a short span of time; in , average penetration was There is, therefore, less need for new physical infrastructure such as roads and phone wires, and base-stations can be powered via generators in places where there is no electrical grid Economist, Finally, in addition to voice communication, mobile phones allow the transfer of data, which can be particularly useful for delivering educational content over long distances. The concept of mobile learning mLearning “ understood for the purposes of this article as learning facilitated by mobile devices “ is gaining traction in the developing world. The number of projects exploring the potential of mobile phone-facilitated mLearning in the developing world is steadily growing, spurred in part by the use of mobile technology in the educational sector in the developed world which has expanded from short-term trials on a small scale to large-scale integration. However, there remains a lack of analysis that brings together the findings of the rising number of mLearning projects in the developing world. With the increasing attention now being given to the role of mobiles in the educational sector in developing countries, there is a need at this juncture to take stock of the available evidence of the educational benefits that mobile phones provide in the developing world. Consequently, this article explores the results of six mLearning projects that took place in several developing countries in Asia “ the Philippines, Mongolia, Thailand, India, and Bangladesh “ both because most developing-country mLearning interventions are being undertaken in Asia and because developments in Asia seem to indicate that the region could become the global leader in educational uses of mobiles Motlik, In exploring how mobile phone-facilitated mLearning contributes to improved educational outcomes, this article examines two specific issues: Of note, the projects reviewed deal with both formal and

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non-formal education as defined by Dighe, Hakeem, and Shaeffer , p. The structure of the article continues as follows. The article then examines six pilot projects that involved the use of mobile phones for education in developing countries in Asia, analyzing the pilot projects in order to determine whether the supposed benefits that the literature outlines hold true in the developing world. The article concludes with a discussion of the potential of mobile phone-facilitated mLearning as well as with indications for possible future areas of research. Theories of Mobile Learning The literature on mLearning points to a variety of benefits that mobile phones could have on the educational sector. For heuristic purposes, the impacts of mobile phones on educational outcomes that are identified in the mLearning literature can be classified into two broad categories. On the one hand, mobiles supposedly impact educational outcomes by improving access to education while maintaining the quality of education delivered. On the other hand, mobiles purportedly impact educational outcomes by facilitating alternative learning processes and instructional methods collectively known as new learning. The Role of Mobiles in Improving Access to Education In theory, mLearning increases access for those who are mobile or cannot physically attend learning institutions “ those who would not otherwise be able to follow courses in a traditional educational setting due to the constraints of work, household activities, or other competing demands on their time. MLearning makes education more accessible in that it enables learners to pursue their studies according to their own schedule. The portability of mobile technology means that mLearning is not bound by fixed class times; mLearning enables learning at all times and in all places, during breaks, before or after shifts, at home, or on the go. Interestingly, however, while mLearning is portable, it is not necessarily associated with physical movement. MLearning, as Visser and West suggest, can also increase access in those situations where cost represents a significant barrier to learning p. For those in rural or remote areas where environmental and infrastructure challenges hinder other learning modalities, particularly eLearning, mLearning presents great opportunities. For the individual learner, mobile technology is much less cost-prohibitive than other technologies like personal computers and broadband connections that are necessary for eLearning. In as much as mobile technology presents a less cost-prohibitive medium for learning, it represents an important avenue by which to reduce the gap between the haves and the have-nots in contemporary society where access to knowledge and information is increasingly important VanWeert, In regards to cost, the benefit of increased access afforded by mLearning is particularly relevant in the developing country context. Thus, mLearning provides a potential way forward for the expansion of education programs to larger segments of the population rather than via the eLearning model that has been adopted in much of the developed world. MLearning allows a method of educational delivery that could be more cost-effective than eLearning methods, not to mention that the ubiquity of mobile phones means that many people are already familiar with mobile phone applications Motlik, In so much as mLearning exerts an impact on educational outcomes by increasing access, mLearning represents a continuation and improvement of distance learning through increased utility and applicability Keegan, , p. MLearning, the literature suggests, broadens the availability of quality education materials through decreased cost and increased flexibility while also enhancing the efficiency and effectiveness of education administration and policy. The Role of Mobiles in Promoting New Learning Others suggest that the benefits of mobile phones are not merely limited to increased access to educational services. MLearning, they indicate, can also facilitate changes in the character of learning modalities that in turn impact educational outcomes. In this regard, mLearning represents more than a mere extension of traditional forms of education; mLearning facilitates alternative learning processes and instructional methods that the theories of new learning identify as effective for learning. According to proponents of new learning, mobiles facilitate designs for personalized learning in that they are responsive to difference and diversity in the way learning occurs. They facilitate designs for situated learning by providing learning during the course of the activity “ in the field for a botany student, in the classroom for a teacher trainee, or in the workshop for an engineer. The supposed value of mobiles also arises from the manner in which they facilitate lifelong learning. Mobiles can support the great amount of learning that occurs during the many activities of everyday life, learning that occurs spontaneously

