

TRADAM: A CATALYST FOR TRAINING TECHNOLOGY INFUSION

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ABSTRACT

With declining resources available to support training, organizations today are turning to advanced training delivery technologies, seeking efficiencies without compromising training effectiveness. The judicious selection of appropriate training delivery technologies will allow initial investment costs to be offset by longer term cost avoidances. Experts agree that cost avoidances can be anticipated from decreased student travel and per diem costs, reduction of shore-based schoolhouse infrastructure costs, reduction of student and instructor costs, etc., as a result of this infusion of advanced training delivery technology. The question faced by training managers is which training courses are the best candidates for infusion of new training technologies. This paper describes the Navy's Training Delivery Assessment Model (TRADAM) which is designed to assist training sponsors, training managers, course developers, and instructors in selecting the most appropriate advanced training technologies for cost effective training delivery.

The TRADAM process allows a quick assessment of the potential for resource savings through the implementation of appropriate advanced training delivery technologies in a given course. TRADAM views the training delivery technology selection process as consisting of three phases: (1) selecting candidate courses that have the most potential for advanced training delivery technology application, (2) selecting the training delivery technology alternatives that match the learning requirements of each candidate course, and (3) performing an economic analysis of the selected training delivery technology alternatives. TRADAM has been used to estimate training technology infusion potential on over fifty traditional classroom training courses, with 19 of the examined courses being identified as excellent candidates for training technology infusion. Projected payback of the initial training technology investment for these 19 courses was predicted to occur in less than three years after implementation.

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INTRODUCTION

The U.S. Navy is faced with declining resources available to support training at the same time that training requirements are growing as a result of the Navy's changing roles and increasing missions. Thus, the Navy is challenged to apply appropriate advanced training delivery technologies to traditional classroom training environments, seeking efficiencies without compromising training effectiveness. Advanced training delivery technologies have been shown to allow for the exporting of traditional classroom training to the trainee's work site and/or shortening/compressing the time the trainee spends in a training status. Anticipated benefits resulting from this advanced training delivery technology infusion are: decreased student travel and per diem costs, reduction of shore-based schoolhouse infrastructure costs, reduction of student and instructor costs, etc.

The Chief of Naval Operations' Office of Training Technology (CNO N75), in December 1995, initiated the development of a model to select the best opportunities for improving training effectiveness and training efficiency through the application of advanced training technology. This initial effort was in response to the CNO N8 initiative to compress Officer Pipeline training time. The Chief of Naval Education and Training (CNET) in January 1996 tasked Naval Air Warfare Center Training Systems Division (NAWCTSD) to determine if application of advanced training delivery technologies to existing courses could produce clear and quantifiable benefits in the near term. The tasking envisioned the continued development of the model to estimate the benefits of training technology applications in specific Navy training courses and help identify the best opportunities to reduce training time and training costs. This enhanced model was subsequently tested and refined during the Training Efficiency Reviews (TER) of over 50 existing classroom training courses.

This paper describes the Navy's Training Delivery Assessment Model (TRADAM) which is

designed to assist training sponsors, training managers, course developers, and instructors in selecting the most appropriate advanced training technologies for the cost effective delivery of training. The TRADAM is intended to provide a quick, but fairly accurate, identification of existing classroom training courses that present the best training resource saving opportunities. Application of TRADAM, when screening a large number of courses, insures early identification of the courses most likely to benefit from training technology infusion. A complete Training Systems Requirements Analysis (TSRA), including an economic analysis, should be performed on those classroom training courses when the TRADAM analysis estimates significant savings/cost avoidances from implementing advanced training delivery technologies.

TRAINING DELIVERY ASSESSMENT MODEL

Currently, the typical Navy technical training course consists of classroom lecture and hands-on laboratory experience. Training delivery technologies that best accomplish the classroom lecture objectives might not be suitable to accomplish the objectives of the hands-on laboratory section of the course. Therefore, to assess potential for advanced training delivery technology infusion in Navy courses, the model must evaluate each training delivery technology on its ability to satisfy the course learning requirements in a lesson by lesson, training objective by training objective manner.

