

FOREWORD

“Instructional Systems Development (ISD) is a methodology for ensuring that training is relevant to the job.”

That reminder was contained in a consulting evaluation prepared for the US Armed Forces, in January, 1980, by the Human Resources Research Organization, Alexandria, Virginia. (HumRRO Technical Report TR-80-1.)

HumRRO found that despite the highly codified military procedures prescribed since 1975, ISD was not producing optimum results due to human failures: development personnel for instructional programs were not honoring the strictly derivative and iterative nature of the process. Shortcuts and guesswork were crippling an otherwise dependable methodology for reflecting the actual job via training.

At the millennium, some training consultants are deriding ISD for being awkward and slow, which it probably is. They neglect to say that it is absolutely dependable and predictable. And it appears that the consultants who object to the strongest ISD features (if they're looking for shortcuts or using guesswork, no matter on how many years' experience based), are short-circuiting the process in the same manner that was identified by the military a quarter-century ago. The consultants usually don't suffer because they can bill for their completed program, often at a premium. But you and your organization might suffer because any untoward results of those shortcuts and guesswork are yours! If the program misses the mark, who will remember exactly what that mark was, unless it was initially committed to writing?

The cute catch-phrase used currently is, “There's no ‘*there*’ there.” Pardon me for asking, but don't you think that a perfectly workable program is a ‘*there*’? Certainly it has seemed so for decades at the individual military installations and also for the many corporations for which we have previously helped to design and implement programs. It appears that complaints are essentially red herrings. Where would those complainers rather be? Where is *their* “there”? Can they offer anything better? Better according to whose research?

The Rise of Corporate Training:

The same human failings have plagued training for business purposes since its origins as a profession following World War II. Carelessness aggravated problems incident to such training problems in planning as could be presumed natural when based on a) shortcuts and guesswork that resulted in loose and inadequate training program structure; b) emphasis on media and formats rather than on content and its validity, and c) emphasis often placed under the almost perennial, amateurish supervision of corporate trainers, because (except in the most advanced organizations), the Training Manager's slot was most often filled by a super salesman brought inside to begin his management climb. No, not he/she—few women were around in management positions at that time. As a result of all these items, training developed a bad name—deservedly.

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Yet expertise can and must be shared. The culprit was the slowness of business to recognize that *knowing* and *doing* are two different functions and that *knowing how to teach others to do* is still another vastly different function.

Few people possessed of advanced knowledge or dexterity skills are able to dissect and articulate those skills. Moreover, many well-educated individuals usually selected to oversee training did not understand the differences between *education* and *training*. So they *educated* the trainees, who left the classroom intellectually/verbally skilled but yet unable to perform the motor tasks necessary to perform to standard requirements because they often could not convert the intellectual knowledge unless they had had motor skills practice in the classroom or lab.

The conversion of book theory into on-the-job practice is the prime responsibility of corporate training and trainers; and ISD is still the single most advanced and detailed system for ensuring the applicability of the training to the real world job. ISD can carry you through any project in the design and development of training—no matter how complex or simple—if you will honor its disciplines!

When properly applied, ISD is remarkable. It's also one of the world's best-kept secrets, in so far as the world's user population is concerned. ISD is *do-it-yourself* supreme! That's a priority in function that's low on the priority lists of consultants who say there's no "*there*" there—as mentioned above. After all, the military uses it daily—and not all service people are Ph.D.s. More to the point, few of the trainers are Ph.D.s, either, whether or not that helps.

Although it's far more complex and time-consuming than guesswork and borrowed materials are, ISD has slowly crept into business training, largely because training specialists leaving the military have brought their wares into the corporate world. But the *disciplined* approach of ISD often clashes with the traditional trial-and-error-and-error-and-error approach common to the traditional corporate training world. Even into the 70s and 80s, ISD didn't always win in disputes because the older traditionalists (and some of their organizations) were often "in charge" and adamant; and corporate top management often didn't understand either the ISD process or the issue between ISD and trial-and-error. That was management by abdication. Small amounts of familiarity can provide great understanding, and we have tried to provide that familiarity in the companion book to this, *Managing Through Training: a Common Sense Guide for Non-Trainer Managers*.

ISD deserves your confidence. It is not an unproved thesis! Rather, it is the culmination of nearly three decades of groundwork in theory and methodology approved by major, known research agents, sharing both educational and training roots. It represents a synthesis of the very best! Curiously, this military paragon had its roots in a civilian publication for educators. No matter how you look at it, it's impossible to dismiss it honestly!

Specific Origins of ISD:

Although, as discussed at length in the companion book mentioned, education and training methods have different objectives and thrusts, they are often combined in any thorough training program. Education prepares us with theories/general knowledge that we as individuals can apply to the unforeseen future problems of life; whereas training selects from that theoretical universe whatever (and only that) which applies to the problem situation at hand each time!

When each discipline is used where appropriate, you can avoid wasting time making distinctions not germane to the underlying problem(s) if you use the term *instruction*. Then education and training methods can be used in conjunction without doing violence to either concept—and without making definitions your paramount concern in the program development process.