in impromptu settings outside of the classroom and outside of the usual environment of home and office. They enable learning that occurs across time and place as learners apply what they learn in one environment to developments in another Sharples et al. Mobile phones theoretically make learner-centred learning possible by enabling students to customize the transfer of and access to information in order to build on their skills and knowledge and to meet their own educational goals Sharples et al. MLearning thus exerts a democratizing effect on the learning experience as learners take a greater responsibility for the learning process instead of being passively fed information by an instructor. Whereas in traditional models of education the goal is the transfer of knowledge from teacher to student, mLearning empowers students to actively participate in the learning process to make it a process of construction and not mere instruction dela Pena-Bandalaria, As a facilitator of new learning, mLearning goes beyond an emphasis on the possession of information to enabling learners to find, identify, manipulate, and evaluate existing information Brown, , p. Mobiles can also supposedly facilitate knowledge-centred learning by providing efficient and inventive methods by which students can learn with understanding “ meaning that they deepen their understanding of a specific subject matter rather than merely memorizing large amounts of information ” and then use this knowledge as a basis for new learning through integration and interconnection. Mobile devices make possible assessment-centred learning as well by enabling the provision of continual feedback throughout the learning process, presenting learners with diagnosis and formative guidance as to what might be improved or what might be learned next. Moreover, in providing prompt feedback, mLearning maintains the appeal of learning and provides a motivating factor that can at times be lacking in traditional modes of education Geddes, Mobile phones also facilitate community-centred learning, meaning learning that the learner deems valuable because of its relevance to the surrounding social context; mLearning facilitates learning that can be used to achieve socio-economic goals that respond to problems, such as problems related to health or family care confronting the surrounding community Sharples et al. Given that social interaction is central to effective learning, as indicated by theories of new learning, mobile phones should also impact educational outcomes by facilitating communication. Mobiles permit collaborative learning and continued conversation despite physical location and thus advance the process of coming to know, which occurs through conversations across contexts and among various people. Via mobile technology, learners engage in conversation whereby they resolve differences, understand the experiences of others, and create common interpretations and shared understanding of the world Nyiri, ; Sharples et al. In promoting educational modalities that accord with the theories of new learning, mLearning should offer an appeal aspect that also impacts educational outcomes. MLearning can be particularly appealing for those who have not succeeded in traditional learning environments; it can attract those not enamoured by traditional learning approaches that are generalized and decontextualized in nature. MLearning is also beneficial in that it can provide immediate feedback and thus provide continued motivation for those who are not motivated by traditional educational settings. Moreover, mLearning presents an appeal simply because the use of mobile technology in and of itself presents something new and exciting for a great array of learners Geddes, , p. Mobiles, therefore, should impact educational outcomes by altering the character of education and learning because the nature of mobile technology converges with and facilitates new learning. The new learning is personalized, learner-centred, situated, collaborative, ubiquitous, and lifelong. Likewise, mobile technology is increasingly personal, user-centred, mobile, networked, ubiquitous, and durable Sharples et al. The literature indicates that the benefits afforded by this convergence should exert a positive impact on educational outcomes. Methodology In light of the theories as to how mLearning should solve access problems as well as facilitate new learning, the authors sought to examine the existing evidence so as to confirm, or refute, the purported benefits advanced by the literature. To this end, the authors identified relevant mLearning pilot projects by conducting a search of academic publications and conference proceedings, as well as conducting a general Internet search. The projects were selected according to the following criteria: Six projects met the criteria of the search and are discussed in the section that follows see Table 1 for brief summary. The search revealed that most mLearning projects have been implemented in the

