



# **Improving and Measuring the Impact of Training: Selected References**

**August 31, 2012**

The U.S. Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA) has funded the collection of this information and resulting product(s) under Contract No. HSH250201100031C with the Public Health Foundation.

## Table of Contents

<b>Introduction</b> .....	<b>3</b>
<b>Approach</b> .....	<b>3</b>
<b>Using This Report</b> .....	<b>3</b>
<b>References</b> .....	<b>5</b>
<b>General References</b> .....	<b>5</b>
<b>Stages of the Training Process</b> .....	<b>14</b>
<b>Assess</b> .....	<b>14</b>
<b>Assessment References</b> .....	<b>14</b>
General.....	14
Factors Related to Learners.....	15
Organizational Factors .....	20
Factors Related to Trainers.....	20
Environmental Factors .....	21
<b>Motivate</b> .....	<b>22</b>
<b>Motivation References</b> .....	<b>22</b>
Motivating Learners .....	22
Motivating Supervisors.....	25
<b>Design</b> .....	<b>27</b>
<b>Design References</b> .....	<b>27</b>
<b>Deliver</b> .....	<b>50</b>
<b>Delivery References</b> .....	<b>50</b>
<b>Evaluate</b> .....	<b>55</b>
<b>Evaluation References</b> .....	<b>55</b>
General.....	55
Process Evaluation .....	58
Outcome Evaluation.....	59

# Improving and Measuring the Impact of Training: Selected References

## Introduction

The Council on Linkages Between Academia and Public Health Practice (Council on Linkages), a collaborative of 19 national public health organizations, has long recognized the importance of high-quality continuing education to ensuring a competent public health workforce. To support the ongoing training of public health professionals, the Council on Linkages launched the Public Health Training Impact initiative in the fall of 2011 to identify strategies, methods, and tools to improve and measure the impact of training. The Training Impact Task Force (Task Force) was established to guide this initiative and consists of 11 professionals with expertise in training, evaluation, and public health. Task Force members were drawn from academia, government, and the private sector, and work both inside and outside of the field of public health.

*Improving and Measuring the Impact of Training: Selected References* provides training institutions and programs, trainers, public health organizations, and sponsors of training a collection of references to literature on training and evaluation of training. This collection offers background and supporting literature on techniques to improve training activities and determine whether those activities have the desired effects, as well as examples of the successful implementation of training and evaluation strategies. In conjunction with *Improving and Measuring the Impact of Training: Strategies and Methods*, this collection is designed to assist organizations and individuals in developing and delivering effective training efforts.

## Approach

Between October 2011 and August 2012, literature on training and evaluation of training was collected. With the assistance of the National Library of Medicine, searches were conducted to identify relevant literature. Databases searched included PubMed; Embase; CINAHL (Cumulative Index to Nursing and Allied Health Literature); ERIC (Education Resources Information Center); Scopus; Google Scholar; and EBSCOhost's Health and Psychological Instruments, Health Business Elite, and Psychology and Behavioral Science. Searches focused on such topics as training, continuing education, professional development, teaching/teachers, learning/learners, learning styles, assessment, motivation, incentives, evaluation, and educational measurements. Additional literature was added to the collection based on recommendations from the Task Force.

## Using This Report

This collection of references is intended for training institutions and programs, trainers, public health organizations, and sponsors of training interested in improving and measuring the impact of their training. Literature on training and evaluation and examples of the application of training and evaluation techniques is provided. Strategies and methods aimed at enhancing training activities are contained in the companion document, *Improving and Measuring the Impact of Training: Strategies and Methods*.

References within this collection are presented in six categories:

- ❖ General
- ❖ Assess
- ❖ Motivate
- ❖ Design
- ❖ Deliver
- ❖ Evaluate

With the addition of a general category to encompass crosscutting references, these categories mirror those used to describe strategies and methods in *Improving and Measuring the Impact of Training: Strategies and Methods*. References relevant to multiple categories are noted where appropriate.

## References

### General References

Broad, Mary L., & Newstrom, John W. (1992). *Transfer of training: Action-packed strategies to ensure high payoff from training investment*. New York: Basic Books.

#### Abstract

*Transfer of Training* n 1: the ability of persons to effectively apply to the job the knowledge and skills they gain in off-the-job education 2: learning in one situation that facilitates learning (and therefore performance) in subsequent similar situations 3: a development effort that induces significant new behavior on the job 4: the use of learning in the work situation 5: the maintenance of behavior; anything that maintains an acquired skill or knowledge to a performance standard. Experts question the ultimate on-the-job effectiveness of employee development programs. By some estimates, corporations, nonprofit organizations, and governments spend about \$50 billion each year for human resource development (HRD) for their employees; yet studies show that only 10% of classroom learning is applied in the workplace. Today, with demands on corporate wallets coming from all sides, is any wonder that training budgets are often the first to be reduced—or even eliminated? Obviously the need to increase return on investment is of increasing concern to executives, making the transfer of training a crucial issue for today's trainers. In *Transfer of Training*, Mary Broad and John Newstrom show why the full transfer of learned skills to the workplace is critical for the organization's growth and survival, and they present a systematic process for bringing managers and trainees into the transfer process so that the diverse workforce can benefit. They offer ways to manage the powerful role of "manager of the transfer process," and they provide the tools to get this important job done.

Cline, Beverly V., et al. (1993). Planning and implementing effective staff development programs. In Bonnie S. Billingsley, et al. (Eds.), *Program leadership for serving students with disabilities*. Blacksburg, VA: Virginia Polytechnic Institute and State University.

#### Abstract

This chapter on designing and implementing effective staff development programs is taken from a guide to instruction and services for students with disabilities. The chapter focuses on assessment of staff development needs and identification of priorities for training. Staff development options are discussed in terms of formats (such as workshops, summer institutes, videotape applications) and levels of training based on target audience. Planning staff development programs involves the following steps: identifying needs, considering the characteristics of adult learners, establishing goals and objectives, obtaining commitments, and designing the program. Extrinsic and intrinsic incentives are discussed. Methods for determining the effectiveness of the staff development program are noted. Appendixes include a needs assessment instrument, a list of characteristics of adult learners, and a staff development checklist. (Contains 37 references.)

Frey, Barbara A., & Overfield, Karen. (2000). *Faculty development: Assessing learner achievement*. Available from <http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED443886>

#### Abstract

This study addressed the challenges of developing a faculty professional development workshop on assessment, measurement, and evaluation of achievement in adult learners. The setting for the workshop was a system of postsecondary career colleges throughout the United

States. The curriculum development model of D. Kirkpatrick (1994) was used as a tool to guide the decision-making process. Prior to the workshop, a needs assessment including trainers, clients, and managers was conducted to determine the framework of the program. Instructional objectives were established based on the content identified in the needs assessment. Following a review of instructional objectives, the workshop addressed assessment techniques in the cognitive, affective, and psychomotor domains of learning. Both formative and summative evaluations provided feedback on the workshop. An appendix contains the faculty needs assessment questionnaire. (Contains 16 references.)

Friedman, Andrew L. (2011). *Continuing professional development: Lifelong learning of millions*. New York: Routledge.

Abstract

Continuing Professional Development (CPD) is the means by which the professions across the world ensure that their knowledge and skills remain up to date and relevant to changing needs and environments. CPD significantly contributes to the quality and reputation of the professions and therefore to the quality of national and international social life and economic well being. Starting with a discussion on what CPD is, the author analyzes how professional bodies govern CPD, what support they provide to individual professionals and how they measure or evaluate what individuals do under the provenance of CPD. "Continuing Professional Development" explains why, up to now, CPD has been a relatively neglected subject in spite of it being carried out by millions. It argues whether a variety of perspectives or visions of CPD has held back wider public appreciation of it and if greater co-ordination by professional bodies, or the introduction of new players to the field, will change this in the future. Providing the first comprehensive study of the subject, this innovative book will be required reading for CPD professionals and researchers and is a fascinating read for all professionals, especially those involved with human resource development and management/leadership development.

Gibbs, V. (2000 November). Learning how to learn: A selective review of the literature. *Radiography*, 6(4), 231-235.

Abstract

With the current emphasis on Continuing Professional Development within the healthcare professions, many of us need to rediscover, or improve, our ability to learn. The continuously changing nature of modern technology and the employee's typical movement through many jobs, means that more effort needs to be focused on 'learning how to learn'. This paper looks at the literature on the subject, to explore methods that individuals and organizations can use to enhance the ability to learn.

Griscti, O., & Jacono, J. (2006 August). Effectiveness of continuing education programmes in nursing: Literature review. *Journal of Advanced Nursing*, 55(4), 449-456.

Abstract

AIM: The aim of this paper is to review the literature on what facilitates or inhibits continuing education in nursing and to identify ways to make continuing education more effective. BACKGROUND: [corrected] Healthcare professionals have always been encouraged to update their knowledge and maintain clinical competence. The rapid changes currently taking place within healthcare systems have increased the pressure from direct care providers, professional bodies and the general public for nurses to engage in continuing education programmes. Despite a growing body of empirical research on this topic, the effectiveness and impact of continuing education remains underexplored. METHOD: A literature search was conducted in

January 2005 using CINAHL, Medline, the Cochrane databases and the Internet. Keywords used were: 'continuing education', 'professional development', 'viability of continuing education/professional development programmes', 'evaluation of continuing education/professional development programmes' and 'effectiveness of continuing education/professional development programmes'. No date restrictions were imposed. RESULTS: Factors that facilitate the implementation of continuing education in nursing arise from individual, professional and organizational perspectives. While the philosophy behind continuing education is to encourage nurses to become lifelong learners, the learning method chosen for such programmes is often didactic in nature, as opposed to encouraging nurses to take initiative and direct their own learning. Continuing education is intended to ensure healthcare practitioners' knowledge is current, but it is difficult to determine if those who attend these courses are implementing what they have learnt. CONCLUSION: To make continuing education programmes more effective, nurses need to have a more participatory role in their learning. A concerted effort should be made to make continuing education attainable and realistic.

Grossman, Rebecca, & Salas, Eduardo. (2011). The transfer of training: What really matters. *International Journal of Training and Development*, 15(2), 103-120. Available from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1841254#%23](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1841254#%23)

#### Abstract

Although organizations invest billions of dollars in training every year, many trained competencies reportedly fail to transfer to the workplace. Researchers have long examined the "transfer problem", uncovering a wealth of information regarding the transfer of training. Inconsistencies remain, however, and organizations may find it difficult to pinpoint exactly which factors are most critical. Using Baldwin and Ford's model of transfer, we identify the factors relating to trainee characteristics (cognitive ability, self-efficacy, motivation, perceived utility of training), training design (behavioral modeling, error management, realistic training environments) and the work environment (transfer climate, support, opportunity to perform, follow-up) that have exhibited the strongest, most consistent relationships with the transfer of training. We describe our reasoning for extracting such variables from the literature and conclude by discussing potential implications for practice and future research.

King, Stephen B., King, Marsha, & Rothwell, William J. (2001). *The complete guide to training delivery: A competency-based approach*. New York: American Management Association.

#### Abstract

This guide focuses on 14 instructor competencies identified by the International Board of Standards for Training, Performance, and Instruction. It provides examples, job aids, worksheets, case studies, and sample dialogs and contains actual experiences and critical incidents faced by trainers who participated in the survey study. Strategies to improve training effectiveness conclude each chapter. Chapter 1 summarizes each competency. Chapter 2 matches training content to the targeted learners and discusses learner styles and characteristics. Chapter 3 deals with preparing the training site and laying out the room and equipment. Chapter 4 covers establishing credibility by demonstrating acceptable conduct, content expertise, and flexibility. Chapter 5 deals with the psychological climate, time management, and effective ways to deal with disruptive, resistant, or silent learners. Chapter 6 discusses using verbal and nonverbal language and adapting messages to learner needs. Chapters 7-9 focus on effective presentation skills, effective questioning skills and techniques, and responses to learner questions or comments during training. Chapters 10-16 cover how to provide positive reinforcement and motivational incentives to learners; training methods and

their use; training media; ways to compare learners' achievements to training objectives; assessing one's ability to help learners achieve objectives and discusses instructional design evaluation; how best to provide an evaluation report to stakeholders; and training in international settings, co-training, and transfer of training. Appendixes include survey details; critical incidents from survey respondents; annotated list of 29 resources with contact information; endnotes; and index.

Laird, Dugan, Naquin, Sharon S., & Holton, Elwood F. (2003). *Approaches to training and development: New perspectives in organizational learning, performance and change* (3<sup>rd</sup> ed.). New York: Basic Books.

Abstract

*Approaches to Training and Development* provides a comprehensive and practical introduction to the field of organizational training and human-resource development. It surveys the methods, functions, and goals of training--from needs assessment to implementation--illustrating each step of an effective training program. This new edition includes updates throughout, with fresh examples and current references, with an emphasis on evaluating and explaining new training. Comprehensive, authoritative, and accessible, this new edition will prove an essential resource to a new generation of trainers, HRD professionals, educators, and managers

Lee, N. J. (2011 May). An evaluation of CPD learning and impact upon positive practice change. *Nurse Education Today*, 31(4), 390-395. Available from [http://www.nurseeducationtoday.com/article/S0260-6917\(10\)00145-0/abstract](http://www.nurseeducationtoday.com/article/S0260-6917(10)00145-0/abstract)

Abstract

This paper explores positive practice change in nursing and health care practice following continuing professional development (CPD). It is derived from a commissioned evaluation study within the United Kingdom (UK). Evaluation data was gathered using semi structured discussions with CPD participants, a convenience sample of line managers and University module leaders. Findings suggest that professional peer attitudes and support, when harnessed effectively in the practice setting, strongly enhance positive change. Conversely a lack of engagement with practice peers, a lack of strategic support and not knowing how to access support hinder change. The study found that learning need was often explored through personal development planning and appraisal, however there was little systematic follow up, review and support following learning. Interestingly the individual personal drive and enthusiasm of practitioners was perceived as the strongest factor helping practice change, while policy drivers and national health targets were secondary. Possible strategies to enhance positive practice change are explored.

Lim, Doo Hun, & Morris, Michael Lane. (2006 Spring). Influence of trainee characteristics, instructional satisfaction, and organizational climate on perceived learning and training transfer. *Human Resource Development Quarterly*, 17(1), 85-115.

Abstract

This study examines the effect of transfer variables on trainee characteristics, instructional satisfaction, and organizational factors of perceived learning and training transfer made by a group of trainees who attended a financial training program conducted for a Korean conglomerate. Data analyses revealed several variables in the three domains that significantly influenced the trainees' perceived learning and learning transfer immediately after and three months after the training. Discussions and implications for practice and future research are included.



Mann, K. V. (2002 Spring). Thinking about learning: Implications for principle-based professional education. *Journal of Continuing Education in the Health Professions*, 22(2), 69-76.

#### Abstract

The understanding of teaching and learning in medical education has increased to improve medical education at all levels. Selected approaches to understanding learning provide a basis for eliciting principles that may inform and guide educational practice. In this article, these approaches are discussed from two perspectives: the cognitive and the environmental. The cognitive perspective includes activation of prior knowledge, elaboration of new learning, learning in context, transfer of learning, and organization of knowledge. The environmental perspective includes the dynamic interaction of learners with their environment, observational learning, incentives and rewards in the environment, goal setting and self-monitoring, self-efficacy, and situated learning. Implications are presented for facilitation of effective learning and support of the learning environment throughout the continuum of medical education.

Noe, Raymond A. (2002). *Employee training and development* (2<sup>nd</sup> ed.). Columbus, OH: McGraw-Hill.

#### Abstract

This book presents the main principles of strategic training, which is an approach to employee training and development that supports the employing organization's business goals and strategy. The book is intended for use in undergraduate and master's-level training courses in a variety of disciplines. The following are among the topics covered: (1) the principles of employee training and development and factors influencing it; (2) strategic training; (3) needs assessment; (4) learning theories and program design; (5) transfer of training; (6) training evaluation; (7) traditional training methods (simulation; presentation methods; hands-on methods; group-building methods); (8) e-learning and use of technology in training (multimedia training; computer-based training; intelligent tutoring systems; distance learning; technologies for training support; technologies for training administration); (9) employee development (formal education; assessment; job experiences; interpersonal relationships); (10) special issues in training and employee development (cross-cultural preparation; managing workforce diversity; school-to-work transition; training's role in welfare-to-work programs; joint union-management programs); (11) careers and career management; (12) special challenges in career management (socialization and orientation; dual-career paths; plateauing; skill obsolescence; balancing work and life); and (13) the future of training and development. Each chapter contains some or all of the following elements: behavioral objectives; in-text examples drawn from companies in all industries; discussion questions; key terms and concepts; and application assignments.

Olson, Debra, Hoepfner, Mary, Larson, Susan, Ehrenberg, Anne, & Leitheiser, Agnes T. (2008). Lifelong learning for public health practice education: A model curriculum for bioterrorism and emergency readiness. *Public Health Reports*, 123(Suppl. 2), 53-64. Available from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2430942/>

#### Abstract

In 2002, the University of Minnesota School of Public Health (UMNSPH) adopted an approach that supports basic, advanced, and continuing education curricula to train current and future public health workers. This model for lifelong learning for public health practice education allows for the integration of competency domains from the Council on Linkages Between Academia and Public Health Practice's core public health workforce competency levels and the Centers for

Disease Control and Prevention's Bioterrorism and Emergency Readiness Competencies. This article describes how UMNSPH has implemented the model through coordination with state planning efforts and needs assessments in the tristate region of Minnesota, North Dakota, and Wisconsin. In addition, we discuss methods used for credentialing practitioners who have achieved competency at various levels of performance to enhance the capacity of the public health preparedness systems.

Phillips, Jack J. (1999). *HRD trends worldwide: Shared solutions to compete in a global economy: Improving human performance series*. Woburn, MA: Butterworth-Heinemann.

Abstract

This book, which is intended for individuals involved in developing, delivering, and supporting human resource development (HRD) programs, discusses worldwide HRD trends that were identified in a study of the HRD practices in 35 countries. Chapter 1 discusses the importance of the HRD trends identified and explains how they were identified. Chapters 2-17 are each devoted to one of the top 16 HRD trends, which are as follows: training linked to the organization's strategic direction; increased emphasis on needs assessment and analysis; emphasis on training's role in performance improvement; increased acceptance of corporate universities; rapid changes in training delivery; shared responsibility for training; use of systematic evaluation processes to measure training's effectiveness; increased measurement of return on investment; closer monitoring of training costs; conversion of training and development functions to a profit center concept; bigger training and development budgets; adoption of the learning organization concept; partnerships between training staff and line management; greater use of technology in training; more training designed for global use; and more outsourcing of training to contractors. Chapter 18 outlines four steps for working with the trends. Seventy-four tables/figures are included. Most chapters include substantial bibliographies. The top 16 and second 16 global HRD trends are appended.

Phillips, Jack L., & Phillips, Patricia P. (2002 September). Reasons why training and development fails...and what you can do about it. *Training*, 39(9), 78-82, 84-85.

Abstract

Among the reasons why training and development fail are lack of alignment with needs, failure to recognize nontraining solutions, lack of objectives, expensive solutions, lack of accountability for results, failure to prepare for transfer, lack of management support, failure to isolate the effects of training, lack of executive commitment and failure to provide feedback.

Poindexter, C. C., Lane, T. S., & Boyer, N. C. (2002 October). Teaching and learning by example: Empowerment principles applied to development, delivery, and evaluation of community-based training for HIV service providers and supervisors. *AIDS Education and Prevention*, 14(5), 391-400.

Abstract

This article describes and recommends a participatory method of developing, implementing, and evaluating a learner-driven community-based continuing education effort for HIV workers and supervisors. The Boston University School of Social Work (BUSSW) created and delivered a training program in partnership with the Massachusetts Department of Public Health HIV/AIDS Bureau (the Bureau). Because teaching empowerment-based practice was an overarching goal, every step of the process modeled collaboration and self-determination. The program was unusual in several ways: the workshops focused on basic helping skills rather than the medical aspects of HIV; community stakeholders shaped the workshops in consultation with staff from

the Bureau and BUSSW; a formative evaluation led to adaptations of the curriculum in the first few months of the project; objectives were set in part by learners, who evaluated themselves on goal attainment; and follow-up interviews explored the effects of the workshops on practice. Most supervisors and direct care workers reported that the workshops were highly relevant to their work and that they were able to incorporate their learning into practice, suggesting that the empowerment approach has utility. The report includes the genesis and necessity of the project; the principles underpinning it; the use of empowerment at each stage; and implications for administrators, service providers, and educators in the HIV field. We propose that resources dedicated to collaborative or participatory curriculum development, implementation, and evaluation are well spent.

Potter, Margaret A., Fertman, Carl I., Eggleston, Molly M., Holtzhauer, Frank, & Pearsol, Joanne. (2008 July/August). A public health training center experience: Professional continuing education at schools of public health. *Journal of Public Health Management & Practice*, 14(4), E10-E16.

#### Abstract

The Public Health Training Center (PHTC) national program was first established at accredited schools of public health in 2000. The PHTC program used the US Health Resources and Services Administration's grants to build workforce development programs, attracting schools as training providers and the workforce as training clients. This article is a reflection on the experience of two schools, whose partnership supported one of the PHTCs, for the purpose of opening a conversation about the future of continuing education throughout schools and degree programs of public health. This partnership, the Pennsylvania & Ohio Public Health Training Center (POPHTC), concentrated its funding on more intensive training of public healthcare workers through a relatively narrow inventory of courses that were delivered typically in-person rather than by distance-learning technologies. This approach responded to the assessed needs and preferences of the POPHTC's workforce population. POPHTC's experience may not be typical among the PHTCs nationally, but the collective experience of all PHTCs is instructive to schools of public health as they work to meet an increasing demand for continuing education from the public health workforce.

Sargeant, J. (2009 Summer). Theories to aid understanding and implementation of interprofessional education. *The Journal of Continuing Education in the Health Professions*, 29(3), 178-184.

#### Abstract

Multiple events are calling for greater interprofessional collaboration and communication, including initiatives aimed at enhancing patient safety and preventing medical errors. Education is 1 way to increase collaboration and communication, and is an explicit goal of interprofessional education (IPE). Yet health professionals to date are largely educated in isolation. IPE differs from most traditional continuing education in that knowledge is largely socially created through interactions with others and involves unique collaborative skills and attitudes. It requires thinking differently about what constitutes teaching and learning. The article draws upon a small number of social and learning theories to explain the rationale for IPE needing a new way of thinking, and proposes approaches to guide development and implementation of IP continuing education. Social psychology and complexity theory explain the influence of the dynamism and interaction of internal (cognitive) and external (environmental) factors upon learning and set the stage for IPE. Theories related to professionalism and stereotyping, communities of practice, reflective learning, and transformative learning appear central to IPE and guide specific educational

interventions. In sum, IPE requires CE to adopt new content, recognize new knowledge, and use new approaches for learning; we are now in a different place.

Stephenson, John. (2003 April). *A review of research and practice in e-learning in the workplace and proposals for its effective use*. Paper presented at the 84<sup>th</sup> Annual Meeting of the American Educational Research Association (AERA): Accountability for Educational Quality: Shared Responsibility, Chicago, IL.

Abstract

Following an abstract and introduction, this document reviews five research projects on the learning experiences of workers. The first two concern the environment required for successful learning in the workplace, and the last three address implementation of e-learning programs. (The findings from the first two studies revealed 24 conditions that must be met for successful learning in the workplace, including linking learning to improved performance, valuing collaborations in learning, and management awareness of the need for learning. Conditions for successful e-learning revealed by the last three studies included the relevance of training to the current job, user ownership and control of the process, a culture of support by the training provider and employer, and personal recognition for learning achieved.) A wider context is next provided through reference to another literature review and other writings. Characteristics of successful approaches to online work-based learning are presented, as well as four features required to produce those characteristics (intelligent and intuitive tools, and extensive database of materials, imaginative design, and a shared commitment). Three successful programs are described. A conclusion states that online work-based learning will succeed where it is personalized, managed by the user, relevant to the user's work, supported by the employer, linked to just-in-time material, and fully supported within a healthy learning environment. There are 55 references and two appendixes.

