

EQUIPMENT INSTRUCTIONS IN THE ENGLISH FOR BUSINESS AND TECHNOLOGY SYLLABUS

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Abstract

Equipment Instructions (EI's) constitute a distinct and, by definition, authentic genre, examples of which include predictable information regarding set-up, use, maintenance, repair, etc. of machinery. The information found in EI's along with their accessible layout make them a valuable, and in fact compelling, tool for addressing both the linguistic and broader training functions of the EBT curriculum. EI's present material in ways that makes it useful to learners of all levels of proficiency and usable by instructors who may not be subject area specialists. EI's support a broad range of assignment types including integrative communicative exercises, both oral and written. They can be used as a basis for subsequent examination items.

Product and Equipment Instructions and ESP:

Virtually all equipment, from the heaviest machinery to that designed for light office applications, is accompanied by instructions that detail its proper operation and maintenance. Similarly, such non-configured products as adhesives, paints, solvents, and insecticides are also distributed with directions that specify their safe and proper use. Product and Equipment Instructions (PEI's) are, therefore, a depository of information that corresponds to a wide range of practical concerns that technical, supervisory, and managerial personnel frequently deal with in the workplace.

There is surprisingly little written about PEI's and there seems to be nothing in print regarding PEI's and ESP. Available discussions of PEI's do offer considerable insight into their general characteristics as well as valuable observations on the creation of effective instructions. (Wright 1981; Velotta 1987); other papers offer authoring guidelines with special reference to the legal implications of inexpertly authored instructions (Clement 1987; Helyar 1992). My interest, in contrast to issues of effective authoring, is the use of existing instructions for pedagogical purposes.

That part of the ESP spectrum commonly referred to as English for Business and Technology (EBT), particularly as it is implemented in Asia, is designed to meet the substantial communication needs of mid- to high-level users of English as an auxiliary, international language. Many of the workplace situations that such users of English will encounter and regarding which they will need to communicate in English are foreshadowed in the material that comprise PEI's. In this paper I will limit my discussion to Equipment Instructions (EI's) written in English and a range of applications of EI's in the EBT curriculum. I will share my empirically derived conclusion that regardless of syllabus specifics, the approach of the EBT practitioner, or the proficiency level(s) of the learners in a given class, the information contained in EI's will support many appropriate and high-value assignments and compels their incorporation into the EBT curriculum.

There are many concrete and specific reasons for the inclusion of EI's in the EBT curriculum. They include the following.

- Equipment Instructions constitute by definition absolutely authentic materials.
- EI's rank among the most accessible that can be brought to the EBT course. The very organization and presentation of material facilitates understanding, typically exemplifying the important principles set forth in Gibbons (1992). In addition, the content in these information-rich documents is often complemented by graphics, which also facilitate comprehension.
- EI's are relatively easy to use by EBT instructional personnel who are not subject-area specialists, a quite common circumstance.
- EI's can be used 1) with classes which include students with various majors by concentrating on general information or 2) with classes in which all students have the same major and in such a case with closer attention to discipline-specific issues.
- EI's can be used effectively by instructors who may have lower-than-optimal language proficiency in technical registers and repertoires.

- EI's afford access to some of the most important cognitive domains that should be explored in the EBT syllabus such as preventive maintenance and safety in the workplace.
- EI's present issues that span the range of concerns from the technical/engineering to the managerial and thus promote understanding across this professional divide.
- EI's represent an especially effective way to teach top-down reading skills since content expectations are easy to motivate and textual transparency makes it easy for the reader to match expectations with information in the text. See Carrell(1988).
- EI's for a single item of equipment can be introduced and then revisited after a time interval and used to support a second assignment. Learners are made aware of their progress in English by such a second encounter with previously seen material.

As these and other facets of EI's are discussed, it will become clear that their early introduction in any appropriate EBT course will be immediately valuable and that, once introduced, EI's can be reintroduced as resource material at many points throughout a course and in fact, the entire EBT curriculum.

Equipment Instructions as a genre:

A survey of approximately 80 examples of manufacturer's instructions for heavy equipment, power tools, electrical assemblies, machinery used in manufacturing, and office machines, including computers and printers, has resulted in the information category menu presented below. It is simply the result of a genre analysis that follows the approach of Swales (1990). It serves as a category "shopping list" and as such, a primary tool for teaching about EI's and for devising EBT assignments that involve EI's. It is unnecessary to point out that such a list cannot be definitive and therefore is subject to modification, especially additions; however, it should be noted that infrequently occurring types of information have been purposely omitted.

EBT practitioners should note and students should be made aware that information categories are often combined in EI's as evident in the following material.

"Before installing your sound card, make sure that the installation site has been shielded from static electricity. High voltages caused by static electricity could permanently damage components on your sound card and other parts of your PC system and will void your warranty."

In these two sentences we see exemplified the categories "installation" (2), "proper location" (2), "non-obvious hazards" (3d), and a "warranty advisory" (3e).