developed countries of Europe, North America, and Asia-Pacific; mLearning projects in the developing countries of Asia have been few in number 2. Moreover, of the projects undertaken, only a select few were documented in a manner that allows analysis of results. For the six selected cases, project reports and project-related, peer-reviewed publications served as the source for information. Some key limitations of the study must be taken into consideration when generalizing the findings. Firstly, the study depended on the validity of the data presented by the sources. To minimize this limitation, the authors reviewed the appropriateness of the methodologies for each project in order to ensure, to the best of their knowledge, that they were acceptable. Secondly, the absence of a process of collecting primary data for this study meant that, in some cases, the data resulting from the projects reviewed did not always relate to the research question of this study. Consequently, some of the projects produced only limited information concerning the indicators that this study assessed. Based upon information gathered in pre-project surveys and focus-group discussions, the MDFI created two learning modules in conjunction with the ALS. One module was titled MIND your English and included sections on expressing oneself, language and grammar, reading skills, and letter-writing. The other module was titled MIND your Math and included sections on fundamentals of mathematics, area and perimeter, and percentage. Each module was designed to incorporate the use of SMS with a workbook. The English module also contained an audio CD containing the workbook exercises in audio form to aid students with proper pronunciation and diction. The modules were designed such that SMS quizzes and tests had to be passed in order to complete the modules Ramos, , p. The difference between the two groups was slightly greater in regards to the mean percent correct for parts II and III. Most remarkable is the difference in the range of the mean percent correct for parts II and III, with the lowest scores for the SMS group being significantly higher than the lowest scores of the non-SMS group. This difference in the range, the authors of the project suggest, may also account for the large difference in the overall passing rate between the two groups Ramos, , p. Findings regarding improved access and promotion of new learning. Several program and hardware problems arose during the testing phase of the project Ramos, , pp. There were also some problems with the handling of student records and access to the SMS server because of the malfunctioning of the data encoding system that ensured that only mobile phones registered in the system could access the SMS quizzes. Some students switched phones and others dropped out without advising their teachers, causing problems because the SMS system required updates to ensure that new numbers were not blocked. At the start of the project, the volume of incoming messages also led to delays in the auto-reply system. Student errors in entering improper keywords also led to problems with the quizzes. Evident, then, is the fact that careful planning is necessary to ensure that mLearning does in fact deliver on its promise of increased access to educational services and to ensure that technological factors do not hinder the effective design and implementation of mobile phone-facilitated mLearning.

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## Chapter 4 : Effectiveness of simulation-based nursing education depending on fidelity: a meta-analysis

*The problems of rural education, V.L. Griffiths Cost-benefit analysis in educational planning, M. Woodhall the effectiveness of education.*