Vella, Jane. (1995). *Training through dialogue: Promoting effective learning and change with adults: The Jossey-Bass higher and adult education series*. San Francisco: Jossey-Bass.

Abstract

This book, which is designed for trainers responsible for training other trainers, outlines and illustrates the principles of a program in which trainers are prepared to promote adult learning and change. Part 1: "Training That Respects the Learner," presents insights from popular education and a model for training trainers in the popular education approach. Part 2: "Lessons Learned from Practice," presents selected lessons learned from practice (the effect of group size and the role of the "professor," the importance of dialogue, honoring the role of the learner, transforming the culture of teaching, and making time for training) within a variety of training contexts, including programs training trainers in community health, paid and volunteer workers in nonprofit organizations, health professionals, literacy trainers, professionals working with substance abuse programs, and trainers working with a community development bank. Part 3: "Applying the Approach," focuses on application of the approach and considers the challenge of design, strategies for supporting newly trained trainers by continuing dialogue; and program evaluation. Case studies drawn from diverse settings, including Chile, rural Arkansas, rural Vermont, New York State, and Haiti, are included. Contains 34 references. (MN)

Wold, Judith Lupo, Gaines, Sherry K., & Leary, Janie M. (2006 March-April). Use of public health nurse competencies to develop a childcare health consultant workforce. *Public Health Nursing, 23*(2), 139-145.

Abstract

The purpose of this article is to describe the efforts in the state of Georgia to train public health nurse-childcare health consultants (PHN-CCHCs) using the framework of the "Core competencies for public health practice." OBJECTIVES: The goal of the training was twofold: (1) to prepare a statewide cadre of PHNs as the primary workforce for Georgia's emerging childcare health consultation (CCHC) system and (2) to prepare their district nurse directors to lead and support CCHCs. DESIGN: Administrators attended a 2-day workshop followed by access to executive coaching for their management teams. PHNs participated in a three-phase training program, with phases 1 and 3 offered as 3-day workshops with field experiences, and phase 2 offered online and as a practicum. SAMPLE: Forty-four administrators and over 85 PHN-CCHCs completed the training. RESULTS: Graduates of the program reported satisfaction with training and reported the use of PHN core competencies in CCHC. Graduates also found enhanced skills in using core competencies to be applicable to a variety of population-based practices. Beyond CCHC being instituted in selected health districts, interest in CCHC has occurred statewide. CONCLUSIONS: The PHN-CCHC program enhanced the knowledge and use of core competencies and heightened interest in CCHC statewide.

Zahner, S. J., & Gredig, Q. B. (2005 September-October). Improving public health nursing education: Recommendations of local public health nurses. *Public Health Nursing, 22*(5), 445-450.

#### Abstract

**Objectives:** This paper reports recommendations for improving public health nursing (PHN) undergraduate, graduate, and continuing education (CE) made by staff-level public health nurses working in local health departments (LHDs). Implications for academia and practice are discussed. **Design:** A cross-sectional written survey was used to collect data from 424 public health nurses in 76 LHDs in Wisconsin (68% response rate) in 2003. Recommendations for improving undergraduate, graduate, and CE were made through responses to open-ended survey questions. Content analysis was conducted to identify major themes among responses. **Results:** Major themes emerging from the recommendations for undergraduate education included the need for more clinical public health experiences and population-focused practice content. Graduate education improvement recommendations included addressing access barriers and increasing organizational incentives. Improved access and more public health content were the major recommendations for improving CE. **Conclusions:** Implications for academia focus on increasing opportunities for students to experience population-focused PHN and to learn organizational and collaborative practice skills, supporting PHN preceptors and building evidence for PHN intervention through research. Implications for practice include the need to expand opportunities for students with LHDs and to collaborate with academic partners for education and research.

# Stages of the Training Process

## Assess

Assessing training needs and the resources available to meet those needs forms the first step in the development and delivery of effective training. References in this section address factors related to learners, their organizations, trainers and facilitators, and the environment that may impact training efforts.

## Assessment References

### General

Donovan, Paul, & Darcy, David P. (2011 June). Learning transfer: The views of practitioners in Ireland. *International Journal of Training and Development*, 15(2), 121-139.

#### Abstract

Considerable expenditure on human resource development (HRD) has not necessarily resulted in a significant impact on organizational performance, and research suggests that the failure to transfer learning may be an important explanation. The search for factors affecting transfer has been extensive, as shown in Grossman and Salas's article in this issue, but, as they also show, more research is needed. The purpose of the present study is to ascertain the views of HRD practitioners (in Ireland) about the factors that they believe are relevant to the transfer of learning in the workplace. The aim is to discover whether practitioners have identified potential factors which researchers have not explored or not explored sufficiently. This group of practitioners was chosen because of the considerable control they wield over significant tranches of organizational resources. The method first involved engagement with 28 senior HRD practitioners in a workshop setting to create a transfer inventory based on their expert opinion. The initial inventory was then responded to online by a group of 314 practitioners indicating the relevance of the items to the question of transfer. Factor analysis was used to achieve parsimony among items, and 21 potential factors were identified. This study focused on the 15 factors adjudged by practitioners to be most relevant. It is concluded that trainer effectiveness, organizational linkage and training event climate, all deemed relevant by practitioners, may justify further research.

Lorig, Kate. (1977 March-April). An overview of needs assessment tools for continuing education. *Nurse Educator*, 2(2), 12-16.

#### Abstract

Presents descriptions, advantages, and disadvantages of six needs assessment tools which can be used for continuing education: The simple checklist, the reiterated checklist, the Delphi II assessment, "asking," the matrix assessment, and the pyramid assessment. Emphasis is on the Delphi II technique.

Rosset, A. (1987). *Training needs assessment*. Englewood Cliffs, NJ: Educational Technology Publications. Available from: <http://books.google.com/books?id=IWBppwNMC-QC&printsec=frontcover#v=onepage&q&f=false>

Swanson, R. A. (2007). *Analysis for improving performance: Tools for diagnosing organizations and documenting workplace expertise* (2<sup>nd</sup> ed.). San Francisco: Berrett-Koehler.

## Abstract

This revised and expanded version of "Analysis for Improving Performance" provides the tools for doing the crucial - yet often overlooked - upfront analyses essential to the success of any performance improvement effort. Human resource development expert Richard A. Swanson's step-by-step method allows program developers and managers to: assess an organization's real business needs and the status of its supporting systems; analyze necessary worker skills, knowledge, and attitudes; specify performance requirements and evaluation standards; and produce a viable and comprehensive performance improvement design. This second edition is extensively revised throughout and contains many updated case studies and expanded concepts. It also contains a new chapter on Documenting and Improving Work Process. In the end, the tools and resources provided within "Analysis for Improving Performance" will help make sure that workplace performance improvement efforts really work.

*Note: Also relevant for Design.*

Wang, Greg G. (2010). Theorizing e-learning participation: A study of the HRD online communities in the USA. *Journal of European Industrial Training*, 34(4), 344-364.

## Abstract

**Purpose:** This study sets out to investigate the e-learning participation and completion phenomenon in the US corporate HRD online communities and to explore determinants of e-learning completion. **Design/methodology/approach:** Based on the HRD Learning Participation Theory (LPT), this study takes a two-stage approach. Stage one adopts an interview approach to selected e-learning managers and to bridge the LPT with empirical data for stage two; stage two develops a survey questionnaire for collecting e-learning completion related data. **Statistical techniques** are used for data analysis. **Findings:** The study finds that the e-learning completion rate is significantly higher in the online HRD communities than those reported in the popular media. The results show that e-learning completion is influenced by individual, organizational, and learning process factors and variables. Environmental factors also influence the completion rate to a certain degree. **Research limitations/implications:** The data were obtained from HRD online communities in the USA. Generalization of the results should be exercised with caution. The study offers implications to HRD research and theory building as an example covering the conceptualization, operationalization, and application phases. **Practical implications:** Organizational policies, workload during learning process, e-learning location in terms of home vs workplace, among others, are significant determinants of the e-learning completion rate. Organizations should consider these factors when implementing e-learning interventions. **Originality/value:** The study fills a gap in the HRD e-learning literature. While most research on corporate e-learning is focused on technology features or instructional design, little attention has been paid to whether learners can complete planned e-learning. The study also contributes to HRD theory building. (Contains 2 figures and 3 tables.)

## Factors Related to Learners

Akhtar-Danesh, N., Valaitis, R. K., Schofield, R., Underwood, J., Martin-Misener, R., Baumann, A., & Kolotylo, C. (2010 December). A questionnaire for assessing community health nurses' learning needs. *Western Journal of Nursing Research*, 32(8), 1055-1072.

## Abstract

Learning needs assessment is an important stage of every educational process that aims to inform changes in practice and policy for continuing professional development. Professional competencies have been widely used as a basis for the development of learning needs assessment. The Canadian Community Health Nursing Standards of Practices (CCHN

Standards) were released in 2003. However, it is not known whether community health nurses (CHNs) have the educational background to enable them to meet these standards. This article reports on the development of a learning needs assessment questionnaire for CHNs. Exploratory and confirmatory factor analyses were conducted to examine the consistency of factors underpinning the CCHN Standards. Also, validity and reliability of the questionnaire were evaluated using appropriate techniques. This process resulted in a valid and reliable CHN learning needs assessment questionnaire to measure learning needs of large groups of practitioners, where other forms of measurement cannot be feasibly conducted.

Chauvin, S. W., Anderson, A. C., & Bowdish, B. E. (2001 July). Assessing the professional development needs of public health professionals. *Journal of Public Health Management and Practice*, 7(4), 23-37.

#### Abstract

This article describes the major activities associated with designing and implementing a comprehensive, professional development needs assessment of public health professionals in four states of the South Central region of the United States. The instrumentation, research design, and summary results of the needs assessment described in this article may facilitate similar efforts by interested researchers and program developers to assess the public health professional workforce training needs. Results of needs assessments can be useful in designing and evaluating professional development curricula and activities to strengthen public health services in the United States.

DeSilets, L. D. (1995 September-October). Assessing registered nurses' reasons for participating in continuing education. *Journal of Continuing Education in Nursing*, 26(5), 202-208.

#### Abstract

Registered nurses (RNs) attending a national conference were surveyed to find out what motivated their participation in continuing professional education. Eight hundred sixty-six RNs completed the Participation Reasons Scale (PRS) and the Respondent Information Form (RIF). Five factors emerged from a factor analysis and several significant relationships were found between person-related and profession-related variables. These findings indicate that nurses are concerned with professional competence and participate in continuing education for complex reasons. This study can serve as the basis for further research and should be useful to those who teach or plan continuing education activities, promote them, select instructional techniques, and evaluate learning experiences. If, as current research indicates, continuing education contributes to quality practice, then reasons that influence participation take on an increasingly greater significance for the entire nursing profession.

Harrison, L. M., Davis, M. V., MacDonald, P. D., Alexander, L. K., Cline, J. S., Alexander, J. G., Rothney, E. E., Rybka, T. P., & Stevens, R. H. (2005). Development and implementation of a public health workforce training needs assessment survey in North Carolina. *Public Health Reports*, 120(Suppl. 1), 28-34.

#### Abstract

Assessing the training needs of local public health workers is an important step toward providing appropriate training programs in emergency preparedness and core public health competencies. The North Carolina Public Health Workforce Training Needs Assessment survey was implemented through the collaboration of several organizations, including the North Carolina Center for Public Health Preparedness at the North Carolina Institute for Public Health,



the outreach and service unit of the University of North Carolina School of Public Health, the Office of Public Health Preparedness and Response in the North Carolina Division of Public Health Epidemiology Section, and local health departments across the state.

Hicks, C., Hennessy, D., & Barwell, F. (1996 November). Development of a psychometrically valid training needs analysis instrument for use with primary health care teams. *Health Services Management Research, 9*(4), 262-272.

#### Abstract

The growing demand for professional updating and training within the health service has created a proliferation of post-registration courses, many of which fail to reach the appropriate personnel or the real training objectives of the participants and their managers. One reason behind this problem relates to the fact that many such courses are constructed and delivered in a haphazard way, without systematic reference to the direct and indirect consumers of the educational programmes. A more rational approach to post-experience provision of this sort might involve the methodical collection of information regarding the training needs of target health professional populations. Such a data base would afford a global overview of competencies and deficiencies, both within and between individuals. From this the content, level and focus of training could be customized to meet the reported needs, thereby streamlining the commissioning process to enhance efficiency and effectiveness. Previous attempts to rationalize provision through the prior use of training needs analysis instruments have been compromised by the shortcomings of the analysis tool. This study, then, was an attempt to redress this problem, using a training needs analysis instrument developed along traditional psychometric principles. The tool was intended to be used with primary health care teams because of the increasing role this sector of the health service will play in the future delivery of care, although this would not preclude its use with other health care professionals (following appropriate modification), since the principles behind its construction and format are transferable. The instrument has demonstrable construct, content and face validity and significant reliability. Moreover, preliminary investigations suggest that it also has criterion validity in the areas tested. These findings suggest that the instrument is unique of its kind. Early use of the tool has demonstrated its value in a variety of ways, such as in team building exercises and skill mix reviews as well as in precise and effective commissioning of training and education in a range of areas.

Iqbal, Muhammad Zahid, & Khan, Rashid Ahmad. (2011). The growing concept and uses of training needs assessment: A review with proposed model. *Journal of European Industrial Training, 35*(5), 439-466.

#### Abstract

**Purpose:** This paper aims to review the relevant literature on training needs assessment (TNA) with an objective to provide users/beneficiaries of TNA with the understanding of its growing concept, multiple uses (outcomes), and valuing these uses (antecedents).

**Design/methodology/approach:** To conduct the literature review on uses of TNA, the authors used the systematic search comprising four stages: selection of appropriate search terms such as training, needs assessment, needs analysis, training needs assessment, and training needs analysis; carrying out search in established databases such as EBSCOhost, Emerald, JSTOR, SpringerLink, and Wiley-Blackwell; initial sample filtering (relevance-based); and further sample filtering (access-based). Based on this review, a conceptual framework for examining the forward and backward linkages between TNA and nine human resource management and development areas is proposed for further examination. **Findings:** This paper highlights training plans, goal setting, employee development, managing change, career development, knowledge,

skills, and attitude, learning motivation, cost effectiveness, and performance appraisal as nine major human resource management and development areas revealing different uses of TNA. This gives an appropriate place to the expanding view of TNA. Practical implications: This paper offers important implications for human resource professionals. Their learning about multiple uses of TNA can help them attain comprehensive solutions of varied organisational problems. Originality/value: This paper attempts to make a significant contribution towards understanding the growing concept of TNA by expanding the long-established way of looking at it through increasing its potential effects and subsequently enhancing its purposes and uses for both training and non-training initiatives. (Contains 3 tables and 6 figures.)

Kaste, L. M., Sadler, Z. E., Weintraub, J. A., Niessen, L. C., Narendran, S., & Hayes, K. L. (2001 Spring). Training status and interest in certification of nondiplomate faculty teaching predoctoral dental public health. *Journal of Public Health Dentistry*, 61(2), 114-119.

#### Abstract

**OBJECTIVES:** A survey was conducted to better understand the training needs of faculty members without dental public health (DPH) specialty board certification who teach DPH to dental students. **METHODS:** An 11-item questionnaire was sent to 193 non-DPH diplomate faculty members at US dental schools who were dentists and at least one of the following: a member of the American Association of Dental Schools Community and Preventive Dentistry Section, a referral from an academic American Board of Dental Public Health diplomate, a DPH faculty listed on the school's Web pages, a DPH contact from the AADS Institutional Directory, or the school's dean if no other contact. **RESULTS:** A 70 percent response rate was obtained. Seventy-nine percent of the respondents taught at least one national board-related DPH topic. Among these faculty members, 67 percent have or are in training for the master of public health, 26 percent have completed or are in a DPH residency, and 63 percent desire training in one or more of the DPH topics. The majority (64%) does not plan to take the specialty exam, while 28 percent plan to take the exam within five years. About half reported no personal incentives to take the exam and 39 percent perceived no institutional incentives. **CONCLUSIONS:** These nondiplomate teachers of predoctoral DPH desire training, but appear to have barriers and perceive few benefits to achieving DPH board certification.

Laxdal, O. E. (1982 November). Needs assessment in continuing medical education: A practical guide. *Journal of Medical Education*, 57(11), 827-834.

#### Abstract

The identification and assessment of learning needs and the setting of priorities are the foundation of successful program planning in continuing medical education (CME). The present report includes recommendations concerning optimal procedures for the assessment of the learning needs of individual physicians, small groups, and large groups. The vital role of learners and their perceived needs is emphasized. Appropriate and accurate needs assessment contributes greatly to the success of CME programs. The most effective needs assessment involves the dynamic interaction of teachers, learners, and experienced program planners. The recommendations in this report are based on studies and interviews conducted in several major academic health centers in the United States and Europe over a period of one year. Research efforts to improve needs assessment techniques are greatly needed. As improved methods of needs assessment are adopted, CME planners may be assured that their programs will become more attractive and effective.

Lindley, L. L., Wilson, R. W., & Dunn, J. D. (2005 January). Assessment of the training needs of Kentucky public health educators. *Health Promotion Practice, 6*(1), 97-104.

Abstract

A survey to identify the training needs of Kentucky public health educators was conducted during the spring of 2001. Questionnaire items assessed respondents' job title, years of experience in public health education, percentage of work time doing public health education, and educational background. Respondents were asked to rate their perceived level of mastery of 50 public health educator competencies and skills, desire for additional training in each of the competencies and skills, and preferred format for training. Surveys were mailed to 699 health department employees across the commonwealth. A total of 366 questionnaires were completed and returned. Results provide a descriptive profile of Kentucky public health educators and pinpoint competency deficiencies. Grant writing, budgeting, evaluation, managing controversy, and multicultural understanding were identified most frequently as competencies in which more training was needed. An overview of survey results and recommendations regarding the training of Kentucky public health educators is provided.

Morse, J. S., Oberer, J., Dobbins, J. A., & Mitchell, D. (1998 January-February). Understanding learning styles: Implications for staff development educators. *Journal of Nursing Staff Development, 14*(1), 41-46.

Abstract

The authors present information for understanding diverse learning styles among RNs. Various learning-style assessment tools are presented. Emphasis is placed on the use of a learning-style instrument that addresses multiple learning-style constructs. Implications for staff development educators are discussed.

Wedeking, L. A. (2001). *The learning styles of public health nurses*. Doctoral dissertation, Capella University.

Abstract

The purpose of this study was to identify the learning styles of practicing public health nurses. An answer to this question has taken on greater importance as more and more of the continuing education and training for the public health workforce, including that of nurses, is done through distance education. The Learning Type Measure was used to assess the learning styles and Watching/Doing preferences of 106 public health nurses practicing in the upper Midwest states of Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin. This group was slightly younger than the average age for public health nurses in the United States and was slightly more female than the national average for registered nurses. The racial and ethnic background of the research participants mirrored that of registered nurses in the North Central states. About 72% of the group held baccalaureate degrees in nursing. Type 1 Learning Style was selected by 44%, Type 2 Learning Style by 17%, Type 3 Learning Style by 19%, and Type 4 Learning Style by 12% of the group. A small part of the group, 7.4%, did not make a single type selection; they opted for tie scores for two or more learning style types. The group was about evenly divided between Watching and Doing as an information-processing strategy, with 53% of the group selecting Doing. Age, educational attainment, and experiences as a public health nurse were not statistically significant factors in nurses' selection of learning style. Experience as a registered nurse, however, was statistically significant. Recommendations are given for suggested actions in the design of continuing education for public health nurses and for health education for clients. Recommendations are also given for additional research studies.

Worthington, R. C., & Clay, M. C. (1995 June). Learner-specific continuing education and the Myers-Briggs Type Inventory. *Journal of Continuing Education in the Health Professions*, 15(2), 95-100.

#### Abstract

While traditional needs assessments identify educational content, generally these assessments do not measure the varied learning styles of the audience. Individual practitioners can use the Myers-Briggs Type Inventory to help identify learning styles and, based on that identification, select continuing education activities where learning will be most efficient and effective. A review of the Myers-Briggs typology and relevant literature indicates that learners with varied learning styles benefit from quite different learning activities. The traditional large continuing education meeting, for example, is well suited for some learners, not for others. Health professionals will find it easier to stay current in their fields if they select appropriate, learner-specific modes of continuing education. Professional relationships may also benefit if professionals in the same practice environment understand and appreciate that different continuing education formats are necessary for people with different learning styles.

### Organizational Factors

Rebelo, Teresa Manuela, & Gomes, Adelino Duarte. (2011). Conditioning factors of an organizational learning culture. *Journal of Workplace Learning*, 23(3), 173-194.

#### Abstract

Purpose: The aim of this study is to assess the relationship between some variables (organizational structure, organizational dimension and age, human resource characteristics, the external environment, strategy and quality) and organizational learning culture and evaluate the way they interact with this kind of culture. Design/methodology/approach: Data were collected from 107 Portuguese companies, where a total of 1,122 workers were asked about learning culture through a questionnaire. Data about the other organizational variables of this study were collected in official documents, from scales and also from a structured interview with top managers. Findings: The results revealed that an organic structure, an approach to total quality principles, and highly educated employees, could act as facilitators of the development of a learning culture in organizations. On the other hand, quality certification, firm dimension and age, as well as workers' age, could act as inhibitors of this type of cultural orientation. Research limitations/implications: In spite of the meaningful results found, the cross-sectional nature and the exploratory nature of the research leads us to look carefully at the causality of the relationships under study. Practical implications: The results of this study, in so far as they point out some factors linked to greater cultural orientation to learning in organizations and some factors linked to less orientation to learning, provide clues for organizations concerning better management of their investment in developing this kind of culture. Originality/value: In the literature on organizational learning and learning organizations, culture emerges as a key concept. In fact, organizational culture is mainly conceived as an essential condition to promote and support learning in organizations. Despite its recognized importance in the literature, little research has been devoted to this issue, namely research centered on the related factors that could contribute to its development. (Contains 7 notes and 6 tables.)

### Factors Related to Trainers

Schwarz, Roger M. (1995 May). Hiring good facilitators. *Training & Development*, 49(5), 67-71.

#### Abstract

Offers tips on hiring a good training facilitator. Assessment of an organization's need for a facilitator; Hiring someone outside the organization; Facilitator's tasks; Characteristics of a good

facilitator; Types of facilitator; Questions to ask prospective facilitators; Facilitators' approaches in planning. INSET: Coming to agreement with a facilitator.

### **Environmental Factors**

Vosko, Richard S. (1991 Summer). Where we learn shapes our learning. *New Directions for Adult and Continuing Education*, (50), 23-32.

#### **Abstract**

Notes environmental factors affecting adult learning situations: territoriality, seating arrangements, sightlines, and equipment. A checklist for conducting a space audit includes features inside and outside the classroom.

## Motivate

Motivation to participate in training is key to the success of training efforts. Motivation is not limited to the learners who attend training; trainers must be motivated to deliver high-quality training and learner's supervisors must be motivated to support the learners in their training activities. References in this section address motivating these groups to engage in training.

## Motivation References

### Motivating Learners

Bille, D. A. (1979 May). Successful educational programming: Increasing learner motivation through involvement. *The Journal of Nursing Administration*, 9(5), 36-42.

