

FOREIGN MILITARY TRAINING PROGRAM DEVELOPMENT

Johnnie A. Butler
Head, FMS Training Acquisition Branch
Naval Training Equipment Center
Orlando, Florida

ABSTRACT

Modernization of the military posture of friendly foreign governments has placed uncontemplated, challenging demands on training program developers. To minimize total cost, foreign governments use existing equipment designs where feasible. By using existing designs, the logistics support package has already been developed; however, this package was tailored to meet the needs of United States military personnel. All items of the logistics package are satisfactory except -- training and technical publications. Problems in these two areas become especially difficult when English is used as a second language by the procuring country. Since their background and experiences are different, a training approach that is different than the one used in the existing package is required. Training developers must modify existing curriculum to allow for these differences, to remove culturally offensive situations, and to tailor the training to learning patterns of the intended student. Once the training program accomplishes its objective, problems with the technical documentation disappear.

INTRODUCTION

Military technology is advancing rapidly requiring continual updating of even the most modern weapon systems. Many of our allies maintain a modern defensive posture through procurement of sophisticated weaponry from the United States and its North Atlantic Treaty Organization Allies.

Existing equipments and support packages are usually procured, where feasible. Though most elements of the support package are universally acceptable, two of these can prove troublesome. They are: training and technical manual programs. These may prove troublesome because, of all elements of the support package, these two are developed to fulfill the specific needs of a group of military weapon systems support technicians and operating specialists who share a common core of training and experience. Unless the support technicians and operating specialists of the procuring country share this common training and experience, attempts to use the training portion of the support package can be expected to result in less effective training.

A recent example where the use of existing training programs to save time and money proved unsatisfactory was when students of the middle east were placed in nine different training programs that had been developed for U.S. Navy technicians. Existing programs were used in an attempt to save time and money. Each program was given to four different groups over an extended period. To insure that problems would be identified immediately, frequent evaluations of training progress were planned. Because of language, background, training, and experience, differences which existed between the U.S. students the group for which the programs had been developed, many problems were identified.

As it turned out, the first group of students served a dual role. In addition to becoming qualified in their selected specialty, they became a pilot group for validation of existing training

programs for use to train personnel who possessed different qualifications than those for which the training had been developed.

As each problem was identified, the training program was revised in an attempt to eliminate like problems for those groups programmed to follow.

The end result was that each group successfully completed their respective training programs. This was made possible because of the extreme number of hours that had been devoted to program revision and increased training time. However, students would have suffered less frustration and total cost would have been less if the training programs had been initially developed to satisfy the specific needs of this type of student.

THE INITIAL ATTEMPT

Program Development

In the initial attempt, training courses were established around existing U.S. military curricula in every respect, including course length, course content, course subject sequencing, laboratory and classroom time, and selected media. As mentioned above, this consisted of nine courses of instruction which was repeated to different classes.

The Instructor

In each case, experienced, highly competent course developers and instructors were used. Instructor personnel had been specifically selected and their performance observed and evaluated prior to the beginning of training. Those personnel allowed to teach had been certified by the contractor and by the Government.

First Indication of Trouble

At the end of the first week, in each of the nine courses, the instructors were behind the planned schedule by 30% to 50%.

Student Reports

When questioned about their training, student comments for all courses were similar, and consisted primarily of the following:

- 1 - "Course is too fast"
- 2 - "Instructor is no good"
- 3 - "Instructor doesn't explain well"
- 4 - "Course is too difficult"
- 5 - "We don't have enough time"
- 6 - "Don't need to take tests"
- 7 - "We need to see and use the equipment"

ANOTHER ATTEMPT

Override in U.S. Courses

In addition to the above nine courses, many personnel with similar cultural backgrounds were provided English Language Training (ELT) then entered in U.S. military training courses, to compete directly with U.S. military personnel.

Result

The resulting attrition rate of these personnel was intolerable, especially for those students enrolled in electrical and electronic type courses. This attrition rate, in many cases, exceeded 50%.