The Rising Price of Higher Education By William Trombley State spending for public colleges and universities dropped sharply last year, as the state-by-state numbers contained in this special report from the National Center for Public Policy and Higher Education demonstrate. At the same time, tuition and required fee charges rose significantly in many states, and some states reduced their student financial aid programs. The result was the worst fiscal news for public higher education institutions and their students in at least a decade, as the economic recession struck almost every state. So far this year, the picture looks even bleaker, with states continuing to cut higher education appropriations and campuses responding by raising tuition even higher, imposing new fees and reducing student financial assistance. View bar graph version of the data. Bureau of Economic Analysis; the U. They show that state support for higher education, measured in current dollars, increased only 1. Appropriations dropped in 14 states, with the largest decline percent-in Oregon. Tuition and mandatory fee charges at four-year public institutions rose in every state, startlingly so in some cases. Iowa, Missouri and Texas increased tuition and required fees by 20 percent, North Carolina by 19 percent, Ohio by 17 percent. Sixteen states increased tuition and fees by more than 10 percent. Community college tuition and mandatory fees rose in all but two states California and Maine , with 10 states registering increases of more than 10 percent. The biggest increases were in Massachusetts and South Carolina, where charges jumped 26 percent. Fourteen states increased their total investment in student grant aid by more than 10 percent between and , the report notes. South Carolina had the largest percentage increase percent. But 17 states spent less on student financial aid in than they had the year before. Massachusetts had the largest decrease 24 percent , followed by Rhode Island 20 percent , Nebraska 15 percent , Utah 14 percent , and Connecticut 13 percent. If was a bad year financially for public colleges and universities, will be worse, most experts predict. There are a few exceptions, he said: Wyoming-where taxes on revenue from mineral extraction have helped to balance the state budget-and a few other small-population states. An informal survey by the National Association of State Universities and Land-Grant Colleges, representing public institutions, found mid-year tuition hikes ranging from 4. After several years of freezing tuition rates, Virginia now has seen increases for the fall and spring semesters that average In the National Center for Public Policy and Higher Education survey, Massachusetts has some of the poorest ratings-largest tuition increase in four-year public institutions 24 percent , second largest in community colleges 26 percent , biggest cut in student financial aid 24 percent , and a three percent reduction in state appropriation for public higher education. In addition, classes are crowded, the library was unable to buy any new books last year, and seven sports teams have been eliminated. Cal State Chancellor Charles B. At the same time, Cal State will try to make sure that faculty members are available to teach courses students need in order to graduate. Some community college officials estimate that the budget cuts and fee increases will cause an enrollment decline of about , students. The budget proposal acknowledges that the fee increase is likely to trim community college enrollment by at least 40, and gives that as a reason for reducing the state appropriation. Said another, "Governor Davis and his top staff people either went to the University of California or elite private universities. Higher education institutions have been warned to prepare for a 9. There is no money for the trust funds that enabled the Kentucky Council on Postsecondary Education to promote promising campus reforms. Lori Valigra, a Boston-based freelance writer, contributed to this article.

## Chapter 5 : Understanding the Rising Costs of Higher Education

*Cost-effectiveness analysis is a method that consists of defining the objectives of a project and choosing the solution that minimizes discounted capital and recurrent costs for a given output or maximizes the output for a given cost.*