#### Abstract

Requiring attendance at staff development activities does not insure that staff members will be motivated to learn or to use the skills and information being taught. Such motivation can be increased by asking a representative sample of prospective learners to help determine program content. This article will discuss the process used to capture learner input in educational program planning.

Callicutt, D., Norman, K., Smith, L., Nichols, A., & Kring, D. (2011 March). Building an engaged and certified nursing workforce. *The Nursing Clinics of North America*, 46(1), 81-87. Available from <http://www.sciencedirect.com/science/article/pii/S0029646510000976>

#### Abstract

Professional certification has been linked to positive patient, system, and nurse outcomes. However, certification rates among nurses remain low. Using tenets from employee engagement theory, we designed strategies to fully engage nurses within our nursing division to pursue certification. After 1 year, certification rates more than doubled in our cardiac departments.

Chiaburu, Dan S., & Marinova, Sophia V. (2005 June). What predicts skill transfer? An exploratory study of goal orientation, training self-efficacy and organizational supports. *International Journal of Training and Development*, 9(2), 110–123.

#### Abstract

Results from a study examining the predictors of skill transfer from an instructional to a work environment are presented. Prior research indicates that skill transfer is a function of both individual and contextual factors. A total of 186 employees from a work organization were surveyed on individual dimensions (goal orientation, training self-efficacy) and contextual factors (supervisor and peer support). Pre-training motivation was proposed as proximal training outcome and further connected to the distal outcome, skill transfer. Analyses with structural equation modeling using EQS indicate that individual dimensions, such as mastery-approach goal orientation and training self-efficacy, are related to pre-training motivation. Also, contextual factors, such as peer support, predicted both pre-training motivation and skill transfer, while supervisor support was unrelated to either pre-training motivation or skill transfer. Pre-training motivation, in turn, was related to skill transfer. Implications for theory and practice are discussed.

Draper, Fiona, Oltean-Dumbrava, Crina, Tizaoui, Chedly, & Newbury, Brian. (2011 February). Factors influencing attendance and success on the Institute of Environmental Management and

Assessment Associate Membership Certificate course. *Journal of Further and Higher Education*, 35(1), 1-23. Available from

<http://www.ingentaconnect.com/content/routledg/cjfh/2011/00000035/00000001/art00001>

Abstract

The Institute of Environmental Management and Assessment (IEMA) Associate Certificate in Environmental Management course is designed to raise the professional competence of aspiring and existing environmental practitioners. Successful completion entitles the individual to become an associate IEMA member. A dedicated evaluation model was developed for this focused research, in order to determine the factors which influence student attendance and success on the course. The methodology utilised the core elements of three academically proven training evaluation models to examine presage and process factors, the student's reaction to the course, and changes in knowledge, attitude and understanding. A range of personal, work-related and course-related factors were identified. These include student motivation, previous environmental experience and preferred learning style. A negative correlation was found between examination success and the need for students to also focus on work activities while attending this course. (Contains 2 figures and 5 tables.)

Hodges, Charles B. (2004 Winter). Designing to motivate: Motivational techniques to incorporate in e-learning experiences. *The Journal of Interactive Online Learning*, 2(3), 1-7.

Abstract

This paper addresses the construct of motivation as it relates to learning. Questions that will be discussed are (a) What is motivation, (b), how can motivation be incorporated in the instructional design process, and finally, (c) what motivational techniques have been used successfully in e-learning settings? Some general background information on motivation will be discussed. Two instructional design models for motivation will be described and examples of best practices for Web-based learning will be supplied.

*Note: Also relevant for Deliver.*

Joung, Hyun-Woo, Choi, Eun-Kyong, & Goh, Ben K. (2010 July 31). *Training motivational factors as predictors of employees' training satisfaction in foodservice operation*. Paper presented at the 2010 ICHRIE Conference. Available from

[http://scholarworks.umass.edu/refereed/CHRIE\\_2010/Saturday/6/](http://scholarworks.umass.edu/refereed/CHRIE_2010/Saturday/6/)

Abstract

Fundamentally, investment in training by the company can lead to the retention and motivation of its talented staff and promote high self-fulfillment by providing career development. The objectives of this study were (a) to investigate training motivational factors affecting employees' training satisfaction and (b) to assess the employees' (training) satisfaction with training motivational factors. Furthermore, by developing employees' training motivation model and conducting multiple regression analysis, two types of motivations were positively related to employees' training satisfaction. Meantime, the employees' training satisfaction was a significant determinant factor in improving job satisfaction.

Keller, J. M. (1987). Development and use of the ARCS model of motivational design. *Journal of Instructional Development*, 10(3), 2-10. Available from

<http://www.springerlink.com/content/72828k22416p4156/>

Abstract

The ARCS Model of motivation was developed in response to a desire to find more effective ways of understanding the major influences on the motivation to learn, and for systematic ways of identifying and solving problems with learning motivation. The resulting model contains a four category synthesis of variables that encompasses most of the areas of research on human motivation, and a motivational design process that is compatible with typical instructional design models. Following its development, the ARCS Model was field tested in two inservice teacher education programs. Based on the results of these field tests, the ARCS Model appears to provide useful assistance to designers and teachers, and warrants more controlled studies of its critical attributes and areas of effectiveness.

*Note: Also relevant for Deliver.*

Schweitzer, D. J., & Krassa, T. J. (2010 October). Deterrents to nurses' participation in continuing professional development: An integrative literature review. *Journal of Continuing Education in Nursing, 41*(10), 441-447.

Abstract

Background: Continuing education (CE) helps nurses keep their practice safe and current. Although the literature provides information about motivating strategies, learning styles and settings, and reinforcement of the need to update skills, little research has focused on barriers to nurses' CE program attendance. This literature review describes factors that deter nurses' CE attendance. Methods: Ten research studies published between 1990 and 2008 addressing barriers to nurses' CE participation were located. Results: The most frequent deterrents found were the cost of attending CE, inability to get time off from work to attend CE, and child care and home responsibilities. Conclusion: Leaders supporting CE must understand factors that motivate and prevent nurses from participating in CE. Implications from this study can assist educators to develop CE offerings to better meet staff needs and increase participation.

Tassone, M. R., & Heck, C. S. (1997 Spring). Motivational orientations of allied health care professionals participating in continuing education. *Journal of Continuing Education in the Health Professions, 17*(2), 97-105.

Abstract

The purpose of this review was to determine the motivational orientations of allied health professionals participating in continuing education (CE). It is generally accepted that, prior to learning, a prospective learner must be motivated. If participation in CE is to be viewed as a motivated behavior, the organizations who offer CE programs must ensure that motivational orientations are considered in decision making regarding program development and mandated CE. A review of the allied health literature using Medline, Cinahl, manual searches, article references, and an online public catalogue was conducted for the period 1985-1995. Inclusion criteria included survey research studies using a measurement tool from the educational field and studies involving allied health professionals. Investigators found that adults demonstrated various motivational orientations toward CE, such as individual desire to learn, professional advancement, responses to external pressures, the fostering of community, social interactions, and relief from routine or boredom. The reviewed literature consistently shows that practitioners are motivated to participate in CE by knowledge rather than potential punitive actions by authority figures. The implementation of mandated CE may be an unnecessary action since it has not been shown to produce positive practice changes and since other external influences appear to exist. Licensing bodies and CE providers should focus their efforts on identifying the proportion of individuals who are nonparticipants or whose primary motivation is to meet obligatory relicensure requirements.



Thomas, Kenneth. (2009 November/December). The four intrinsic rewards that drive employee engagement. *Ivey Business Journal*. Available from [http://wwwold.iveybusinessjournal.com/article.asp?intArticle\\_ID=867](http://wwwold.iveybusinessjournal.com/article.asp?intArticle_ID=867).

Abstract

Motivational dynamics have changed dramatically to reflect new work requirements and changed worker expectations. One of the biggest changes has been the rise in importance of psychic, or intrinsic rewards, and the decline of material or extrinsic rewards. This author draws upon recent research to explain the popularity of intrinsic rewards and how these rewards can be used to build a high-engagement culture.

### Motivating Supervisors

Dowd, S. B. (1999 June). Change and professional development: An adult education approach. *Seminars for Nurse Managers*, 7(2), 78-80.

Abstract

The purpose of this article is to explain the staff development approach as a means of enhancing the nurse manager's professional growth as well as the growth of employees. Staff development is growth-oriented, provides opportunity for self-direction, and integrates the needs of the learner and the facility while focusing on long-term goals. The author discusses integrating the goals of the adult learner and those of the health care organization as a means of meeting the needs of the institution and the individual employee.

Lyso, Ingunn Hybertsen, Mjoen, Kristian, & Levin, Morten. (2011 September). Using collaborative action learning projects to increase the impact of management development. *International Journal of Training and Development*, 15(3), 210-224.

Abstract

This article aims to contribute to the field of human resource development by exploring the conditions that influence the organizational impact of action learning projects. Many organizations use such projects as an integral part of their management development programs. Past research on action learning projects has shown how balancing action and learning improves the organizational impact of management development, but we argue that the concern with such a balance is not enough. We argue that certain organizational conditions are likely to mediate this balance. Based on empirical material from a case study of one off-site management development program, we identify three organizational conditions that seem to enhance organizational impact: clear reasons for enrolling managers on a development program, support from the manager's local superior throughout the process of the action learning project and local participation in the project work on the part of the manager's employer. These findings have practical implications for providers of management development programs as well as for organizations exploring ways of enhancing the impact of their investment in management learning and development. In terms of theory, the lack of organizational impact of action learning projects can be seen as part of the wider "transfer problem" in training and development, and the results of the present study are consistent with the literature, which shows factors in the work environment to be important in facilitating or preventing transfer.

Mihalko, Beverly J. (2010). *The influence of transfer system factors and training elapsed time on transfer in a healthcare organization*. Doctoral dissertation, Wayne State University. Available from <http://digitalcommons.wayne.edu/dissertations/AAI3397961/>

#### Abstract

Organizations and other sponsors of training face increasing pressure to demonstrate the value or impact of their training programs on individual and organizational performance. A critical element in the validation of training effectiveness is the permanent transfer of learned knowledge, skills, and behaviors to the workplace. The generalization of learned material to the job and maintenance of trained skills, are greatly influenced by training design, trainee characteristics, and work environmental factors. Using a multidimensional approach to identify all factors that promote or inhibit transfer could provide performance technologists and instructional designers with the insight necessary to design and develop strategic interventions that may enhance transfer and sustained workplace performance. Much of the empiric research has examined evidence of transfer soon after training while studies assessing the generalization or maintenance of skills and knowledge are few; yet, the majority of training transfer models specify a change in performance or behavior at the individual or organizational level following training as the primary measure of transfer. The purpose of this study was to examine trainee perceptions of transfer system factors that influence the transfer process as a continuum in a multi-center healthcare organization 9 to 24 months following a management training program using the validated Learning Transfer System Inventory (LTSI) survey instrument. In addition, the study examined the influence of time elapsed since completion of training on stage of transfer achieved. Results showed that trainees who perceived a more supportive work environment had a greater likelihood of progressing to maintenance of the skills and knowledge learned in training. Individuals who achieved the maintenance stage of transfer specifically, perceived motivation to transfer learning, performance self-efficacy, and transfer design as strong catalysts for transfer in this study while mean scores for trainees who achieved only partial transfer or no transfer of skills indicated a perception of a weak transfer climate overall. Time since completion of training was not found to be a significant influence on the stage of transfer achieved. Previous studies have suggested that the transfer climate in organizations is complex and unique to specific types of organizations and training programs. These study results support previous findings and contribute to the understanding of transfer as a process. These and other findings are discussed as well as implications for instructional designers, performance technologists, and the business of healthcare. Limitations related to the study and recommendations for future research are also presented.

## Design

Well-designed training is planned, appropriate to the target audience, and able to be delivered within the resources available. References in this section address planning for training, developing the materials used to provide the training, and crafting a strategy for evaluating the training.

### Design References

Alexander, Lorraine K., Dail, Kathy, Horney, Jennifer A., Davis, Mary V., Wallace, John W., Maillard, Jean-Marie, & MacDonald, Pia. (2008). Partnering to meet training needs: A communicable-disease continuing education course for public health nurses in North Carolina. *Public Health Reports*, 123(Suppl. 2), 36-43.

#### Abstract

In 2004, the General Communicable Disease Control Branch of the North Carolina Division of Public Health and the North Carolina Center for Public Health Preparedness partnered to create a free continuing education course in communicable-disease surveillance and outbreak investigations for public health nurses. The course was a competency-based curriculum with 14 weeks of Internet-based instruction, culminating in a two-day classroom-based skills demonstration. In spring 2006, the course became mandatory for all public health nurses who spend at least three-fourths of their time on tasks related to communicable diseases. As of December 2006, 177 nurses specializing in communicable diseases from 74 North Carolina counties had completed the course. Evaluations indicated that participants showed statistically significant improvements in self-perceived confidence to perform competencies addressed by the course. This course has become a successful model that combines academic expertise in curriculum development and teaching technologies with practical expertise in course content and audience needs. Through a combination of Internet and classroom instruction, this course has delivered competency-based training to the public health professionals who perform as frontline epidemiologists throughout North Carolina.

Andrusyszyn, M. A., Cragg, C. E., & Humbert, J. (2001 April). Nurse practitioner preferences for distance education methods related to learning style, course content, and achievement. *The Journal of Nursing Education*, 40(4), 163-170.

#### Abstract

The relationships among multiple distance delivery methods, preferred learning style, content, and achievement was sought for primary care nurse practitioner students. A researcher-designed questionnaire was completed by 86 (71%) participants, while 6 engaged in follow-up interviews. The results of the study included: participants preferred learning by "considering the big picture"; "setting own learning plans"; and "focusing on concrete examples." Several positive associations were found: learning on own with learning by reading, and setting own learning plans; small group with learning through discussion; large group with learning new things through hearing and with having learning plans set by others. The most preferred method was print-based material and the least preferred method was audio tape. The most suited method for content included video conferencing for counseling, political action, and transcultural issues; and video tape for physical assessment. Convenience, self-direction, and timing of learning were more important than delivery method or learning style. Preferred order of learning was reading, discussing, observing, doing, and reflecting. Recommended considerations when designing distance courses include a mix of delivery methods, specific content, outcomes, learner characteristics, and state of technology.

Antonis, Konstantinos, Daradoumis, Thanasis, Papadakis, Spyros, & Simos, Christos. (2011 August). Evaluation of the effectiveness of a web-based learning design for adult computer science courses. *IEEE Transactions on Education*, 54(3), 374-380.

Abstract

This paper reports on work undertaken within a pilot study concerned with the design, development, and evaluation of online computer science training courses. Drawing on recent developments in e-learning technology, these courses were structured around the principles of a learner-oriented approach for use with adult learners. The paper describes a methodological framework for the evaluation of three main educational issues involved in the learning process of Web-based computer science training courses, and analyzes the results of this study with the aim of providing an improved learning design, and environment, for these courses. The findings highlight a number of potential barriers to learning and indicate the failed indicators that need to be improved in order to enhance effective performance. The authors give their views both on ways to improve the proposed learning environment and on the need for an optimal balance between asynchronous and synchronous activities, enhanced collaboration, and interactions among adult learners and e-tutors.

Billings, D. M., Ward, J. W., & Penton-Cooper, L. (2001 February). Distance learning in nursing. *Seminars in Oncology Nursing*, 17(1), 48-54.

Abstract

**OBJECTIVES:** To inform oncology nurses about distance-learning technologies and to offer suggestions for how nurses can locate, appropriately select, and use distance learning to their benefit. **DATA SOURCES:** Published articles, research studies, and review articles pertaining to distance education and learning in nursing. **CONCLUSIONS:** Distance learning offers new opportunities for nurses who are seeking basic or advanced degrees, certificates, or lifelong learning for professional development. **IMPLICATIONS FOR NURSING PRACTICE:** Oncology nursing practice is a dynamic specialty and requires the nurse to be a lifelong learner. Distance learning facilitates this requirement.

Brown, Sylvia T., Kirkpatrick, Mary K., & Wrisley, Caroline D. (2003 March). Evaluative parameters of a web-based nursing leadership course from the learners' perspectives. *Journal of Nursing Education*, 42(3), 134-37.

Abstract

Registered nurses in an online nursing leadership course (n=33) reported a high level of confidence in attainment of objectives and leadership competencies; 57% felt the online course required more work. Faculty created a helpful learning environment with clear expectations and innovative assignments. (Contains 21 references.)

Campeau, A. G. (1998 January-March). Distribution of learning styles and preferences for learning environment characteristics among emergency medical care assistants (EMCAs) in Ontario, Canada. *Prehospital & Disaster Medicine*, 13(1), 47-54.

Abstract

**INTRODUCTION:** In Ontario, Canada, Emergency Medical Care Assistants (EMCAs) have many opportunities for continuing education. However, little is known about how EMCAs learn. **OBJECTIVES:** The intent of this study was to explore the distribution of learning styles, preferences for major learning environment characteristics, and the associations between these two factors among the EMCA population in Ontario, Canada. **METHODS:** Following review of the literature, a 32-item survey of learning environment characteristics was constructed to

measure the respondents' preferences. Using a random number generator, 386 EMCAs were selected for participation. Each received: a) an explanatory cover letter; b) a copy of the Kolb Learning Style Inventory (LSI) questionnaire; c) a second questionnaire consisting of learning environment characteristics; and d) a stamped, return addressed envelope. Completed surveys were scored to determine the respondent's Learning Style. The LSI and Learning Environment survey results were entered into a data base and subjected to Dual Scaling analysis in order to 1) Identify the distribution of learning styles; and 2) Explore associations between styles and environmental characteristics. RESULTS: A total of 75 completed surveys were returned, each of the four styles of learning (Converger; Diverger; Assimilator; and Accommodator) were identified in the sample. Dual Scaling analysis indicated a noteworthy association ( $R(jt)$  correlation  $> 0.300$ ) between learning style and 10 of the 32 environmental characteristics. The data describe the usefulness of each of the learning styles. Accommodators believed courses with a strong emphasis on practical applications and working in groups to be very useful, but were less interested in courses with a strong emphasis on theory. Assimilators felt lectures and courses with a strong emphasis on theory very useful, but were less interested in providing input into course objectives. Divergers found that a lot of verbal explanation is useful, but were less interested in working with teachers who act as coaches. Convergers believed that working with teachers who act as coaches is useful. They also preferred courses with a strong emphasis on practical applications, but were less interested in courses with a strong emphasis on theory. CONCLUSIONS: The findings in this study, provide some additional insight into the connections between learning style and elements of the learning environment, and their application may contribute to operationalizing learning theory.

*Note: Also relevant for Assess – Factors Related to Learners and Assess – Environmental Factors.*

Chan, C. H., & Robbins, L. I. (2006 November-December). E-Learning systems: Promises and pitfalls. *Academic Psychiatry, 30*(6), 491-497.

Abstract

OBJECTIVE: This review examines the use of e-learning systems in psychiatric education. METHOD: The authors review the Instructional System Design process, focusing on ADDIE (Analysis, Design, Development, Implementation, and Evaluation). The authors also report on two representative teaching projects, discussing the planning, work, and assessment required. RESULTS: The basic operations of these education software systems are relatively easy to learn. The real work is the project preparation which precedes software use and final implementation. CONCLUSIONS: Internet-based learning software is another tool in the educator's armamentarium. Educators must still utilize sound educational pedagogy to create effective learning instruments.

Chow, M., & Sit, J. (2006). Continuing nursing education via the Internet: An evaluation. *Studies in Health Technology and Informatics, 122*, 809. Available from

<http://booksonline.iospress.nl/Content/View.aspx?piid=3433>

Abstract

The aim of this study was to describe registered nurses' experiences and evaluate their satisfaction with web-based continuing nursing education. A convenient sample of 64 nurses participated in this study. They were given access right to logon a WebCT courseware entitled Nursing Care of Mechanically Ventilated Patients developed by the author. After two weeks of self-directed e-learning, their perception of the learning experience was evaluation by means of a User Feedback Questionnaire (UFQ). The results of this study showed that web-based

learning has considerable potential to be the preferred delivery mode for continuing nursing education.

Confessore, Sharon J., & Kops, William J. (1998 Winter). Self-directed learning and the learning organization: Examining the connection between the individual and the learning environment. *Human Resource Development Quarterly*, 9(4), 365–375. Available from <http://onlinelibrary.wiley.com/doi/10.1002/hrdq.3920090407/abstract>

Abstract

This chapter articulates the connection between self-directed learning (SDL) and the learning organization. Although there is much literature on developing learning organizations and there has been some work addressing SDL in the workplace, there is a paucity of work analyzing the connection between self-directed learners and their place in a learning organization. An analysis of the literature on both learning organizations and SDL, however, identifies learning environments that are strikingly similar. This chapter explicates these relationships and proposes some recommendations for practice and for future research.

Conlan, J., Grabowski, S., & Smith, K. (2010). Adult learning. In M. Orey (Ed.), *Emerging perspectives on learning, teaching, and technology* (pp. 115-126). Available from <http://www.opencollegertextbooks.org/orey-emerging-perspectives-on-learningteaching-and-technology-2010/>

Abstract

There are conflicting perspectives on adult learning as it relates to and separates itself from early childhood development practices and overall approaches to learning. It is the belief of the authors that all styles of learning are applicable to both early childhood and adult learning, with differences presenting themselves in regard to the use of the style based on the learning environment. Topics discussed: Andragogy; Variables Affecting Adult Learning; Toolkit for Facilitators of Adult Learning; Learning Theories Related to Adult Learning: Action Learning, Experiential Learning, Project Based Learning, Self-Directed Learning.

Coogle, Constance L., Head, Colleen A., Parham, Iris A., & Zeman, Stephanie. (2004). Person-centered care and the workforce crisis: A statewide professional development initiative. *Educational Gerontology*, 30(1), 1-20.

Abstract

The care of individuals with dementia requires knowledge and competencies across a wide range of physical and psychosocial aspects of the disease. Yet the quality of care for persons with dementia suffers from staff shortages and inadequate training about the treatment and optimal care strategies for individuals with Alzheimer's disease. Attention has turned recently to the importance of increasing incentives and improving training in order to attract, train, and retain qualified workers. A collaborative dementia training program was implemented in Virginia to promote a greater understanding of person-centered care techniques, with the ultimate goal of improving the quality of care given to people with dementia. The 12-hour multidisciplinary program emphasized a team approach and was recommended for all levels of staff in a variety of long-term care settings. Statistically significant knowledge gains provided empirical support for the effectiveness of an educational program of this type. The training not only increased knowledge levels about person-centered care, but also provided trainees with a better understanding of individuals with dementia. The initiative illustrated the benefits of top-down collaboration among organizations combined with the involvement and commitment of key

individuals at the grassroots level. The implications for person-centered care training as a potentially valuable approach to addressing the current workforce crisis are discussed. (Author)

Coulson-Thomas, C. (2010). Transforming productivity and performance in healthcare and other public services: How training and development could make a more strategic contribution. *Industrial and Commercial Training*, 42(5), 251-259.

#### Abstract

**Purpose:** Public services such as healthcare face a variety of challenges. This paper aims to show how the use of a new generation of learning and support tools could make a significant contribution to tackling current problems and addressing future issues.