Possible Problem

Though all courses were written and presented in English, this was not considered a problem because the students were first cycled through English Language Training, at Lackland Air Force Base, San Antonio, Texas. A requirement for graduation from this course was that they demonstrate attainment of an English Comprehension Level (ECL) of 70. This ECL of 70 was initially equated to the 7th grade; however, later investigation revealed that this score was based on a test that primarily evaluated their use and recognition of spoken English. Little reading ability or reading comprehension was checked.

Research into the Problem

Because of this high attrition rate, the Government investigated the situation and concluded that the problem was a multifaceted one. The researchers surmised that background experiences, cultural traits, and different patterns of learning were all factors which contributed to their undesirable performance in the learning situation.

Learning Pattern Differences

Researchers discovered that these Mid-Eastern cultures learn predominantly through rote memory, whereas U.S. curricula was based on the premise that the student should first learn principles, then he could be led through attainment of the training objective through analysis of the problem and a synthesis of basic principles to provide solutions to the problem. Consequently, an anomaly in training strategy had existed from the beginning.

Evaluation of Learning

U.S. military curricula is based upon a pattern of continued feedback. To insure that the student is learning sufficiently to enable him to accomplish the objective, the instructor is directed to provide interim summaries and evaluations at strategic points within the lesson. In other words, the instructor directs thought-provoking questions at specific students in order to determine whether that student has learned the subject to that point, and to insure that he does not have misunderstandings about key points of the lesson. In order to insure an adequate sampling of student personnel for obtaining this feedback, the instructor is trained to randomly select and direct the question to an individual student. Because of this procedure, a student that is not understanding the subject will not evade detection by the instructor for very long. This system is used regardless of the rank or status of individual members of the class. This works fine for U.S. students because they are considered to be of equal rank during that time when they are in the learning situation. No one student has a higher status than other students of the class.

This same philosophy with Mid-Eastern students met with sudden, overwhelming resistance. First, their cultural training seems to prevent them from engaging in any act or activity that may prove degrading to another member of their society. Consequently, if one student does not know the answer to a question, it would be degrading to him for another student to provide the correct answer. Initial reaction of the student, when placed in this situation, seems to be that if he doesn't provide an answer he cannot be wrong. When questioned about quizzes and exams, especially of the oral type, their reaction was that they were there to learn, not to be tested. It is interesting to note that this attitude is supported by the concept of rote memory as opposed to the analysis and synthesis process mentioned earlier. In other words, if they are given the question and the correct answer, they can memorize it. This is their customary means of learning. If they learn through this method of instruction, there is no need for tests or quizzes, and no competitiveness occurs. Therefore, no student is caused to seemingly degrade another student, especially one who has the higher rank or status. Usually when a question is posed to a class of students that has mixed rank, the duty of providing the answer falls upon the ranking member. All subordinate members of the class then support that answer given by their leader.

When confronted with a written exam, whereby each individual must provide an answer of his own, the students often start talking among themselves in their native tongue. A natural reaction of the instructor is to believe that they are cheating. However, when the instructor intervenes, the ranking class member usually informs him that they were discussing the time, or some other unrelated thing. They seem to feel that their group has been confronted with a problem rather than each individual having been confronted with the problem. This justifies their free discussion.

Dependence upon Instructor

Through observation and questioning of these students, their successful instructors, and training administrator personnel, it was determined that the students come to see their instructor as a friend and confidant. They develop a dependence upon their instructor for everything, not just training related problems. They bring any problem to him, and they trust and rely heavily upon his judgment. He is their friend, their counselor, and their advisor as well as being their instructor. However, not every individual instructor was able to develop such rapport with them. Because of this, an instructor that possesses a great deal of experience, who may even be considered a leader in the field, and who has been an excellent instructor for U.S. military personnel may not be considered a good instructor by such students. This possibly resulted because the foreign students did not feel safe in trusting him with their individual problems.

Similarity to the Job

Because U.S. military personnel could be expected to operate any one of perhaps 100 different pieces of equipment that has been designed to provide a specific function, only a piece of equipment that is most representative of the group of 100 different types is selected for use in the training course. For example, the U.S. Navy may have within its inventory of active equipment as many as 100 different types of communication receivers. A type is selected for use in the training course that is deemed to be most representative of the other 99 types. Though students are trained on this one type, they are expected to relate their training to any type with which they may be required to operate. They are taught the function of the "SQUELCH" control and, regardless of where the control may be found on the panel, they can relate it to the Squelch function. Consequently, they are considered qualified to operate the "SQUELCH" control to achieve its intended function on any one of the 100 different types of equipment that they may be assigned.