Received Sep 25; Accepted May This article has been cited by other articles in PMC. Abstract Background Simulation-based nursing education is an increasingly popular pedagogical approach. It provides students with opportunities to practice their clinical and decision-making skills through various real-life situational experiences. However, simulation approaches fall along a continuum ranging from low-fidelity to high-fidelity simulation. The purpose of this study was to determine the effect size of simulation-based educational interventions in nursing and compare effect sizes according to the fidelity level of the simulators through a meta-analysis. Forty studies met the inclusion criteria and were retained in the analysis. Results This meta-analysis showed that simulation-based nursing education was effective in various learning domains, with a pooled random-effects standardized mean difference of 0. Subgroup analysis revealed that effect sizes were larger for high-fidelity simulation 0. In terms of cognitive outcomes, the effect size was the largest for high-fidelity simulation 0. Regarding affective outcome, high-fidelity simulation 0. Conclusions These results suggest that simulation-based nursing educational interventions have strong educational effects, with particularly large effects in the psychomotor domain. Since the effect is not proportional to fidelity level, it is important to use a variety of educational interventions to meet all of the educational goals. Nursing education, Patient simulation, Educational models, Meta-analysis Background Clinical education in nursing aims to integrate theoretical knowledge from books into practical knowledge in real-life situations and to help students develop their problem-solving skills. Simulation-based clinical education in nursing refers to a variety of activities using patient simulators, including devices, trained persons, lifelike virtual environments, and role-playing, not just handling mannequins [ 1 ]. With realistic clinical scenarios, simulation-based educational interventions in nursing can train novice as well as experienced nurses, helping them develop effective non-technical skills, practice rare emergency situations, and providing a variety of authentic life-threatening situations. The advantages of simulation-based educational interventions include the ability to provide immediate feedback, repetitive practice learning, the integration of simulation into the curriculum, the ability to adjust the difficulty level, opportunities to individualize learning, and the adaptability to diverse types of learning strategies [ 1 ]. Simulation can be described as a continuum ranging from low-fidelity simulation LFS to high-fidelity simulation HFS [ 2 ]. Various simulation methods can be adapted according to specific learning outcomes and educational levels. Dieckmann [ 3 ] warns against placing too much emphasis on having optimal equipment and surroundings that realistically replicate the clinical setting. The required learning outcomes must govern the choice of simulation method [ 4 ]. A number of research studies in nursing have evaluated the effectiveness of simulation-based educational interventions [ 5 ]. However, the reported effectiveness has varied according to the fidelity level of the simulators and the outcome variables. However, their review was limited to HFS, medical education, and learner outcome variables, and did not compare simulation methods. Therefore, a meta-analysis synthesizing the results of these studies is needed to provide important insights into the level of simulation fidelity that is most effective for educational use. Study selection Studies published between January and July were identified by conducting an electronic search of the following databases: The literature search was limited to articles published in English or Korean and was conducted using combinations of the keyword phrases nursing, simulation, human patient, and simulator. A total of potential studies were identified. Titles and abstracts were reviewed for eligibility. Relevant studies were screened for inclusion based on the following criteria: We excluded articles that did not report a control group or that tested the effectiveness of computer-based virtual patients. For abstracts that did not provide sufficient information to determine eligibility, full-length articles were retrieved. Disagreement on the inclusion or exclusion of articles was resolved by consensus. Of the potentially relevant articles, screening of

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the title and abstracts resulted in relevant studies. After a review of these articles, 96 studies were retained and three articles included additionally via hand search. These 99 full-text articles were reviewed systematically to confirm their eligibility Fig.

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## Chapter 6 : Cost-effectiveness analysis - Wikipedia

*Problems of higher education. Abraham Ramsey, Staff Writer. November 6, Filed under Opinion. Students may believe that this college is one of many across the country that has perfected cost-effective education.*

Publications Ten Cost Effective Strategies for Bullying Prevention In a time where district budgets are being cut and pressure is increasing on administrators to ensure student safety, solutions need to be developed that can meet both of these competing interests. One of the biggest issues facing students, parents, and school personnel today is the frequency and long lasting effects of bullying. Incidents of bullying can affect the school environment, the community, and most importantly the psychological and developmental state of the youth involved e. Specifically, students who are bullied have shown higher levels of anxiety, higher levels of depression, and are more prone to sleeping disorders Fekkes, Pijpers, and Vanhorick, Bullying has also shown to increase fear in the school environment, interfere with academic achievement, and foster a low level of trust in adults Griffin, The following ten strategies have shown success in reducing bullying incidents, and for the most part can be implemented with minimal funding: Assess Bullying at your School In order to respond appropriately to any problem, it is necessary to have a full understanding of the problem. This entails knowing the frequency of the problem, when and where it occurs, and how effective current interventions are at mitigating the problem United States Department of Health and Human Services, a. Bullying is no different. By using surveys or focus groups, school administration can gather information from the school community and use the information to respond accordingly Black, Washington, Trent, Harner, and Pollock, Gathering information and perceptions from all facets of the school environment allows for a more comprehensive evaluation of the problem. Next, obtain consent from parents and students prior to the assessment and stress that the information gathered is anonymous United States Department of Health and Human Services, b. Once information is gathered, it can be analyzed and an action plan should be developed to address the findings. This information can be used to guide bullying prevention efforts for the future and can act as a baseline measure to test the effectiveness of new prevention efforts. This strategy is minimal in cost, but takes some dedication from staff. Target Areas Where Bullying is Most Common This strategy may seem simple and straightforward, but is a key component of prevention efforts. The first step, and often the most difficult, is to identify where bullying incidents occur most frequently. This can be done through the formal assessment conducted at the campus 1 or from input given by staff, students, and parents 4. Once these areas have been identified, an action plan should be developed to increase or restructure supervision assignments to target these areas. Schools should be creative and utilize all staff personnel when addressing target areas United States Department of Health and Human Services, a. Ttofi and Farrington conducted a meta-analysis of bullying prevention programs, and concluded those that increased supervision were found to be the most effective. Create a Safe and Supportive School Environment In order to reduce the number of bullying incidents, a safe and supportive school environment must be established. A safe environment is one that allows children to focus on learning, and not about the next time they are going to be the victim of bullying. A supportive environment is one where members of the school community teachers, administrators, and other students step up and speak out for someone who is being bullied United States Department of Health and Human Services, a. It must be made clear both through policy and action that bullying is not tolerated. In terms of youth, it must become "uncool" to bully others and also "uncool" to watch others being bullied and not take action United States Department of Health and Human Services, b. Empowering bystanders to speak up against the bullying behavior they are witnessing is crucial in prevention efforts. It is not a simple behavioral change for a short time, but a cultural and attitudinal shift. A safe and supportive environment requires all staff i. For example, encourage students and staff to be inclusive and reward them for it, stress the importance of respect, and ensure students are interacting appropriately. Adults in the school should lead by example. Though it is not easy to change a school environment and it often requires dedication, perseverance,