The TRADAM uses a training delivery technology selection process that includes three phases: (1) selection of candidate courses that have the most potential for advanced training delivery technology application, (2) assessment of training delivery technology alternatives that match the learning requirements of each candidate course, and (3) economic analysis of training delivery technology alternatives. Figure 1 provides an overview of this three phase process.

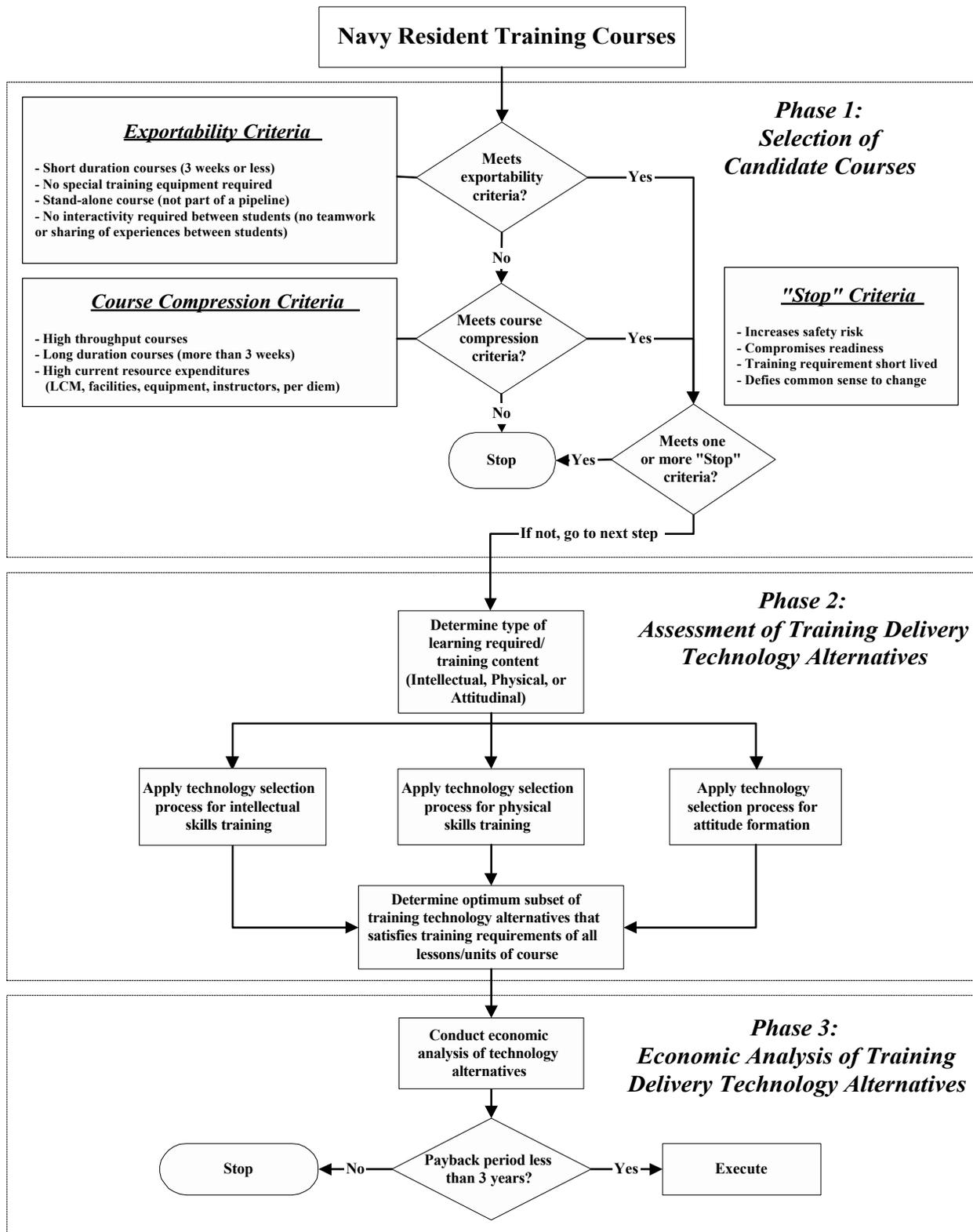


Figure 1: Overview of the Training Delivery Assessment Model (TRADAM).