**Design/methodology/approach:** Learning and support tools can make it much easier for people to understand areas that are inherently complicated and do difficult jobs. The paper shows how an approach to improving the performance of professionals and knowledge workers can be employed in healthcare. Key lessons from early adopters are summarized, and questions posed for training and development professionals. **Findings:** Tools examined in other contexts have increased the performance of key workgroups and yielded a first year return on investment of over 20, 30 and 70 times. Applying the approach that is suggested to healthcare could address challenges facing the system and benefit both practitioners and patients. **Practical implications:** Benefits of the suggested approach include better engagement with patients, greater understanding, improved productivity, reduced costs, quicker responses, faster dissemination of beneficial changes, less stress, higher standards of patient safety and care, and evidenced compliance. Areas examined include education and training, induction, continuing professional development, ensuring patient safety, maintaining standards, monitoring practitioners, diagnosis, ensuring optimum care pathways, reducing stress and improving productivity.

**Originality/value:** Many responsible boards would like to address the challenges facing public services such as healthcare, but they lack a practical and cost effective way of doing so. The approach outlined represents a cost effective way of integrating learning and working, and uses a framework for managing information, knowledge and best practice, and related learning tools to support the development, updating and practice of healthcare professionals, and ensure adherence to relevant procedures, regulations and standards.

DiBartola, L. M. (2006 Winter). The Learning Style Inventory challenge: Teaching about teaching by learning about learning. *Journal of Allied Health*, 35(4), 238-245.

#### Abstract

The purposes of this study were (1) to describe a model that educators can use to meet the needs of students with diverse learning styles and (2) to report participants' responses about the usefulness and applicability of the Learning Style Inventory (LSI) challenge. Over 3 years, 77 clinician/educators completed the LSI challenge (30 physicians, 10 nurses, 13 physical therapists, 12 physician assistants, 4 occupational therapists, and 8 educators). All four LSI groups were represented in the sample. Participants were given questionnaires at the end of the session and 6 months after the course. The data were reported and analyzed descriptively. Differences in the participants' ratings of observed learning sessions were compared with their individual learning styles. The response rate was 94% (73/77). At 6-month follow-up, 63 of the participants reported the strategies to be highly effective, while 10 reported them to be effective. Participants' ratings of the educational sessions directly reflected their learning styles. The LSI challenge provides educators with a method to move beyond recognition and understanding to "action" that empowers students.

Dick, Walter, Carey, Lou, & Carey, James O. (2009). *The systematic design of instruction* (7<sup>th</sup> ed.). Boston: Allyn & Bacon.

Abstract

This classic book simply and clearly introduces readers to the fundamentals of instructional design and helps them learn the concepts and procedures for designing, developing, and evaluating instruction for all delivery formats. The new edition covers the impact of critical new theories, new technologies, and the Internet. The book also addresses current design processes used in instructional settings and delivery systems across many curriculum and business areas including Internet-based distance education. Anyone interested in learning about instructional design.

Estrada, Carlos A., Krishnamoorthy, Periyakaruppan, Smith, Ann, Staton, Lisa, Korf, Michele J., Allison, Jeroan J., & Houston, Thomas K. (2011 Winter). Marketing to increase participation in a web-based continuing medical education cultural competence curriculum. *Journal of Continuing Education in the Health Professions*, 31(1), 21-27.

Abstract

Introduction: CME providers may be interested in identifying effective marketing strategies to direct users to specific content. Online advertisements for recruiting participants into activities such as clinical trials, public health programs, and continuing medical education (CME) have been effective in some but not all studies. The purpose of this study was to compare the impact of 2 marketing strategies in the context of an online CME cultural competence curriculum ([www.c-comp.org](http://www.c-comp.org)). Methods: In an interrupted time-series quasi-experimental design, 2 marketing strategies were tested: (1) wide dissemination to relevant organizations over a period of approximately 4 months, and (2) Internet paid search using Google Ads (5 consecutive 8-week periods--control 1, cultural/CME advertisement, control 2, hypertension/ content advertisement, control 3). Outcome measures were CME credit requests, Web traffic (visits per day, page views, pages viewed per visit), and cost. Results: Overall, the site was visited 19,156 times and 78,160 pages were viewed. During the wide dissemination phase, the proportion of visits requesting CME credit decreased between the first (5.3%) and second (3.3%) halves of this phase ( $p = 0.04$ ). During the Internet paid search phase, the proportion of visits requesting CME credit was highest during the cultural/CME advertisement period (control 1, 1.4%; cultural/CME ad, 4.3%; control 2, 1.5%; hypertension/content ad, 0.6%; control 3, 0.8%;  $p$  less than 0.001). All measures of Web traffic changed during the Internet paid search phase ( $p$  less than 0.01); however, changes were independent of the advertisement periods. The incremental cost for the cultural advertisement per CME credit requested was US \$0.64. Discussion: Internet advertisement focusing on cultural competence and CME was associated with about a threefold increase in requests for CME credit at an incremental cost of under US \$1; however, Web traffic changes were independent of the advertisement strategy.

Farel, A., Umble, K., & Polhamus, B. (2001 December). Impact of an online analytic skills course. *Evaluation & the Health Professions*, 24(4), 446-459.

Abstract

This article describes the effect of an online analytic skills training course on professional development and practice and discusses recommendations for using this training modality in the public health workforce. The Enhancing Data Utilization Skills Through Information Technology initiative trained professionals in maternal and child health from 13 Southern tier state and local health departments to collect, analyze, and interpret data via a year-long Web-based course. The evaluation of this initiative was based on a model of change for health professionals that holds that training influences behavior by increasing knowledge, influencing beliefs related to



the behavior, enhancing self-efficacy, and improving skills. Participants' knowledge, beliefs, and self-efficacy all increased significantly during the course. Participants' self-assessed skill levels increased significantly for each of 12 selected skills and overall for all skills combined. Distance learning is potentially an effective means for professionals to advance their skills while continuing to fulfill their work-related responsibilities.

Fischer, L. R., Conboy, K. S., Tope, D. H., & Shewmake, D. K. (2000 September). Educating health professionals: A hepatitis C educational program in a health maintenance organization. *American Journal of Managed Care*, 6(9), 1029-1036.

#### Abstract

**Objective:** To describe the components of and staff reaction to an educational outreach program about hepatitis C (HCV) at a managed care organization in Minnesota. **Project Protocol:** Educational programs for primary care clinicians consisted of lunch-and-learn sessions conducted in 2 phases. In phase 1 (1997-1998), educational programs were offered in 4 clinics; in phase 2 (1999), these programs were offered to a larger number of clinics. There was a structured, 2stage recruitment process, and the protocol included multiple contacts that involved sending educational materials to participants several weeks before the program. A development team, comprised of key health maintenance organization (HMO) stakeholders, provided consultation. **Evaluation:** The initiative reached more than 1000 healthcare professionals, including 150 physicians. The educational programs received very high ratings, and pre- and posttests documented significant improvement in knowledge about HCV. **Conclusions:** This successful educational initiative had 5 key elements: (1) value to healthcare staff (ie, importance of the topic and quality of the programs); (2) incentives (ie, convenience, free lunch, and continuing medical education/continuing education unit credits); (3) repeated exposures (ie, multiple opportunities for learning, both oral and written); (4) commitment by key stakeholders at the HMO and the clinics; and (5) an exceptionally well-organized implementation plan.

Forsetlund, L., Bjørndal, A., Rashidian, A., Jamtvedt, G., O'Brien, M. A., Wolf, F., Davis, D., Odgaard, Jensen J., & Oxman, A. D. (2009). Continuing education meetings and workshops: Effects on professional practice and health care outcomes. *Cochrane Database of Systematic Reviews*. Available from

<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD003030.pub2/abstract>

#### Abstract

**Background -** Educational meetings are widely used for continuing medical education. Previous reviews found that interactive workshops resulted in moderately large improvements in professional practice, whereas didactic sessions did not. **Objectives -** To assess the effects of educational meetings on professional practice and healthcare outcomes. **Search strategy -** We updated previous searches by searching the Cochrane Effective Practice and Organisation of Care Group Trials Register and pending file, from 1999 to March 2006. **Selection criteria -** Randomised controlled trials of educational meetings that reported an objective measure of professional practice or healthcare outcomes. **Data collection and analysis -** Two authors independently extracted data and assessed study quality. Studies with a low or moderate risk of bias and that reported baseline data were included in the primary analysis. They were weighted according to the number of health professionals participating. For each comparison, we calculated the risk difference (RD) for dichotomous outcomes, adjusted for baseline compliance; and for continuous outcomes the percentage change relative to the control group average after the intervention, adjusted for baseline performance. Professional and patient outcomes were analysed separately. We considered 10 factors to explain heterogeneity of effect estimates using weighted meta-regression supplemented by visual analysis of bubble and box plots. **Main**

results - In updating the review, 49 new studies were identified for inclusion. A total of 81 trials involving more than 11,000 health professionals are now included in the review. Based on 30 trials (36 comparisons), the median adjusted RD in compliance with desired practice was 6% (interquartile range 1.8 to 15.9) when any intervention in which educational meetings were a component was compared to no intervention. Educational meetings alone had similar effects (median adjusted RD 6%, interquartile range 2.9 to 15.3; based on 21 comparisons in 19 trials). For continuous outcomes the median adjusted percentage change relative to control was 10% (interquartile range 8 to 32%; 5 trials). For patient outcomes the median adjusted RD in achievement of treatment goals was 3.0 (interquartile range 0.1 to 4.0; 5 trials). Based on univariate meta-regression analyses of the 36 comparisons with dichotomous outcomes for professional practice, higher attendance at the educational meetings was associated with larger adjusted RDs ( $P < 0.01$ ); mixed interactive and didactic education meetings (median adjusted RD 13.6) were more effective than either didactic meetings (RD 6.9) or interactive meetings (RD 3.0). Educational meetings did not appear to be effective for complex behaviours (adjusted RD - 0.3) compared to less complex behaviours; they appeared to be less effective for less serious outcomes (RD 2.9) than for more serious outcomes.

Gagne, Robert M., Wager, Walter W., Golas, Katharine, & Keller, John M. (2004). *Principles of instructional design* (5<sup>th</sup> ed.). Belmont, CA: Wadsworth Publishing Company.

#### Abstract

This pioneering text describes a rationally consistent basis for instructional design, based in cognitive psychology and information-processing theory. The authors prepare teachers to design and develop a course, unit, and module of instruction, outline the nine stages of instructional design procedure, and integrate current research and practice in the movement toward performance systems technology. The Fifth Edition of PRINCIPLES OF INSTRUCTIONAL DESIGN emphasizes the social and cultural context of learning, learner-centered principles, and the affordances of new technologies and learning environments.

Green, M. L., Reddy, S. G., & Holmboe, E. (2009 Fall). Teaching and evaluating point of care learning with an Internet-based clinical-question portfolio. *The Journal of Continuing Education in the Health Professions*, 29(4), 209-219.

#### Abstract

INTRODUCTION: Diplomates in the American Board of Internal Medicine (ABIM) Maintenance of Certification (MOC) program satisfy the self-evaluation of medical knowledge requirement by completing open-book multiple-choice exams. However, this method remains unlikely to affect practice change and often covers content areas not relevant to diplomates' practices. We developed and evaluated an Internet-based point of care (POC) learning portfolio to serve as an alternative. METHODS: Participants enter information about their clinical questions, including characteristics, information pursuit, application, and practice change. After documenting 20 questions, they reflect upon a summary report and write commitment-to-change statements about their learning strategies. They can link to help screens and medical information resources. We report on the beta test evaluation of the module, completed by 23 internists and 4 internal medicine residents. RESULTS: Participants found the instructions clear and navigated the module without difficulty. The majority preferred the POC portfolio to multiple-choice examinations, citing greater relevance to their practice, guidance in expanding their palette of information resources, opportunity to reflect on their learning needs, and "credit" for self-directed learning related to their patients. Participants entered a total of 543 clinical questions, of which 250 (46%) resulted in a planned practice change. After completing the module, 14 of 27 (52%) participants committed to at least 1 change in their POC learning strategies. DISCUSSION:

Internists found the portfolio valuable, preferred it to multiple-choice examinations, often changed their practice after pursuing clinical questions, and productively reflected on their learning strategies. The ABIM will offer this portfolio as an elective option in MOC.

*Note: Also relevant for Evaluate – Outcome.*

Gronlund, N. E. (1995). *How to write and use instructional objectives* (5<sup>th</sup> ed.). Englewood Cliffs, NJ: Prentice Hall.

Abstract

A unique and classic text, Gronlund's essential "how to" text again provides a step-by-step guide to writing instructional objectives as intended learning outcomes. The author describes how to state objectives in terms of the type of performance students must demonstrate in order to show that they have achieved the goals of the instruction—and illustrates his recommended methods with numerous examples. Gronlund's is a specific procedure for writing objectives—one that can be used to achieve all types of learning outcomes and is especially suited to teaching thinking, performance, and problem-solving skills. The book stresses the important role of objectives in the teaching-learning-assessment process—starting from state content standards—and how objectives can be used to improve student learning. The improvements made to this revision only enhance its usefulness and reputation as *the best* guide on the market for writing instructional objectives and using them in teaching and assessment.

Gunawardena, Charlotte N., Linder-VanBerschoot, Jennifer A., LaPointe, Deborah K., & Rao, Lalita. (2010). Predictors of learner satisfaction and transfer of learning in a corporate online education program. *American Journal of Distance Education*, 24(4), 207-226.

Abstract

This study explores factors that predict learner satisfaction and transfer of learning in an online educational program at a multinational corporation, established to improve organizational learning by providing training in technical skills. A mixed-methods design was used, selecting both quantitative methods (utilizing survey research) and qualitative methods (employing open-ended questionnaire items, face-to-face and phone interviews), gathering the perspective of students, instructors, and instructional designers. The online courses were designed using a problem-centered and case-based approach to learning and utilized technologies including learning management systems such as Blackboard and SharePoint as well as instructional design tools such as Breeze, Captivate, and PowerPoint. Online self-efficacy emerged as the strongest predictor of learner satisfaction; collegial support was the strongest predictor of transfer of learning. Qualitative analysis provided additional insight on these findings and the elements that impacted the operation of an online education program in a corporate setting. (Contains 8 tables.)

Hadley, J., Kulier, R., Zamora, J., Coppus, S. F., Weinbrenner, S., Meyerrose, B., Decsi, T., Horvath, A. R., Nagy, E., Emparanza, J. I., Arvanitis, T. N., Burls, A., Cabello, J. B., Kaczor, M., Zanzi, G., Pierer, K., Kunz, R., Wilkie, V., Wall, D., Mol, B. W., & Khan, K. S. (2010 July). Effectiveness of an e-learning course in evidence-based medicine for foundation (internship) training. *Journal of the Royal Society of Medicine*, 103(7): 288-94. Available from <http://ukpmc.ac.uk/abstract/MED/20522698/reload=0;jsessionid=5dHEVFsGsqzmrAzMJXp.0>

Abstract

AIM: To evaluate the educational effectiveness of a clinically integrated e-learning course for teaching basic evidence-based medicine (EBM) among postgraduate medical trainees

compared to a traditional lecture-based course of equivalent content. **METHODS:** We conducted a cluster randomized controlled trial to compare a clinically integrated e-learning EBM course (intervention) to a lecture-based course (control) among postgraduate trainees at foundation or internship level in seven teaching hospitals in the UK West Midlands region. Knowledge gain among participants was measured with a validated instrument using multiple choice questions. Change in knowledge was compared between groups taking into account the cluster design and adjusted for covariates at baseline using generalized estimating equations (GEE) model. **RESULTS:** There were seven clusters involving teaching of 237 trainees (122 in the intervention and 115 in the control group). The total number of postgraduate trainees who completed the course was 88 in the intervention group and 72 in the control group. After adjusting for baseline knowledge, there was no difference in the amount of improvement in knowledge of EBM between the two groups. The adjusted post course difference between the intervention group and the control group was only 0.1 scoring points (95% CI -1.2-1.4). **CONCLUSION:** An e-learning course in EBM was as effective in improving knowledge as a standard lecture-based course. The benefits of an e-learning approach need to be considered when planning EBM curricula as it allows standardization of teaching materials and is a potential cost-effective alternative to standard lecture-based teaching.

Hill, R., Hooper, C., & Wahl, S. (2000 September-October) Look, learn, and be satisfied: Video playback as a learning strategy to improve clinical skills performance. *Journal for Nurses in Staff Development*, 16(5), 232-239.

#### Abstract

The study investigated the viability of video playback as a means to maintain and enhance nursing skills in today's healthcare environment. The purpose was to determine if video playback would improve performance of psychomotor clinical skills and increase participant satisfaction with the learning process. A two-group sample of registered and student nurses participated in the study. Each participant performed a nursing procedure. Two nursing procedures were used, one for each group. Each nursing procedure was recorded on videotape and played back to the participant who then repeated the procedure and completed a satisfaction assessment questionnaire. Results showed improved performance and learner satisfaction.

Holtzhauer, F. J., Nelson, J. C., Myers, W. C., Margolis, S., & Klein, K. (2001 July). Improving performance at the local level: Implementing a public health learning workforce intervention. *Journal of Public Health Management and Practice*, 7(4), 96-104.

#### Abstract

In an effort to continually improve performance of the essential public health services with community partners, the diverse public health workforce in a major metropolitan area engaged in an organizational learning process. Core public health organizational competencies, identified in a multi-year collaborative applied research initiative, provided the curricula content for the public health learning experience. All members (about 600) of the Columbus and Franklin County (Ohio) Health Departments participated in four one-half day small group, highly interactive modules conducted during a 2-year period. The purpose of this article is to describe the design and implementation of this workforce intervention, the lessons learned, and implications for developing organizational capacity and improved performance.

*Note: Also relevant for Deliver.*

Huddleston, J. (1990 March-April). Developing a psychiatric self-instruction module. *Journal of Nursing Staff Development*, 6(2), 75-78.

Abstract

The development of a psychiatric assessment self-instructional module that incorporated learning needs assessment, collaboration, implementation, and evaluation is described. A tool as flexible as a self-instructional module responds to various learning styles and is adaptable to continuing education needs.

Iverson, K., Colky, D., & Cyboran, V. (2005 December). E-learning takes the lead: An empirical investigation of learner differences in online and classroom delivery. *Performance Improvement Quarterly*, 18(4), 5-18.

Abstract

Outcomes and mediators of differences in online and traditional course delivery were tested with a sample of 112 graduate students who completed an introductory course in training and development. Specifically, the individual learner characteristics of self-efficacy, motivation, goal orientation, and meta-cognition and their effects on success through online delivery were examined. The study also addressed three outcomes: trainees' reactions to that program, their learning, and subsequent planned changes in job behavior. The findings indicate that online learners have significantly more positive reaction levels of enjoyment and utility and significantly stronger intent to transfer their learning. Online students find the coursework more difficult, but there was no significant difference in learning based on delivery mode. Implications for both managers and educators involved in online learning are discussed.

Jakeway, Carole C., Cantrell, Elizabeth E., Cason, Jackie B., & Talley, Brenda S. (2006 March-April). Developing population health competencies among public health nurses in Georgia. *Public Health Nursing*, 23(2), 161-167.

Abstract

As part of a new vision for public health in Georgia, the role of the public health nurse (PHN) is shifting from a predominantly individual and clinic-based care model to a population health practice model. Based on focus groups conducted with management and frontline PHNs in 2001, nurses in Georgia were unprepared for this transition and lacked a strong understanding of population health concepts and competencies. To prepare nurses for their new and expanded responsibilities, an online population health course was developed specifically for currently employed PHNs. The Quad Council PHN Competencies (2003) provided the roadmap in identifying the population health online course and continuing education training program priority competencies for PHNs in Georgia. Along with incorporating the competencies into case studies and didactic learning, the required projects served as evidence of competency application. The population health online course was offered from fall 2000 to spring 2005 in collaboration with Georgia schools of nursing and has enabled a cohort of nurses to lead the way as Georgia transitions into a new public health model. Nurses who completed the course reported greater experience with and an understanding of population health competencies.

Kaliher, Licia Barrueco. (2010). *Applying multimedia learning theories to the redesign of residence life online training modules*. Doctoral dissertation, University of Delaware.

Abstract

The purpose of this Executive Position Paper (EPP) is to develop a model for improving the online training modules utilized by a mid-Atlantic Residence Life department. The complexity of the Residence Life staff positions, coupled with demands from other university departments and

the need to provide as much information as possible, resulted in an increase in the use of online training modules. The WebCT evaluation conducted in Fall 2008 revealed several problems with the current online training module approach. This 2008 WebCT evaluation indicated the need to explore learning theories and multimedia learning literature and apply them to a new online training design. As such, a literature review was conducted and four learning and instructional theories were selected to guide the design process of the pilot online training module: Gagne's "Conditions of Learning" (1985), Constructivism (in particular Situated Learning), Cognitive Load Theory, and the Cognitive theory of multimedia learning (Mayer, 2001). Informed by the Fall 2008 WebCT module evaluation and literature review, a pilot online training model was designed. A module delivering the content area of room inspections was then developed based on the pilot online training model. A mixed-method approach using quantitative and qualitative techniques was utilized to examine the effectiveness of the pilot online training module in its ability to impact learning. New and returning Residence Life paraprofessionals were recruited to participate in this study (n = 34). Qualitative results from a pre- and post-test indicated significant differences in content knowledge gained by participants. Qualitative data also demonstrated the level of impact the pilot online training module had on content learning. The following themes emerged: (1) RA role defined, (2) Prior knowledge, (3) Application of knowledge, (4) Interactivity, (5) Knowledge retention, (6) Metacognitive processes, and (7) Module effectiveness. The data analysis of the quantitative and qualitative data showed a positive correlation between the pilot online training module and content knowledge retention and application. The results of this EPP confirmed that an online training module that is theory-based and technologically-advanced will actively engage and teach staff members, improve their knowledge base, and facilitate the application of this knowledge to their work with students. Recommendations, additional areas for research, and the limitations of the study are presented.

Kirkpatrick, Rhoda L. (1979). *The development of a model to guide the practitioner in continuing education programs: Learning theory and applications module*. Doctoral dissertation, Nova University.

#### Abstract

The purpose of this study was to construct a model for the design, development, and direction of continuing education programs for registered nurses at John C. Calhoun Community College. The model was based on data from various professional conferences; a review of the literature on continuing education in general and concepts of learning theory; and information supplied by 14 continuing education program directors about the model they currently employed. The study and resulting model allowed nurses to identify learning needs, gain desired education, and evaluate program offerings. The model, which is presented, consists of five phases: (1) an introduction which defines nursing and continuing education, and discusses the model itself; (2) a description of the setting (Northern Alabama) and the population (3,412 nurses) served; (3) an overview of the selection and membership of the advisory committee and its role in program coordination; (4) a statement of goals and objectives; and (5) an outline of the delivery system and specific aspects of planning, implementation, and evaluation of the continuing education program as conducted at Calhoun. The phases are graphically illustrated to demonstrate interrelationships among them. Fifteen appendices, comprising half of the report, include various program forms and documents, and a list of the 14 existing programs that supplied information for the study.

Knowles, M. S, Holton, E. F., & Swanson, R. A. (2011). *The adult learner: The definitive classic in adult education and human resource development* (7<sup>th</sup> ed.). London: Elsevier.

#### Abstract

If you are a specialist or student in education, an adult learning practitioner, training manager, or involved in human resource development, this is the definitive book in adult learning you shouldn't be without. This update of a pioneering classic contains all Knowles' original chapters alongside a newer second part by Elwood "Ed" Holton and Richard A Swanson charting the advancements on these core principles. A third section includes selected readings from previous editions to illustrate the theory's evolution, as well as important articles from other key experts around the world for a comprehensive view.

Koo, Denise, & Miner, Kathleen. (2010 April). Outcome-based workforce development and education in public health. *Annual Review of Public Health*, 31, 253-269.

