

Activity Based Training (ABT) For Education Of Welding Personnel



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DEFINITIONS

- **KNOWLEDGE**

- INFORMATION EVALUATED AND ORGANIZED SO THAT IT CAN BE RETRIEVED AND PRESENTED

- **COMPETENCE**

- ABILITY TO PERFORM PROPERLY A GIVEN TASK WITH A SPECIFIED KNOWLEDGE

- **SKILLS**

- AN ABILITY TO PERFORM AN ACTION OR SET OF ACTIONS

CONSEQUENCES FOR THE EDUCATION

- **KNOWLEDGE**

- CAN BE TRANSFERRED THROUGH USE OF DIFFERENT PEDAGOGICAL METHODOLOGIES AND USE OF CONTENT FOR EDUCATIONAL PURPOSES.
- DIFFERENT TYPE OF TECHNICAL DELIVERY SYSTEMS FOR CONTENT CAN BE USED
 - LMS OR/AND LD
 - DVD
 - STREAMING

CONSEQUENCES FOR THE EDUCATION

- **SKILLS**
 - CAN BE TRAINED THROUGH PRACTICAL TRAINING SESSIONS OR BY THE USE OF VIRTUAL TOOLS (VIRTUAL WELDING)
 - A STABLE REPEATABILITY OF MECHANICAL PERFORMANCE WILL BE THE FINAL TARGET

CONSEQUENCES FOR THE EDUCATION

- **COMPETENCE**

- **WILL BE OBTAINED THROUGH PRACTICAL WORK WHERE THE COMBINATION OF KNOWLEDGE AND SKILLS ARE UTILIZED TO PERFORM A GIVEN TASK.**
- **WILL BE OBTAINED THROUGH THE COOPERATION WITH THE WORKING ENVIRONMENT**
- **MAY BE OBTAINED THROUGH IMPLEMENTATION OF ABT**

