

SVM/om/OWS') (Q
CATALOGUE OF
LEARNING ELEMENTS AND
RELATED MATERIALS ' _ .
1986
ax; INTERNATIONAL LABOUR OFFICE __, _
01-1211 GENEVE 22 _ Fm

concerning; the n.s.s. concept of Vocational
Training are kindly requested to writ. to
ILO Publications. International Labour Office.
CH-1211 Geneva 22. Switzerland, for free
copies of the brochure:
H.B.S.

An Approach to

NOTE

Person. interested in further information
Vocational Training

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Prepared by the

Vocational Training Branch, ILO Geneva

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BUILDING AND CONSTRUCTION.....

ELECTRICAL ENGINEERING.....

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LEARNING MATERIAL FOR H.B.S. STAFF DEVELOPMENT.....-

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INTRODUCTION

For some time there has existed the need for a vocational training system with sufficient flexibility to cope with the changing and varied needs of employer and trained personnel. The ILO's worldwide experience in the planning and execution of vocational training programmes has led to the development of a universal and flexible concept of vocational training called "Module of Employable Skill" (H.E.S.). In order to implement progress under this concept, it has been necessary to develop an appropriate (one of learning material having the necessary flexibility to enable individualized training progress to be compiled. This form of learning material is known as the "Learning Element". and a bank of these is under development covering a number of occupational areas. Development work is taking place in collaboration with a number of industries and institutions.

Learning elements are self-contained instructional booklets, each covering a specific learning objective. The amount of learning that each element covers is small, significant and precisely matched to the learning objective. Each element starts with the learning objective, addressed to the trainee, a list of tools, equipment and aids required, together with a list of other learning elements related to it. The instructional pages contain short, concise text and are highly illustrated. Allowance is made for sufficient practice to master the skill concerned, and the element ends with a progress check precisely matched to the learning objective. Learning elements of this type are also united to learner-based as well as instructor-based training in training institutions or in plant progress. The illustrations need in learning elements are in the form of line drawings to allow for easy reproduction using simple duplicating equipment commonly available. The text is presented in such a way that translations into other languages can easily be accomplished.

Since learning elements are designed to provide training with the flexibility inherent in the H.B.S. system, they can equally well be used for the implementation of any other type of vocational training methodology. The presentation of the learning elements lends itself to easy adaptation into other media (sound/slides, video, etc.), thus extending their application for other purposes, such as the training of illiterates.

Learning elements are being developed initially in the English language and provision is being made for their translation into other languages, for example French, Spanish and Arabic.

Learning elements dealing with general skills such as measuring, marking out and the identification of hand tools are needed in many cases. By more than one occupational area for which they were originally developed. When selecting learning elements, you are therefore advised to refer also to other occupational areas. For example, when selecting learning elements for automotive or mechanical engineering you would require the learning element "Identifying Screwdrivers and Their Uses" which is listed under Electrical/Electronic Engineering for which it was originally developed. The possible use of particular learning elements for other occupational areas is indicated as could be foreseen. is indicated in this catalogue by letter, which are placed behind the title of a learning element.

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- The letter "A" means that this learning element can be used for the occupational area of Automotive Engineering;
- The letter "B" for Building Construction;
- The letter "E" for Electrical/Electronic Engineering;
- The letter "M" for Mechanical Engineering; and
- The letter "P" for Plumbing and Pipe Fitting.

Please note that on page 26 of the catalogue are listed learning materials foreseen for the training of instructional staff in all aspects of the implementation of the MES approach to training, which when followed give the maximum benefit.

For the purchase of the learning element or related materials listed in this catalogue, please refer to the price and other conditions quoted on page 28 and 29. When ordering, either use the order form shown in the catalogue or list the learning element or other materials you wish to obtain by quoting occupational area, category, ISBN number and the title on a separate sheet of paper. Should you wish to purchase a complete set of learning elements from one particular occupational area, you only have to quote the name of that occupational area.

When ordering learning elements, please indicate if it is your intention to reproduce, translate and/or modify them for commercial or non-commercial use, to enable us to provide you with the appropriate agreement.

The code box on the front cover of each element and at the head of each page in for the moment left blank. However, it is intended that a comprehensive coding system, which will facilitate the compilation of training progress, will be introduced in the near future. The code numbers will then be inserted in the boxes provided.

The ILO welcome any comments on the content and structure of the learning element. And any suggestions for their improvement. Industries and Institutes interested in co-operating with the ILO in the joint preparation of learning elements should contact the Vocational Training Branch of the ILO. The ILO will also provide interested parties with advice on the planning and implementation of n.z.s. based training programmes.

AUTOMOTIVE ENGINEERING

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CONCRETING

Placing

Preparation for Placing Concrete at Ground Level
Identifying Control Joint. and Their Use. in Concrete Construction

Mixing Concrete

Hand Mixing Concrete (P.B.)