#### Abstract

The broad scope of the public health mission leads to an increasingly diverse workforce. Given the range of feeder disciplines and the reality that much of the workforce does not have formal training in public health science and practice, a pressing need exists for training and education throughout the workforce. Just as we in public health take a rigorous approach to our science, so too should we take a rigorous, evidence-driven approach to workforce development. In this review, we recommend a framework for workforce education in public health, integrating three critical conceptual approaches: (a) adult learning theory; (b) competency-based education; and (c) the expanded Dreyfus model in public health, an addition to the Dreyfus model of professional skills progression. We illustrate the application of this framework in practice, using the field of applied epidemiology. This framework provides a context for designing and developing high-quality, outcome-based workforce development efforts and evaluating their impact, with implications for academic and public health practice efforts to educate the public health workforce.

*Note: Also relevant for Evaluate – Outcome Evaluation.*

Lin, Z. C. (2012 January 19 [Epub ahead of print]). Comparison of technology-based cooperative learning with technology-based individual learning in enhancing fundamental nursing proficiency. *Nurse Education Today*. Available from [http://www.nurseeducationtoday.com/article/S0260-6917\(11\)00340-6/abstract](http://www.nurseeducationtoday.com/article/S0260-6917(11)00340-6/abstract)

#### Abstract

**BACKGROUND:** The aim of nursing education is to prepare students with critical thinking, high interests in profession and high proficiency in patient care. Cooperative learning promotes team work and encourages knowledge building upon discussion. It has been viewed as one of the most powerful learning methods. Technology has been considered an influential tool in teaching and learning. It assists students in gathering more information to solve the problems and master skills better. **PURPOSE:** The purpose of this study was to compare the effect of technology-based cooperative learning with technology-based individual learning in nursing students' critical thinking in catheterization knowledge gaining, error discovering, skill acquisitions, and overall scores. **METHODS:** This study used a pretest-posttest experimental design. Ninety-eight students were assigned randomly to one of two groups. Questionnaires and tests were collected at baseline and after completion of intervention. **RESULTS:** The results of this study showed that there was no significant difference in related catheterization skill performance. However, the remaining variables differed greatly between the two groups. **CONCLUSIONS AND APPLICATIONS:** This study's findings guide the researchers and instructors to use technology-based cooperative learning more appropriately. Future research should address the design of the course module and the availability of mobile devices to reach student-centered and learn on the move goals.

Long, Huey B., et al. (1996). *Current developments in self-directed learning*. Norman, OK: Classic Book Distributors.

#### Abstract

This document contains the following papers examining current developments in self-directed learning: "Self-Directed Learning: Challenges and Opportunities" (Huey B. Long); "Examination of Self-Directed Learning Readiness and Selected Demographic Variables of Top Female Executives" (Lucy M. Guglielmino); "Enhancing Self-Directed Learning in the Workplace: A Model and a Research Agenda" (Roland Foucher); "Self-Directed Learning: A Tool for Management to Eliminate the Annual Performance Appraisal" (Ingrid Wojciechowski); "Interests of Corporate Trainers in Application of Self-Directed Learning Techniques in Training" (Thomas D. Phelan); "Construct Validation of the Oddi Continuing Learning Inventory" (Gerald A. Straka); "Framework for Using Instruments in Self-Directed Learning Research" (Jane Pilling-Cormick); "Hermeneutical Dialogue: A Critical Component in Self-Directed Learning" (John R. Goss III et al.); "Adult Learner's Self-Efficacy, Readiness for Self-Directed Learning, and Gender: Implication for Math Performance" (A. David Wall, Claudia J. Sersland, Gary Hoban); "Preliminary Study of Self-Directed Learning Readiness in the People's Republic of China" (Paul J. Guglielmino, Lucy M. Guglielmino, Shuming Zhao); "Relationship between Self-Directed Learning Readiness and Academic Performance in a Nontraditional Higher Education Program" (Huey B. Long, Scott S. Morris); "Approaches to the Stimulation of Autodidactic Competence in University Settings: Learning Contracts and Tutorials" (Philippe Baveye); "Are Self-Directed Learning Skills the Missing Competency in the Special Education Curriculum?" (Robert J. Bulik); "Self-Directed Learning Readiness and Student Success" (Huey B. Long, Stanley W. Smith); "Risks and Dangers in the Measurement of the Self-Directed Learner" (Rene Bedard); "Cohort Group Model and Support" (Arthur H. Johnson, Lilian H. Hill); "Ways in Which the Cohort Model Influences Self-Directed Learning" (Virginia O. Jenks, William J. Haney, Kathryn H. Clark); and "Courses Designed to Facilitate Self-Directed Learning in Nursing Education" (Huey B. Long, Karen L. Barnes). A total of 26 tables/figures are included. Most papers contain substantial bibliographies.

Merriam, Sharan B., & Leahy, Brendan. Learning transfer: A review of the research in adult education and training. *PAACE Journal of Lifelong Learning*, 14, 1-24. Available from <http://www.iup.edu/assets/0/347/349/4951/4977/10267/F66B135A-DB09-4BA0-8D20-90D751AF39B6.pdf>

#### Abstract

Millions of dollars are spent every year on continuing education and training, yet some estimate that less than 10% of this expenditure pays off in improved performance at work. How to ensure for the transfer of learning from the classroom to the workplace has challenged adult educators and trainers for decades. This article reviews the empirical research since 1990 on learning transfer. Research findings with regard to participant characteristics, program content and design, and work environment are reviewed. Based on the research, three recommendations congruent with adult education and adult learning theory are presented: (a) that the learner be included in the planning of the educational program, (b) that strategies for transfer be built into the program design, and (c) that a supportive work environment be fostered to enable transfer. The article concludes with recommendations for future research on learning transfer.



Nistor, Nicolae, Dehne, Anina, & Drews, Frank Thomas. (2010 November). Mass customization of teaching and training in organizations: Design principles and prototype evaluation. *Studies in Continuing Education*, 32(3), 251-267.

Abstract

In search of methods that improve the efficiency of teaching and training in organizations, several authors point out that mass customization (MC) is a principle that covers individual needs of knowledge and skills and, at the same time limits the development costs of customized training to those of mass training. MC is proven and established in the economic sector, and shows high potential for continuing education, too. The paper explores this potential and proposes a multidisciplinary, pragmatic approach to teaching and training in organizations. The first section of the paper formulates four design principles of MC deduced from an examination of economics literature. The second section presents amit[™], a frame for mass customized training, designed according to the principles presented in the first section. The evaluation results encourage the further development and use of mass customized training in continuing education, and offer suggestions for future research. (Contains 2 figures and 5 tables.)

Notarianni, M. A., Curry-Lourenco, K., Barham, P., & Palmer, K. (2009 June). Engaging learners across generations: The Progressive Professional Development Model. *Journal of Continuing Education in Nursing*, 40(6), 261-266.

Abstract

The Progressive Professional Development Model (PPDM) is a framework to guide educators in planning learning experiences that promote development in the cognitive, affective, and psychomotor domains. The model marries the use of standardized patients and virtual and simulated practice environments with traditional clinical practice and offers the opportunity to address learning styles of a multigenerational work force. Proposed is the application of technology in designing both instructional and evaluative experiences for new nurse orientation and continuing education. Outcome measures include learning of increasingly complex knowledge, values, skills, and demonstration of competency-based behaviors. Examples of application are provided, including a discussion of considerations for operationalizing the model in the health care setting.

Oermann, M., Truesdell, S., & Ziolkowski, L. (2000 July-August). Strategy to assess, develop, and evaluate critical thinking. *Journal of Continuing Education in Nursing*, 31(4), 155-160, quiz 190-191.

Abstract

**BACKGROUND:** To care for patients with complex health problems, nurses need a strong knowledge base and critical thinking skills. Critical thinking enables the nurse to process and analyze information, solve clinical problems, and decide on actions to take. Teaching and evaluation, however, often focus on memorizing facts and details about clinical care rather than on critical thinking. **METHOD:** Context-dependent test items are designed to evaluate critical thinking and may be used in orientation, in competency testing, and by preceptors and others who work with beginning nurses for formative evaluation and discussions with them. A context-dependent item presents introductory material to analyze and determine a course of action. The introductory material may be a clinical scenario, an issue nurses might face in their practice, patient data, graphs or flow sheets, and other types of material for analysis. Carefully planned questions for assessing critical thinking are then asked. **CONCLUSION:** The article describes how to develop and use context-dependent items in nursing continuing education.

Paechter, Manuela, Maier, Brigitte, & Macher, Daniel. (2010 January). Students' expectations of, and experiences in e-learning: Their relation to learning achievements and course satisfaction. *Computers and Education*, 54(1), 222-229.

Abstract

Within only a few years, the use of e-learning has increased rapidly in Austria. In certain subjects, up to 60% of university students report using e-learning platforms at least "sometimes" or "frequently" (Unger & Wroblewski, 2006). Yet, which aspects of e-learning do students consider important for their learning achievements and course satisfaction? This question was addressed by surveying 2196 students from 29 universities in Austria about their expectations of, and experiences in e-learning. Multiple regression analyses using Mplus 4.21 were carried out to investigate how different facets of students' expectations and experiences are related to perceived learning achievements and course satisfaction. With regard to their expectations, i.e., aspects of a course they consider important, students' achievement goals were the best predictors for success and ranked higher than other course characteristics. With regard to their experiences, students' assessments of the instructor's expertise in e-learning, and her/his counseling and support were the best predictors for learning achievement and course satisfaction. Furthermore, self-regulated and collaborative learning were related to learning achievements. The results of the study suggest to influence students' motivation and goals by adapting instruction accordingly and emphasize the importance of continuing education and training for the instructors.

Peavey, Kay S., & Krieger, Alan. (2001 January). *Career development and occupational studies: A supplement to the adult education resource guide and learning standards*. Glenmont, NY: Hudson River Center for Program Development. Available from

<http://www.nald.ca/library/research/career/career.pdf>

Abstract

This publication focuses on New York's learning standards for career development and occupational studies (CDOS) in adult education: career development, integrated learning, universal foundation skills, and career majors. A section on the adult learner provides information on engaging learners to increase motivation. The next section focuses on connecting the work-based skills of CDOS to adult goals. It discusses these three essential components that facilitate a successful transition from school to work and careers: work-based learning, school-based learning, and connections between the two. The following pages examine the CDOS standards as distinct entities, based on the recognition and assumption that there is a need for a continuum of ongoing support for learners throughout the entire process. The next section considers CDOS links since the CDOS (and six other) learning standards do not stand alone. It discusses other pieces that educators must use, including performance indicators, hands-on learning experiences, support services, and assessment. Appendixes are a list of 28 organizational, online, and print resources. (Contains 10 references.)

Pescuric, Alice, & Byham, William C. (1996 July). The new look of behavior modeling. *Training & Development*, 50(7), 24-30.

Abstract

Focuses on the use of behavior-modeling-based training for the improvement of the organization or corporate employee performance. Historical background on behavior modeling; Evolution of behavior modeling; Five critical components for the insurance of effective learning; Factors contributing to the manner by which people learn;

Phillips, J. J., & Phillips, P. P. (2012). *10 steps to successful business alignment*. Alexandria, VA: ASTD Press.

Abstract

Defining business alignment as the process of ensuring that a new project, program, or process is connected directly to business impact measures, usually expressed in terms such as output, quality, cost, or time, *10 Steps to Successful Business Alignment* offers concrete input, detailed suggestions, and pragmatic know-how on how to plan for, implement, and maintain effective alignment for projects of nearly every size and scope. Written by a pair of renowned experts in the field of business measurement and evaluation, *10 Steps to Successful Business Alignment* shows how to connect projects to business measures, and how to maintain alignment with those measures throughout a projects entire life cycle. This book covers the full spectrum of issues related to alignment, including planning the alignment with clients; determining payoff, business, performance, and preference needs; addressing high-level objectives; measuring impact; reporting the results of the alignment; and more.

Truly a comprehensive resource on alignment, *10 Steps to Successful Business Alignment* delivers practical insight on every step of the alignment process, and is essential reading for every professional involved in creating, maintaining, and verifying alignment.

*Note: Also relevant for Evaluate – Outcome Evaluation.*

Phillips, J. J., & Phillips, P. P. (2008). *Beyond learning objectives: Develop measurable objectives that link to the bottom line*. Alexandria, VA: ASTD Press.

Abstract

A learning objective is a statement that describes expected outcomes of a learning event. A seemingly simple concept, it is extremely important in the process of developing effective learning programs. The classic idea of learning objectives consist of three parts: performance, conditions and criteria. In *Developing Learning Objectives*, authors, Jack J. Phillips and Patricia Pulliam Phillips, link learning objectives to program return on investment (ROI).

*Developing Learning Objectives* expands the classic components of learning objectives from three to six parts: project scope, the four levels of learning (training evaluation, reaction, learning, behavior), results, and the Phillips ROI. With this book, readers will be able to write specific and meaningful learning objectives that address all six components. Additionally, the methodology will enable stakeholders in the learning process to design learning programs, facilitate learning events, and make decisions regarding business impact.

*Note: Also relevant for Evaluate – Outcome Evaluation.*

Phillips, P. P. (2011 November 8). *Business alignment: The path to meaningful data and a positive ROI*. Available from <http://www.capanalytics.com/resources/articles/business-alignment-meaningful-data-positive-roi>

Abstract

Today's business community, and particularly the human capital community, are relying more on analytics to make decisions about programs and projects than ever before. Yet, many people still ask: How do we ensure the right measures are taken and that the connection between investment in our people and the results achieved is clear? We do it through the process of business alignment.

*Note: Also relevant for Evaluate – Outcome Evaluation.*

Phillips, P. P. (Ed.). (2009 October). The process of business alignment. *Proven: Beyond the Process*, 2(4). Available from [http://media.roiinstitute.net/articles/pdf/2011/10/31/Achieving\\_Business\\_Alignment\\_A\\_series\\_of\\_articles.pdf](http://media.roiinstitute.net/articles/pdf/2011/10/31/Achieving_Business_Alignment_A_series_of_articles.pdf)

Pilcher, J. (2011 January-February). Creative learning ideas from around the U.S. *Neonatal Network*, 30(1), 66-70.

Abstract

Moving education away from a teacher-centered “sage on the stage” approach to learner-centered methodologies in which the instructor is more like a “guide on the side” enhances learning and retention of material. When preparing educational materials, nurse educators should focus on engaging learners, stimulating multiples senses, and taking steps to make learning fun. The innovative teaching strategies presented here have hopefully stimulated creative thinking among both educators and learners. Thank you to the nurses who were willing to share their creative ideas in this column.

Porter, R. S. (1991 April). Efficacy of computer-assisted instruction in the continuing education of paramedics. *Annals of Emergency Medicine*, 20(4), 380-384.

Abstract

STUDY OBJECTIVE: To determine the relative effectiveness of lecture, video, and computer-assisted instruction (CAI) for the continuing education of paramedics. DESIGN: The study was a statewide, cross-sectional, and prospective. It used premethod, post method and 60-day evaluations addressing both cognitive knowledge and attitude toward the method. Subjects were required to complete a 20-question cognitive examination and a ten-point satisfaction inventory. Each study site was randomly assigned a method by a computer-generated table. SETTING: The study involved 11 sites, systematically distributed throughout Michigan. TYPE OF PARTICIPANTS: 111 Michigan licensed paramedics. RESULTS: CAI subjects scored an average of 79.6% on the post-test, while lecture and video subjects scored 70.5% and 68.9%, respectively. At 60 days, CAI subjects scored 70.9%, while lecture and video subjects averaged 59.4 and 59.1, respectively. The difference among the scores was significant post method ( $P = .01$ ) and at 60 days ( $P = .02$ ). The subject method preference was lecture, video, and CAI premethod; lecture, CAI, and video immediately post method; and lecture, CAI, and video at 60 days. CONCLUSION: Although lecture was the preferred method, CAI was best able to impart knowledge and enhance participant knowledge retention.

Ralph, Edwin G. (2001 Spring). Motivating instruction in university continuing education: A fresh look at key principles. *Canadian Journal of University Continuing Education*, 27(1), 61-76.

Abstract

From a literature review, the following principles for facilitating adult learning in continuing education were derived: (1) promote positive relationships; (2) gain learners' attention; (3) ensure that content is relevant; (4) provide support and challenge; and (5) ensure learner satisfaction. (Contains 55 references.)

Russell, S. S. (2006 October). An overview of adult-learning processes. *Urologic Nursing*, 26(5), 349-353, 370.

Abstract

Part of being an effective instructor involves understanding how adults learn best. Theories of adult education are based on valuing the prior learning and experience of adults. Adult learners have different learning styles which must be assessed prior to initiating any educational session. Health care providers can maximize teaching moments by incorporating specific adult-learning principles and learning styles into their teaching strategies.

*Note: Also relevant for Assess – Factors Related to Learners.*

Saenz, R., Skledar, S. J., Yourich, B., & Mark, S. M. (2010 August 15). Educational program for pharmacists at a multifacility academic medical center. *American Journal of Health-System Pharmacy*, 67(16), 1368-1372.

Abstract

**PURPOSE:** An educational program for pharmacists in a multifacility health care setting is described. **SUMMARY:** The expansion of pharmacy services at a university medical center from a centralized to a decentralized, unit-based model created the need for enhanced education of staff pharmacists. A steering committee with pharmacy department and school of pharmacy representation surveyed educational and professional needs related to the expanded services. Pharmacists indicated that they needed an educational program that was comprehensive, interactive, and accessible to all shifts. Pharmacy school clinical faculty members provided most of the initial educational sessions, which combined didactic presentations and case-based discussion. The needs survey was used in selecting topics that were most relevant to the pharmacists' expanded practice. Each major topic was covered in a series of one-hour sessions held at two-week intervals and scheduled at a time convenient for afternoon-shift pharmacists. Incentives were offered to encourage participation. The live presentations were recorded with video-streaming technology and made available via the Internet to pharmacists on all shifts in all facilities of the health system as well as to faculty members. Since program implementation in 2005, attendance at the live sessions has averaged 25. In postimplementation surveys, pharmacists indicated that the program was meeting their needs and improving patient care. Since 2008, pharmacists have been able to earn continuing-education (CE) credit for the sessions. **CONCLUSION:** A collaborative educational series with online access, clinical content, and CE credit has been effective in meeting pharmacists' needs in a multifacility health care setting.

Shaw, T., Long, A., Chopra, S., & Kerfoot, B. P. (2011 Spring). Impact on clinical behavior of face-to-face continuing medical education blended with online spaced education: A randomized controlled trial. *The Journal of Continuing Education in the Health Professions*, 31(2), 103-108.

Abstract

**BACKGROUND:** Spaced education (SE) is a novel, evidence-based form of online learning. We investigated whether an SE program following a face-to-face continuing medical education (CME) course could enhance the course's impact on providers' clinical behaviors. **METHODS:** This randomized controlled trial was conducted from March 2009 to April 2010, immediately following the Current Clinical Issues in Primary Care (Pri-Med) CME conference in Houston, Texas. Enrolled providers were randomized to receive the SE program immediately after the live CME event or 18 weeks later (wait-list controls). The SE program consisted of 40 validated questions and explanations covering 4 clinical topics. The repetition intervals were adapted to each provider based on his or her performance (8- and 16-day intervals for incorrect and correct answers, respectively). Questions were retired when answered correctly twice in a row. At week 18, a behavior change survey instrument was administered simultaneously to providers in both cohorts. **RESULTS:** Seventy-four percent of

participants (181/246) completed the SE program. Of these, 97% (176/181) submitted the behavior change survey. Across all 4 clinical topics, providers who received SE reported significantly greater change in their global clinical behaviors as a result of the CME program (p-values .013 to < .001; effect size 0.7). Ninety-seven percent (175/179) requested to participate in future SE supplements to live CME courses. Eighty-six percent (156/179) agreed or strongly agreed that the SE program enhanced the impact of the live CME conference. DISCUSSION: Online spaced education following a live CME course can significantly increase the impact of a face-to-face course on providers' self-reported global clinical behaviors.

Songhao, He, Saito, Kenji, Maeda, Takashi, & Kubo, Takara. (2011 January). Evolution from collaborative learning to symbiotic e-learning: Creation of new e-learning environment for knowledge society. *US-China Education Review*, 8(1), 46-53.

#### Abstract

For people who live in the knowledge society which has rapidly been changing, learning in the widest sense becomes indispensable in all phases of working, living and playing. The construction of an environment, to meet the demands of people who need to acquire new knowledge and skills as the need arises, and enlighten each other regularly, is becoming very important. Thus, we hope to make the best use of the advantages of a rich e-learning environment which aims at "anytime, anywhere and anybody" learning, because participants in lifelong learning for the knowledge society demand to learn at the right place and right time, and with learning content, they can select themselves. However, in a general e-learning environment so far, because the situation is usual in which the instructor is absent and has the asynchronous access without an immediate communication with others, the participants tend to be solitude and it is difficult to maintain the learning motivation. Therefore, the creation of a new e-learning environment becomes extremely important in which various participants can learn and enlighten each other through an occasional and helpful interaction among them in appropriate learning communities in the network environment. In this paper, we present 5 points as basic requirements for the construction of an e-learning environment which can satisfy the various learning demands of the knowledge society, and discuss how to realize them. The key point here is the extension of the usual "strong" collaborative learning to effective "weak collaborative learning". In addition, the evolution of "symbiotic learning" for the knowledge society, that is, the necessity of "symbiotic e-learning environment based on occasional collaborative relationship" and its effective realization are discussed.

Sparling, L. A. (2001 July-August). Enhancing the learning in self-directed learning modules. *Journal for Nurses in Staff Development*, 17(4), 199-205.

#### Abstract

Self-directed learning modules are a popular option for providing continuing nursing education. Not all nurses are comfortable with this learning format. Nursing educators may be unfamiliar with strategies to facilitate self-directed learning. Self-directed learning is based on assumptions about adults as learners. Effectiveness and acceptance of the learning modules are enhanced by educational strategies that address these assumptions.

Stanley, Sharon A. R., Polivka, Barbara J., Gordon, Deanna, Taulbee, Kelly, Kieffer, Gloria, & McCorkle, Sheryl M. (2008 March-April). The ExploreSurge Trail Guide and Hiking Workshop: Discipline-specific education for public health nurses. *Public Health Nursing*, 25(2), 166-175.

#### Abstract

Generic preparedness education and training for the public health workforce has increased in availability over the past 5 years. Registered Nurses also have more opportunities available for participation in emergency and disaster preparedness curricula. Discipline- and specialty-specific training and education for public health nurses (PHNs) incorporating their population-based practice, however, remains a largely unexplored area that is not accessible except for sporadic local venues. The Public Health Nursing Surge Curriculum provides 50 hr of nursing continuing education and activity-based aggregate focused learning experiences that are completed within a 12-month period, including an in-classroom seminar. The Public Health Nursing Surge Curriculum was developed on a foundation of 25 competencies linking PHNs and their population-based practice to surge capability. The curriculum was built in partnership with statewide public health directors of nursing over a 12-month period and is evaluated by a 3-level process to include self-rated confidence in performance. The curriculum's use of a blended learning methodology enables staff-level PHNs to master individual competencies toward surge capability within the public health response system.

Stewart, K. E., Halverson, P. K., Rose, A. V., & Walker, S. K. (2010 September-October). Public health workforce training: Application of the Council on Linkages' core competencies. *Journal of Public Health Management and Practice, 16*(5), 465-469.

#### Abstract

Despite calls from multiple sources, including the Institute of Medicine, a large proportion of public health professionals have limited formal training in public health science. The Council on Linkages Between Academia and Public Health Practice developed the core competencies to provide a framework for assessing professionals' readiness to manage the complex challenges in public health. We incorporated the core competencies into a workforce development program to improve workforce competence of professionals at the Arkansas Department of Health. The program's curriculum was mapped to the core competencies in each of the Linkages domains. Participants self-assessed their competence before and after the year-long program, and results from the 2007 and 2008 participants are provided. The 2007 results indicate that participants significantly increased their perceived competence in all of the Linkages domains, whereas in the 2008 program, participants reported increases in all but cultural competency. The greatest reported increase in perceived competency was in policy development. On the basis of these findings, the Council on Linkages core competencies appear to be an effective tool in guiding workforce development programs and serve as an important framework for assessing comprehensive interdisciplinary training programs. Such programs can substantially increase public health professionals' self-assessed competence in the Linkages domains.