Instruction of some sort and complexity throughout the lifetime of the human animal is now known to be normal, but *competent training theory* is very recent.

The properly designed instructional program correlates theory and application as needed to fulfill the given job requirements, and ISD's Algorithms (found here in the Appendix) will help you to make proper choices quickly and accurately. That ease of usage has a foundation of 30 years of research and testing and formal application. Have confidence in ISD!

Throughout the 50s and 60s, social scientists expanded and refined the work begun in mass communications techniques by the landmark 1949 book, *Experiment on Mass Communication*, by Carl Hovland, Arthur Lumsdaine, and Fred Sheffield. Roleplaying and aspects of attitude change were examined for the first time during that era. In 1964, Homer C. Rose published *The Development and Supervision of Training Programs*, and the dichotomy between education and training was formalized. The military picked up on this book, and early ISD was invented. In 1975 military ISD was subjected to the reviews quoted above. But the dichotomy was clear.

Theories on audiovisual learning were being reformulated as a result of the impact of television on the school classroom as well as on the corporate training room. At that time, television first dominated thinking about the classroom. But the training field was coming together as a professional discipline.

Studies made in 1960 by Dr Joseph E. Kanner, of the US Army Training Command had indicated that there was no significant difference in learning when comparing color to black&white. That was not a popular finding with the TV manufacturers—enter Marshall McLuhan, who felt constrained to state (in 1964, likely under influence of his having already been hired by the television industry) that “The medium is the message.” To us, the *message* has always been the message. Gagne would react against that slogan.

Also in 1960, the Educational Facilities Laboratories (and the Ford Foundation) issued *Design for ETV: Planning for Schools with Television*. The distinction between entertainment values and educational/ training/ instructional values had also been established. That difference is apparent even today, when peons to performers can be seen on Public Television—you know, the education folks on the air. Educational television today is not what it was in the 50s and 60s! But at least it now carries advertising—and we know how conducive advertising has been to unslanted news reporting in all other media.

In 1965, when Robert M. Gagne co-published his book, *The Conditions of Learning* (furthering that dichotomy) his disciples believed, possibly erroneously, that he had *originated* that concept. The distinction between education and training and the resulting dichotomy are permanent in this society, having been thoroughly researched for at least a decade sooner. For a further layman's discussion of related literature in this field, see Cavalier, *Sales Meetings That Work*, (Dow Jones-Irwin, 1983; 2001, in an expanded third edition); or Cavalier, *Managing Through Training*, (2002).

But the dichotomy between medium and message was corroborated and extended by HumRRO's 1971 report to the US Army, in *Comparison of Techniques for Guiding Performance During Training*; and that report was summarized in Cavalier (1983) in introducing it to the meetings field, which had somehow overlooked it. An ensuing two decades of formal studies demolished the cherished sales clichés of the A/V industry (including McLuhan's erroneous dictum), on which so much failed training has been predicated. American business must now try to catch up to reality. Having been introduced too late to ISD (and too often via returning service men who couldn't communicate with their own unskilled training superiors) many American organizations are now recalcitrant, paying more lip service than money or know-how to their own indispensable training efforts.

One of the reasons that TV had such an impact on public education is that the underlying theories and assumptions of modern education itself are relatively young: John Dewey published *Experience and Education* in 1938, when film was a rarity in the school and TV broadcasts didn't exist. Given the broad public acceptance of free tube-entertainment following World War II, TV had the power to demand to be accommodated elsewhere, including schools, but TV has not yet lived up to its promise in this country. Mexico, for example, broadcasts first-quality *school* instruction to all its villages throughout a country of widely varied terrain and despite poverty. We can't seem to learn that lesson, despite a crunch on adequate school buildings and failing educational systems. We do have the medium, Marshall—we just don't get the message!

As a result, all A/V media and methods were re-evaluated—upward—in the pop viewpoint. But *pop* didn't have all the answers, either. The fact of TV exposure itself seemed to confer cache' on products advertised, although advertising space is not necessarily synonymous with product quality. This does not dispute the value of TV advertising as an exploiter of the massive exposure of the sponsor's message.

In an increasingly technologized and visualized world, learning theories based on the printed word, aided with chalkboard and maps and still photos were deemed inadequate—without research! The Army's Dr Kanner found the opposite to be true. Simple images are still valid visuals—they don't need to be expensive, colored, and full motion in order to be useful. Is it any wonder that the manufacturers and service groups and consultants haven't flocked to these *proved but contrary theories*?

New ideas were flowing during the second half of the last century but they didn't fit easily into the marketers' plans or into traditional molds, and business abhors change and enshrines tradition. Or *did*, until the Age of Computers and radical daily change of electronic wonders. Maybe in the thought process business still does favor tradition. . .and that's probably why business can't seem to understand contemporary training well enough to appreciate ISD competence in that field.

