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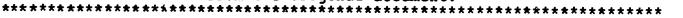   *Instructional Systems; *Military Personnel;
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ABSTRACT
        Ten years after institution of the multiservice
effort to develop a common doctrine and procedures for systematic
development of training and education curricula, which became known
as Instructional Systems Development (ISD), a U.S. Army Training
Board report declared that the Army's military occupational
specialties were devoid of serious analysis, design, and
developmental work. One reason for ICD's lack of success may have
been the Army's failure to establish a fully trained professional
corps of civilian training developers led by training managers who
were deeply grounded in ISD. At the school level, neither the active
duty military nor the civilian specialists were well grounded in ISD.
At the same time, civilian specialists found their jobs to hold
little prestige, and commanders and service school commandants failed
to grasp the ISD concept. Like competency-based education, ISD had
strong behaviorist roots. Many educators, on the other hand, tend to
follow a humanist philosophy. Part of this problem with educational
philosophy may have been rooted in ISD itself since the system was
cumbersome, bureaucratic, and too time-consuming to follow. It must
also be remembered that at the time of ISD's implementation the Army
was also experiencing serious problems with recruitment.
Notwithstanding all of these possible causes for the failure of ISD,
perhaps the key reason for its failure was an inability to come to
grips with the Army's real training needs. (MN)

Where Did We Go Wrong? An Analysis of the Way Instructional
Systems Development Was Mustered Out of the Army

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Preface

This paper is based on critical reflections about what
has seemingly gone wrong with the systems approach to
training as set forth in the Interservice ISD Procedures. It
does not address the thousands of man-years of dedicated
service of both military and civilian personnel within the
U.S.Army who have produced many excellent courses of
instruction with their attendant   training materials.
Numerous innovations in training, training development and
training management can be pointed to with justifiable pride
by Army personnel over the past ten years. The systems
approach to training is still observed more or less as a
mental process by competent personnel who are involved in
training development. The procedures, though modified
somewhat, remain enforced by a U. S. Army Training and
Doctrine Command regulation.

Introduction

A recent U.S.Army Training Board Report (United States
Department of the Army,1985) concluded that over fifty
percent of the Army's military occupational specialties were
"in disarray, based upon random and erratic development
efforts" and were "devoid of serious analysis, design and
developmental work." (p.2). It charged that Army training
products were not standardized, were often contradictory,
and failed to use the full capabilities of U.S. soldiers.
The Army Training Board faulted the U.S. Army Training and
Doctrine Command (TRADOC) for its failure to "employ
scientific methods in the development, fielding, and
validation of training products." (p. 2).
     In 1974, the Inter-service Training Review Organization
(ITRO), consisting of the heads of the training commands
within the Air Force, Army, Navy and Marine Corps,
instituted a multi-service effort to develop a common
doctrine and procedures for systematic development of
training and education curricula. Appropriate training
methods and media and instructional materials were to be an
outgrowth of this systematic development. This approach was
"Instructional Systems Development" or now more commonly
referred to in Army training circles as the "systems
approach to training (SAT)." (United States Department of
the Army, 1982). The ITRO effort was primarily funded by
TRADOC through a contract with Florida State University. The
project was supervised by a committee appointed by the ITRO.
Dr. Worth Scanland from the Navy served as its chairman. The

result of this effort was a series of five volumes which became known as the Interservice ISD Procedures (Branson, 1975 a,b,c,d,e). Scanland described this work as "probably the most basic and authoritative document on that subject in the world." ISD committee of ITRO intended that these inter-service procedures would become doctrine in each of the separate service training commands. A system of analysis, design, development, implementation, and evaluation would become critical to all training development.

With such precise and thorough "doctrinal" guidance, why is there apparent "disarray" in Army training ten years later? Considerable exploration was required to develop a pattern of explanation. Twenty-five key researchers and training practitioners with intimate knowledge and expertise with ISD from all four military services were asked to state their opinions. As could be expected, no single answer emerged. Yet many seemed to agree that there now has been a renewed emphasis on conventional instructional approaches. The current prevailing trend is away from self-pacing and non-traditional instructional methods toward more conventional group-pacing and human instructor-centered classroom situations. The role of automated systems in delivery and management of training (i.e., computer-assisted instruction (CAI) and computer-managed instruction (CMI) is under critical review. Some military personnel favor a return to strictly conventional teaching as seemingly remembered in the "good old days" with middle management non-commissioned officers back in charge of teaching, to include being the primary dispensers of technical information and serving as live role models in front of the classrooms for trainees to emulate. Training and training development were again considered one and the same functional area. The "Little Red School House" came back into vogue as a descriptive metaphor of TRADOC education and training. In the forefront of these changes has been the Commander of TRADOC, General W. R. Richardson who expressed dissatisfaction with the "atmosphere of the classroom". (Richardson,1984). A definite need was apparent for TRADOC trainers to improve the learning environment. This improvement appeared to have been expected to come from human intervention in the classroom more than from advanced instructional technology. The high expectations of ISD and non-conventional instruction that were raised in the mid-1970s had not been realized.