Su, W. M., & Osisek, P. J. (2011 July). The Revised Bloom's Taxonomy: Implications for educating nurses. *Journal of Continuing Education in Nursing, 42*(7), 321-327. Available from <http://www.healio.com/nursing/journals/JCEN/%7BF460E3D4-8660-42C3-B884-555972646E28%7D/The-Revised-Blooms-Taxonomy-Implications-for-Educating-Nurses>

#### Abstract

One of the essential goals for continuing education in nursing is to enhance nurses' ability to improve patient care outcomes. Toward this goal, learners need to transfer learned knowledge to actual practice. Achieving effective transfer requires knowledge of thinking paradigms in relation to specific subject content. Educators can facilitate knowledge transfer by developing instructional designs that incorporate subject content and cognitive processes related to the use of the subject content. However, it is difficult to develop such instructional designs. The Revised Bloom's Taxonomy provides a framework for meeting this educational need. In this article, the authors establish the relevance of the Revised Bloom's Taxonomy to continuing education and

describe how to use the taxonomy to plan an educational session with an emphasis on promoting knowledge transfer.

Sun, Pei-Chen, Tsai, Ray J., Finger, Glenn, Chen, Yueh-Yang, & Yeh, Downing. (2008). What drives a successful e-learning? An empirical investigation of the critical factors influencing learner satisfaction. *Computers & Education, 50*, 1183-1202.

Abstract

E-learning is emerging as the new paradigm of modern education. Worldwide, the e-learning market has a growth rate of 35.6%, but failures exist. Little is known about why many users stop their online learning after their initial experience. Previous research done under different task environments has suggested a variety of factors affecting user satisfaction with e-Learning. This study developed an integrated model with six dimensions: learners, instructors, courses, technology, design, and environment. A survey was conducted to investigate the critical factors affecting learners' satisfaction in e-Learning. The results revealed that learner computer anxiety, instructor attitude toward e-Learning, e-Learning course flexibility, e-Learning course quality, perceived usefulness, perceived ease of use, and diversity in assessments are the critical factors affecting learners' perceived satisfaction. The results show institutions how to improve learner satisfaction and further strengthen their e-Learning implementation.

Temkin, Terrie. (1982 November). *Mapping the terrain of continuing allied health education*. Presented at the National Adult Education Conference, San Antonio, TX.

Abstract

A number of factors make continuing education in the allied health professions a unique category of adult education. The mandatory nature of continuing allied health education violates two of the basic tenets of adult learning theory--that adults voluntarily participate in learning to satisfy personal needs and that adults are generally not comfortable in a structured atmosphere. In addition to being flexible, however, the adult educator providing continuing allied health education must thoroughly understand the educational needs of allied health personnel. The educational goals may be influenced by organizations with an interest in the educational achievement of allied health personnel. Characteristics of allied health personnel make them atypical adult learners. Common personality types include the "lifer," the transient, ex-military personnel, individuals whose licenses are expiring and who need additional continuing education units quickly, and individuals sent by their supervisors. Various educational settings--the hospital, meetings of professional organizations, and public seminars--have advantages and disadvantages. Some innovative and some effective traditional educational techniques that enhance learning experiences are the workshop or seminar, skills training conducted by staff members, educational television and films, computer-assisted interactive video instruction, and simulations.

Walker, E. A. (1999 November-December). Characteristics of the adult learner. *The Diabetes Educator, 25*(6 Suppl.), 16-24.

Abstract

PURPOSE: This article provides an overview of adult learner characteristics, with an emphasis on those characteristics studied in diabetes patient education research. METHODS: A selected review of the conceptual and research literature on general adult education and adult learning was conducted, with particular attention to diabetes patient education studies. RESULTS: Characteristics reviewed included learning styles, literacy level, age/aging, ethnicity or culture, gender, and knowledge. Studies of the learning style of group vs individual education indicated



some positive benefits for group learning; questions remain about optimal size or periodicity. Studies evaluating the benefits of culturally specific interventions for diabetes management have yielded some information. Characteristics related to gender and age have been studied, but often in pilot or feasibility studies without the power to answer the study questions.

**CONCLUSIONS:** There continue to be many gaps in knowledge related to adult learner characteristics in diabetes education. Lessons from both general adult learning literature and patient education literature from other chronic diseases should be evaluated and incorporated. The complexities of these learner characteristics create challenges in designing studies. However, evidence to support the need for effective educational interventions is of great importance for implementing change in health care.

Winfield, William, Mealy, Martha, & Scheibel, Pamela. (1998). *Design considerations for enhancing confidence and participation in web based courses* (Report No. IR019026). Madison, WI: Proceedings of the Annual Conference on Distance Teaching and Learning. (ERIC Document Reproduction Service No. ED 422 885)

Abstract

The University of Wisconsin Learning Innovations Center's instructional design model for World Wide Web delivered courses incorporates a range of collaborative discussions and interactive experiences for the learner. In addition, these courses capitalize on the multimedia learning environment that the web offers to accommodate many kinds of learning styles. This paper provides an overview that highlights the translation of the model into specific online learning activities in the development of a 15-week professional nursing course. Weekly learning activities to enhance student motivation and perception were structured along the following guidelines: (1) build up user confidence with technology; (2) build in the instructor's presence and personality; (3) provide a clear set of learning activities; (4) build on personal and professional experiences of participants; (5) relate content to real situations using case studies and simulation; and (6) build in collaboration and facilitated team projects. Application of these guidelines is discussed. The paper also addresses evaluating the results of the application of the design guidelines by assessing educational effectiveness at the student and instructor levels.

Wood, Diana F. (2003 February 8). Problem based learning. *BMJ*, 326(7384), 328–330.

Abstract

Problem based learning is used in many medical schools in the United Kingdom and worldwide. This article describes this method of learning and teaching in small groups and explains why it has had an important impact on medical education.

## Deliver

The preparation for training described in the sections on assessment, motivation, and design culminates in the delivery of a training session. References in this section address interacting with learners effectively to increase the likelihood that the knowledge and skills provided through training will be retained and applied.

## Delivery References

Balasoorya, Chinthaka, di Corpo, Sophie, & Hawkins, Nicholas J. (2010 August). The facilitation of collaborative learning: What works? *Higher Education Management and Policy*, 22(2), Article 9.

### Abstract

The better management of group dynamics is increasingly being recognised as crucial for the success of inquiry-based curricula. This paper explores a number of issues surrounding the management of group dynamics in collaborative learning settings in medical education at the University of New South Wales, Australia. The findings of a study conducted there provide a practical framework for the identification of common problems that can confront facilitators, as well as a range of strategies that have been found by experienced facilitators to be useful in managing these issues. The strategies are discussed within the conditions in which they have been found to be effective, and facilitators are alerted about the possible pitfalls associated with these strategies. Thus, the paper provides insights into a key aspect of the collaborative learning and teaching process and the student behaviours that impact on it. It proposes practical strategies that can inform staff development activities, and is a starting point for developing quality teaching support.

Davis, Dave, O'Brien, Mary Ann Thomson, Freemantle, Nick, Wolf, Fredric M., Mazmanian, Paul, & Taylor-Vaisey, Anne. (1999). Impact of formal continuing medical education: Do conferences, workshops, rounds, and other traditional continuing education activities change physician behavior or health care outcomes? *JAMA*, 282(9), 867-874. Available from <http://jama.jamanetwork.com/article.aspx?articleid=191423>

### Abstract

Context - Although physicians report spending a considerable amount of time in continuing medical education (CME) activities, studies have shown a sizable difference between real and ideal performance, suggesting a lack of effect of formal CME. Objective - To review, collate, and interpret the effect of formal CME interventions on physician performance and health care outcomes. Data Sources - Sources included searches of the complete Research and Development Resource Base in Continuing Medical Education and the Specialised Register of the Cochrane Effective Practice and Organisation of Care Group, supplemented by searches of MEDLINE from 1993 to January 1999. Study Selection - Studies were included in the analyses if they were randomized controlled trials of formal didactic and/or interactive CME interventions (conferences, courses, rounds, meetings, symposia, lectures, and other formats) in which at least 50% of the participants were practicing physicians. Fourteen of 64 studies identified met these criteria and were included in the analyses. Articles were reviewed independently by 3 of the authors. Data Extraction - Determinations were made about the nature of the CME intervention (didactic, interactive, or mixed), its occurrence as a 1-time or sequenced event, and other information about its educational content and format. Two of 3 reviewers independently applied all inclusion/exclusion criteria. Data were then subjected to meta-analytic techniques. Data Synthesis - The 14 studies generated 17 interventions fitting our criteria. Nine generated positive changes in professional practice, and 3 of 4 interventions altered health care outcomes in 1 or more measures. In 7 studies, sufficient data were available for effect sizes to be

calculated; overall, no significant effect of these educational methods was detected (standardized effect size, 0.34; 95% confidence interval [CI], -0.22 to 0.97). However, interactive and mixed educational sessions were associated with a significant effect on practice (standardized effect size, 0.67; 95% CI, 0.01-1.45). Conclusions - Our data show some evidence that interactive CME sessions that enhance participant activity and provide the opportunity to practice skills can effect change in professional practice and, on occasion, health care outcomes. Based on a small number of well-conducted trials, didactic sessions do not appear to be effective in changing physician performance.

Herrman, J. W. (2011 October). Keeping their attention: Innovative strategies for nursing education. *Journal of Continuing Education in Nursing*, 42(10), 449-456. Available from <http://www.healio.com/nursing/journals/JCEN/%7B3E133D0D-639A-410D-92B6-85FD572B9573%7D/Keeping-Their-Attention-Innovative-Strategies-for-Nursing-Education>

Abstract

Providing nursing education in clinical and other educational settings presents several challenges. Changes in learners, vast amounts of material to be taught, and decreasing educational resources require increased effectiveness of nurse educators and each educational experience. Current teaching strategies may be enhanced to meet learners' expectations and address the reduced attention spans characteristic of today's learners. This article provides 20 strategies and additional helpful hints to increase learner engagement, improve retention of material, and make nursing education more enjoyable for instructors and learners.

Keller, J. M. (2010). *Motivational design for learning and performance: The ARCS model approach*. New York: Springer.

Abstract

Motivational Design for Learning and Performance introduces readers to the core concepts of motivation and motivational design and applies this knowledge to the design process in a systematic step-by-step format. The ARCS model—theoretically robust, rooted in best practices, and adaptable to a variety of practical uses—forms the basis of this problem-solving approach. Separate chapters cover each component of the model—attention, relevance, confidence, and satisfaction—and offer strategies for promoting each one in learners.

*Note: Also relevant for Motivate – Learners.*

Liebermann, Susanne, & Hoffmann, Stefan. (2008 June). The impact of practical relevance on training transfer: Evidence from a service quality training program for German bank clerks. *International Journal of Training and Development*, 12(2), 74-86.

Abstract

The management literature provides a variety of recommendations as to how workers' customer orientation might be improved, including through training. Crucial factors in the process of transferring the contents of service quality training programs to practice, however, have not yet been sufficiently analysed. This study proposes and tests a model of transfer motivation and training transfer via structural equation modelling, validating Baldwin and Ford's framework and Kirkpatrick's levels of evaluation. Following the recommendation of Alliger *et al.*, the present study analyses the relationship between Kirkpatrick's levels of evaluation, paying attention to the specificity of the measures at each level. The survey collects data from 213 German bank employees who attended a training program aimed at improving service quality. As hypothesized, the perceived practical relevance of the training was found to exert a strong

influence on the reaction of the participants and had a substantial total effect on the motivation to transfer and on actual transfer. Subject to the limitations of the research methodology employed here, it is concluded that trainee satisfaction needs to be conceptually distinguished from perceived practical relevance and that the latter is the main driving force for transfer motivation and transfer.

*Note: Also relevant for Evaluate – Outcome Evaluation.*

Lymn, J. S., & Mostyn, A. (2010 October 27). Audience response technology: Engaging and empowering non-medical prescribing students in pharmacology learning. *BMC Medical Education*, 10, 73. Available from <http://www.biomedcentral.com/1472-6920/10/73>

Abstract

**BACKGROUND:** Non-medical prescribing (NMP) is a six month course for nurses and certain allied health professionals. It is critical that these students develop a good understanding of pharmacology; however, many students are mature learners with little or no formal biological science knowledge and struggle with the pharmacology component. The implications for patient safety are profound, therefore we encourage students not just to memorise enough pharmacology to pass the exam but to be able to integrate it into clinical practice. Audience response technology (ART), such as the KeePad system (KS) has been shown to promote an active approach to learning and provide instant formative feedback. The aim of this project, therefore, was to incorporate and evaluate the use the KS in promoting pharmacology understanding in NMP students. **METHODS:** Questions were incorporated into eight pharmacology lectures, comprising a mix of basic and clinical pharmacology, using TurningPoint software. Student (n = 33) responses to questions were recorded using the KS software and the percentage of students getting the question incorrect and correct was made immediately available in the lecture in graphical form. Survey data collected from these students investigated student perceptions on the use of the system generally and specifically as a learning tool. More in depth discussion of the usefulness of the KS was derived from a focus group comprising 5 students. **RESULTS:** 100% of students enjoyed using the KS and felt it promoted their understanding of key concepts; 92% stated that it helped identify their learning needs and 87% agreed that the technology was useful in promoting integration of concepts. The most prevalent theme within feedback was that of identifying their own learning needs. Analysis of data from the focus group generated similar themes, with the addition of improving teaching. Repeated questioning produced a significant increase ( $p < 0.05$ ) in student knowledge of specific pharmacological concepts. **CONCLUSIONS:** The use of ART enhanced non-medical prescribing students' experience of pharmacology teaching. Student perceptions were that this system increased their ability to identify learning needs and promoted understanding and integration of concepts. Students also reported that the technology aided exam revision and reduced associated anxiety.

Moon, J. (2004 Winter). Using reflective learning to improve the impact of short courses and workshops. *Journal of Continuing Education in the Health Professions*, 24(1), 4-11.

Abstract

For a variety of reasons, short courses and workshops often have no impact on workplace practice and are, therefore, a waste of money. The notion of "impact" on work practice is introduced, and it provides a focus toward which all elements on a short course should contribute (including the administrative processes). This article discusses the distinction between teaching and learning and some variables about the quality of the learning process that should be taken into account: the approach the learner takes and the learner's stage of

conception of the structure of knowledge. The support of good-quality learning is a principal attribute of good teaching, and the nature of good teaching is discussed on this basis. Teaching and learning in a short course can usefully be structured by a framework to improve the impact of short courses and workshops. This also provides a structure for reflective activities. This article briefly discusses the definition of reflection and considers how it might be implemented. Finally, as another tactic in the focusing on impact, the components of short courses are analyzed on the basis that every component needs to work toward the improvement of the impact of the course.

Phillips, J. M. (2005 March-April). Strategies for active learning in online continuing education. *Journal of Continuing Education in Nursing*, 36(2), 77-83. Available from <http://ukpmc.ac.uk/abstract/MED/15835583>

#### Abstract

Online continuing education and staff development is on the rise as the benefits of access, convenience, and quality learning are continuing to take shape. Strategies to enhance learning call for learner participation that is self-directed and independent, thus changing the educator's role from expert to coach and facilitator. Good planning of active learning strategies promotes optimal learning whether the learning content is presented in a course or a just-in-time short module. Active learning strategies can be used to enhance online learning during all phases of the teaching - learning process and can accommodate a variety of learning styles. Feedback from peers, educators, and technology greatly influences learner satisfaction and must be harnessed to provide effective learning experiences. Outcomes of active learning can be assessed online and implemented conveniently and successfully from the initiation of the course or module planning to the end of the evaluation process. On-line learning has become accessible and convenient and allows the educator to track learner participation. The future of online education will continue to grow, and using active learning strategies will ensure that quality learning will occur, appealing to a wide variety of learning needs.

*Note: Also relevant for Design.*

Roszkowski, Michael J., & Soven, Margot. (2010). Did you learn something useful today? An analysis of how perceived utility relates to perceived learning and their predictiveness of satisfaction with training. *Performance Improvement Quarterly*, 23(2), 71-91.

#### Abstract

A popular taxonomy for categorizing outcomes of training is the four-level model formulated by Kirkpatrick (1959). The first level in the model consists of reactions to training. Kirkpatrick recognized only affective reactions, but more recent reformulations of the model posit other types of reactions, including utility and perceptions of learning. We studied the relationship between three types of reaction measures (Kirkpatrick level 1) in six cohorts of first-year college students participating in an evaluation of an orientation training program. The assessed reactions were amount learned, the usability of the information, and satisfaction with the training program. A substantial correlation (0.6 to 0.7) exists between self-assessed learning and the perceived usefulness of the information. Usefulness was almost as good as amount learned in predicting satisfaction with the training. The findings underscore the importance of using relevance strategies to make information appear useful.

*Note: Also relevant for Evaluate – Outcome Evaluation.*

Wlodkowski, Raymond J. (2003 Summer). Fostering motivation in professional development programs. *New Directions for Adult and Continuing Education*, 2003(98), 39-48. Available from <http://onlinelibrary.wiley.com/doi/10.1002/ace.98/abstract>

Abstract

The Motivational Framework for Culturally Responsive Teaching includes four conditions collaboratively created by teachers and learners: establishing inclusion, developing attitudes, enhancing meaning, and engendering competence. Peer coaching, action research, and a balance of pressure and support are ways to enable successful transfer of learning.

*Note: Also relevant for Motivate – Learners.*

## Evaluate

Evaluation considers the success of training and is necessary for identifying elements of training processes and training programs themselves that were beneficial and areas for improvement. The most effective evaluation is not initiated following the conclusion of the training session, but occurs throughout the training process. A plan for evaluation should be built into the plan for training from the beginning and the results of evaluation should be communicated in order to inform future efforts. References in this section address planning for evaluation, conducting evaluation, and reporting the results of evaluation. Two types of evaluation are highlighted: process evaluation and outcome evaluation. Process evaluation focuses on how well the elements involved in the training were conducted, while outcome evaluation focuses on whether the training elicited the desired results.

## Evaluation References

### General

*The value of evaluation.* (2009). Alexandria, VA: ASTD Press. Available from <http://store.astd.org/Default.aspx?tabid=167&ProductId=20770>

#### Abstract

Measuring the impact of learning continues to be one of the most challenging aspects of the learning function. ASTD's Value of Evaluation report explores the complex issue of learning evaluation, the techniques being used, barriers to effective implementation, and strategic use of learning metrics. Companies employ myriad strategies to identify and quantify the results of training, but most are not satisfied with the evaluation efforts. Organizations are not giving up on successful measurement of the learning function, as they continue to explore ways to communicate and document the value of training and development they provide to employees. The data in this report can help many firms become more proficient in these areas.

Basarab, Dave. (2011 March). Forecasting the value of training. *Performance Improvement*, 50(3), 22-27.

#### Abstract

The Predictive Evaluation (PE) model is a training and evaluation approach with the element of prediction. PE allows trainers and business leaders to predict the results, value, intention, adoption, and impact of training, allowing them to make smarter, more strategic training and evaluation investments. PE is invaluable for companies that struggle to define the success of training, fight to justify its value, or view training as an expense rather than an investment with predicted return. (Contains 3 figures and 2 tables.)

Burkhart, Jennifer. (1996). *Evaluating workplace education program effectiveness.* Available from <http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED399435>

#### Abstract

This guide, which is intended for project directors, coordinators, and other professional staff involved in developing and delivering workplace education programs, explains the workplace education evaluation process, the main approaches to evaluation, and considerations in selecting appropriate evaluation instruments. Discussed first are the importance of program evaluation and measurable outcomes. Special attention is paid to the importance of evaluating "soft skills" training and elements business wants from evaluation (those which involve key players, use multiple evaluation measures, incorporate continuous feedback, use evaluation findings to review/revise training as needed, assess program outcomes through measurable

outcomes). The similarities and differences between formative and summative evaluation are detailed, and several noninstructional factors that may influence training outcomes are mentioned. Described next are the four levels of Donald L. Kirkpatrick's model for evaluating training, which entails measurement of the following: training participants' reactions to training at the time of training; their learning of the training materials' content; their use of new skills on the job; and observable business results (the return on investment as a result of training). The strengths/weaknesses of using student reaction, student learning, student performance, and organization results as measures of program effectiveness are weighted. Contains 10 informational resources.

Eseryel, Deniz. (2002). Approaches to evaluation of training: Theory and practice. *Educational Technology & Society*, 5(2), 93-98.

Abstract

There is an on-going debate in the field of evaluation about which approach is best to facilitate the processes involved. This article reviews current approaches to evaluation of training both in theory and in practice. Particular attention is paid to the complexities associated with evaluation practice and whether these are addressed in the theory. Furthermore, possible means of expediting the performance of evaluations and expanding the range and precision of data collection using automated systems are discussed. Recommendations for further research are also discussed.

Freeman, Michael K. (2003 Winter). Assessing and evaluating continuing education programs: Why and how? *Journal of Continuing Higher Education*, 51(1), 23-30.

Abstract

Outlines factors to consider in assessing and evaluating continuing education programs and elaborates on seven questions to guide the process: purpose, audience, who should evaluate, what to evaluate, evaluation criteria, methods, and reporting of results. (Contains 15 references.)

Kirwan, Cyril, & Birchall, David. (2006 December). Transfer of learning from management development programmes: Testing the Holton model. *International Journal of Training and Development*, 10(4), 252-268.

Abstract

Transfer of learning from management development programmes has been described as the effective and continuing application back at work of the knowledge and skills gained on those programmes. It is a very important issue for organizations today, given the large amounts of investment in these programmes and the small amounts of that investment that actually translates into an improved individual and organizational performance. This paper describes the testing of the Holton model of learning transfer and suggests amendments to the model where appropriate. A sample of participants on a management development programme within the Irish health service completed the Learning Transfer System Inventory based on the Holton model. The data obtained were analysed using multiple regression and partial correlation techniques. Results indicate that the model does adequately represent the effects of its factors, although a slightly revised model is presented. Important relationships between factors are identified, and the central role of the learners' personal capacity for transfer (hitherto unreported in the literature) and their motivation to transfer in facilitating transfer is highlighted. In practical terms, the tested model can be used as a diagnostic tool by identifying individual, training design and work environment transfer issues in need of attention and by developing strategies



to deal with them. It can also be used as a framework for the evaluation of training and development interventions, examining factors outside the traditional range of most training evaluation efforts and providing a more complete picture of the success or otherwise of that intervention.

Leviton, Laura C., Kettel Khan, Laura, Rog, Debra, Dawkins, Nicola, & Cotton, David. (2010 April). Evaluability assessment to improve public health policies, programs, and practices. *Annual Review of Public Health*, 31, 213-233. Available from <http://www.annualreviews.org/doi/abs/10.1146/annurev.publhealth.012809.103625>

Abstract

Evaluability assessment, also commonly known as exploratory evaluation, has assisted the field of public health to improve programs and to develop a pragmatic, practice-based research agenda. Evaluability assessment was originally developed as a low-cost pre-evaluation activity to prepare better for conventional evaluations of programs, practices, and some policies. For public health programs, however, it serves several other important purposes: (a) giving program staff rapid, constructive feedback about program operations; (b) assisting the core public health planning and assurance functions by helping to develop realistic objectives and providing low-cost, rapid feedback on implementation; (c) navigating federal performance measurement requirements; (d) translating research into practice by examining the feasibility, acceptability, and adaptation of evidence-based practices in new settings and populations; and (e) translating practice into research by identifying promising new approaches to achieve public health goals.