ABT

- **ACTIVITY BASED TRAINING**

- **TRAINING FOLLOWS PRODUCTION ACTIVITIES ACCORDING TO A PRODUCTION SCHEDULE**

★ **TRAINING CARRIED OUT IN THE FACTORY OR CLASSROOM**

- **COMPLETION OF A DEFINED PRODUCT OR SERVICE**



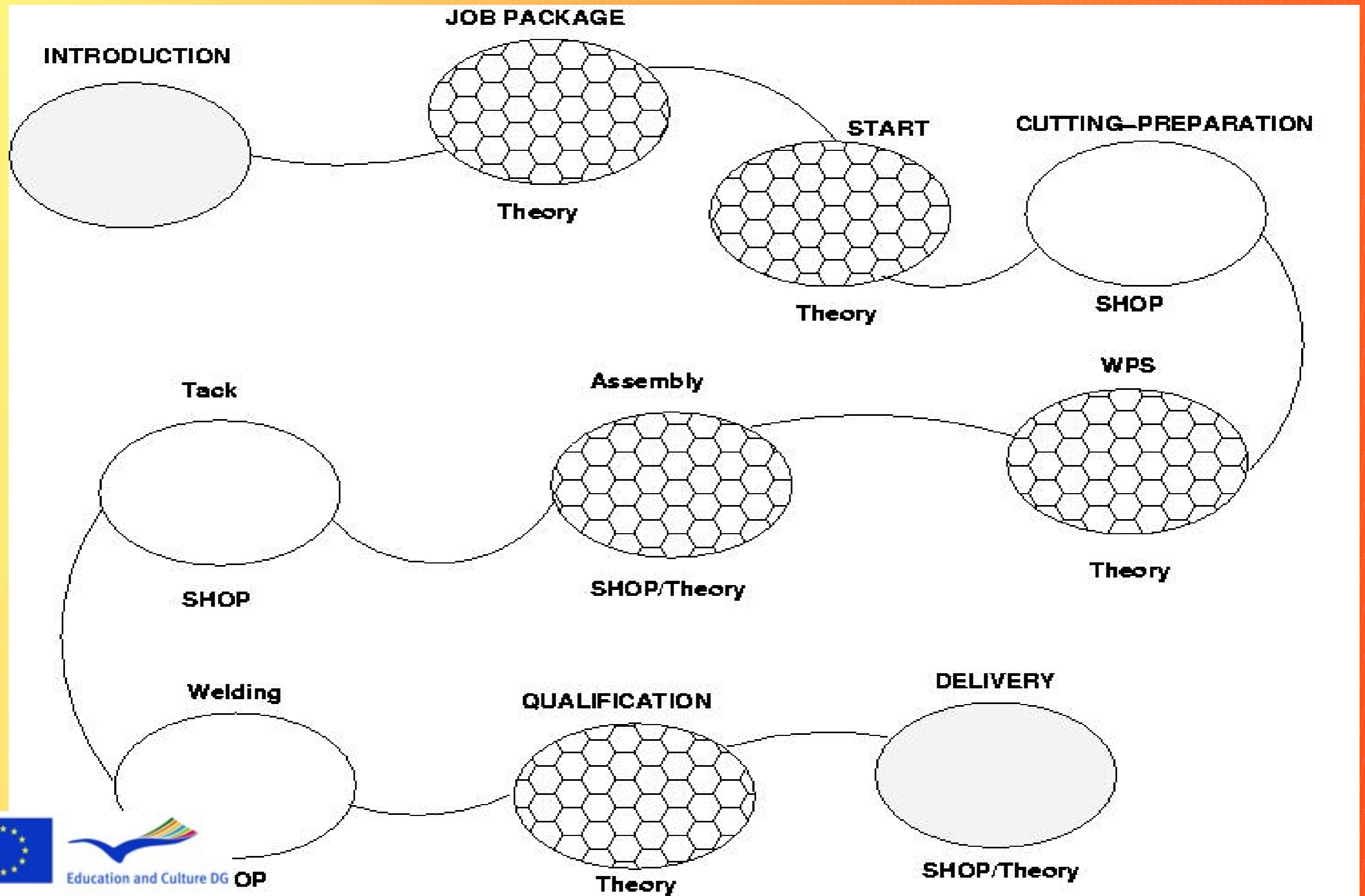
ABT

- THE EDUCATION STARTS WITH A WORK ORDER
- THIS ORDER CONTAINS A DOCUMENT PACKAGE WITH:
 - DRAWINGS
 - SPECIFICATIONS
 - QUALITY REQUIREMENTS
 - DELIVERY SCHEDULE
 - CONTROL REPORTS AND DOCUMENTS
 - MATERIAL DESCRIPTION AND WORK SEQUENCES
 - DELIVERY REQUIREMENTS