Pattern of Explanation

One of the principal reasons for the lack of expected success with the systems approach to training may have been the failure of the Army, TRADOC in particular, to establish a fully-trained, highly professional corps of civilian training developers lead by knowledgeable training managers at TRADOC who were deeply grounded in ISD theory and

doctrine. And that this corps have the necessary fiscal
resources and command support to "enforce" ISD on each of
the twenty-two Army Service Schools who were primarily
responsible for training development. Instead,
implementation rested largely on the shoulders of active
duty military personnel and low-grade civilian education
specialists. Headquarters, TRADOC, had the responsibility to
train this work force, develop standardized courses of ISD
training for their staff and faculty, visit the service
schools and provide on-site guidance and expertise. One
Headquarters, TRADOC key person during that period reflects:
"It never did any of those things, or did them in such a
poor fashion that they didn't work". He continues: "The
people we hired were not very good. They simply didn't know
their jobs. So we had the blind leading the blind".

At school level, neither the active duty military nor
the civilian specialists, who generally worked for the
uniformed personnel were well-grounded in ISD. They did
not understand the ways to meet the technical requirements,
yet produce quality instructional materials in a timely
fashion. Often the mechanistic details and the
standardization of an ISD facade took precedence over
relevant training of soldiers in the tasks needed to
accomplish the military mission. ISD became to many, an
excruciatingly painful experience, with no visable training
products to show for their efforts. About the time the
military personnel became functionally competent, their tour
of duty was finished, hence they moved on to other career
challenges and were replaced by neophytes. This cycle
continues even to this day.

Meanwhile, the civilian specialists found their jobs to
hold little prestige. They were continuously training their
military supervisors. Chances for promotion in the 1710/1712
civilian career fields were slim at best and often entangled
with education services specialists and officers who managed
Army Education Centers and who had little or nothing to do
with training development nor did they generally share the
same education philosophy as the trainers did. Hence, these
career fields seemed to offer little for the bright,
creative, upwardly mobile training developer. On the
contrary, civilians, who "treaded water, met the daily mail
but made no waves," seemed to fare better over the years
than those who attempted to develop a professional expertise
and effect change in the "status quo". At least, that seemed
to be the perception that existed.

The commanders and service school commandants failed to
grasp the ISD concept. The initial TRADOC Study Group had
recommended a slow, step-by-step implementation extending
over five years. General William DePuy, the TRADOC commander
during that period, was not known to be a patient man. At
the TRADOC Commander's Conference in December 1975, he
purportedly told all twenty-two school commandants: "Move
out! I want all of us to get into this Systems Approach to
Training". A witness at this conference remembers that there

were no questions. The Commandants appeared not to know
enough about the "Systems Approach" or ISD to ask any. Nor
did the Headquarters, TRADOC, command element follow through
on implementation. It did not develop a management system
that said, in effect: "You have got to apply the Systems
Approach". Instead, when Commandants came to Headquarters
for dollars and manpower to teach courses and programs, no
one asked if a front-end analysis had been done. Money and
spaces were given out without regard to implementation of
ISD. Hence, the word quickly got around that the "Systems
Approach" was verbage. No one was really serious about it.
        The lack of a common education philosophy among Army
educators and trainers, especially those civilians within
the Army training and educational systems, may have been a
primary underlying cause fo lack of success with ISD. One
senior service school technical advisor stated:

        "The more basic global kind of problem is with
education in general; military training is simply a
subset of that. There is simply no fundamental
principle or educational doctrine, if you want to put
it in a little bit of a military context, that is
subscribed to and practiced with religious fervor."