Through conditioning provided by the "rote memory" type training which they have received throughout their life time, Mid-Eastern students do not tend to learn the function of the "SQUELCH" knob. Instead, they tend to learn the function of the knob located in the lower left-hand corner of the receiver that is labeled "SQUELCH". Because of this, they do not readily relate to a different receiver that has a knob near the center of the panel labeled "SQUELCH". They have not been trained to operate this new knob. This is, of course, oversimplified, but used to illustrate a problem which has been identified through external evaluation of their training programs.

Consequently, the Mid-Eastern student expects to have received training on that specific piece of equipment that he is expected to operate.

Comprehension

The use of English by the instructor did not seriously impede the students' understanding, as long as the instructor was careful to insure that the presentation was preceded by an identification of new, unfamiliar technical words along with a definition of their meaning.

When the lesson dealt with a piece of equipment, it was best to have the equipment or a good, complete picture of it readily available. Since their primary mode of learning is rote memory, it is best to have the actual equipment available so they can have the operation or procedure demonstrated by the instructor, then they can perform the operation or procedure themselves, on that piece of equipment.

If the instructor feels they should take notes, the only way he can get them to do so is to write them on the board. It seems that they write in their notes everything that their instructor writes on the board for them.

The students greatest impediment to learning was found to be his reading comprehension. One major problem was that he was given study materials that had been written at or above the twelfth reading grade level. Since the average reading grade level of these personnel was below the sixth grade, a built-in problem existed. Additional problems caused by using this material were attributed to the lack of illustrations. In order for written materials to be effective for personnel who learn primarily by rote memory, it is necessary to frequently illustrate the written word through use of accurate, detailed pictures or drawings of the equipment or system being described.

FACTORS CONSIDERED IN CURRICULUM REVISION TO SATISFY FOREIGN TRAINING

The Training Situation

For this type student, it was determined that the best training situation existed when the student was instructed on the equipment in a laboratory type situation. This capitalizes upon one of their strengths -- that of rote memorization. They are adept at learning by doing.

Of course, this is not always possible. Sometimes it is necessary that principles be learned which cannot be readily demonstrated on a piece of equipment. An excellent example of this is the theory of operation of an electronic circuit. Try as one may, he cannot see the electrons moving through the wires. It is necessary to resort to pictures, illustrations, movies, and chalkboard work to supplement a lecture dealing with analogies between electronic theory and known principles which can be readily viewed, such as water systems.

Since some instruction cannot be accomplished through equipment "hands-on", it is necessary to resort to classroom presentation. This type training situation should be preceded by a demonstration of the job for which this

training is designed to support. This allows each student to become involved, to a limited degree, in the performance of the job; allows him to ask questions regarding this operation, and answer those which can be answered. For those which cannot be easily answered because of the lack of background information, the instructor should show here the necessity of the classroom training, then proceed to the classroom.

Curricula developed to support this training should include many pictures and illustrations and should also make use of the actual equipment. This training should always be performance oriented.

Written Student Materials

For training curricula developed to MIL-STD-1379A, written student materials include Student's Guide, Tests, Equipment Utilization Handbook, and the On-the-Job Training Handbook.

These materials should be written to take advantage of the student's strengths. Since he has been found to possess highly developed visual memories, they can retain most readily that which they see. Consequently, this written material should be supplemented heavily with pictures and sketches which illustrate what the written word is trying to say.

In addition to illustrative supplements, when the written material is trying to explain something, the writer should attempt to draw analogies between that complex thing he is trying to explain and something that is similar in operation but less complex.

In selecting pictures, illustrations, and analogies, one should insure that no culturally offensive situations are created in this material. For example, pictures should not be used where individuals have the fingers of their left hand near their face. Also, analogies should not be made between a series electrical circuit and a string of Christmas tree lights. These are only examples, to insure that materials are not developed which are culturally offensive, developing personnel should be made aware of differences which exist between their society and ours. Editing personnel should also be made aware of these differences.