Fascination with wonders has transferred to the schools, too. . .unfortunately, because few have bothered to study the underlying principles, even though the paucity of existing new teaching/learning materials has already been identified. Yes, the kids need to be able to control the machines, but the machines still must then be able to say something intelligent to the kids! That *something* is content: subject matter, and marvelous equipment is no substitute!

The issues and workable approaches to the theories of instruction were probably not fully codified until 1968, with Jerome Bruner's book *Toward a Theory of Instruction*, which described seven key characteristics. The National Education Association contributed Ira Gordon's ten

Criteria for Theories in Instruction, in 1968. These two key documents occurred within recent memory and indicate how tenuous a hold that training theory has on corporate realities. Many of today's corporate training managers-of-that-title simply are not versed in these theories and practices. The result is a mess that users recognize and the training field tries to blame onto ISD. For shame!

As theory, most early work was exploratory rather than prescriptive. Perhaps the first correlative organization of theory and knowledge in both education and training was presented by Philip L. Hosford in *An Instructional Theory: A Beginning (1973?)*. His prescriptive principles created a unified, systematic approach that generated a quantum leap in the understanding of the *conversion of knowledge into performance*. Isn't that the purpose of all training?

But to reiterate: training as a formalized discipline is less than 40 years old at this writing, but most or all of the persons who were aware of its beginnings are already gone from their respective organizations. Therefore, marketers can push almost anything, and the members of the Pollyanna Press will publish mostly things supportive of the advertisers' positions, regardless of their merit for you. The group communications field has already been subdivided by suppliers and press into meetings, training, and conventions; and now it's a profitable industry. *Caveat emptor!*

In this early, uncertain stage, B.F. Skinner was attempting to create his theory of behavioral technology. That led, in the 50s and 60s to the development of Programmed Learning and teaching machines. . .and in the creation of a handy means to manipulate the adult learner's animal self resulted but have since been reversed. Just another fad because "what's new" is not necessarily "what's best". Shame on Skinner et al. And shame on American business for being willing to be stampeded by unfounded fads.

Skinner believed—apparently falsely—that we can teach anybody anything if the content is broken up into small enough pieces. His theory, in turn, promoted time-and-motion studies, etc. We now know that early job minimization was a mistake—and that job enrichment programs are now undoing the work of Skinneresque "job efficiency experts." Without doubt, education's "publish or perish" dictum can be damaging to education and instruction. We know today—through formal research—that chopping a task into little pieces can interfere with the learner's gestalt understanding of the task and therefore with his performance of it. Remember bicycle riding! Can you chop that up into peddling, steering, and balancing—separately? And are some of your training requirements more complicated than that "simple" motor skill?

While Skinner was still the resident guru of business, Programmed Learning became the rage. Yet the HumRRO report of 1971 indicated that the PL format does not necessarily aid conceptual understand, which is wholistic, not sequential. As we wrote in prior books, "You might say that a hamburger is a programmed steak—chemically identical, yet changed for all time." Then why have some program designers ignored the developments of the related fields? Is the pull of the market so strong? Or are some of today's training managers still so insecure?

Reality Check:

Nevertheless, the 60s saw the first concerted efforts to deal with instructional objectives in a systematic way. Two entries include 1) A. E. Hickey's monograph, "progressive Instruction in

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Business and Industry,” in *Applied Progressive Instruction* (Wiley, 1962), and 2) Robert Mager’s *Preparing Objectives for Programmed Instruction* (programmed; reissued for instructors almost unchanged, except for margins), in 1963 by Fearon as *Preparing Instructional Objectives*.

As an early attempt to identify and protect program purpose, Mager’s approach became a mini-classic. Mager and PL reassessed and stressed the impact of organization of materials on learning efficiency. That’s still a valued insight, but current research indicates that rigid sequencing in PL (left hemisphere brain processing) can interfere with conceptual learning (right hemisphere appeal): bicycle-riding, again. Is it now “Good-bye, Programmed Learning?” Not necessarily, if your task to be trained-for is related to counting book pages in sequence or putting one foot ahead of the other in sequence. On the serious side, bookkeeping might be considered to be essentially sequential, although accounting is highly conceptual—both dealing in the sequencing of numbers. Certainly the early organizational books for educators now need translation for trainers.

Since PL leans heavily on Skinner’s theories, PL is now viewed skeptically by many professionals; it will probably survive at least in part because it adapts so readily to the computer’s on/off logic system, which is itself sequential. The computer has an infinitely greater capacity to mimic human learning patterns, rightly or wrongly programmed.

On the whole, Programmed Learning is now seen as just one more format, rather than as a formal procedure applicable to everything, as ISD still is. PL is no substitute for ISD!

Overall Development of Training and ISD:

Although much slower to develop, ISD is not a patent medicine approached by one individual. ISD is thorough and is less susceptible to fakery than is any other method around today. Nor are any future developments likely to be more cohesive a system than ISD already is. The ISD system or process can be identified by that title as early as 1967; but the developing process appeared under such early titles as *Training Situation Analysis* or *Design of Instructional Systems* as early as 1963.

