Handbook
Workshop Management

Instructions for training workshop management

Hợp tác Đức
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I. BACKGROUND

The Technical and Vocation Education and Training (TVET) System of Vietnam is facing major challenges. Rapid industrial development leads to increasing demand of skilled labor, which causes employment vacancies unfilled as planned. There are, presently, only approx. 25% of the workforce which are trained via vocational training system. The TVET in Vietnam is facing a big shortage of practical training capacity and technical competence to meet the actual demand of industries. Vocational training institutes are mostly unable to provide appropriate training environment which meet the actual qualified training demand.

The main causes are:

- Teachers/instructors are seriously lack of practical work experience and they just provide training on their subjective view and/or under given achievement.
- The current applied training curriculum doesn't meet the expectations of the industry, which often overlook basic skills development.
- The devices available at vocational institutes are not enough in numbers, technology and compatibility with the industry.
- The time for at-work practical training is often too short to reach the level necessary to master industrial production processes.

Vietnamese Government was aware of the situation and has made efforts to reform the nationwide system. In the framework of the Vietnamese - German Cooperation on "Sustainable Economic Development and Vocational Training", the Government has received support for improving quality of the vocational training through the "Programme Reform of TVET in Viet Nam". The program aims to improve the capacity in supplying skilled labor to meet the labor market demand.

The programme consists of three interlinked components on different levels of the Ministry of Labour, Invalids and Social Affairs (MOLISA) and the General Department of Vocational Training (GDVT) is the agency responsible for implementation. Specific components are:

- Policy advocacy and System advisory
- Programme Vocational Training 2008 (PVT2008) and
- Center of Excellence in vocational training - LILAMA2
- Vocational training for waste water treatment.

The cooperation is to continuously implementing various activities to improve the training quality from the micro level (vocational institute) to macro level (policy making) via piloted models proved.

Five vocational institutes were selected to support under the framework of PVT2008 on evaluation criteria agreed upon, and LILAMA2 vocational college was selected to establish as a high-technology institute or so-called the Center of Excellence in vocational training. The support is objective to provide demand oriented training at vocational institutes in some of focus identified areas as:

- Metal cutting / CNC,
- Industrial Electrics/ Electronics
- Mechatronics

The forms of technical cooperation include:

- Provide advanced training in technical issues and other topics related to vocational pedagogy for teachers/ instructors are selected from some focus areas which were outlined in their school development plan (DP), and development of teaching and learning materials.
- Provide advisory support to evaluate the current training modules to improve in meeting demand-driven approach, and aims to use the vocational institutes more sustainably; provide advanced training for teachers/instructors in developing new training modules and advanced training modules relevant to labor market demand.
- Provide advisory support and training to management staff in training need assessment, enterprise cooperation, financial management, training facility maintenance and quality management.

The technical cooperation activities are closely linked and coordinated with the financial cooperation activities, which are approved as reflected in the school development plan.

II. RATIONAL OF WORKSHOP MANAGEMENT

Since high growth speed and potential for development in modern industries using electronic and mechatronic technologies as well as metal cutting/CNC, Ninh Thuan, An Giang, Long An, Bac Ninh, Thai Nguyen and Center of Excellence - LILAMA2 were selected for strengthening these above focus areas. However, both professionals (TVET specialists, GDVT, GIZ) and the vocational institutes agreed that there is still a big need for improvement of workshop management, which is currently, is inadequate with its organization and effective production. Devices and equipment are not classified appropriately and effectively (in many cases, many people are working on one machine, which makes it difficult for students to develop their practical skills). The renovation, maintenance and reparation are not considered and taken properly.

To develop market demand oriented training approach at the project partner vocational institutes, the partner schools clearly outlines what need to improve regarding workshop management; appropriate layout of teaching and learning facilities for effective exploitation of training workshop as well as better maintenance of devices and equipment. Accordingly, a number of practical training courses were organized to improve the workshop management in compliance with standards of health protection and work safety, action plans for infrastructure development, capacity building for workshop managers have been taken place in each of the schools. In addition, some training courses, study surveys and assessment were also implemented. Workshop management tools, criteria for efficient workshop organization were also presented to these vocational institutes. The action plan and commitment of the schools for effective implementation were given and launched. The workshop management knowledge will be documented and compiled in a handbook "**Guidelines for Workshop Management**" and then shared for using at the schools. The document will be used as a daily handbook to help teachers/instructors understand the process and steps needs to be performed as well as their commitments to fulfil. This document will be further amended and expanded to other vocational institutes in the coming time.

III. OVERVIEW OF WORKSHOP MANAGEMENT

1. Health protection and Work safety

a). Assessment of current status

- Make an assessment of the current status at your schook regarding:
  - Health protection
  - Work safety
  - Waste treatment
  - Environment protection
- A special focus on the following issues:
  - Which regulations are available in these work areas?
  - How do your perform these regulations?

Work scope	Available requlariоns?	How these regulation are performed?
Health protection		
Work safety		
Waste treatment		
Environment protection		

b). Necessary regulations

- At-work place regulations
  - For a working room
  - For time-break room, standing office and WCs
  - For lighting, ventilation and temperature in working room
- Rules for Hazardous Substances
  - Comprehensive regulations on measures to protect employees against work related to hazardous substances

    - The hazardous substances includes: additives, physical chemicals products such as highly flammable, toxic, corrosive, carcinogenic, and other dangerous substances.
- Rules for fire prevention and fire fighting

  Including provisions for the following areas:
    - Fire fighting, fire exit routes
    - Storage of flammable solids in buildings
    - Keep flammable solids outdoors
- Technical regulations to ensure safety at work place
    - Regarding technology, occupational health, hygiene and labor scientific knowledge
        - Provision of appropriate working means
        - Using working means
        - Operating working devices which strictly require supervision

c). Health protection

- Objective: Prevent health problems and occupational diseases caused at work.
- Approach: We take action on safety and suitable to our health condition in vocational training, as well as present our examples to others!

d). Work implementers

Make written agreement with all vocational teachers/instructors about their duties at work and in training. For example, it should be mentioned in a labor contract, job description, etc.