The TRADAM was designed to be modular in its application. The three TRADAM modules, corresponding to the three phases of the training delivery technology selection process, can be applied independently. If candidate courses are already selected, phases 2 and 3 can be applied without phase 1. The economic analysis process (phase 3) can be applied alone following a thorough analysis of training system requirements.

Phase 1: Selection of Candidate Courses

The first phase of the TRADAM process performs a quick screening on all training courses to be reviewed to ensure that the best candidates for advanced training delivery technology application are examined first. The purpose of this preliminary screening is to ensure that the labor intensive learning requirements analyses and economic analysis are first performed on the courses with the most potential for cost avoidances.

Training cost avoidances can result from: (1) *exporting* training to the trainee's work site, thus saving travel time, travel costs, lodging costs, and per diem costs; and/or (2) *shortening/compressing* the training pipeline so the trainee spends less time in a training status (reduced training days lead to reduced training costs).

The characteristics of courses that are good candidates for exportability are different than the characteristics of courses that are good candidates for course compression. The TRADAM addresses these two situations separately.

Exportability Criteria. The initial screening process starts with assessing each course's potential for exportability. The exportability criteria (see Figure 1) determine whether a course could be taught in other than a formal resident schoolhouse or typical classroom environment. A course must meet all the exportability criteria to be considered for redesign. The following describe the exportability criteria and their application:

1. *Short Duration Course.* If the course exceeds three weeks in length, trainees would be hard pressed to find the time to work on course materials and complete the course given the competing priorities at the work site. There are well documented problems with distance learning models (especially correspondence courses without significant two-way communication between student and instructor/course manager/facilitator and between the student and other

students) in that over time the student becomes isolated, procrastinates, and eventually drops out (Sherry, 1996). Further, the greater the length of courses taught through distance learning technologies, the lower the completion rate. This relationship can be mediated somewhat by raising the quality and frequency of the instructional interactions (student-to-learning material, student-to-instructor, and student-to-student). *If the course can be partitioned into fairly independent training modules of three weeks or less, it will meet this exportability criteria.*

2. *No Special Training Equipment Required.* If the course has a requirement for special training equipment that would not be available at the trainee's work site, it is not a candidate for exporting.

3. *Stand-alone Course, Not Part Of A Training Pipeline.* If the course is a small part of a larger training pipeline, and other courses are taken immediately before or after it, the course will not be a good candidate for exporting. (The costs of travel would not be avoided if the student has to travel to and from his home port before or after the section of the pipeline exported.)

4. *No Face-To-Face Interaction Required Between Students.* If the course emphasizes team performance, the training and subsequent team practice will probably require face-to-face team participation and would not be a good candidate for exporting. If the intention of the course is to capitalize on the students' varied and extensive experiences, and use these experiences/shared insights as part of the discussion leading to achieving the course objectives, it is best to have the trainees interacting in a face-to-face manner in a more typical classroom setting. If, however, the team normally performs their tasks without face-to-face interaction, the course is still a candidate for exporting.

Failure to meet all exportability criteria does not mean the classroom training course is not a candidate for technology infusion. Rather, TRADAM subsequently will focus on course compression opportunities which will result in a reduction of personnel, schoolhouse infrastructure, and per diem costs.

Course Compression Criteria. Since a large number of courses will meet the general criteria for course compression (see Figure 1), courses selected for course compression/shortening should be ranked by a combination of course throughput and course length.

This combination equals student training days which directly relates to training costs. That way the more costly courses (which have more potential for savings/cost avoidances) would be looked at first. The following describes the course compression criteria and their application:

1. *High Throughput Courses.* Courses with a large number of students completing the course annually are better candidates for compression than courses with lesser annual student throughput. Student personnel costs represent the largest cost for most Navy technical training courses.

2. *Long Duration Courses.* Courses that are more than three weeks in length (and thus would not be a candidate for exportability) are candidates for compression.

3. *High Current Expenditures.* If course operating costs (other than student and instructor salaries and benefits) are significantly higher than average, the course would be a candidate for reducing costs through course compression. A course requiring four instructors each day would be more costly than one requiring one instructor. Other examples include high printing costs or using expensive (in terms of capital costs or recurring/operating costs) technical training equipment to support the course.