In the 1960s, R. M. Gagne’s *Principles of Instructional Design* and later his *Conditions of Learning* helped to establish the general topic of instructional design. The latter work, although heavily oriented toward psychomotor skills, is considered to be a classic

Trainer Dr. Malcolm Knowles was contributing to the organizational efforts via his monograph, “New Media in Education” in *Adult Education* (Aldine, 1966). In 1967, Dartnell published a ring binder text on meetings methods and tips, to which this author (uncredited) contributed original work for the meetings/conventions industry’s first collection of codified methodology for determining meeting participants’ knowledge and tool/training needs. The Audience Profile and Message Profile and Objectives Profile that are much imitated today throughout the meetings industry are this author’s original work, and were included in the book *Sales Meetings That Work*, along with all other forms we had developed. Based largely on our original materials and formats, that ring binder was seminal in the meetings field, which was as yet unformed among users. The forms’ formats were based on our half dozen years’ experience in coordinating multiple national conventions and corporate meetings using original methods for a number of organizations (for whom we consulted annually) simultaneously in each of twice-

annual seasons. We then learned the difference between *any one organization's needs* and *all organizations' needs*. Associations in the field have attempted to create widespread "expertise" by pronouncing thirty, one-company executives to have the same experience as one, thirty-company consultant. Convinced? Or do you seek their relatively meaningless boost to your ego?

You don't think training happens in meetings? Well, the industry breaks group communications up into segments—but that promotes the targeting of readers by specific function: i.e., controlled circulation. The segmenting of group communications into meetings, training, and A/V is a commercial, not a legitimate, segmentation. Don't be fooled by it. Qualifying for a controlled circulation publication *does not* indicate that you've *arrived* or are recognized as being qualified in your profession, no matter how it boosts your ego!

Also in 1967, J. P. Guilford's incisive book, *The Nature of Human Intelligence*, identified five mental operations used to process four kinds of information content in one of six forms. He established 120 variables known now as the function of *cognitive style* vs. ability. Notice the importance of content. And notice, also, the late date in man's history, as well as the recency in learning theory. Working below the surface structure of PL, L. J. Briggs' 1970 publication, *Handbook of Procedures for the Design of Instruction*, brought more formalism to the instructional process under the aegis of the American Institute for Research, Pittsburgh. Although advances had been made in structuring meetings, the original materials were scattered, and they were never collected by the publications in the meetings field. Is informing readers not important—or do commercial considerations count for more?

In this period of the systematizing of programming, this author's first bylined book, *Achieving Objectives in Meetings*, appeared (1973). It embodied the industry's first complete system for protecting the message against media but was intended to further train meetings professionals—of whom there were relatively few at the time. In the 1970-71 season, meeting planners were called together for the first time in the world's history of meeting planners by Jay Lurye, under the title of the World Meeting Planners. In the following year, Meeting Planners International (now called Meeting Professionals International) was formed, likely by borrowing Lurye's first attendance list, not necessarily with his approval. Lurye and Cavalier were previously co-workers at United Attractions, the organization that founded the convention consulting function, back in 1960.

By the mid-70s, HumRRO and the Rand Corporation were re-evaluating military versions of ISD. Each of the service branches was establishing its own system along similar lines, but the lines were not identical and interchangeable. The result was a competition internal to the military and a major advance (through competitions) to the training field. The Navy's system won. Ultimately, this author was able to interview the members of the Navy's award-winning team at Great Lakes (IL) Training Command before normal military transfers scattered them . . . and the specific methodology of the present book is the end result.

For the business world, one of the first correlative approaches to training was Carl R. Vartel's 1976 classic, *Instructional Analysis and Materials Development*. Even if his was a relatively narrow construct, little has been done since in the methodology of corporate training which was not either outlined or foreshadowed there. That book was prepared as a specific aid to technical education/instruction—and it stressed system: "Appropriate planning and organization are essential in the development of instructional materials so that the most effective learning will occur. This planning and organization should take the form of a 'systems approach,' which

includes the conduct of an instructional analysis through to the completion of a course of study on the training plan.” Has the training industry’s problem ever been more succinctly (or more recently) outlined? How can professionalism be assigned by title?

Global understanding was furthered when advanced theories were correlated into a text entitled *Individuality in Learning*, by Samuel Messick *et al.* Messick himself amplified the topic of cognitive style and ability, which managed both to clarify any reasons for ragged differences in performance by individuals and also to make the field of instruction seem infinitely more complicated than common sense (and millions of years of evolution) makes necessary.

Linkage between instructional development for the public school and the training room was established with *The Systematic Design of Instruction*, by Walter Dick and Lou Carey (Scott Foresman, 1978). Intended to be used by public school teachers and designers of curriculum, the book presented insights into the organization and philosophy of systematic design, including reasons and concepts as a basis for variation. Linkage to the military came when the US Navy acknowledged the use of the Dick and Carey book in revising its incipient ISD from the Navy’s original version, then-current, into what became the award-winning final for HumRRO and Rand, as previously mentioned.