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and hard work, it can be done with minimal funding. Creating a safe and supportive environment is needed to ensure bullying prevention efforts sustain over time United States Department of Health and Human Services, a. This type of environment will create a culture where bullying is not accepted. Again, this cultural shift will not happen overnight, but should be the long term goal of bullying prevention efforts. Engage Staff, Students, and Parents in Prevention Efforts Administrators cannot implement bullying prevention efforts alone. Though a strong and dedicated administration is vital in implementing a successful prevention strategy, the support from members of the community is also needed in order to sustain the efforts over time United States Department of Health and Human Services, b. Members of the community include parents, students, staff, teachers, bus drivers, and community residents. This encourages everyone involved in the school to talk about the problem together. It allows the prevention efforts to not only occur in school, but extends them into the home and throughout the community. In a sense, the school is extending its prevention efforts into the community and allowing for all stakeholders to have input on how to address the problem. Engaging adults and youth also fosters a deeper level of trust and communication between one another. A student is more likely to talk with an adult regarding a bullying incident if that youth perceives the adult as trustworthy and someone that can help again, this strategy requires little funding. This group can also assist in bullying prevention. For example, the committee can be charged with analyzing the data from the assessment 1 , collecting feedback from stakeholders, and ultimately implementing a prevention strategy United States Department of Health and Human Services, a. This group should include members from the entire school community. This is often a good way to engage staff members, parents, and community members in the prevention efforts. Building a team that has a diverse background and set of skills allows for a comprehensive strategy to be developed. For example, a mental health professional may be able to provide guidance on how to treat such issues, parents can share the family components, and teachers can provide classroom difficulties associated with bullying United States Department of Health and Human Services, b. It is important to include members who want to be on the committee and not require certain individuals to be on the committee that have no interest in the problem. There is no real cost associated to the creation of the group. Again, it requires time and dedication to making schools a safer place for youth. Staff at minimum should be able to identify the various types of bullying, be aware of the effects bullying has on individuals victim, perpetrator, and bystanders , and have the knowledge to appropriately intervene when an incident of bullying occurs. Bullying incidents are not limited to just the classrooms where teachers are supervising. It has also been found to occur in areas where other school staff is present. A school can increase supervision in areas of need by training all staff in bullying prevention United States Department of Health and Human Services, a. It is more likely that a staff member e. Making sure students fully understand the components of bullying is an important step in prevention efforts, which does not necessitate an expensive commercial program. It is also necessary to provide students with guidance on how to appropriately intervene when they witness a bullying incident. A crucial part of a prevention program is empowering youth to act when they witness an act of bullying occurring. Create and Enforce Clear Rules Pertaining to Bullying In addition to inclusion in the district code of conduct, it should be made clear in the campus rules that bullying will not be tolerated. These rules should be discussed frequently with students and their parents. It is not enough to discuss the rules at the beginning of the year and not have follow-up discussions throughout the school year. The term bullying should be used explicitly in the rules and actions that constitute bullying should be clearly identified United States Department of Health and Human Services, a. To take it a step further, rules should not only forbid bullying, but encourage students who witness bullying to take action bystanders. Clearly stating what is required of students who witness bullying will ensure students know the appropriate actions to take when bullying behavior is witnessed United States Department of Health and Human Services, a. These rules again should be clearly stated and use the term "bullying" explicitly. For example, use the term "bullying" in your school mission statement. A sentence in the mission statement could read "School X is committed to establishing a safe environment free of bullying, violence and harassment" United States Department of Health and Human