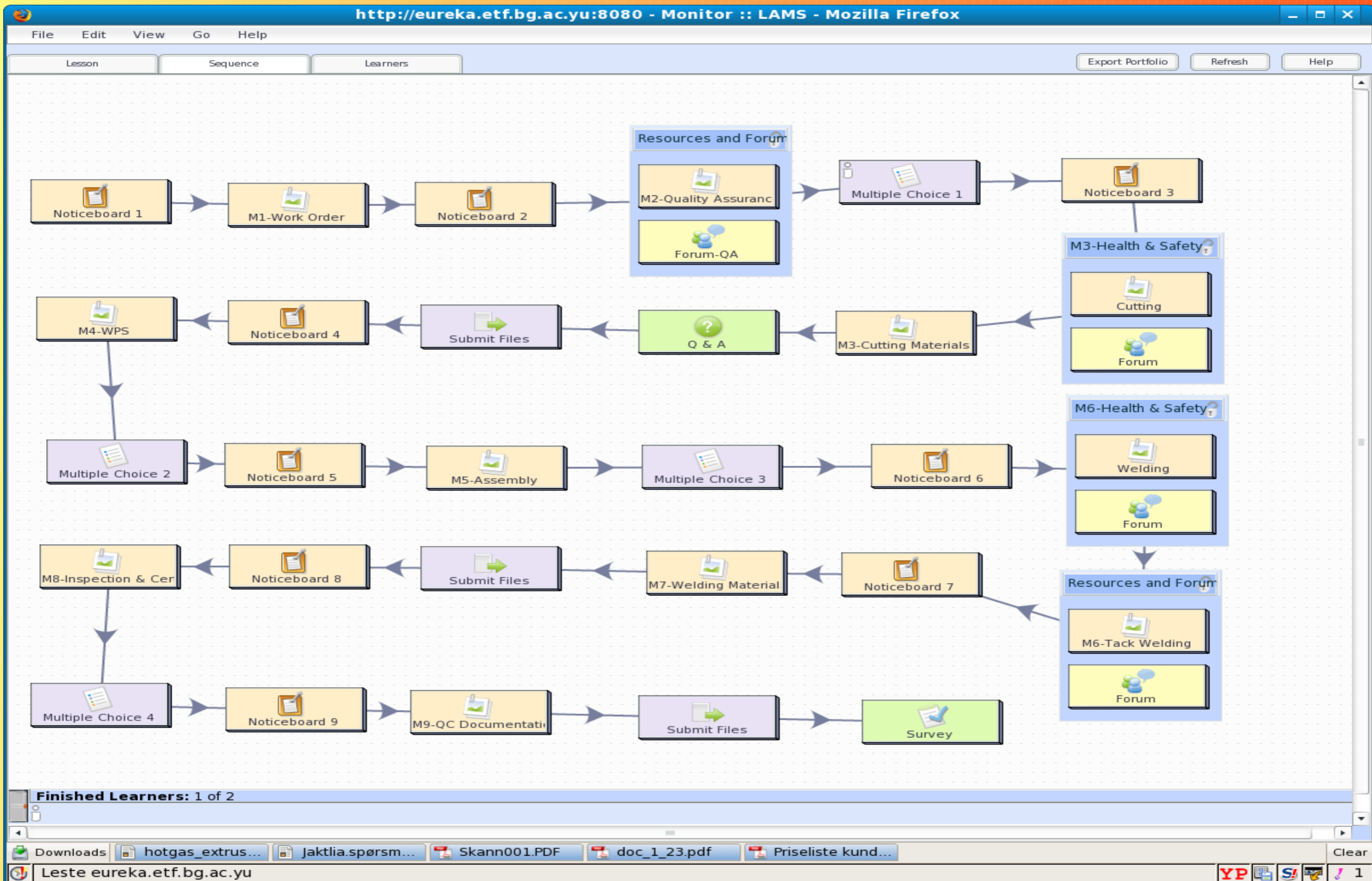
ABT

- THE WORK ORDER IS THEN DIVIDED INTO A NUMBER OF PRODUCTION PHASES OR PRODUCTION STEPS
- THESE ARE ORGANIZED INTO A PRODUCTION PROCESS FLOW OR A SET OF ACTIVITIES

THE WORK ORDER DIVIDED INTO ACTIVITIES



THE WORK ORDER MODELLED INTO ACTIVITIES



CONSEQUENCE FOR THE EDUCATION PROCESS

- * **START WITH A ORDER FOR A DEFINED PRODUCT**

THIS MEANS:

A WORK ORDER WITH ALL ASSOCIATED DOCUMENTS

MUST BE PRODUCED

- * **FOLLOW THE PRODUCTION SCHEDULE**

THIS MEANS:

THEORY AND PRACTICE MUST FOLLOW EACH OTHER

CONSEQUENCE FOR THE EDUCATION PROCESS

- * **START WITH A ORDER FOR A DEFINED PRODUCT**

THIS MEANS:

A WORK ORDER WITH ALL ASSOCIATED DOCUMENTS

MUST BE PRODUCED

- * **FOLLOW THE PRODUCTION SCHEDULE**

THIS MEANS:

THEORY AND PRACTICE MUST FOLLOW EACH OTHER

CONSEQUENCE FOR THE EDUCATION PROCESS

- * THE THEORY IS THEN GIVEN WHEN NEEDED ACCORDING TO THE PRODUCTION PROCESS**

- * THE THEORY IS THEN RELATED TO THE ACTUAL SUBJECT AND GIVEN ONLY FOR THAT SUBJECT. THIS MEANS THAT A THEORETICAL TOPIC ACCORDING GUIDELINES WILL BE SPL DIVIDED INTO THE NEEDS OF THE SUBJECTS**