Given the historic dichotomy between developments in the public and corporate fields of instructional works, as well as the fragmentation of research in both fields, corporate training understandably lacked both clear direction and dependable methodology until the mid-70s. As was previously explained, much of that early methodology was essentially restricted to military use. To fill the vacuum of leadership and direction in business between the 60s and 80s, countless theorists promoted countless rootless theses and launched fad after fad, with the assistance of publications desperate for news. So training was confronted with argument based on PL frames or pedagogy vs andragogy or celebrating The Supremacy of Media in the hands of the Electronics Gurus. What about people?

Perspective and common sense came to the field with the publication, in 1979, of *Individualizing Educational Objectives and Programs*, by P. J. Valletuti and O. A. Salpino (University Park Press). Although keyed to psychological evaluation in public education, the book put the entire emerging field of instructional discipline on notice with a damning observation:

“Educators have been brainwashed into denigrating their own talents and unique insights and to rely on the wisdom of presumably sophisticated professionals who carry testing materials from school to school. . . .The absence of translation and the use of impractical jargon *reinforces the dependence of teachers on others and prevents them from utilizing common-sense approaches* to evaluating the educational skills and needs of pupils.” (Emphasis added).

With that caveat in mind, we can go to the issue at hand, the creation of valid instruction for job training developed with a sensible, dependable system.

The Scope of This Book:

In this book we have adopted and adapted proved military procedures, have given them new rationales and coordinating forms (called “correllators”), and have created a composite version of ISD related to (but distinct from) the various military versions and civic books and methods. Some book elements are totally original—having no direct counterpart in military versions. Even

those elements marked “based on US Navy example” (remember, the best military version in the competition) have significant changes that make them more usable by civilian organizations. Forms used here directly as additional information for you are indicated with the number-code “N:-” and are found mostly in the Appendix.

Nevertheless, we acknowledge and endorse the underlying Navy procedures, with good reason, even though many procedures were altered so as to simplify. This author was fortunate in being able to meet and talk with the award-winning instructional design and development team at Great Lakes (IL) Naval Training Command. We have had and enjoyed their counsel in highlighting and clarifying issues and reasons for specific practices, and our debt is hereby acknowledged.

Two concepts emerged and need to be emphasized:

First, the ISD process is eminently logical, reasonable, and practical. Its phases, tasks, and steps—if conscientiously applied—so guide the thought process as to virtually preclude judgmental error. Even possible error itself is ferreted out and corrected by the iterative nature of the process. It’s not necessary to have an advanced degree in education nor decades of experience in training in order to make ISD work for you.

Second, the military has proved that it is faster and surer to teach competent performers of a job just those platform skills needed to function as an instructor than it is to teach a skilled classroom instructor how to perform a complicated job. Platform skills are portable—they travel to any reach of the owner’s own platform job experience. Platform skills are lionized by the training industry but are less valuable to the employer, who already has knowledgeable job experts on staff: they are his cadre!

After selection on a stringent profile of trainer-candidate personality characteristics (why give a permanent teaching job to someone who hates the job and maybe other people)? A Navy job specialist can become a competent instructor in just six weeks. (Although project/job specifics change, the instructional know-how lasts forever—or as long as that training job does!) You should be able to make your current job last longer than is likely with trial-and-error-and-error methods. So there’s not much excuse for your failing to master ISD if you want to manage others or to oversee a program through consultants—or even do-it-yourself.

That military six-week platform-polishing period contrasts with a period of approximately six months of job-related lead time (reported necessary by a manufacturer of electronic products) that’s needed in order to allow a training-platform specialist to become proficient on the existing product(s) for that same manufacturer.

Although each new product might require some additional retraining of any platform specialist, a design engineer already familiar with the entire product line could be more efficient and more effective—sooner!—over a broader subject area if given platform coaching or formal training. Moreover, the engineer’s conviction level with trainees will be higher than the outsider’s, too, even if he lacks some of the platform star’s finesse. We witnessed such a star’s using his wristwatch in his hand as a show of concern for precision time, although his client company already knew the running time of that segment of program. For whom the show? For what purpose? For the trainees, the watch itself became an attention-splitter. If lionized, the watch must be important—when would it become pertinent? Negative input because of a platform star’s hoped-for show of finesse! But negative input does not prove finesse.

Clearly, you or any other competent performer of any job or task can use ISD methodology to design and develop and implement training programs that will achieve observable, measurable, and verifiable objectives. . .reliably! Now, if you don't really know your job, you are in serious trouble as a trainer! And you're probably in worse trouble as a purchaser of consulting answers to the problems that you don't understand!

What follows here, then, is not THE methodology of ISD (which does not exist) but rather a faithful recombination and interpretation *for business* of decades of our book and article writings plus extrapolations from four branch versions of military processes, principles, and methods. The necessary conversions or extrapolations have already been completed. So what's included here is *what we have in our own hands-on experience proved workable* in the business world.