The “*Stop Criteria*” (see Figure 1) represent a sanity check of the results of blindly applying the exportability and course compression algorithms. The selection criteria for exportability and course compression could be programmed to select candidate courses automatically from training management databases such as the Navy Integrated Training Resources and Administration System (NITRAS). Any such program would make a number of selection errors because the exportability criteria and course compression criteria listed above do not consider training content factors that a knowledgeable training manager/instructor would in making individual training delivery technology selections. For example, the program probably would not know which courses are scheduled for cancellation in the near future. The “*Stop Criteria*” helps by inserting a knowledgeable human in the otherwise automated decision making process.

Phase 2: Assessment of Training Delivery Technology Alternatives

For each candidate course that is reviewed for advanced training delivery technology infusion, the second phase requires a detailed assessment of training delivery technology feasibility for each of the lessons taught in the course. The process collects information about the current training, determines the type of learning involved, and identifies requirements for student interactions with the instructional content. TRADAM provides a structured way to document the results of these detailed assessments.

Different types of learning require different types of instructional interactions. Each lesson/unit of a candidate course, therefore, must be examined to determine the types of learning that are required. The TRADAM uses a classification scheme derived from one described by Gagné and Briggs (1974). Gagné and Briggs define five general classes of learned capabilities (intellectual skills, cognitive strategies, verbal information/verbal knowledge, motor skills, and attitudes). The training for each of these five general classes would follow different instructional strategies and incorporate different instructional activities. The identification of training delivery technologies that are appropriate for three of these classes of learned capabilities (intellectual skills, cognitive strategies, and verbal information/ verbal knowledge), however, depends on similar factors. These factors include the student interface with the learning content (amount and nature of stimuli and feedback), the amount and nature of interactivity required between students, and the visual representations required (2D/3D, static/dynamic, etc.). TRADAM uses a simplified classification scheme, differentiating between only three general learning types that are relevant to the selection of training delivery technologies. The three general domains of learning considered by TRADAM during this process are: (1) intellectual skills (Gagné and Briggs’s intellectual skills, cognitive strategies, and verbal information); (2) physical skills; and (3) attitudes.

Intellectual Skills. For the purpose of TRADAM, an *intellectual skill* includes those content areas sometimes called knowledge (factual knowledge, process or procedural knowledge, conceptual knowledge, and schema), or cognitive content. If the lesson is currently taught in a classroom, it probably contains intellectual skills learning. Figure 2 presents the process for identifying training delivery technologies appropriate for training intellectual skills.

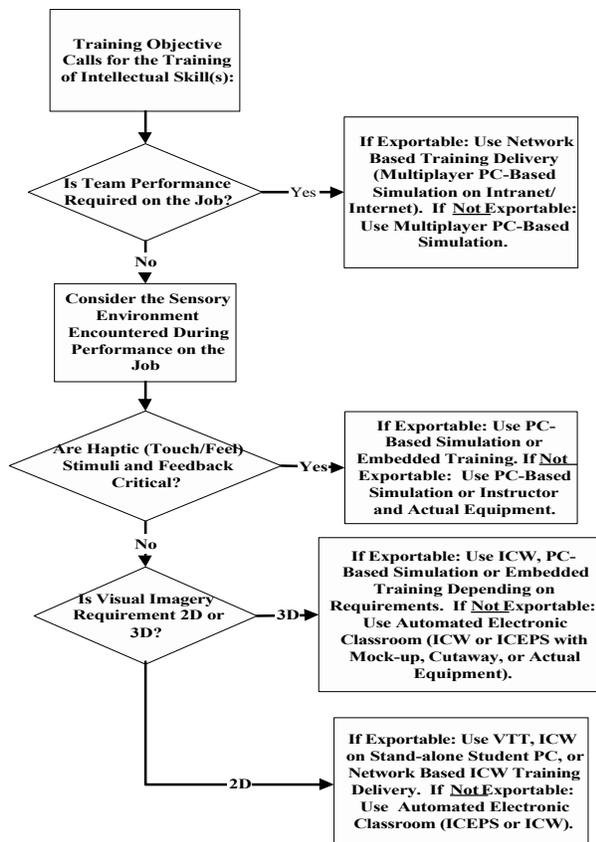


Figure 2: Training Delivery Assessment Process for Intellectual Skills Training.