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Services, b. Make sure the rules are posted throughout the school, including classrooms, so students are frequently reminded of what is expected of them. Once rules are clearly stated, they should be strictly enforced. If rules are enforced on some days and not on others, or for some students and not others, they lose all power to prevent unwanted behaviors. Like many of the other strategies discussed, enforcement requires all staff to be involved. Rules should be enforced in the same manner by all staff members. Typically, including all staff in the developmental process of the rules can ensure a better understanding of the rules and what is expected of staff in terms of enforcement United States Department of Health and Human Services, b. Schools that implement rules which are clearly stated and are enforced fairly and consistently have been shown to experience less bullying behavior Cook, Gotfredson, Chongmin, The key to effective rules is clarity and enforcement. If rules are simple as well as consistently and fairly applied, they will be valuable assets in bullying prevention efforts. Empower Staff to Intervene During a Bullying Incident The previous seven strategies have encompassed 8 indirectly, but its importance requires it be directly stated. This strategy requires that all staff have the knowledge and authority to intervene when they witness a bullying incident United States Department of Health and Human Services, a. Staff should have the skills to actually engage the problem and handle it in an appropriate manner. It is not enough to have a staff member call the office to request the presence of an administrator to handle the incident. By that time, the incident may have taken place and the damage may be already done. Effective intervention requires staff diffuse the situation in the first minutes United States Department of Health and Human Services, a. The key to this strategy is communicating to school staff that they have the authority to intervene. Infuse Bullying Prevention Education into Existing Curriculum Administrators should allow teachers to creatively infuse bullying education into their existing lesson plans. For example, a writing class can focus a paper around a bullying topic, or an art class can focus a project around depicting the effects of bullying from a visual perspective United States Department of Health and Human Services, b. In addition, it is also useful to allow teachers a short amount of time minutes every few weeks to discuss bullying and peer relationships United States Department of Health and Human Services, a. This will not only provide students with the prevention education they need, but also allow teachers to bring areas of concern to the safety and security committee for further analysis. Continue Efforts over Time Bullying prevention efforts are a continuous process with no established end date United States Department of Health and Human Services, a. Prevention should be considered an ongoing process and not simply a one-time event. These strategies should be built into the school culture over time. It is not realistic to think that in just one school year, all of these strategies can be accomplished to their full potential. On the other hand, these strategies take hard work, dedication, and a long-term commitment. Research has shown that these strategies are an effective course for bullying prevention efforts. They attempt to build a culture with clear rules, norms, and beliefs that do not allow for bullying. Considering the damaging effects bullying can have on a school, the community, and the youth, it is vital that effective strategies are implemented. Implementing effective strategies have often been associated with a hefty cost. However, the ten strategies provided are evidence that with commitment and hard work, bullying prevention efforts can be effective without the large cost attached to them.

### Chapter 7 : The Rising Price of Higher Education

*The Cost-Effectiveness Analysis S P ≠ A form of economic evaluation that allows for the comparison of the costs (in monetary units) and consequences (in natural units) of two or more.*