Our purpose in discussing the five phases of ISD in such detail in the five key units following is to give you a managerial overview of the process that will yield managerial control, whether you do much or none of the actual work yourself. The forms alone won't do that job! So don't skip through lightly! But the forms will guide your learning and doing.

No book can make you an expert in program development with a single reading—so you will probably refer to this book constantly. Yet this book is *complete* and will enable you to oversee even the most ambitious training programs *if you conscientiously apply its principles and methods*. Anything beyond that statement would be a guarantee—and no guarantees can be made for any newly-developed program prior to its test runs and—even if it should run flawlessly there—its initial actual run. However ISD guarantees that the program that you *seek* via proper documentation will be the program you actually *get*!

The collateral costing segments in the Appendices C & N have a military source. They concentrate on budgeting and cost-effective media, and are not necessarily a strict part of ISD procedure but are provided here in the certainty that money considerations will affect—and sometimes dominate—options and decisions. These criteria will help you to make choices that will not damage your objectives, at the very least, and will surely optimize your intended results when budget are adequate. Again, we provide original correlators to help you to apply the types of military how-to materials provided in the Appendix N. No, the entire military books are not contained here. If you want more than we've provided, see a Navy Training Command officer. Some reproduced military forms are very rough; some are very small-type and might not survive reduction, but they're worthwhile, if. That applies equally to the Algorithms reprinted for purposes stated in this text.

Adequacy is a concept that will recur in all training contexts. Adequacy is not a pejorative word in the ISD context; rather it states that performance is *satisfactory* without dwelling on the superior performance and performer, who cannot (by definition) be considered the norm and whose excess capabilities might offer no (usable) benefit.

By the time you have read and digested the substance of *Common Sense ISD*, you will be able confidently to set in motion the processes that will culminate in a working staff, line, or marketing program that will achieve the desired goals—every time. The segment objectives and checkpoints are stipulated by the process: honor the ISD process and it will reward you with a fine, workable, and achieving program! And if you cheat by looking for shortcuts or using guesswork, don't blame us for even the least of the disasters that could come your way with any guesswork program.

On first reading: To get the most out of this book, read through all five of the following phases before attempting to convert any of the information or operations into action in your project. In that first reading, keep in mind that some of the steps of ISD are sequential and some are conceptual; some, serial; and a few are to be performed simultaneously and interactively in wholistic fashion, as in bicycle riding or Federal/State tax form preparation. You'll know which.

Yet the language arts (and therefore this presentation) are only sequential or serial in nature. So if the process is working well, ideas will cluster and flow, even if not in perfect book "running order" for the given discussion. That's synergy coming your way! Synergy of the working parts is essential to the proper function of the entire process, and that synergy must take place in your mind, first and foremost. Have faith: mental pictures will transfer themselves to your operating program. The event is likely and automatic.

On first reading: Do not concern yourself with seeking synergy—you can't seek it. It arrives—the *Aha! Experience*. So do not concern yourself with it, lest you inhibit your own creativity during the useless search.

On second reading: This time jump back and forth as necessary to tie together the logically related elements. That will help you to master the components and see how each contributes to the whole. You can begin to do the actual work during the second time around. You needn't do that from memory because this book is at hand. In ISD: that's the "know/use/aided" category of competence. Check it frequently. And be sure to check your incipient programming at each stage recommended by ISD.

ISD is complex but not difficult. There's a difference. What *is* difficult is the need to make FACT-based decisions in areas traditionally governed by emotions, guesswork, or mindless response to the competition. Fact won't hurt you. Guesswork probably will.

Your Role in the Process:

As the originator and manager of a demanding programming process, you will have to carry the responsibility for resolving discrepancies between the ideas regarding the do-able; between the highly inflexible givens of machines and workplaces and the sometimes grudging accommodation by staff to those inflexibles; between the human impulse to "get something—anything—out there" and the time-consuming precision required to get the right thing out there in the right format to do the whole job right. That takes character and resolve. Yours!

In all real life, training situations relating to personal problems of trainees can interfere with their mastering the jobs/tasks trained-for. As a result changes (sometimes reinforcement) in their affective state/attitudes might be needed even in cases that look to be straight-forward skill or knowledge based. Be alert to hidden or disguised personal needs and factor them into all phases of your analytic and test procedures.

If affective states are always a consideration, even in cognitive and dexterity training situations; and if much of that dexterity/psychomotor training requires some cognitive input; and if some cognitive matter requires some skills practice, it's evident that you, as the Program Manager, will be dealing a virtually all time with interrelated learning domains. That's normal. Expect it.