CONSEQUENCE FOR THE EDUCATION PROCESS

**THE THEORY IS THEN RESTRUCTURED COMPARED TO THE
TRADITIONAL COURSE BOOK**

**THE THEORY IS PRESENTED WHEN NEEDED FOR THE
PRODUCTION ACTIVITY**

CONSEQUENCE FOR THE EDUCATION PROCESS

* THE STUDENTS LEARN HOW TO DO THINGS RIGHT

HOWEVER:

* THE LESSONS OF OTHERS MISTAKE IS A VALUABLE
RESOURCE FOR MOTIVATION TO LEARN

WE THEN USE MISTAKES ACTIVELY AND ASK: WHY DO THIS
MISTAKE HAPPEN ??

EXAMPLES FROM INDUSTRY



SUPPORT LEARNING ACTIVITIES WITH VIDEO BASED LEARNING RESOURCES

- VIDEO EXAMPLES INCLUDE:

- ★ LABORATORY EXPERIMENTS

- COMPLEX EQUIPMENT

- VIVID ILLUSTRATIONS, BEHAVIOUR

- ★ TUTORIALS AND DOCUMENTATION OF TASKS

- EVENTS FROM INDUSTRY

- TASKS DELIVERED BY THE STUDENTS

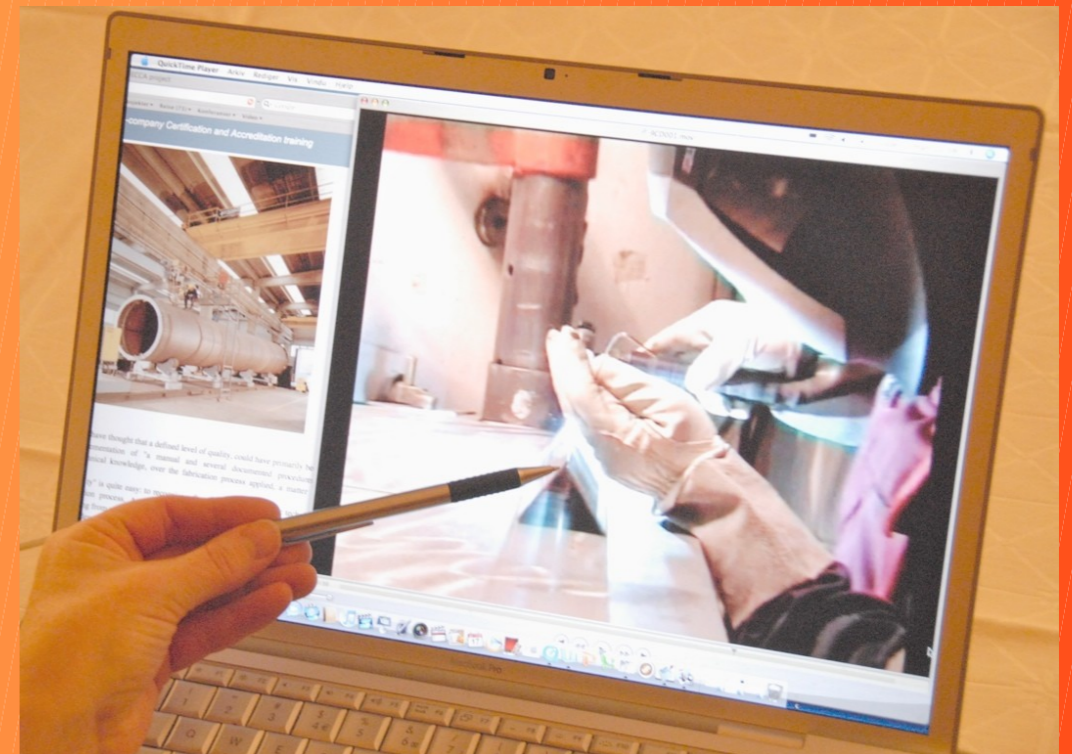
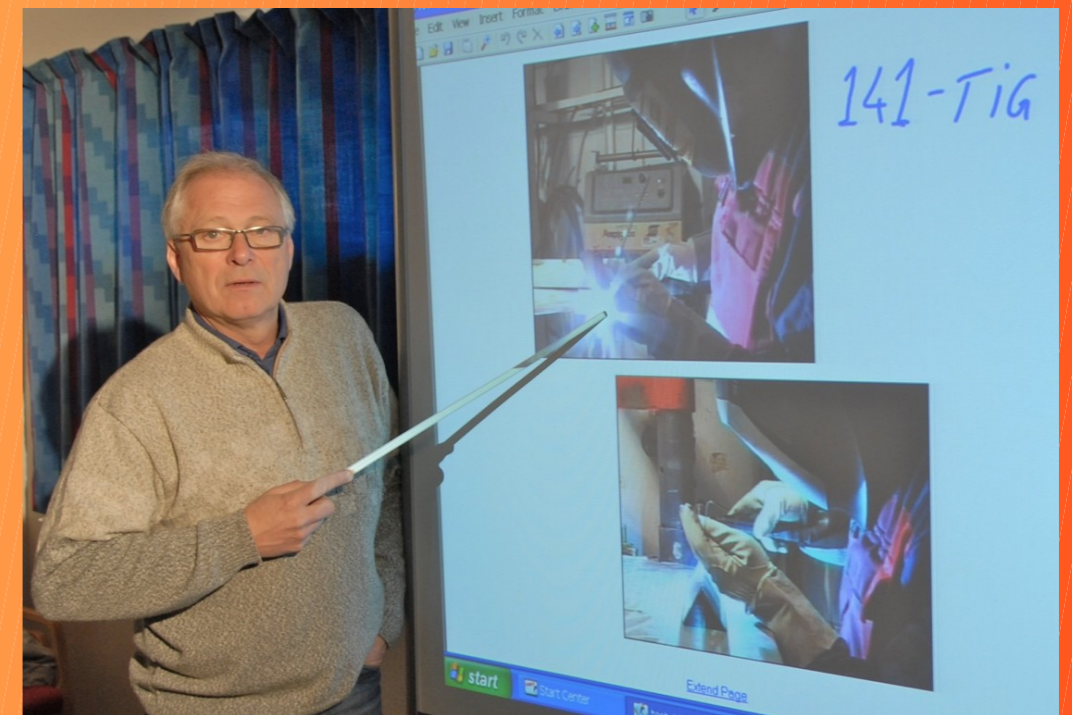