The steps in the training delivery assessment process for intellectual skills are as follows:

1. *Interactivity Requirements.* Student to student interaction/discussion is critical when the intellectual skill will be performed by teams in the fleet. If there is interactivity required *between* students, only training delivery technologies capable of accommodating student to student interaction are feasible. Multiplayer networked CBT/ICW, networked PC-based simulations, and computer mediated communication devices (e.g., desktop video conferencing, intranet/internet audio conferencing) are appropriate for training intellectual skills where interactivity is critical.

2. *Touch/Feel Stimulus and Feedback Requirements.* Touch/feel stimuli and feedback are critical when the job performance requires the operator to identify controls by their feel or diagnose problems by vibrations. Simulation, embedded training, and training on actual operational equipment are used to

train skills where touch/feel stimuli and feedback are critical to performing intellectual skills.

3. *Visual Imagery Requirements.* Traditional training delivery media such as printed student guides/printed syllabi, transparencies, slides, and wall charts are incapable of delivering dynamic images. Since all electronic training delivery technologies can easily deliver both static and dynamic imagery, the requirement for dynamic imagery is not a consideration in selecting among such technologies. This step determines whether students can efficiently be trained using two dimensional or simulated three dimensional electronic visual images or whether true three dimensional representation of the visual space (mockups, cutaways, actual equipment, etc.) is necessary.

Physical Skills. For the purpose of TRADAM, *physical skills* include those learned capabilities sometimes called psychomotor skills or motor skills. The learning and performance of physical skills involve the senses and the brain as well as the muscles. Training physical skills involves repeated practice (with frequent feedback on performance) that improves accuracy, speed, and smoothness of motion. There is no easy way of avoiding practice if one seeks to improve the performance of physical skills. One lesson can contain training on both physical and intellectual skills. Those lessons that do not involve extensive physical practice do not contain physical skills training. Figure 3 presents the process for identifying training delivery technologies appropriate for training physical skills. The following describes the steps in the training delivery assessment process for physical skills:

1. *Equipment Availability.* The first step is to determine if the actual equipment is available at the proposed training site for training purposes (whether at the job site or in the schoolhouse). If equipment is not available at the training site, use simulation for training delivery. Equipment that would not be employed due to environmental concerns, except during actual war time, could not be used as on-site trainers.

2. *Safety Issues.* If errors committed by a student using the equipment would jeopardize personnel, ship, or mission, then the actual equipment would not be used. Simulation would be used, instead.

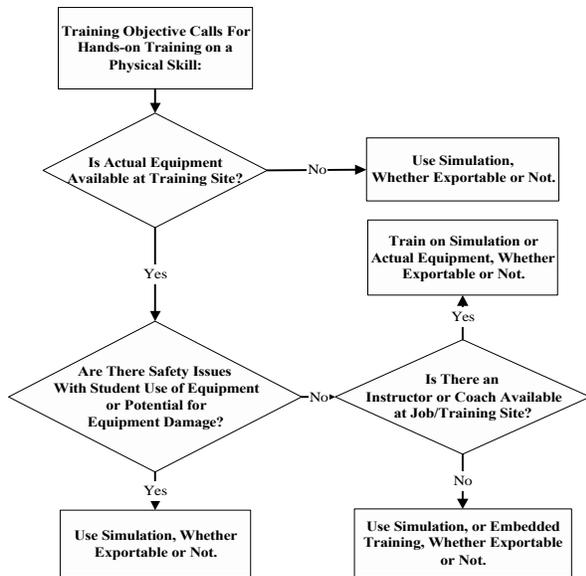


Figure 3: Training Delivery Assessment Process for Physical Skills Training.

3. *Instructor/Coach Availability.* If equipment is available and there are no safety concerns that preclude training on the actual equipment, instructor/coach availability is determined next. Individuals that could serve as instructor/coach would be certified operator and maintenance personnel, journeymen, or individuals with enough experience (and time) to be trusted with responsibility for the equipment. If instructor/coaching personnel are not available for training purposes, applicable training delivery technologies include simulation or training on the actual equipment with embedded training.