Hosford has identified four possibilities of overlap in addition to the three pure domains—or seven constant variables within the three interrelated domains. The three domains and their variables do not have equal import in all training situations. Be alert to small changes in circumstances which can translate into major differences in approach. For example, if a salesperson is expected to demonstrate a machine, that person must practice the dexterity skills basic to the operation of that machine but need not learn all its tricks. Your how-to manual should describe the tricks for later practice. But the salesperson must also understand both your purposes in training him/her and even, to some degree, the repair/maintenance function before the salesperson will feel secure in making the presentation. Many valid corporate on-paper plans fail because the salespersons refuse in the field to attempt the complicated motor skills glossed over in the training room. Sales people will not knowingly make themselves look silly before a client! So forget the direct orders to demonstrate—they will when they feel capable. Attitudes and approaches to the given machine or widget will be colored by the fundamental differences in emphases: a) if the machine or widget is itself the product; or b) if the machine or widget is only the medium for demonstration, as with a slide projector that shows the image of the machine or widget, your product. So depending on the salespeople's concepts of need, their efforts (and therefore their demonstration) and results could vary significantly in that segment of the course which teaches operation of that machine.

Given that logical argument against “simple” solutions to training, it's easy to understand also why the job/task(s) to be trained-for must be separated: so as to identify *terminal* skills and objectives and also to identify the subordinate *enabling* skills and objectives of which the terminal behavior and objectives are comprised. The identification of the skills is a matter and product of the Analysis phase; and the objectives, of the Design phase. But it's all quite logical.

In our lives, the three pure domains of knowledge, dexterity/motor skills, and attitude are always interwoven. Our point here is that any assignment or identification of *primary* domain made in the Development phase using the Algorithms given in the Appendix can reflect primacy without excluding its related values. Program enrichment depends on accommodating valid—not at all extraneous—related elements. Consider all steps within each phase to be slightly adjustable according to your need, *first provided that those adjustment are not your disguised attempts to avoid fresh critical thinking, each time.* Avoidance is intellectual poison.

Fulfilling the Dictates of ISD:

The incipient training program in question originates with you. No one is better able to know when its dictates have been fulfilled. The dictates of that program will be best fulfilled when the dictates of the ISD process are fulfilled:

- a) the rigorous derivation of training requirements from the job requirements, as identified 1) by objective measure of existing jobs or 2) by consensus of subject matter experts for potential new jobs, as appropriate;
- b) the selection of those instructional strategies that maximize the efficiency of the training offered; and
- c) the iterative trials and revisions of instructional materials throughout the developmental phases until the terminal training objective is met.

Then—and only then, according to ISD—is your project truly ready to be implemented. Then—and only then—will it deliver the desired results. . . dependably and consistently.

Finally, because some of our readers will be creating their first training program of any kind, we are providing additional helps and guides toward evaluations of such “jobs” or programs for generic situations. . . but placed in the Appendix, because such extra helps are not an integral part of ISD and are not absolutely necessary. Use and adapt whatever you need.

Do not try to read this entire book at one or two sittings, and do not try to read it as it appears—chopped into many numerated pieces. Rather, read the items that belong together—an entire Phase, if possible; but, if not, surely an entire Roman numeral designation for individual duties or tasks, together with their steps. You’ll notice that sometimes words such as Job, Duty, Task and Step are capitalized, and sometimes they are not. The capital letters represent an attempt to separate the precise present usage under discussion from the generic concept of the same word. That selection process isn’t always as clear as it sounds, but discrepancy won’t affect the sense of the material even if you think I’m wrong. And if you can challenge our choices there, you’re already learning!

And if you don’t need dependable and consistent results in training, why are you bothering to create a new program?

A few Words About This Book’s Construction:

There are no chapters in the traditional sense. ISD has five intrinsic sections or segments (called Phases), each with a few or numerous subsections. Each Phase is designated by a Roman Numeral, I-V. Unlike with true Roman Numeral outlining, letters for segments do not follow next—rather the engineering system of 1.1.1 is used. So your designations here, for example, are I-1-1 or III-2-7, etc. It’s hybrid, but simple. Easy. Foolproof.

Although the book has no numbered chapters, every individual segment is numbered by the ISD numbering-code system: [Roman-Arabic-(Arabic)]; so I-1 is the smallest segment number, coming before I-1-1 or II-1, etc. If you know engineering’s 1.1.1 system, you won’t go astray.

Some of the original materials provided in this book have served both the author and his clients for decades. You’ll identify these because they’re positively ancient—of the Genus Typewriterus. Although we could have produced a more finished appearance by converting all forms to computer format, that would have destroyed the simplicity that can be seen at the heart of the ISD system and its decades-old related research (quoted in our books *Sales Meetings That Work* and also *Managing Through Training*.)

Suffice it to say that “adequate” is the operative word in ISD. “Sloppy” is not condoned, and “pretty” is irrelevant to learning. You’ll learn from Genus Typewriterus just as fully as from a computerized version. . . and that fact demonstrated here is worth more than any lecture on the topic. For proof, see the Frontispiece’s computer-finished “ISD Hierarchy Chart for ISD.” Do you really think you’d have learned less if the hand-drawn original were reproduced there instead?

Now carry that iconoclastic understanding forward into your considerations for costing and also for Instructional Delivery Systems media choices (aided by algorithms in the Appendix). Always use the most cost effective (not necessarily the least expensive) alternative Instructional

Delivery System that works, because the US military research long ago proved that skill—not expense—determines learning/teaching values.