Patton, Michael Quinn. (2000). Utilization-focused evaluation. In D. L. Stufflebeam, G. F. Madaus, & T. Kellaghan (Eds.), *Evaluation models*. Boston: Kluwer Academic Publishers.

Abstract

How evaluations are used affects the spending of billions of dollars to fight the problems of poverty, disease, ignorance, joblessness, mental anguish, crime, hunger, and inequality. How are programs that combat these societal ills to be judged? How does one distinguish effective from ineffective programs? And how can evaluations be conducted in ways that lead to use? How do we avoid producing reports that gather dust on bookshelves, unread and unused? Those are the questions this chapter addresses, not just in general, but within a particular framework: utilization-focused evaluation.

Phillips, P. P. (Ed.). (2010). *ASTD handbook of measuring and evaluating training*. Alexandria, VA: ASTD Press.

Abstract

A follow-on to ASTD's best-selling *ASTD Handbook for Workplace Learning Professionals*, the *ASTD Handbook of Measuring and Evaluating Training* includes more than 20 chapters written by preeminent practitioners in the learning evaluation field. This practical, how-to handbook covers best practices of learning evaluation and includes information about using technology and evaluating e-learning. Broad subject areas are evaluation planning, data collection, data analysis, and measurement and evaluation at work.

Pineda, Pilar. (2010). Evaluation of training in organisations: A proposal for an integrated model. *Journal of European Industrial Training*, 34(7), 673-693.

Abstract

Purpose: Training is a key strategy for human resources development and in achieving organisational objectives. Organisations and public authorities invest large amounts of resources in training, but rarely have the data to show the results of that investment. Only a few organisations evaluate training in depth due to the difficulty involved and the lack of valid instruments and viable models. The purpose of this paper is to present an evaluation model that has been successfully applied in the Spanish context that integrates all training dimensions and effects, to act as a global tool for organisations. The model analyses satisfaction, learning, pedagogical aspects, transfer, impact and profitability of training, and is therefore a global model. Design/methodology/approach: The paper's approach is theoretical, and the methodology used involves a review of previous evaluation models and their improvement by comparing their application in practice. Findings: An analysis of pedagogical aspects enables training professionals to improve training quality, as they are able to identify any weaknesses in elements, such as training design, needs analysis and training implementation, and improve on them. In fact, the quality of these elements depends entirely on the training professional. The improvement of pedagogical aspects, as a result of their evaluation, increases training quality and the results of training in organisations that can be identified by evaluating the other levels of the model, particularly the aspects of learning, transfer and impact. Practical implications: The author has applied the model successfully in several public and private organisations, in industry and in the services sector, which demonstrates its usefulness and viability in evaluating the results of training. Therefore, this evaluation model has interesting and practical implications, as a useful tool for training managers for evaluating training results, as well as providing a global simplified approach to the complex evaluation function. Originality/value: The originality of this evaluation model lies in its focus on a key and novel aspect--i.e. the pedagogical dimension, providing an integrated tool that can be easily adapted to any organisation. (Contains 2 tables and 3 figures.)

Robertson, M. K., Umble, K. E., & Cervero, R. M. (2003). Impact studies in continuing education for health professions: Update. *Journal of Continuing Education in the Health Professions*, 23, 146-156.

#### Abstract

Introduction: This article critiques the questions asked and methods used in research syntheses in continuing education (CE) in the health professions, summarizes the findings of the syntheses, and makes recommendations for future CE research and practice. Methods: We identified 15 research syntheses published after 1993 in which primary CE studies were reviewed and the performance (behavior) of health professionals and/or patient health outcomes were examined. Results: The syntheses were categorized by the research questions they asked using a wave metaphor. Wave One (n = 3) syntheses sought to establish a general descriptive causal connection between CE and impact variables, asking, "Is CE effective, and for what outcomes?" Wave Two syntheses (n = 12) sought to explain the relationship between CE and impacts by identifying causal moderators, asking, "What kinds of CE are effective?" Discussion: Wave One findings confirm previous research that CE can improve knowledge, skills, attitudes, behavior, and patient health outcomes. Wave Two syntheses show that CE, which is ongoing, interactive, contextually relevant, and based on needs assessment, can improve knowledge, skills, attitudes, behavior, and health care outcomes. The most important implication of the present review is that there are differential impacts of CE programs, and the reasons for those impacts cannot be fully understood unless the context of the program is considered.

## Process Evaluation

Linnan, Laura, & Steckler, Allan. (2002). *Process evaluation for public health interventions and research: An overview*. Hoboken, NJ: Jossey-Bass.

Abstract

Process evaluation is a growing and important component of a comprehensive evaluation effort. This overview has briefly reviewed the history of process evaluation as it has been applied to public health interventions, has identified gaps in knowledge concerning process evaluation, has recommended definitions and the consistent use of key process evaluation components, and has presented a strategy for designing and implementing effective process evaluation efforts. Improvements in the conceptual thinking about process evaluation will drive changes in the design, measurement, data collection, analysis, and timely reporting of the process evaluation data. Process evaluation data can be used to answer important questions that advance understanding of how and why public health interventions work, which has positive implications for both research and practice.

Saunders, Ruth P., Evans, Martin, & Joshi, Praphul. (2005 April). Developing a process-evaluation plan for assessing health promotion program implementation: A how-to guide. *Health Promotion Practice, 6*(2), 134-147.

Abstract

Process evaluation is used to monitor and document program implementation and can aid in understanding the relationship between specific program elements and program outcomes. The scope and implementation of process evaluation has grown in complexity as its importance and utility have become more widely recognized. Several practical frameworks and models are available to practitioners to guide the development of a comprehensive evaluation plan, including process evaluation for collaborative community initiatives. However, frameworks for developing a comprehensive process-evaluation plan for targeted programs are less common. Building from previous frameworks, the authors present a comprehensive and systematic approach for developing a process-evaluation plan to assess the implementation of a targeted health promotion intervention. Suggested elements for process-evaluation plans include fidelity, dose (delivered and received), reach, recruitment, and context. The purpose of this article is to describe and illustrate the steps involved in developing a process-evaluation plan for any health-promotion program.

## Outcome Evaluation

Bates, Reid. (2004). A critical analysis of evaluation practice: The Kirkpatrick model and the principle of beneficence. *Evaluation and Program Planning, 27*, 341–347.

Abstract

This chapter describes Kirkpatrick's four-level training evaluation model and the reasons for its popularity in organizations. Several fundamental limitations of the model are outlined and the potential risks these limitations raise for evaluation clients and stakeholders are discussed. It is argued that these risks, plus the inability of the model to effectively address both the summative question (Was training effective?) and the formative question (How can training be modified in ways that increase its potential for effectiveness?), limits the capacity of training and HRD professionals to fulfill the core ethical duty of beneficence.

Brown, Robert E., & Reed, Celeste Sturdevant. (2002 March). An integral approach to evaluating outcome evaluation training. *American Journal of Evaluation, 23*(1), 1-17. Available from <http://aje.sagepub.com/content/23/1/1.short>

Abstract

Public and private nonprofit organizations are increasing training efforts to build individual and organizational capacity to carry out and utilize outcome evaluation. Evaluators of training are challenged to find comprehensive evaluative frameworks. Traditional training evaluation tend to focus individual change, while organization-focused efforts tend to incorporate individual change as a necessary sub-component of the larger entity's change. Neither approach adequately incorporates a developmental context within the evaluative framework. This article presents an integral, developmental approach that links individual and collective attributes. The use of the framework is illustrated with examples from Check Points, an outcome evaluation training program of Michigan State University and United Way of Michigan. The article concludes with suggestions for improving training and evaluative efforts.

Burkett, H. (2005). ROI on a shoe-string: Strategies for resource-constrained environments: Measuring more with less (Pt. I). *Industrial and Commercial Training*, 37(1), 10-17.

Abstract

Purpose - Despite heightened interest in return on investment (ROI) and increased accountability for training professionals to prove their bottom-line organizational value, many practitioners are deterred from comprehensive measurement and ROI evaluation due to concerns about the cost, time, and human resources necessary to fully implement the process. The purpose of this two-part series is to present ten best practice, cost-saving approaches for developing a credible, economical ROI strategy. Design/methodology/approach - A systemic approach to measuring training's impact begins with an evaluation framework. For the purposes of this article, Jack Phillips' five-level framework for capturing the financial impact of training programs was referenced. Based on over 20 years of research and global applications, Phillips' ROI model also includes techniques for isolating the impact of other variables, besides training, on performance improvement. Findings - Many organizations around the globe are using cost-saving approaches so they can begin conducting ROI evaluation within their current budget, while others use cost-saving approaches in order to increase the number of ROI studies they conduct. The ten cost-saving approaches for measuring programs at the ROI level have been proven to significantly decrease resource requirements while still providing sound, credible data. Despite these factors, establishing an evaluation culture is no easy task. In many ways, implementing a system-wide ROI effort is similar to implementing a large-scale change initiative. Practical implications - Practical application of these cost-saving approaches allows the resource-constrained training function to present their work in terms of financial benefits that leaders understand and have come to expect. It is a vital step in establishing business partnerships that will enhance commitment for training programs, products, and services going forward. Originality/value - By evaluating training programs with the ROI in mind, training functions can be perceived in a more credible light. Programs aligned with organization strategy are offered, while others that add little value are redesigned and sometimes eliminated. Trainers, designers and developers can use the findings of an ROI evaluation to increase training alignment with business needs and to improve the efficiency of the training design, development, and delivery life cycle.

Burkett, H. (2005). ROI on a shoestring: Evaluation strategies for resource-constrained environments or ROI on a shoestring: Measuring more with less (Pt. II). *Industrial and Commercial Training*, 37(2), 97-105.

Abstract

Purpose - Despite heightened interest in return-on-investment (ROI) and increased accountability for training professionals to prove their bottom-line organizational value, many practitioners are deterred from comprehensive measurement and ROI evaluation due to

concerns about the cost, time, and human resources necessary to fully implement the process. This article, the second in a two part series, aims to present best practice, cost savings approaches for developing a credible, economical ROI strategy. Design/methodology/approach - A systemic approach to measuring training's impact begins with an evaluation framework. For purposes of this article, Phillips' (1997) five-level framework for capturing the financial impact of training programs was referenced. Based upon over 20 years of research and global applications, Phillips' ROI model also includes techniques for isolating the impact of other variables, besides training, upon performance improvement. Findings - Many organizations around the globe are using cost-saving approaches so they can begin conducting ROI evaluation within their current budget while others use cost-saving approaches in order to increase the number of ROI studies they conduct. The ten cost saving approaches for measuring programs at the ROI level have been proven to significantly decrease resource requirements while still providing sound, credible data. Despite these factors, establishing an evaluation culture is no easy task. In many ways, implementing a system-wide ROI effort is similar to implementing a large-scale change initiative. Practical implications - Practical application of these cost-savings approaches allows the resource-constrained training function to present their work in terms of financial benefits that leaders understand and have come to expect. It is a vital step in establishing business partnerships that will enhance commitment for training programs, products, and services going forward. Originality/value - By evaluating training programs with the ROI in mind, training functions can be perceived in a more credible light. Programs aligned with organization strategy are offered, while others that add little value are redesigned and sometimes eliminated. Trainers, designers and developers can use the findings of an ROI evaluation to increase training alignment with business needs and to improve the efficiency of the training design, development, and delivery life cycle.

Burrow, Jim, & Berardinelli, Paula. (2003). Systematic performance improvement – Refining the space between learning and results. *Journal of Workplace Learning*, 15(1), 6-13.

Abstract

Planned learning can be applied to a range of education and training interventions and events in an organization. Its value can be directly measured through observable performance improvement of trainees in job contexts following the planned learning highlighting transfer of learning. More specific and directly connected organizational metrics need to be identified. The connections should be both to the trainee performance and learning and to the broader organizational performance. Reports a redefinition of training evaluation resulting from the authors work with members of a global manufacturing training department. The effort was undertaken to create a process for the department to demonstrate the impact of planned learning on key organizational performance measures. The value-added from training was established when the direct relationships between training (planned learning) and systematic job performance improvements were observed that were drawn from and directly linked to broader organizational productivity and performance metrics. From those successful field experiences and the training evaluation literature, proposes a refinement within the traditional four-level evaluation process akin to a new level 3.5 – performance impact, to fit between Kirkpatrick's model of level 3 (behavior) and level 4 (results).

Chevalier, Roger. (2004 April). The link between learning and performance. *Performance Improvement*, 43(4), 40-44.

Abstract

Evaluation is a powerful stage of both the instructional design and the human performance technology models. Unfortunately, it is not often done at a level that will measure the impact of

training or other performance improvement interventions on-the-job and its value to the organization. If done properly, systematic evaluation can provide the information needed for continuous improvement. Once the evaluation process has begun, more opportunities for subsequent evaluation may be discovered to further understanding of the patterns of performance identified in the initial evaluation. In this article, the author clarifies the difference between formative and summative evaluation, discusses Donald Kirkpatrick's four levels of evaluation, and summarizes the lessons learned about evaluation.

Curran, V. R., & Fleet, L. (2005). A review of evaluation outcomes of web-based continuing medical education. *Medical Education*, 39(6), 561-567.

Abstract

**INTRODUCTION:** The Internet and worldwide web have expanded opportunities for the provision of a flexible, convenient and interactive form of continuing medical education (CME). Larger numbers of doctors are accessing and using the Internet to locate and seek medical information. It has been suggested that a significant proportion of this usage is directly related to questions that arise from patient care. A variety of Internet technologies are being used to provide both asynchronous and synchronous forms of web-based CME. Various models for designing and facilitating web-based CME learning have also been reported. The purpose of this study was to examine the nature and characteristics of the web-based CME evaluative outcomes reported in the peer-reviewed literature. **METHODS:** A search of Medline was undertaken and the level of evaluative outcomes reported was categorised using Kirkpatrick's model for levels of summative evaluation. **RESULTS:** The results of this analysis revealed that the majority of evaluative research on web-based CME is based on participant satisfaction data. There was limited research demonstrating performance change in clinical practices and there were no studies reported in the literature that demonstrated that web-based CME was effective in influencing patient or health outcomes. **DISCUSSION:** The findings suggest an important need to examine in greater detail the nature and characteristics of those web-based learning technologies, environments and systems which are most effective in enhancing practice change and ultimately impacting patient and health outcomes. This is particularly important as the Internet grows in popularity as a medium for knowledge transfer.

Dreisinger, M., Leet, T. L., Baker, E. A., Gillespie, K. N., Haas, B., & Brownson, R. C. (2008 March-April). Improving the public health workforce: Evaluation of a training course to enhance evidence-based decision making. *Journal of Public Health Management and Practice*, 14(2), 138-143.

Abstract

An evidence-based public health (EBPH) course was developed in 1997 by the Prevention Research Center at Saint Louis University School of Public Health to train the public health workforce to enhance dissemination of EBPH in their public health practice. An on-line evaluation of the course was conducted among participants who attended the course from 2001 to 2004 to determine the impact the course had on the implementation of EBPH within their Respective public health agencies (n = 107). The majority of these individuals were program directors, managers, or coordinators working in state health departments. Results from the evaluation Revealed that 90 percent of participants indicated that the course helped them make more informed decisions in the workplace. Respondents identified improvement in their ability to communicate with their coworkers and Read Reports. When asked to identify potential barriers, participants specified that time constraints were the biggest impediment to using EBPH skills in the workplace. These data suggest the importance of professional training opportunities in

EBPH for public health practitioners. Future endeavors should focus on overcoming the barriers to the dissemination of EBPH.

Elliott, Michael, Dawson, Ray, & Edwards, Janet. (2009). Providing demonstrable return-on-investment for organisational learning and training. *Journal of European Industrial Training*, 33(7), 657-670.

Abstract

Purpose: The aim of this paper is to present a holistic approach to training, that clearly demonstrates cost savings with improved effectiveness and efficiencies that are aligned to business objectives. Design/methodology/approach: Extending Kirkpatrick's evaluation framework with Phillips's return-on-investment (ROI) concepts, the paper conveys a number of successes including trainee satisfaction and the capturing of improved knowledge and skills. Findings: The paper includes case studies of how, and to what extent this knowledge has been applied with examples of resulting efficiency savings. The paper shows that there is growing agreement that one of the primary drivers, if not the key driver of long-term organisational effectiveness, is the ability of an organisation to learn effectively. The methodology requires some additional assessment and course preparation to establish a basis from which to demonstrate learning effectiveness. The financial benefits of the applied learning are far greater than the additional preparatory costs. Practical implications: Learning organisations that anticipate, react to change and learn, are likely to maintain a competitive advantage. These organisations are constantly looking for more effective and efficient ways of training. Paradoxically, other organisations will often slash training budgets in times of hardship, as training departments are unable to demonstrate the effectiveness of their programmes. Originality/value: The paper presents a practical example of how training should be applied to truly demonstrate its value in the workplace. (Contains 3 figures and 6 tables.)

Flanagan, Mary Jane. (2010 December). Measuring the effectiveness of L&D. *Training Journal*, 62-66. Available from <http://www.trainingjournal.com/magazine/2010-12-training-journal-magazine/>

Abstract

The article measures the effectiveness of learning and development (L&D) in organizations. It cites employers who invest more in L&D to make sure that their workforce is capable of delivering the best service needed to survive. Thus, L&D professionals must reportedly be able to show a clear and tangible return on investment.

Fleck, E., & Fyffe, T. (1997 January). Changing nursing practice through continuing education: A tool for evaluation. *Journal of Nursing Management*, 5(1), 37-41.

Abstract

In light of the current cost-orientated, rapidly changing health service, continuing education providers are challenged to achieve the greatest benefits for the service. Given this culture it is argued that it is essential for nurses to acquire the skills to continually learn, and that for managers there is seen to be a measurable change in a recommended practice or behaviour. To meet these challenges it is essential that continuing educators plan, implement and evaluate programmes in partnership with clinicians and managers. A literature review revealed that most evaluations did not address whether continuing education has resulted in a change in practice. This paper describes a study on the use of goal attainment scaling as an evaluation tool to measure changes in learner behaviour and as a means of promoting self-determination among the participants. It is proposed that goal attainment scaling can be used to measure changes in

participant behaviour following an educational programme. In addition, this analysis of participant interviews indicates the tool's usefulness as a self-reporting instrument and this appears to foster the skills of self-assessment and appraisal of performance.

Galloway, Dominique L. (2005 April). Evaluating distance delivery and e-learning: Is Kirkpatrick's model relevant? *Performance Improvement*, 44(4), 21-27.

Abstract

Just as technology has changed the environment in which businesses operate, it has also changed the way businesses deliver training to employees. Distance delivery, including e-learning, offers organizations a way to improve training while increasing performance initiatives and potentially delivering higher returns on training investments. Distance education does present new challenges to the assessment of training outcomes. In this article, Galloway discusses the applicability of the traditional four-level evaluation approach (reaction, learning, behavior and results) as it applies to e-learning, potential alternative evaluation models, an ideal evaluation model for distance learning and gaps between the ideal model and current evaluation models. Galloway concludes by advocating that a blend of Kirkpatrick's four-level model and a return on investment (ROI) model adapts the traditional method to a more technologically-based training environment, satisfying the need of businesses and managers to evaluate the bottom line in training and development programs while simultaneously providing a method for effectively evaluating distance-delivery and e-learning activities. The Kirkpatrick and ROI models are strengthened through hybridization of their different approaches, and the hybrid may be found responsive and adapted to evaluating e-learning in the current corporate environment. (Contains 1 figure.)

Gardênia Abbad, Jairo, Borges-Andrade, Eduardo, & Henriques Sallorenzo, Lúcia. (2004). Self-assessment of training impact at work: Validation of a measurement scale. *Revista Interamericana de Psicología/Interamerican Journal of Psychology*, 38(2), 277-284.

Abstract

This paper describes the development and validation of a measurement scale for *Training Impact at Work*. Impact is defined as the training long-term effect on work performance, motivation and/or attitudes. Two weeks after training, a questionnaire with 12 *impact* evaluation items was applied to participants from 226 courses that had been offered by a Brazilian public organization. The 1.270 valid answers were submitted to factor analyses (PAF, *direct-oblimin*) and to reliability analyses (Cronbach's Alpha). A two sub-scale structure was found ( $\alpha=0.86$ ;  $r=.56$ ) accounting for 60 percent of the *impact* variability. A single factor structure was also found and it is similarly reliable ( $\alpha=.90$ ), accounting for 45 percent of the variability. Both structures are useful, reliable and valid.

Hicks, C., & Hennessy, D. (2001 January). An alternative technique for evaluating the effectiveness of continuing professional development courses for health care professionals: A pilot study with practice nurses. *Journal of Nursing Management*, 9(1), 39-49.

Abstract

Background: Increasing recognition of the need for continuing professional development (CPD) for health professionals has created an inevitable expansion in course provision. One criterion of a successful course demands that CPD must meet local health service needs, as well as the personal and professional requirements of the participants. At a more general level, a key pedagogical requirement of any educational course is that the content and process must meet the stipulated aims and objectives, and this requires appropriate evaluation procedures. Within



health care CPD, very little course evaluation routinely takes place, possibly because the area is relatively new, and secondly because relevant evaluation may be difficult to operationalize. Aims: The current study reports a small exploratory pilot investigation into the use of a valid and reliable training needs analysis questionnaire as a means of evaluating a nurse practitioner (NP) training scheme for practice nurses (PN). Methods: Using a before/after design, the instrument involved the participants in a pre and post course self-assessment on a range of tasks. These assessments were made according to three criteria: how critical each task is considered to be to the effective delivery of the respondent's current PN role; how critical each task is considered to be to the effective delivery of the role of the NP; and how well each task is currently performed. Various comparisons of the ratings provide a considerable amount of information that may be of use to the nurse manager in planning NP programmes. Of particular relevance to the current paper, however, are the comparisons between salience of tasks for the NP role and performance on these, before and after the course. This provides an assessment of the extent to which the course has met educational requirements. Results: The present study demonstrated that overall, the course reduced skill deficits in all but seven of the tasks. Of these, six related to research and audit and the seventh to clinical examination of patients. Conclusion: The study is discussed in terms of the implications of the technique for course development and planning to take account of local needs, as well the instrument's reliability and validity, for use in this way.

Kirkpatrick, Donald L. (1998). *Another look at evaluating training programs: fifty articles from 'Training & development' and 'Technical training' magazines cover the essentials of evaluation and return-on-investment*. Alexandria, VA: American Society for Training & Development.

Abstract

The 'Kirkpatrick Model' is a four-level (reaction, learning, behaviour, and results) model for evaluating training programs developed by the author in 1959. This publication contains articles evaluating training programs taken from 'Training & development' and 'Technical training' magazines covering the 1977-1997 period.

Kirkpatrick, Donald L. (1977 November). Evaluating training programs: Evidence vs. proof. *Training and Development Journal*, 31(11), 9-12.

Abstract

Each of four segments (reaction, learning, behavior, and results) in the process for evaluating training programs is analyzed in terms of evidence versus proof of program effectiveness.

Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). *Evaluating training programs: The four levels* (3<sup>rd</sup> ed.). San Francisco: Berrett-Koehler Publishers.