Attitudes. For the purpose of this training delivery technology assessment process, an *attitude* is a system of beliefs (a perspective on the world) that affects an individual's choice of action toward some object, person, or event. Training in the content areas of leadership, equal opportunity, continuous improvement (TQL/TQM), and prevention of sexual harassment, include some attitude objectives among other intellectual skill objectives. Clearly, training in these content areas is intended to accomplish more than the understanding of concepts, rules, and principles. It is intended to influence the attitudes, and thus the behavior, of the training participants.

The learning of attitudes and the means of bringing about changes in attitudes are rather complex matters. Certainly the methods of instruction to be employed in establishing desired attitudes differ

considerably from those applicable to the learning of intellectual skills and physical skills. There is a great deal of evidence that the use of persuasive communications alone is *not* very effective; this is true for communications that make emotional appeals and those which are developed by a careful chain of reasoning.

There are direct and indirect methods of establishing and changing attitudes. Direct methods rely on the principle that people tend to repeat actions that are successful. Training sessions provide practice exercises tailored to reward the desired behavior. An indirect method that is important to military training situations is called *human modeling*. Using this method the student observes and learns attitudes from other people (human models). The human model must be someone whom the student respects or with whom the student can identify. Having observed the attitude or actions, or hearing of the experiences/lessons learned from the human model, the student learns that such attitudes and their associated actions lead to success on the part of the model.

Figure 4 presents the process for identifying training delivery technologies appropriate for training attitudes.

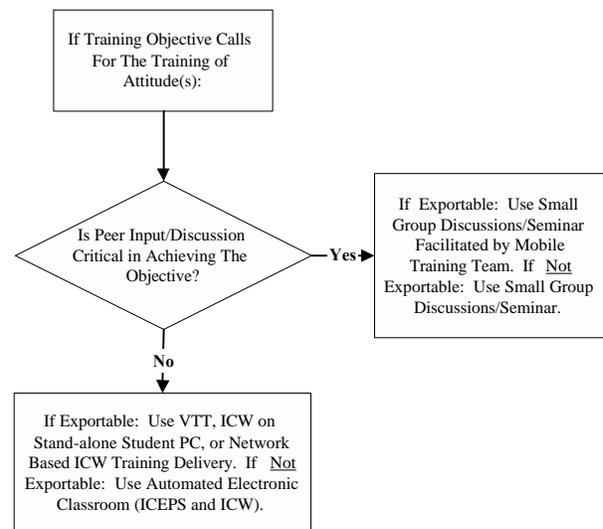


Figure 4: Training Delivery Assessment Process for Attitude Formation.

If attitudinal learning is involved, you must determine if *peer discussion is critical in achieving the objective*. Peer discussion is critical when the best course of action is not very clear and you can expect the student to respect the attitudes, insights, and

experiences of his/her peers. Small group discussions and dynamic interaction between students and instructor(s) typically help to shape attitudes where respected peers and/or respected instructors share insights and personal experiences/lessons learned. There are some newer advanced training delivery technologies that appear feasible where peer discussion is critical in achieving the attitude formation. Desktop video conferencing and some of the intranet/internet based computer mediated audio conferencing technologies can be successful in training attitudes.

Some lessons will involve more than one type of learning, and thus, require the use of more than one training delivery assessment process. The product of these analyses will be one or more candidate training delivery technologies to teach that lesson.

The last step in this second phase consolidates the lesson by lesson assessments to arrive at a subset of training delivery technologies that would satisfy the training/learning requirements of the course. For most courses, more than one training delivery technology will need to be applied. For example, both an instructor led electronic presentation enhanced delivery for intellectual skills and individual simulations for physical skills training could be employed in one course; or both CBT/ICW and desktop simulation could be used to teach intellectual skills.

Phase 3: Economic Analysis of Training Delivery Technology Alternatives

The third phase of the TRADAM process provides economic analyses for each of the training technology alternatives resulting from phase 2. The economic analysis of alternative training delivery technology solutions requires an assessment of both the value of resources required to support each alternative (*costs*) and an assessment of the benefits (*cost avoidances or savings*) derived from each alternative being considered. *Training efficiency*, the comparison of the costs and benefits of a training technology alternative, is the primary consideration here. The cost of each training delivery technology alternative is analyzed in terms of investment costs and annual recurring costs. The benefits/savings resulting from using a particular training delivery technology to accomplish specific training goals are quantified by estimating those costs attributed to the current training delivery method that would be eliminated or reduced by implementing the training delivery technology alternative.