Using those intrinsic divisions as separators here creates the most-controllable approach to the many pieces of this relatively complex (but easy, because of its common sense) but wonderfully accurate programming tool. The identification of related, free-standing forms and other related items by ISD-numeral was a military development—we have simply extended it to the whole of this book’s text because that seemed the most logical and controllable method. Unlike page number changes, no matter how or how often this text might be revised in the future or others, the Romanesque designation will probably never change.

In the process, we have created original “correlator” forms, among other guides, that will help you to coordinate the many military-type pieces that might otherwise tend to overwhelm by their sheer numbers. However, to preserve both the proof of ISD’s simplicity and to preserve due credit to the military we have placed military examples in the Appendix N. ISD is not difficult, but it is demanding of precision—never forget that. What you put into the ISD process is what you will get out: if you honor the system, you will have a program *guaranteed* to reflect and serve your input and initial objectives.. And if you choose not to do all the work yourself, a knowledge of ISD procedures will enable you to supervise other persons knowledgeable and efficiently, including professional consultants.. Then you will not be subject to unjustified rate hikes and silly blandishments that are not only profitable to the suppliers and “consultants” but also worthless to you.

Finally, in choosing whether to create highly-finished work via computer or to reflect the simple but workable items that any organization can replicate with a competent typist, we have decided to use our original handicraft. You can probably use those notes, too, because the idea of “The Medium Is The Message” is a distorting slogan that has been creating problems with content of meetings for nearly 50 years! HumRRO and the US military have already proved otherwise! “Pretty” has nothing whatsoever to do with instructional value! We’ll prove it to you by printing photos of our hand drawn charts in an early Appendix section, rather than run them through a computer scanner! This is the least fancy system that any reader could possibly have, and it should be understood on that basis.

Because ISD has been promoted to its widespread (but somewhat disparate) status by the various Branches of US military and some colleges and commercial schools, there is no absolute “standard,” although the US Navy, in the mid-60s, won an award for creating the best system. That award-winning system (explained to us personally by its specialist practitioners at Great Lakes Naval Station near Chicago) became our model for this book. However, the military has needs and procedures that require an exceptional amount of detail work, which our spare-time readers don’t absolutely need (but might want to use if they prefer not to go mad in the control process). Anyone should understand if military draftees could handle it at that time. Therefore, we have “translated” the Navy/military version(s) into a system that will work for even the smallest business entity that needs to train employees, associates, or neighbors.

You can learn ISD procedures from this book. You can hire specialists who are leaving the military and who already understand ISD—there are thousands or perhaps hundreds of thousands—ordinary guys who learned something new and valuable. You can hire local school teachers and even paid consultants, if needed. But you are not alone. . .and you can in fact do-it-yourself!

A word about additional helps:

Money is basic to all considerations of alternatives; and so we have provided a special costing guide in the Appendix C. It contains items that are both this author's and those of the military. It's intended to provide additional help if you want it, but none of these added materials is essential for your purposes if you don't think so.

As an adjunct to the basic program (because anyone who does these collateral things once or twice can probably do them unaided forever) we have included both a series of 4 key Characteristics Algorithms (regarding various learning areas and objectives) and also a series of 12 Instructional Delivery System Algorithms (those pair with the preceding group—giving you 16 quick, precise guides to the correct media choices for your programming). If you happen to have access to computer-aided instruction, you can read “computer” for any of the visual items that can be converted to computer program or disk. Always remember that the slick new gewgaws that some suppliers would like to sell to you are not necessarily aids to instruction. Buyer beware!

Materials that are essential to your understanding of, or implementing of, the ISD process are contained in-place in the body of the book text, as numbered in Roman-Arabic-Arabic segments...except for the equipment Algorithms and related (noted above) which are too extensive for textual location because they would interrupt. ISD discourages avoidable interruptions.

Therefore, the materials in the various Appendices are probably worthwhile, whether created by the author (Author Aids section *AppdxAA*) or borrowed from the Navy (*AppdxN*). *Correlators* are author-insights and combine two or more Military Tasks or Steps on one sheet for better understanding and ease of use. Forms marked *AppdxN:helps* are not essential on format but might aid you in conceptualizing your needs.

The Appendix N helps marked “N:-,” which are totally military, appear as photos of the actual mimeographed military originals. Some diagrams include a few of our notes, which might help you to see how easily the military material can be adapted to personal objectives.

In those early days of ISD's development (as a foolproof system) more than a quarter century ago, there were no production-photocopy machines and few unassigned computers. Programming had to work without “pretty” or “glitzy” elements. . .just as things have been working for thousands of years from the caveman to the invention of the first electronic lens medium—the film projector. The computer simply offers just a different way of getting the same basic, old-style images to your eye. But that computer ease could cost you more money than the incipient program is worth. It's your decision. But if you stick with the Algorithms, you can always get another supplier! Review the entire group of Appendices with your first reading of this book so that you know what's there for additional help if you want it. It also contains other material that we have originated and think might be useful to you.

Now, you show me *your* stuff!