Selection of Training Equipment

Curricula written for U.S. military training courses is normally supported by equipments that are generic to the field of equipments upon which the training is designed to support. This is appropriate because the training approach is to teach principles, then allow the student to adapt to specific needs through a recall and synthesis of appropriate principles. These students learned operation of a piece of equipment thoroughly through their rote memory learning method. A problem arose if they were introduced to a version of this same equipment which functioned in an identical manner, but which contained a different arrangement for its functional controls. These students believed they should receive training on this new piece of equipment also. Consequently, the training courses must be equipment-specific. That is, the equipment selected to support the training must be a comprehensive grouping of those

equipments which the graduate will be expected to operate.

Testing and Evaluation

Because of the desire among students not to compete with each other, or disagree with any one of the others openly, it is desirable to have them complete individual tests on "easy-to-mark" answer sheets. That way, no student will know the answer given by the others in the class.

Planned Course Length

To enhance the rote learning process and adapt the presentation strategy to other unique student strengths, requires considerably longer course items, especially for non-mechanical subjects.

Reading Grade Level

Those curriculum materials written for student use in support of his training should be written to a reading grade level (RGL) compatible with that of the student personnel. For those which have just completed English Language Training (ELT) of the type given at Lackland Air Force Base, where the requirement for graduation is an English Comprehension Level (ECL) of .70, this falls somewhere between the 4th and 6th reading grade level. Because of this, materials written for their use during the first six weeks of training, immediately following ELT, should not exceed the 6th reading grade level.

Because reading comprehension can be expected to improve through use, and because the student is rapidly increasing his technical vocabulary for his field of study, the RGL of materials can, and should be increased as he progresses through his rate training.

However, care should be taken to insure that no sample of the student materials is allowed to go beyond an RGL of 8.9, as measured by the Flesch-Kincaid procedure for determining the Reading Grade Level of written materials.

Though most U.S. Navy technical manuals, when evaluated using the Fry or Flesch-Kincaid methods, prove to be written at or near the 12th reading grade level, I do not believe that any attempt should be made to raise the reading grade level of this type student above the 9th grade because of the amount of time it would take. Since their basic military training, and all specialized rate training is being conducted in English, their reading proficiency can be expected to improve through normal use as they progress through their specialized rate qualification training. I believe that the motivated student who meets the sixth reading grade level requirement upon entry into his rate training can be expected to increase his proficiency to the ninth reading grade level upon graduation. This leaves a three-grade discrepancy between his reading proficiency and the level to which his technical documentation is written. It has been my experience that this discrepancy does not represent an insurmountable problem. I am convinced, after having studied this problem, that an individual can adequately comprehend materials written up to three reading grade levels above his own, if provided sufficient time.

Standardization

When dealing with personnel of friendly foreign governments, there is much room for misunderstanding because of differences in the way in which the two countries conduct business, and communication difficulties which result from the different languages.

Because of this, it is essential that all deliveries of training material follow the same concept and format as that with which they are familiar. Since previously developed curriculum materials were developed to MIL-STD-1379A, and its associated Data Item Descriptions, it is recommended that this remain the standard which governs the type of curriculum materials, their content and format.

SUMMARY

Curricula developers and instructors, who present the planned training for foreign military personnel, must be ready to change thought patterns and complete considerable learning and research if they expect success. They must temper their thoughts relative to what constitutes a good training program in accordance with differences which exist between their new target population, versus the population for which they have been writing and presenting training.

Educators must become thoroughly knowledgeable of cultural differences, i.e., different religious beliefs, different patterns of learning, concepts of training, and background experiences. They must design the curriculum around a training concept that takes advantage of the strengths of the target population, while overcoming their weaknesses. Much research will be required before they will be able to identify these differences, strengths and weaknesses, and this research must be completed before they begin developing a concept of the training situation.

ABOUT THE AUTHOR

Johnnie A. Butler has been employed at the Naval Training Equipment Center, Orlando, Florida, since 1967. He is a Supervisory Education Specialist, responsible for guiding development of training programs for friendly foreign governments. He holds a B.S. degree in Business Management from Florida Southern College, Lakeland, Florida and an M.A. in Teaching from Rollins College, Winter Park, Florida.