Machine Mixing Concrete

Proportioning Material. for Mixing Concrete (P.B.)

Identifying and Using Common Type. of Portland Cement

Identifying, Selecting and Using Aggregate: for Concrete, Mortar. and Plasters (P.E.)

Finishing

Striking Off Concrete using a Straight Edge or Strike-Off Board

Consolidating Concrete Using Tamper. or Vibrator-Bull Floating Concrete

Finishing Concrete

Edging Concrete

Jointing Concrete

Hand Floating Concrete (P.E.)

Power Floating Concrete

Hand Trowelling Concrete (P.E.)

Power Travelling Concrete

Curing

Water Curing Concrete

Protecting Concrete Using Liquid Membrane Forming Compound.

Curing Pavements. Roofs, Bridge Deck: and Exterior Floor.

Curing Exterior Walls, Columns and Bridge Pier.

Protecting and Curing Concrete (P.E.)

CARPENTRY

Planing Timber by Hand to Produce a True Side

Planing Timber by Hand to Produce a True Edge and True End

Dismantling, Joining and Adjusting a Plane

Repairing I Plane Iron Using a Grinding Machine
Sharpening a Plane Iron Using an Oilstone
Cutting Timber to a Specific Shape Using Hood Chisel.
Identifying Types of Planes and Their Use.
Filing Surface. to the Required Size And Shape
Identifying Types of Hood Joints and Their Use-
Identifying Type: of Files and Their Uses
Sharpening a Chisel Using an Oilstone
Cutting Curved Line. in Timber Using Compass. Keyhole or
Capping Saw.
Identifying Workbench and Other Supporting Device-

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Construction of Scarf Joint
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Identifying Fitting Device. Used to Join Timber
Joining Timber Material by Nailing
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InIEection/CilibrItion

CalibrItion InterVII for HcIIuring Tool.

TrIcerility

Inapection of I Toolllkcr Try Square

InIpIction of I Plnin DiI-Iter Plug GIugI

Inupcction of I ScrIv Plug Gluge

Inspecting DiIl IndiCitorI

MILLING

Introduction

fhe ProceII Ind Hark ExI-plcl

. Identifying Part. of Milling HIchinII 1

Identifying PattI of Milling HIchinII 2

IdIntifying Milling HIchinI Attach-enta

Identifying Typel of Milling HICtheI

Spocifyin; Milling HIchinII

' Milling SITety Devices Ind FreeIutionI

Controlling thI Milling HIchinI

Milling HIchinI - lirIt LinI HIintInIncI

Horkholdig; DIvicII

Idcntifying;AnglI PlIcII and Their UII-

Setting Up UIin; Pixod Anglt PlItc

Idontifying Machine VicoI Ind ThIir UIII

SItzin; Up UIin; I HIchinI Vic.

Identifying ClIan Ind ThIir UIII

Setting Up Unin; ClI-po

identifying RotItty TablIl Ind Their UIeI

Setting Up UIing RotIry Table-

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Setting Up UIin; VII llockI

.Cuttern Ind CuttIrholdIrI

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Identifying Milling Cutter Holder. Ind Their UIII .
Setting Up shill End Hill on Stub Akbar on Vertical SandII
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Identifying Twist DrillI, Co-binItion CentrI DrillI Ind
(GauntersinkI (A.B.P.D.) ' .
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Cutting Infor-Ition
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OEIrItionI

Milling I Horkpiece Square
End Milling I Slot
Milling I Slot UIing I slotting Cutter
Milling I 510: Using I Slitting Saw
Milling I Vee
Milling I Shoulder
Milling I Corner Radius
Striddle Milling Two SlotI
Milling I Tee Slot
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Milling I Kgway in I Round Horkpiece
Cutting Pipe Using I Power "IckIIw

TURNING

Horkholding Device-

Identifying Silf-Centcrin; Chuck. Ind Their UIII

Identifying LithI CantrII Ind Their UIeI

ARC WELDING

welding Information
Identifying Arc Holding Electrode
Identifying "Ind Tool Ind Hilturin; Tool. Used by Hilder
Identifying perIonIl Safety Equipment for Arc welding
Preparing JointI for Welding
Identifying welding Equipment for HInuIl Arc Welding
Identifying Arc Holding SourceI
Identifying Uelding ScrIIIeI Ind DIItortionI
Identifying Uelding Sy-bolI
Starting the Welding Procedure
Examining Held. - Identifying Welding Fault:
Examining HeldI - Identifying TeIt Method-
Horizontal Welding
Welding Corner Held - FlIt Position
Thick Welding
Horizontal Welding - Lip Joint - Flt: Position
Horizontal Welding - Two Supcrimpoled BeIdI - Flat Position
Horizontal Welding - Lying StrIghc BeIdI on FlIt SurfICI
with Changing Electrode-
Horizontal welding - Fillet Held with Three RunI
Horizontal Welding - Butt Held - FlIt Position
Welding Corner Held on Thick HItIriII - PlIt Position
Horizontal Welding - SeIIing Run on single VeI-lutt Joint -
FlIt Position
Horizontal Welding - TeeIJoint Fillet Held with One Run
Horizontal Welding - single Vee-Butt Joint - FlIt Position
Horizontal Welding - Inside Corner Held