Information Categories for Equipment Instructions:

1. Handling of equipment as shipped and subsequent unpacking; often referenced to a supplied packing-list.

2. Assembly (Set-up): How is the unpacked equipment, as shipped from the factory, made operative; cautions or warnings regarding assembly.

and/or

Installation (Set-up): integration of the equipment, as a component, into an existing physical/mechanical context or configuration, including information regarding access, proper location, and power connections; warnings or cautions regarding improper installation.

and/or

Proper location of free-standing equipment, often including cautions.

3. Product functions:

a) Inclusive: What is the equipment designed to do?

b) Exclusive: What are the equipment's limitations. (These are sometimes called "shortcomings", particularly in a legal context.)

c) Explicit limitations. These are often signaled with Danger, Warning, or Caution, accompanied by a hazard alert symbol.

d) Warnings regarding non-obvious hazards.

e) Warranty, legal, or regulatory advisories.

4) Operation:

a) Start-up, including pre-start-up checks and tests.

b) General operating information.

c) Warnings regarding acts that could disable the equipment.

d) Safety precautions during operation. (These often overlap with 3c and 3d and are similarly signaled)

e) Proper shut-down.

- f) General safety and ergonomic advisories.
- 5) Care and/or storage of idled equipment:
 - a) Short-term.
 - b) Long-term.
 - c) Start-up after (long-term) storage.
- 6) Service and Preventive Maintenance:
 - a) Routine inspection.
 - b) Routine lubrication, cleaning, adjustments, calibration, replacement of lubricating or operating fluids.
 - c) Predictable and scheduled replacement of belts, hoses, filters, o-rings, seals, etc.
- 7. Troubleshooting:
 - a) Checks and Tests, keyed to symptoms.
 - b) Warnings regarding problems not to be addressed by unqualified personnel.
 - c) Contact information for assistance.
- 8) Repairs: Responses to equipment failure.
- 9) Technical Specifications: These are normally of use and interest only to personnel with specialized technical training or experience.
- 10) Emergencies:
 - a) Immediate mechanical response.
 - b) Immediate Human Factors responses: First Aid.
 - c) Contact Information for Assistance.
- 11) Warranty Statement.
- 12) Proper Disposal of equipment that has reached the end of its service life.

The following review presents a range of instructional activities that can be implemented using EI's. Since it would not be feasible in a survey article to present details for all assignments reviewed, I have provided characterizations for some and more complete materials for others.

I. Vocabulary studies

Contextualized and thematically unified vocabulary study is a constantly available pedagogical application of EI's. The precepts and approaches to the promotion of vocabulary acquisition set forth in Paribakht and Wesche (1997) find immediate resonance in the language and layout of Equipment Instructions. Many of the exercise types that they suggest follow logically and without complication from the very nature of EI's. One such vocabulary-teaching technique that is both obvious and effective is to highlight selected lexical items, collocations, and set phrases in distributed material. This establishes a learning agenda for the student and provides the primary desideratum of vocabulary promotion exercises, accessibility in meaningful context. Though mentioned first, vocabulary study using EI's should not be considered a separate and prior undertaking but one that accompanies the entire range of EI activities.

II. Activities for familiarization with EI's

A. A class-set of EI's for a single device can be distributed to the students in a class. Individually or in groups the EI's can be surveyed for information categories, using the source list. This activity can be repeated with benefit using a second class-set of EI's.

B. EI's for a single device can be photocopied and cut into appropriate fragments. Students inspect a fragment and identify the type of EI information it contains.

C. Students obtain their own EI materials and mark them for information categories. A number of collaborative activities involving shared or exchanged materials are secondarily supported by this exercise.

D. Using the students' own or instructor-supplied EI's, learners are instructed to search for specific information such as "lubrication (schedule)" or "supplier contact information".

E. Students work with EI's for different equipment of the same type, three models of forklifts, for example. They then compare ways that analogous information is presented in the various EI's.

III. Communicative assignments with EI's:

These can include memos, letters, and oral exercises. These are especially valuable assignments and are appropriate for advanced learners. In a class in which there are students of varied proficiency, collaborative written assignments are indicated with at least one student of advanced proficiency in each group. Assignments that involve an authored text should, in most teaching contexts, be accompanied by a sample response.

A. Students are supplied with a scenario such as the following:

A piece of equipment has been mishandled. It is not clear who is responsible and, in any event, this is not the most important issue. In the role of supervisor, students write a memo for distribution to all appropriate personnel that 1) mentions what has happened. 2) points out the apparent reason 3) reminds all concerned of the proper handling of the equipment and directs attention to the place in the EI's where this can be reviewed 4) reminds all that a repetition is not expected.

B. A piece of equipment has experienced a significant problem. A supervisor inspects the equipment and determines what had caused the failure. HE/she writes a memo to the person, the responsible lower-level supervisor, who should have prevented the incident with closer attention to his/her work force and, importantly, closer attention to the corresponding EI's. Here is a sample memo written to this assignment.