        ISD, like competency-based education, has strong
behaviorist roots (Gagné and Briggs, 1979; Dick and
Carey,1978; Nickse, 1981). Many educators, on the other
hand, tend to follow a humanist philosophy as espoused often
in adult and continuing education (Knowles, 1980; Mezirow,
1985; Rogers,1969). The underlying issue seems whether
emphasis is placed on the organization and its overwhelming
need to design and develop or, using a term out of the
1950s, engineer learning and the learners to meet
organizational goals and purpose; or on the human learner
and his or her individual needs for learning
(Kolesnik,1975).
        Though strong advocates of ISD, Dick and Carey (1978)
recognized the fact that most teachers viewed themselves as
humanists and were almost always concerned with the
feelings, attitudes, beliefs, and values of their students;
those things which made an individual distinctly human. Yet,
teachers prefer a systematic approach, which used research
and knowledge on the conditions of learning required for
students to achieve clearly defined outcomes. Education
specialists involved in implementing ISD emphasized the
"Army job" and the task analysis which attempted to develop
those clearly defined tasks with precise conditions and
standards. The analysis did little to look at soldier needs.
The underlying assumption seemed to be that individual
learning needs were so insufficient in relation to Army
training requirements that training developers need not be
particularly concerned with analyzing soldier learning
needs. Human soldiers were merely to be molded through
procedural or instrumental learning to do the Army tasks in

accordance with Army prescribed conditions and standards as
mechanically established through the analysis phase of ISD.
In other words, learning was viewed as a mechanical process
(input ,process >output >outcome) not as a human experience.
     Part of the problem with educational philosophy may be
attributed to the nature of ISD, itself. For some, ISD is
simply a name that has been used for the past few years for
a systematic descriptive approach to analyzing the
requirements for instruction, design and developing the
instructional system, implementing it and evaluating how
effective a trainer has been in accomplishing what he or she
started out to accomplish. In essence, it was a thought
process important for trainers and educators to follow in
order to insure mission accomplishment. Yet in 1975, this
thought process was codified in over 1,000 pages of
procedures and sent throughout the Army training
establishment as TRADOC Pamphlet 350-30. Implementation of
ISD then became an effort in persuading large numbers of
people at the service schools to read those 1,000 pages of
highly technical material and to thoroughly understand its
contents. One service school technical advisor felt strongly
that the Interservice ISD procedures as embodied in TRADOC
Pamphlet 350-30 seriously hindered the implementation
process:

     " It was simply too cumbersome, too bureaucratic,
too time consuming to be practical to follow. Whoever
wrote that document must never have envisioned it being
read by sergeants or people with no particular training
in educational technologies."

     Also, it must be remembered that during the period
1975-1980, the U.S. Army was experiencing a serious problem
with soldier recruitment. Substantial shortfalls in sheer
numbers of enlistees was common place. Large percentages of
those accessions who did come into the Army were non-high
school graduates and were below average as measured by the
Armed Services Vocational Aptitude Battery. It was the
period of the so-called "mis-normed ASVAB". Illiteracy and
marginal literacy among soldiers were serious problems.
Readability and comprehension of technical, field and
soldier manuals became a major issue. The majority of
soldiers in many military MOSs were failing their written
Skills Qualification Tests. Testing showed that many
soldiers could read only around the fourth or fifth reading
grade level. The average reading grade level of all incoming
soldiers was around eighth grade level as measured by such
standardized reading tests as the Adult Basic Learning
Examination (ABLE) or the Test of Adult Basic Education
(TABE). Readability of publications and basic skills
education for soldiers became crisis points of concern at
Headquarters, Department of the Army; which in turn placed
greater demands on training developers to write and edit all
training materials to meet seventh through ninth   reading

grade level as measured by the Flesch-Kincaid Readability
Formula without the slightest regard to ISD or the systems
approach to training (Anderson,1986).

Notwithstanding all of the above reasons for the lack
of success with ISD implementation and the circumstances
inherent in the era in which implementation was attempted,
perhaps the key or overriding problem has been TRADOC's
inability to come to grips with the "real" training needs of
the Army. The systems approach to training,as codified in
TRADOC Pamphlet 350-30, assumes somewhat of a stable
organizational environment where Army jobs are appropriately
defined and documented and the Army missions are relatively
clear and understandable. The training developers, along
with the combat developers and the military personnel
managers, work from Army structural documents called Tables
of Organization and Equipment (TO&Es) and Tables of
Distribution and Allowances (TDAs) which are often modified
(MTOEs; MTDAs). Selection, recruitment, training and
equipping the Army generally follow along this
documentation. Divisions, brigades, companies, platoons,
squads, teams and a myriad of non-divisional units are part
of this documentation. Missions are attached to units.
Military occupational specialties, career managment fields
and grade structures are divined and serve as integral parts
of this system.