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Horizontal-Vertical Welding

Laying Straight Bend. in Horizontal-Vertical Position

Laying Supcri-ponod Icadu - Horizontal-Vertical Position

Horizontal-Vertical Holding - Square Butt Hld

Horizontal-Vertical Holding - single Vee-Joint

Horizontal-Vertical Position - Single Vee-Butt Joint - Thick

Material

Vertical Holding

3 Vertical Welding - Straight Bend. Upward.

Vertical Holding - Inside Corner Held Upward

Vertical Holding - Straight Beads Downward-

Vertical Welding - Corner Held Three Run-

Overhead Welding

Overhead Holding - Supcri-ponod Beldu on a Steel Plate

Overhead Holding - Vee-Butt Joint

Pipe Welding

Pipe to Flange Holding - Fixed Position.

Pipe to Flange Welding - Free Position

Pipe to Pipe Holding - Free Position.

Pipe to Pipe Holding - Partly Welded from Inside

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 Identifzing Tool. and Eguiggst
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 Installing Ball Cock. (lull Valve.) in Sanitary Fixturco
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Peger/Cuttinglcuillotine QEIrItion

Typee of PIpIr Cutting HIchineI

Controlling'the PIper Cutting "Ichine

Identifying the SubItInce of PIper end Ioerd

Identifying the Pepe: Grnin

Identifying the HIin ClIeIeI of PIpIr Stock

HIndling Ind TrIneporting PIpIr Ind Beerd-

HeIeurin; Ueing Metric Flexible Rule.

ChIngin; the ShIre Bolt: on I Pepe: Cutting "Ichine

Identifying Internationnl Pepe: size-

Interpreting the Job Inettuction Sheet Cutter

Opereting the PIper Cutting HIchine

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LEARNING MATERIAL FOR H.E.S. STAFF DEVELOPMENT

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Identifying Key Characteristics and Couponente of .

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Identifying Module. of Blploynble Skill

Identifying Hoduler Unit-

Identifying the Characterietice and For-nt of Learning

Element-

Identifying the Titles, Scope and Categories of Learning

Element.

JobI Talks. skill. Anllznil and the Pregatlition

of H.E.S. Training Ptogrnn-ne

Identifying the Steps of Work Perforped Hithin I Modular Unit

Analysing the Step: of Work of a Moduli: Unit

Identifying Global. National and Specific Occupational

Profile-

Prepering Job Specification. for N.E.S. Training

Identifying the Learning Element. Required for a Modular

Unit on a Global Dalia

Preparing H.E.S. Training Programme. Using H.E.S. Selection Chart.

Designing H.B.s. Perfor-nnce Teut-

Prepering Trainee Specification. (Attain-entu Component)

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Developing of learning element

Identifying Procedures/Activities and Respective Staff

Development Learning Element. for Learning Element

Development

writing Objective. for Learning Element

Designing Progress Check- for Introduction and Theory Learning
Element.

Designing Assignment and Progress Check. Activity Learning
Element:

Determining the Content. of Learning Element.

Preparing the Draft. of learning Element.

Typing of Learning Element.

Preparing Illustration for Learning Element

Preparation of learning Element Header-

Editing. Technical and Methodological Review of Learning
Element.

Printing Storage and Retrieval of Learning Element-
Transition and Adapting learning Element. to Local
Condition.

Guideline. (for the Standardized Layout of Learning Element.

Support Learning Element-

Writing Learning Objective: - Rationale

writing Learning Objectives - Part. of Learning Objective

Writing Learning Objectives - Description of Learning

Writing Unit; Objective- - Application-

Preparation for Implementation. Administration. Monitoring

and Control of H.E.S. Training Programme

Identifying Activities and Respective Staff Development

Learning Element. for M.E.S. Programme Implementation and
Management.

Reviewing the learning Element of A Learning Package to
Identify Change and Modification.

Preparing Instructional Unit to Cover the Content. of

Learning Element. identified but not yet Developed

Identifying the Facilities Required to Implement HES

Training Programme-

Identifying learning Station. for HES Training

Preparing workshop Layout. for HES Training
Identifying Control Document. Used for HES Training
Principle. of HES Instructions And the Preparation of
Specific Instructor Guidance Material
Preparing MES Guidance Heterial for Trainee-
Checking the Preparation and Hannging the Implementation of
HES Training Programme.
Evaluating the Progress, the Perfor-Ance and the Behaviour
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