Abstract

This book, which is designed for practitioners in the training field, explains the principles of evaluating training programs on the basis of a four-level model consisting of the following components: reaction, learning, behavior, and results. The book is divided into two parts. Part 1, which consists of eight chapters, describes the concepts, principles, guidelines, and techniques for evaluating training programs at all four levels. In chapter 1, evaluation is discussed as the final step in a 10-step training program development and implementation process. Chapters 2 and 3 detail the reasons for evaluating training programs and the four levels of evaluation. Each of the next four chapters (4-7) is devoted to the unique features of evaluation of each component of the model's four levels. Chapter 8 presents guidelines for implementing the four levels. Part 2 contains 13 case studies from a wide range of nationally known organizations that

have implemented evaluation at one or more of the four levels. Among the types of training programs examined in the case studies are the following: a training program for nonexempt employees; programs of training in performance appraisal and coaching, creative management, presentation skills, supervisory skills, and sales; and an outdoor-based training program. Contains 60 tables/figures and 10 references.

Kraiger, Kurt, Ford, J. Kevin, & Salas, Eduardo. (1993). Application of cognitive, skill-based, and affective theories of learning outcomes to new methods of training evaluation. *Journal of Applied Psychology, 78*(2), 311-328.

Abstract

Although training evaluation is recognized as an important component of the instructional design model, there are no theoretically based models of training evaluation. This article attempts to move toward such a model by developing a classification scheme for evaluating learning outcomes. Learning constructs are derived from a variety of research domains, such as cognitive, social, and instructional psychology and human factors. Drawing from this research, we propose cognitive, skill-based, and affective learning outcomes (relevant to training) and recommend potential evaluation measures. The learning outcomes and associated evaluation measures are organized into a classification scheme. Requirements for providing construct-oriented evidence of validity for the scheme are also discussed.

Menix, K. D. (2007 September-October). Evaluation of learning and program effectiveness. *Journal of Continuing Education in Nursing, 38*(5), 201-208, quiz 209-210.

Abstract

This article describes the evaluation of learning as an integral and critical component of educational program evaluation and one determinant of effectiveness. Various concept, models, processes, and research findings offer practical options for conducting learning and program evaluation. The article discusses how predetermined goals or outcomes guide organizational processes to determine effectiveness. The article further reinforces the importance of valid and reliable data collection used to conduct evaluation processes, then subsequently determine the worth, effectiveness, and success or failure of learning and program outcomes. Key evaluation and effectiveness elements and their relationships are shown.

Murdock, J. E., & Neafsey, P. J. (1995 July-August). Self-efficacy measurements: An approach for predicting practice outcomes in continuing education? *Journal of Continuing Education in Nursing, 26*(4), 158-165.

Abstract

This study assessed the usefulness of measurements of self-efficacy in evaluating practice outcomes following a continuing education course in advanced practice pharmacology. Self-efficacy, a central construct in social-cognitive theory, refers to an individual's confidence in being able to perform a specific task to successful completion. The study demonstrated that a valid and reliable measure of self-efficacy could be developed from program objectives and used in conjunction with pre- and post-knowledge measures to gain a broader perspective of learning outcomes. Measurement of self-efficacy was a useful adjunct in postinstruction evaluation and may be a cost-effective alternative to longitudinal impact evaluation.

Olmstead, T., Carroll, K. M., Canning-Ball, M., & Martino, S. (2011 July 1). Cost and cost-effectiveness of three strategies for training clinicians in motivational interviewing. *Drug and*

*Alcohol Dependence*, 116(1-3), 195-202. Available from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3105154/>

Abstract

OBJECTIVE: To evaluate the cost and cost-effectiveness of three strategies for teaching community program clinicians motivational interviewing (MI): self-study (SS), expert-led (EX), and train-the-trainer (TT). METHODS: This economic analysis was conducted as part of a three-arm clinician training trial comprising 12 community treatment programs randomly assigned to the three conditions (n=92 clinician participants). EX and TT conditions used skill-building workshops and three monthly supervision sessions. SS provided clinicians MI training materials only. The primary outcome measure was the number of clinicians meeting MI performance standards at 12-week follow-up. Unit costs were obtained via surveys administered at the 12 participating programs. Resource utilizations and clinician outcomes were obtained from the training trial. Costs and outcomes were normalized to account for differing numbers of clinicians across programs and conditions. Incremental cost-effectiveness ratios and cost-effectiveness acceptability curves were used to evaluate the relative cost-effectiveness of the three training strategies. RESULTS: SS is likely to be the most cost-effective training strategy if the threshold value to decision makers of an additional clinician meeting MI performance standards at 12-week follow-up is less than approximately \$2870, and EX is likely to be the most cost-effective strategy when the threshold value is greater than approximately \$2870. CONCLUSIONS: This study provides accurate estimates of the economic costs and relative cost-effectiveness of three different strategies for training community program clinicians in motivational interviewing and should be of interest to decision makers seeking to implement empirically supported addiction treatments with scarce resources.

Parry, Scott B. (1996 May). Measuring training's ROI. *Training & Development*, 50(5), 72-77.

Abstract

Discusses the measurement of employee training's return on investment (ROI). Reasons for calculating the costs and benefits of training programs; Advantages and disadvantages of calculating the ROI of training programs; Ways to measure training ROI; Cost-benefit analysis; Examples of applications of cost-benefit analysis.

Parry, Scott B. (1997). *Evaluating the impact of training: A collection of tools and techniques*. Alexandria, VA: American Society for Training & Development.

Abstract

Sharpen your expertise in applying different methods of evaluation to a variety of organizations and areas of training. This book's lessons guide you through every step and illustrates the process with real-life examples. Helpful tools and checklists explain how to win support from senior management, evaluate your instructional strengths, and more.

Peak, D., & Berge, Z. L. (2006). Evaluation and eLearning. *Turkish Online Journal of Distance Education*, 7(1), 124-131. Available from [https://tojde.anadolu.edu.tr/tojde21/pdf/article\\_11.pdf](https://tojde.anadolu.edu.tr/tojde21/pdf/article_11.pdf)

Abstract

In today's results-oriented, fast-moving business environment, it is critical for trainers to demonstrate the value of training to the organization: There is nothing inherently valuable about training. It is performance gains that training catalyzes that give it worth (Graber, 2000). This is why evaluations tied to business results are becoming commonplace. If you ask training professionals about measuring training, most will start talking about levels of evaluation, referring to Kirkpatrick's landmark evaluation model developed in 1959. Kirkpatrick's levels of

evaluation have been the industry standard for nearly half a century. However, many professionals now believe that elearning and a shift in emphasis toward performance improvement have changed the training business so that these levels are no longer completely relevant. The purpose of this paper is to discuss what similarities and differences exist between evaluating elearning and traditional classroom instruction, how Kirkpatrick's evaluation levels are currently conducted, why conducting Kirkpatrick's Level 4 evaluation is so difficult to do, why elearning evaluation has evolved to include return-on-investment (ROI) calculations, and whether other evaluation methods currently practiced are more relevant and useful.

Peddecord, K. M., Holsclaw, P., Jacobson, I.G., Kwizera, L., Rose, K., Gersberg, R., & Macias-Reynolds, V. (2007). Nationwide satellite training for public health professionals: Web-based follow-up. *Journal of Continuing Education in the Health Professions*, 27(2), 111-117.

#### Abstract

Introduction: Few studies have rigorously evaluated the effectiveness of health-related continuing education using satellite distribution. This study assessed participants' professional characteristics and their changes in knowledge, attitudes, and actions taken after viewing a public health preparedness training course on mass vaccination broadcast nationally by satellite. Methods: A three-part survey design was used to evaluate training effectiveness. Paper-based questionnaires were distributed at a stratified sample of downlink facilities to collect knowledge and attitude responses before and after the broadcast. Six weeks later, willing participants were invited by e-mail to complete a Web-based follow-up questionnaire to assess actions taken as a result of viewing the broadcast. Paired t-tests and McNemar's chisquare were used to compare changes in attitude from before to after the broadcast, after the broadcast to follow-up, and before the broadcast to follow-up. Results: A total of 544 paper-based questionnaires were received from 59 of 70 sampled sites. The pre- and post assessments administered the day of the broadcast demonstrated statistically significant knowledge gain ( $p < .001$ ) and an increased belief immediately following the broadcast that mass vaccination clinics are important to their organizations' public health activities ( $p < .001$ ). Of the 291 respondents who completed the follow-up online questionnaire, 44% ( $n = 128$ ) reported they implemented or planned some form of action after the broadcast. Reported actions were higher among public health workers most likely to be directly involved in preparedness and immunization activities. Discussion: This evaluation assessed (1) participants' professional characteristics, (2) knowledge gain, (3) self-reported actions taken following the broadcast, (4) program satisfaction, and (5) suggested improvements for future satellite broadcast programs. The study's methodology of using a Web-based survey for follow-up is a relatively economical tool for assessing longer-term continuing education program objectives.

Phillips, Jack J. (1998 July-August). The return-on-investment (ROI) process: Issues and trends. *Educational Technology*, 38(4), 7-14.

#### Abstract

Presents issues concerning return on investment (ROI) and its use in education and training. Discussion includes building a feasible ROI process; criteria for an effective ROI process; a practical model for ROI, which includes preliminary evaluation, data collection, isolating program effects, converting data to monetary values, tabulating program costs, calculating the ROI, and identifying intangible benefits.

Phillips, Jack J. (1996 April). How much is the training worth? *Training and Development*, 50(4), 20-24.

#### Abstract

Provides a basic formula for calculating the return-on-investment of training: (1) collect evaluation data; (2) isolate effects of training from other factors; (3) convert results to monetary benefits; (4) total costs of training; and (5) compare the benefits with the cost. (JOW)

Descriptors: Adult Education; Evaluation Methods; Program Evaluation; Training

Phillips, Jack J. (1996 March). Was it the training? *Training and Development*, 50(3), 28-32.

#### Abstract

Ways to isolate the effect of training on job performance include control groups; trend-line analysis; forecasting; and the input of participants, supervisors, management, customers, and experts. In choosing the appropriate method, consider feasibility, accuracy, credibility, costs, and time.

Phillips, Jack J. (1996 February). ROI: The search for best practices. *Training and Development*, 50(2), 42-47.

#### Abstract

Provides case studies to look at how one measures return on investment (ROI) in training. Includes a framework for developing ROI and emphasizes the need for a variety of evaluation plans.

Phillips, J. J. (1983). *Handbook of training evaluation and measurement methods*. Houston: Gulf Publishing.

#### Abstract

This new, third edition of Jack Phillips's classic *Handbook of Training Evaluation and Measurement Methods* shows the reader not only how to design, implement, and assess the effectiveness of HRD programs, but how to ultimately measure their return on investment (ROI). Each chapter has been revised and updated to include additional research, expanded coverage, and new examples of Dr. Phillips's case studies. Seven entirely new chapters have also been added, focusing largely on ROI.

Phillips, P. P., & Phillips, J. J. (2007). *The value of learning: How organizations capture value and ROI*. San Francisco: Pfeiffer.

#### Abstract

*The Value of Learning* is a hands-on guide for the implementation of learning and development programs that can be applied across all types of programs, ranging from leadership development to basic skills training for new employees. In this book, Patti Phillips and Jack J. Phillips offer a proven approach to measurement and evaluation for learning and development that can be replicated throughout an organization, enable comparisons of results from one program to another, and ultimately improve ROI.

Phillips, P. P., & Phillips, J. J. (2005). *Return on investment (ROI) basics*. Alexandria, VA: ASTD Press.

#### Abstract

This book aims to provide a fundamental understanding of the ROI process, from planning, to selection of appropriate programs, to collection of data, to the calculations that determine the ROI, to communicating results, and finally to integrating ROI into an organization's workplace

learning and performance processes. An invaluable volume for the novice and the experienced professional.

Pinkerton, S. E. (2004). The financial return on education programs. *Journal of Continuing Education in Nursing*, 35(6), pp. 244-245.

Abstract

Preparing data that demonstrate the financial return on education or training programs is not an easy task. It is complex, given the usual program costs. It is further complicated by the fact that qualitative data are often important in service organizations (e.g., health care). Finding a way to express the value of programs using both quantitative and qualitative data serves educators well because it helps to build the total and whole picture of the programs and their impact. Developing standard formats such as templates for both quantitative and qualitative data will help strengthen the position of education within the organization and will aid in the demonstration of the financial and human value of the training and education programs.

Riley, W., Parsons, W., McCoy, K., Burns, D., Anderson, D., Lee, S., & Sainfort, F. (2009 October). Introducing quality improvement methods into local public health departments: Structured evaluation of a statewide pilot project. *Health Services Research*, 44(5, Pt. 2), 1863-1879. Available from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2758410/>

Abstract

**Objective.** To test the feasibility and assess the preliminary impact of a unique statewide quality improvement (QI) training program designed for public health departments. **Data Sources/Study Setting.** One hundred and ninety-five public health employees/managers from 38 local health departments throughout Minnesota were selected to participate in a newly developed QI training program and 65 of those engaged in and completed eight expert-supported QI projects over a period of 10 months from June 2007 through March 2008. **Study Design.** As part of the Minnesota Quality Improvement Initiative, a structured distance education QI training program was designed and deployed in a first large-scale pilot. To evaluate the preliminary impact of the program, a mixed-method evaluation design was used based on four dimensions: learner reaction, knowledge, intention to apply, and preliminary outcomes. **Data.** Subjective ratings of three dimensions of training quality were collected from participants after each of the scheduled learning sessions. Pre- and post-QI project surveys were administered to collect participant reactions, knowledge, future intention to apply learning, and perceived outcomes. Monthly and final QI project reports were collected to further inform success and preliminary outcomes of the projects. **Principal Findings.** The participants reported (1) high levels of satisfaction with the training sessions, (2) increased perception of the relevance of the QI techniques, (3) increased perceived knowledge of all specific QI methods and techniques, (4) increased confidence in applying QI techniques on future projects, (5) increased intention to apply techniques on future QI projects, and (6) high perceived success of, and satisfaction with, the projects. Finally, preliminary outcomes data show moderate to large improvements in quality and/or efficiency for six out of eight projects. **Conclusions.** QI methods and techniques can be successfully implemented in local public health agencies on a statewide basis using the collaborative model through distance training and expert facilitation. This unique training can improve both core and support processes and lead to favorable staff reactions, increased knowledge, and improved health outcomes. The program can be further improved and deployed and holds great promise to facilitate the successful dissemination of proven QI methods throughout local public health departments.

Sharp, L. K., & Lipsky, M. S. (2002 Spring). Continuing medical education and attitudes of health care providers toward treating diabetes. *Journal of Continuing Education in the Health Professions*, 22(2), 103-112.

Abstract:

**INTRODUCTION:** Continuing medical education (CME) is an important tool in improving the care provided to patients with type 2 diabetes. Health behavior models suggest that attitudes are important factors in changing behavior. The aim of this study was to evaluate the immediate and 3-month impact of a diabetes educational program on the attitudes of health care providers toward treating diabetes. **METHODS:** Health care providers (including physicians, physician assistants, nurse practitioners, and nurses) were attending a 7-hour CME program on type 2 diabetes in one of eight states in the United States between May and September 1999. Attitudes were assessed using the Diabetes Attitudes Scale-3 (DAS-3), which was given immediately before the program, immediately after the program, and 3 months after the program. A convenience sample of 315 providers completed pre- and post-CME measurement. Three-month follow-ups were completed by 146 (46%) of the 315 providers. **RESULTS:** Following the CME program, physicians had significantly more positive attitudes on two of five DAS subscales. At 3 months, the change persisted on one subscale that measured beliefs related to type 2 being a serious disease. Allied professionals had significantly more positive attitudes on five subscales following the program; however, the change did not persist at 3 months. **DISCUSSION:** This CME program resulted in different patterns of attitude change for physicians as compared to allied professionals. In both groups, more positive attitudes toward treating diabetes were detected following the CME; however, the change tended to diminish by 3 months after the program. These findings mimic much of the research on knowledge retention following CME.

Shrock, S. A., & Coscarelli, W. C. C. (2007). *Criterion-referenced test development: Technical and legal guidelines for corporate training* (3<sup>rd</sup> ed.). Alexandria, VA: International Society of Performance Improvement.

Abstract

This is the third edition of the classic and comprehensive reference guide to the theory and practice of competency testing in organizations and professions. *Criterion-Referenced Test Development* has been thoroughly revised and updated to address the most recent issues in certification and qualification testing.

*Criterion-Referenced Test Development* is designed specifically for training professionals who need to better understand how to develop criterion-referenced tests (CRTs). This important resource offers step-by-step guidance for how to make and defend Level 2 testing decisions, how to write test questions and performance scales that match jobs, and how to show that those certified as "masters" are truly masters. A comprehensive guide to the development and use of CRTs, the book provides information about a variety of topics, including different methods of test interpretations, test construction, item formats, test scoring, reliability and validation methods, test administration, and score reporting, as well as the legal and liability issues surrounding testing. New revisions include:

- Illustrative real-world examples
- Issues of test security
- Advice on the use of test creation software
- Expanded sections on performance testing
- Single administration techniques for calculating reliability
- Updated legal and compliance guidelines

The authors have created a very accessible guide with information that is easily grasped and implemented. In addition, the book is filled with relevant exercises that require active responses and reinforce mastery of the principles and procedures.

Steensma, Herman, & Groeneveld, Karin. (2010). Evaluating a training using the "Four Levels Model". *Journal of Workplace Learning*, 22(5), 319-331.

#### Abstract

Purpose: The aims of this study are: to present a training evaluation based on the "four levels model"; to demonstrate the value of experimental designs in evaluation studies; and to take a first step in the development of an evidence-based training program.

Design/methodology/approach: The Kirkpatrick four levels model was used to evaluate the effectiveness of management training. Hypotheses about the effects of internal/external "locus" of control and experiential learning styles were tested. Measures gathered at several points of time were compared to measures taken from a control group. "Level four" results were obtained by 360-degree feedback appraisal. Findings: Trainees' knowledge improved significantly.

Trained managers also demonstrated more "good" management behaviors and they scored higher on long-term results. Trained supervisors with an internal "locus" of control acquired more knowledge than trained supervisors with an external "locus" of control. However, internals did not differ significantly from externals on actual behavior measures. The hypothesized relationship between learning style and training effectiveness was not supported. The four levels method gives detailed insights in results. Attention should be paid to trainees' "locus" of control.

Originality/value: The paper outlines the value of the "four levels model" of training evaluations and contributes to the "theory-based, evidence-based" approach to the development of training programs. (Contains 6 tables and 2 figures.)

Strother, Judith. (2002 April). An assessment of the effectiveness of e-learning in corporate training programs. *International Review of Research in Open and Distance Learning*, 3(1).

Available from <http://www.irrodl.org/index.php/irrodl/article/viewArticle/83/160>

#### Abstract

Corporate managers are constantly looking for more cost-effective ways to deliver training to their employees. E-learning is less expensive than traditional classroom instruction. In addition, many expenses – booking training facilities, travel costs for employees or trainers, plus employee time away from the job - are greatly reduced. However, some firms that have spent large amounts of money on new e-learning efforts have not received the desired economic advantages.

Tamkin, P., Yarnall, J., & Kerrin, M. (2002) *Kirkpatrick and beyond: A review of models of training evaluation*. IES Report. Grantham, UK: Grantham Book Services.

#### Abstract

Many organizations are not satisfied that their methods of evaluating training are rigorous or extensive enough to answer questions of value to them. Complaints about Kirkpatrick's popular four-step model (1959) of training evaluation are that each level is assumed to be associated with the previous and next levels and that the model is too simple and fails to take account of the intervening variables affecting learning and transfer. Others have developed models that purport to resolve difficulties and might be thought of as Kirkpatrick "progeny." They take much inherent in the original model and extend it at the front end, by including training design/needs analysis, or at the back end, by evaluating societal outcomes. The "progeny" are Hamblin's five-level approach (1974); Kaufman et. al's Organizational Elements Model (1995); Indiana



University approach described by Molenda et al. (1996); the Carousel of Development from the Industrial Society (2000); the Five-Level Return on Investment Framework by Phillips, and Holton (1994, 1995); and the KPMT model described by Kearns and Miller (1997). Models unrelated to Kirkpatrick have a different approach to how training evaluation might occur and include the following: responsive evaluation by Pulley (1994); context evaluation described by Newby (1992); and evaluative enquiry described by Preskill and Torres (1999). An underlying model of learning recognizes the intervening factors affecting the chain of impact from a developmental process to individual learning, changed behavior, and resulting organizational or social impact. The evaluation should be cognizant of variables that affect evaluating at these four levels: reaction, learning, behavioral change, and organizational results. (Contains 84 references.)

Tian, J., Atkinson, N. L., Portnoy, B., & Gold, R. S. (2007 Winter). A systematic review of evaluation in formal continuing medical education. *Journal of Continuing Education in the Health Professions*, 27(1), 16-27.

#### Abstract

**Introduction:** Physicians spend a considerable amount of time in Continuing Medical Education (CME) to maintain their medical licenses. CME evaluation studies vary greatly in evaluation methods, levels of evaluation, and length of follow-up. Standards for CME evaluation are needed to enable comparison among different studies and to detect factors influencing CME evaluation. **Methods:** A review of the CME evaluation literature was conducted on primary research studies published from January 2000 to January 2006. Studies assessing only satisfaction with CME were excluded, as were studies where fewer than 50% of the participants were practicing physicians. Thirty-two studies were included in the analyses. Determinations were made about evaluation methods, outcome measures, and follow-up assessment. **Results:** Only 2 of 32 reviewed studies addressed all evaluation levels: physician changes in knowledge and attitudes (level 2), practices (level 3), and improved patient health status (level 4). None of the studies using self-developed instruments (n = 10) provided reliability and validity information. Only 6 studies used validated scales. Twenty studies had a follow-up period of 6 months or less, and 11 had a follow-up period between 1 and 2 years. **Discussion:** A gold standard for evaluating the effectiveness of CME would include assessment of all 4 levels of evaluation. A valid, reliable, and adaptable CME evaluation questionnaire addressing variables in the second level is needed to allow comparison of effectiveness across CME interventions. A minimum 1-year postintervention follow-up period may also be indicated to investigate the sustainability of intervention outcomes.

Wang, Greg. (2003 January-February). Valuing learning: The measurement journey. *Educational Technology*, 43(1), 32-37.

#### Abstract

Discusses the money wasted on ineffective training programs and the resulting surge in interest among training professionals in conducting learning evaluation and return on investment (ROI) measurement. Describes Kirkpatrick's four-level evaluation concept; questions regarding measurement validity and reliability; and new developments in learning measurement, including the Training Results Measurement Model.

Westcott-Abudi, Gina. (2008). Using return on investment to evaluate project management training. In *2008 PMI Global Congress Proceedings*. Denver, CO.

#### Abstract

Executives today are demanding to see the monetary value that project management training programs bring to the organization. This means they need to see a dollar value placed on the benefits of the training, not just that participants believe the training to be valuable to them or they enjoyed the training overall. They want proof that the training program benefited the organization in a positive manner. This paper examines the use of Return on Investment (ROI) to evaluate project management training programs. It provides a background on ROI, along with a description of the Phillips ROI Methodology™ and takes the reader through a process of evaluating a project management training program.

Woltring, Carol, Constantine, Wendy, & Schwarte, Liz. (2003 March/April). Does leadership training make a difference? The CDC/UC Public Health Leadership Institute: 1991-1999.

*Journal of Public Health Management and Practice*, 9(2), 103-122.

#### Abstract

Public health leadership development programs have proliferated since the release of the Institute of Medicine's call for strengthened public health leadership. Little has been documented, however, about the impact of these programs. This article presents results of an eight-year retrospective evaluation of the Centers for Disease Control and Prevention/University of California Public Health Leadership Institute, the nation's first year-long leadership development program serving senior public health leaders. Results show that this program has had a positive impact on participants' leadership effectiveness at the personal, organizational, and community levels as well as on the field of public health.