Phase 3 utilizes a marginal analysis technique, which is a basis for comparing the additional cost of implementing each training technology alternative to the additional benefit arising from such implementation. The essence of the technique is that each competing alternative is evaluated in terms of its total value and the impact of its incremental changes in funding levels. It is inevitable that budget requests will be greater than funds available, forcing an allocation among competing alternatives. Any meaningful ranking of alternatives for budgeting purposes must be based upon the opportunity costs involved with each alternative. Training technology investment proposals must be evaluated on their relative merits, and priorities established. Phase 3 determines which alternative is *relatively* most efficient. The *absolute* cost (and benefit) of implementation is more difficult to determine unless the alternative has been implemented for a period of time, and a summative evaluation has been conducted.

The five steps in performing a cost analysis of training technology alternatives are: (1) determine investment costs; (2) determine recurring costs; (3) determine cost avoidances; (4) summarize costs; and (5) compare alternatives.

1. Investment Costs. The first step in the process is to determine the cost of all investment resource items that will be required to implement each alternative. Investment costs are associated with the acquisition of equipment, real property, nonrecurring services, nonrecurring operations and maintenance (start-up) costs, and other one-time investment costs. It must be determined if the resource is already available or if the resource will have to be purchased or acquired. If the resource is not available in-house, then the cost of the resource is simply the purchase or acquisition price.

Investment resources required to establish or implement a new alternative training delivery system or subsystem could actually impose no additional economic cost. Examples include the use of: (a) excess facilities, (b) excess equipment, (c) excess capacity on equipment, and (d) time when personnel are not engaged in productive work, or any other use of an idle resource. Most resources that will be used, however, have economic value and that value must be determined.

2. Recurring Costs. Recurring Costs are those costs that require annual funding in order to operate

and maintain the training alternative. The four major categories of recurring costs are Personnel, Equipment, Facility, and Courseware.

A. *Personnel*. This category includes students, instructors, and management personnel required to conduct or attend training, travel costs, and per diem costs.

B. *Equipment*. The maintenance, repair and replacement of minor equipment and the maintenance and support of computer networks are included. Much of these costs will result from multimedia computers, telecommunications, networks, audio visual equipment utilized in the classroom, and office equipment used in support of training management.

C. *Facility*. Included in this category are the normal costs to operate and to maintain facilities including utilities, maintenance and refurbishing. When the training technology alternative represents a relatively minor change in facility requirements, then an estimate of the costs associated with the additional impact is used to estimate the recurring cost of the alternative. When the training technology alternative requires an entire facility then the total costs of maintaining the facility should be included.

D. *Courseware*. Typical courseware costs contain both the expendable materials including paper, workbooks, textbooks, pencils, computer disks and tapes, computer paper, supplies for maintaining the facilities, etc. and updates to courseware including curriculum, ICW, video tape, etc. Supplies costs will depend on a number of factors with student throughput being one of the more important.

3. Cost Avoidances. A major step involved in the evaluation of alternatives requires that the benefits of each alternative be identified and quantified to the extent possible. The infusion of advanced training delivery technologies into resident training courses will often result in the elimination of the need for existing equipment, facilities, or personnel time spent in training. Often, the training technology alternative being considered will result in a reduction in the intensity with which certain resources are used, but because these resources are used jointly for other activities or functions, they must be retained. This reduction cannot be claimed as a credit unless cost savings result. If the resource or released surplus capacity has no other use, then the cost (i.e., the opportunity cost) of using that resource for the

proposed alternative would be zero and no credit can be claimed. The costs which the receiving organization can avoid should be used as the value of any surplus equipment or facilities which would be released. When it is not possible to obtain data for determining the value of the cost avoidance, then an estimated sale (or market) price for the equipment or facilities can be used.

Among these cost avoidances are student and instructor *opportunity costs* (the value of the best alternative activity that the student and instructor would be engaged in if they were not attending the training session). If a student spends less time in training, he could report to his operational assignment sooner. Opportunity costs provide a way to compare training technology alternatives by quantifying the time saved for a particular course. Also included in recurring cost avoidances are travel and Base Operations Support (BOS).