But the Army, in reality, is not a "fixed" organization
that can be captured at any point in time and cemented into
a definitive organizational documentation that is "real" in
detail. The problems with this documentation are magnified
during the decade of the 1980s with force modernization and
new doctrinal approaches.

Over 200 major end items of new equipment are being
infused into the Army inventories. Units have old equipment,
new equipment and a mixture of different equipment with
rapidly changing authorization documents. Operation and
maintenance of this equipment and its integration into
operational units radically change soldiers' jobs. Similarly
new Army doctrine (AirLand Battle 2000/Army 21) has caused
major rethinking about how the Army intends to fight.
Instead of being a reactive, defensive force of the late
1970s, Army 21 envisions continuous operations with small
units dispersed and operating over an extended
battlefield,in more or less autonomous manner, with small
and erratic logistical support. Soldiers must be both
technically and tactically proficient. They must not only
react to and surviv the battlefield, but be pro-active with
the ability and the will to swarm against the enemy and
scram back into these widely dispersed configurations
rapidly and in a highly synchronized manner. This doctrine
requires soldiers to be able to think and act based on sound
thought and judgment under severe battlefield conditions. It
is not to be an Army of human robots with each person
programmed through procedural training but an Army
characterized by soldiers who are flexible, who can learn

quickly and function effectively under tremendous stress,
doing many different kinds of jobs.

With infusion of force modernization and Army 21
doctrine as complicating factors, unit commanders, training
officers and NCOs in field environments fully realize that
their units are, in reality, far different from what the
authorization and mission documentation prescribes. It is
the unit's responsibility to use the assigned or attached
"for-duty" soldiers to accomplish unit missions, to operate
and maintain available on-hand equipment and to accomplish
daily the special assignments as directed by the chain-of-
command. Of course, each soldier is expected to have a
"basic load" of some type of technical skills provided by
the Army's "schoolhouse". Similarly, soldiers must possess
the ability to perform the common soldiering tasks. Yet
perhaps more important to successful unit operations is the
soldiers' ability to learn and perform new jobs and tasks
continuously throughout their tours of duty. This provides
the flexibility and elasticity so crucial to mission
accomplishment in the real Army. Soldiers are expected to
glean information whether from reading or from verbal
communications with peers, supervisors, subordinates and/or
from other people within the situational environment. They
must be able to meet new challenges and exercise those
qualities that are uniquely human, i.e., think and take
appropriate actions based on those thoughts albeit
pro-active or reactive in nature. This cycle of dialogue,
reflection and action continues as situations emerge and
until the goal is accomplished. Hence, a large part of the
learning needs of the Army are strategies that facilitate
soldiers to function effectively in a great variety of
situational contexts. Procedural learning based on job task
analysis, by itself, is inadequate. Some alternative
possibilities include discovery learning in situational
contexts as can be portrayed on interactive video
simulations. The need for advanced instructional systems
technology in this area is tremendous. As this type of
instruction is designed and developed, the human element
must be addressed at every step of the way.

<div align="center">Conclusion</div>

In conclusion, Interservice ISD procedures as embodied
in TRADOC Pamphlet 350-30 are not widely adhered to in the
U.S. Army today. On the contrary, only a few individuals,
"the-old-timers" perhaps, would recognize the publication by
its title, or could even find a copy. The mental process of
analysis, design, development, implementation and evaluation
is, however, considered and used by trainers, training
developers, and researchers who are competent in their jobs
of providing training and training materials for soldiers.
Similar to the Army staff study format for decision-making,
the ISD mental model is common sense when developing
training. There is really no replacement for it. Whether it

is being employed properly is a different matter. With the Army's state of flux with force modernization and Army 21 doctrine, it is somewhat amazing that the Army Training Board only found 50% of the MOSs in disarray.

Recommendations

Perhaps the greatest challenge is not in the area of developing procedural technical training tailored for soldiers by grade level in each MOS and by special skill identifiers. Current efforts by the Army service schools when coupled with technical training mandated by new equipment and doctrine may well be adequate to provide soldiers with a "basic load of technical skills". The ISD process should continue to guide developers in preparing, implementing and evaluating this technical training. But the "real" Army need may well be in finding and implementing learning strategies that are effective internally among soldiers. These learning strategies must expand soldiers' human capabilities to sort through the myriad of available information, latch onto essential information elements, develop courses of actions (all in concert with other human beings through dialogue), think, make decisions and take actions within situational contexts to accomplish specific goals. This learning emphasis seems the most appropriate for the "Army 21 soldiers".

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