DIGITAL EXAMPLES

- MECHANICAL INDUSTRY

- ★ DIGITAL BLACKBOARDS

- ★ USE OF MOBILE UNITS



- 📌 VIDEO STREAMING

- HOW TO DO IT

- HOW NOT TO DO IT

- EXPERIENCES

PRACTICAL EXAMPLES

- VIDEO

- ★ SHOW HOW HEAT DISTORTIONS OCCUR
- ★ SHOW INFLUENCE OF OIL AND DIRT IN THE BEVEL
- ★ SHOW INFLUENCE OF BAD PARAMETER SETTINGS
- ★ SHOW PRACTICAL EXAMPLES OF WHAT IS HAPPENING
- ★ ASK THE STUDENTS WHY DOES IT HAPPEN
- ★ LET THE STUDENTS CREATE THEIR OWN EXAMPLES

CONCLUSION:

- * NEW DIGITAL TOOLS CREATES AN OPPORTUNITY TO DEVELOP NEW PEDAGOGICAL METHODOLOGIES IN TRAINING AND EDUCATION**
- * OUR NEW DIGITAL GENERATION OF STUDENTS WILL REQUIRE NEW PEDAGOGIC ATTITUDES**
- * THE ABT METHODOLOGY HAS BEEN TESTED WITH A VARIETY OF DIGITAL TOOLS IN A NUMBER OF LEONARDO DA VINCI SUPPORTED PROJECTS, WITH SUCCESS**

THANK YOU FOR THE ATTENTION



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