4. Summarize Costs. At this point in the process, the additional resources required and resources released, if any, and their associated costs have been identified. All data can be compiled into a total life cycle cost for each training technology alternative.

The net technology infusion cost (avoidance) for each year in the planning period is obtained by subtracting the total infusion cost avoidances from the total infusion costs. The result is the net annual costs (avoidances).

5. Compare Alternatives. Each alternative must be evaluated for both its costs and benefits. A valid comparison among alternatives requires that outyear expenditures be stated in present value (PV) terms. The PV calculation of costs allows for an equivalent comparison of alternatives that do not have uniform cost streams over the life of the project. Discounting is a method which calculates the present value of dollars to be spent or received in the future. The costs which are incurred in the final years of the life cycle are discounted by more than those incurred in the earlier years. The discounted value is computed for each year in the life cycle of the alternative.

The final step in the economic analysis process is to use the data and information derived from the preceding tasks to compare the proposed alternatives. The primary basis for comparing alternatives is the payback period. Once the costs have been estimated, the payback period (or break-even point) is computed

for each alternative. The payback period is the number of years needed to recover the investment cost of the training delivery technology alternatives. The alternative with the shortest payback period is the preferred alternative *assuming that all alternatives generate equal benefits*. The payback period is not, however, the only means used to compare alternatives.

One additional measure of an alternative's effectiveness, the internal rate of return (IRR), is computed for each alternative. For computational purposes, the IRR is defined as the discount rate that equates the present value of the project's future cost avoidances with the project's initial cash outlay. In other words, a project's IRR is simply the rate of return that the project earns over a given life cycle. For all of the training technology alternatives examined in the TRADAM, the IRR is computed over a seven year life cycle. A project with a negative IRR implies that, over the seven year life cycle of the project, the initial outlay will not be recovered.

Although there will always be some subjectivity required on the part of the decision maker, the acceptance criteria for phase 3 is whether a course has a payback period of less than three years. Payback on the investment in advanced training delivery technologies for courses with payback periods longer than three years could very well be justified for learning effectiveness, training management, or other reasons.

APPLICATIONS OF TRADAM

When faced with the need to reduce training costs without decreasing the training scope or training effectiveness, TRADAM can identify which courses would be the best candidates for accomplishing this cost reduction via training technology infusion. The TRADAM process was developed and used to conduct Training Effectiveness Reviews (TERs) for the Chief of Naval Education and Training (CNET). The CNET TERs were focused exclusively on examining CNET owned formal schoolhouse training courses for opportunities to teach existing training objectives with more efficient use of resources. The TER process did not examine the relevance of existing course objectives to fleet performance requirements, nor did it examine redundant training among multiple courses; issues that would be addressed during a complete Training Systems Requirements Analysis or the Naval Training Requirements Review (NTRR) process (*Navy Training Requirements Review*, 1995). TRADAM has been used in various settings to examine the feasibility of

exporting the training from the schoolhouse setting to the operational environment (to save travel time, travel costs, lodging costs, and per diem costs) and/or compressing the schoolhouse training time through advanced training delivery technologies (saving student and instructor costs and base operations support costs). Of over 50 TERs completed, the estimated technology investment payback period for 19 of the courses was less than 3 years.

CONCLUSIONS

To date, the TRADAM has been used successfully to assess training technology infusion potential in over 50 Department of Defense formal training courses. A NAWCTSD Technical Report (Hassen et al., 1996) that describes the logic and processes underlying the TRADAM is posted on the Internet's World Wide Web on the U.S. Navy Chief of Naval Operations' Office of Training Technology (OTT), Seamless Product Information, Data Exchange and Repository (SPIDER). The OTT SPIDER is located at <http://ott.sc.ist.ucf.edu/>. An automated TRADAM software program using a Microsoft Windows® interface has been developed and is exhibited in the U.S. Navy Chief of Naval Operation's Office of Training Technology booth at the 19th annual Interservice/Industry Training Systems and Education Conference held in Orlando, Florida, December 1-4, 1997 at the Marriott World Center Hotel.

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