October 29, 1995

To: Jerry Apodaca, Maintenance Supervisor

From: Felipe Parral, Asst. Plant Manager

Re: Improper maintenance of failed switchboard

I am responding to your oral report of Oct 26, at which time you informed me of the failure of the switchboard. According to the report, the switchboard began to exceed permissible temperature two hours after being cleaned and lubricated. The temperature exceeded the limits considerably, which caused overheating, improper operation, and shut-down.

I have inspected the switchboard and I have determined that the failure of the switchboard was caused by improper maintenance. First, according to the available records, the switchboard had not received any maintenance service during the previous two years. It appears that when personnel from your department did clean the switchboard, instead of vacuuming it, they used an air hose to blow out the dirt and dust. This operation caused debris to become encrusted between the internal relay switches. This subsequently caused overheating of the switchboard and, as a consequence, its failure. You need to take immediate measures in order to prevent another failure of the equipment once it is cleaned and returned to service

I direct your attention to the switchboard instruction and maintenance manual, section 3, page 3-5. In this section it clearly specifies that the switchboard should never be blown out; instead it should be vacuumed. Routine maintenance, including lubrication, cleaning, and vacuuming must be performed once a year.

If you have any question about the maintenance of the switchboard, please let me know. In any event, please confirm the performance of the required maintenance as soon as it has been accomplished.

C. For practice in communication at the technical-business interface, students can be assigned to write a warranty claim letter. Such a letter would reflect the stipulations set forth in the warranty provisions in the EI's. A cross-disciplinary effect (business and technology) obtains when such a letter makes reference to user adherence to the installation, use, and maintenance provisions that are set forth in the warranty. The following is an example of such a letter.

Oct. 13, 1997

Eiki International Inc.

26794 Vista Terrace Drive

Lake Forest, CA 92630-8113

Dear Sirs:

I am writing you in regard to an EIKI overhead projector, model 3850A, purchased by our firm in August 1996 and in service since that time. This unit has failed, it being impossible to project images. Our technician has changed the bulb but this has not solved the problem. I have concluded that there is a basic problem with the electrical system in the projector.

All stipulations with regard to use and maintenance set forth in the Owners and Operators Guide corresponding to the projector have been observed.

Since the projector is under warranty, I am requesting either replacement or factory repair of the unit. Please provide the name and address of the nearest EIKI service station and any other information that I might need to proceed.

Sincerely,

D. Students can be instructed to write scripts that anticipate a call that results in a voice-mail prompt. A script that supports a message that is left for a representative of a supplier or manufacturer

can pivot around information extracted from the EI's for some malfunctioning unit. These are very good assignments for learners of all proficiency levels.

E. Students working in pairs can prepare or, more spontaneously, perform to a provided scenario a two-way oral communication that makes reference to EI's that they have closely inspected and have continuing access to.

F. Students can prepare and practice oral interventions in meetings in which they report on an equipment problem that has been investigated and solved by looking back at the EI's corresponding to the machine.

IV. There are many types of assignments including but not limited to those mentioned below, that can involve EI's not as primary but as supporting material

A. References to EI's can be incorporated into Human Factors and assignments since these may deal with such specifics as preventive measures to safeguard workers from accidents and longer-term ergonomic hazards. Similarly, Hazardous Occurrence assignments, both reports and follow-up communications, can employ EI's as secondary resources.

B. Simulated External and Internal Reports can sometimes incorporate materials from EI's, adding a certain authentic dimension to the report.

C. Memos detailing the rationale for either replacing or repairing malfunctioning equipment can, with benefit to the training scenario, refer to information drawn from corresponding EI's.

Equipment Instructions and Testing:

The instructor who has included EI's in an ESP/EBT course syllabus will have no difficulty finding appropriate examination items. Consider first the following EI material and the examination questions that they support, which are appropriate for either intermediate or advanced learners.

If you encounter any problems during the installation of your CD-Rom drive while using your sound card's CD-ROM interface, try using different installation values (IRQ, I/O address) first before contacting your supplier for technical support.

Exam questions:

1) (advanced) What are the EI information categories seen in this material? What category does the sentence as a whole exemplify?

2)(intermediate) These instructions make reference to a) installation, b) trouble shooting, and c) contacting sources of assistance. What is the *MAIN* EI category in this paragraph?

Advanced learners can be asked to respond to integrative tasks (see Elerick 1995) which are based on EI's. An integrative examination exercise requires the learner to author, in a controlled time period, a text that has significant content, appropriate structure, and shows control of the essential linguistic features of the target language. In addition, and importantly, this task will entail their comprehension and careful use of an existing text, in this case EI's. Here is an example of such an integrative examination item.

You are an Assistant Plant Manager and your unit has just had two conveyer assemblies installed. You have inspected the accompanying Equipment Instructions. You have noticed some aspect of the manufacturer's prescribed maintenance regime that you think is 1) especially important and 2) possibly confusing or easy to overlook. You decide to write a memo to your maintenance supervisor in which you point out your concern and request a confirmation that your point is understood.

As can be seen, Equipment Instructions constitute a significant genre that presents important and specialized information using specialized formats. EI's warrant careful and continuing attention by ESP practitioners as a factor in syllabus design and as a basis for materials development.

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