- Make clear about right of each techers/staff in decision and order making.
- Obligations to perform tasks of safety and health protection in work assigned.
- Make sure the teacher are matching the requirements:
    - Suitable with their professionals and personal manner
    - Demonstrate their proficiency
    - Pass the stipulated labor medical examination
- Together with teachers to discuss and agree on the need and ability to train other teachers on health protection and occupational safety.
- How to conduct occupational safety and health protection is an important task in vocational training, and it must be implemented during education process.

- Leaders of vocational institutes should ask and encourage their teachers in complying accordances health protection and work safety during training. Measures to be applied can be:
  - Work orders
  - Training plan
  - Safety data sources
- Searching, documenting and exchanging instructions necessary for means of working and teaching as well as use of hazardous substances in training.
- Keep all employees informed about existing legal regulations (laws, decrees and technical guidelines on occupational safety, regulation of cooperatives), and provide these to them.
- Teachers are provided with information and guidances on work safely, health protection and carefulness when working at vocational institutes. Setting the time frame taking actions. E.g. These regulations should be provided in the first training phase.
- Teachers must be guided on how to work safely at training institutes, be trained on safety compliances – rules of accident prevention.

e). Work safety

- Health confidence
  - "Too confident"
  - There are over 1,000,000 accident cases in Germany every year
  - Reason: Careless, lack of information
- Where can I work?
  - "Don't touch what are out of your knowledge"
  - Just work on the devices you are instructed on
- Hazards
  - Hazards are very diversified and often occur at working place where machines are running
  - The danger is of clamp, cut, push, roll and stuck
- Protection devices
  - ""Protection device must be used"
  - Accidents can occur at milling and lathing machines due to flying objects
- Dangers are caused by rotation
  - "When machines start, things are spinning"

  - Danger mainly occur at rotating shaft when turning
  - Wear work clothes tidily and no gloves when working on turning or lathing machines

- Flying objects
  - "Objects can fly whenever and wherever"
  - There will always be risk with person or machine moving

- Ear protection
  - When people at work with noise, there should always be rules for ear protection
  - Working with noise less than 8 hours, the ear is not damaged, if the noise does not exceed 85 dB (A)
  - For example:
    - *Typewriters 50 dB (A)*
    - *Talking 60 dB (A)*
    - *Cars 70 dB (A)*
    - *Hand drill 90 dB (A)*
    - *Band Saws 100 dB (A)*

- Eye protection
  - Despite protection measures applied, eyes still in danger
  - Protection glasses must be suitable to work, and must be selected to different work

- Wear appropriate work clothes
  - Wear work clothes tidily to prevent from "rolling up"
  - Protection footwear with toe protection
  - Wear protection gloves to avoid labor injury at hand (Hands are most sensitive to accident)

f). Signages

- Signages to follow
  - Comply with regulations and guidelines

- Signages to ban
  - Prohibition of certain behaviors

- Fully equipped on standard

- Signages of emergency (exit, follow, ...)

- Necessary equipment and tools

g). Regulation when operating machines

For milling machine

1. Using machines only when instructions are already given and explained by techers about features and issues of the machine.
2. Material should be placed tightly to make sure things are smoothy and to get good results.
3. When operating machines, be careful to cut table or mill material clamp.
4. Never leave a running machine without any supervision.
5. Never use your hand to remove shavings! Always use a hand-brush or bristle broom.
6. Never remove protection devices on the machine, as these devices protect you from the shaving flying.
7. When working with brittle materials (eg gray cast iron), your eyes are at risk due to shaving flying. Always wear protection glasses!
8. Measurement can be done only when machine has already stopped.
9. Turn off the main switch when work is completed.
10. When cleaning machine, make sure the machine is definitely off (main switch off).
11. Do not use air compressor to avoid object flying into your eyes and others' eyes.
12. Only those with expertise are allowed to open electrical panels and electrical cabinet.

For turning machine

13. Only work with the machine which have been instructed.
14. Be familiar with all the details of lathe machine.
15. In principle, only one person working with one machine, otherwise there will be a risk of wrong boot or lose concentration.
16. Only use with the key with suitable jaws clamps.
17. Never leave away lathe machine is on.
18. No ring, bracelet or watch when working with lathe machine

19. Wear tidy clothes.
20. Measurement can be done only when machine completely stops.
21. Tie your hair up with net if it is long.
22. No hands in when machine is running.
23. Always remove the keys from the jaws clamp.
24. Long materials (e.g a steel stick) should be surrounded protective materials.
25. Never use your hand to remove shavings! Always use a suitable tools such as hand-brush or shaving hook.

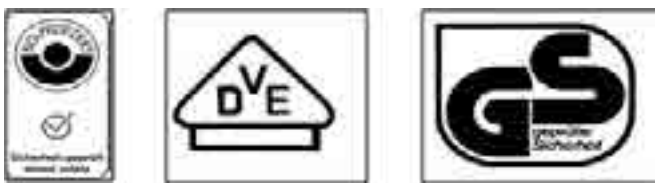
h). Safety at training workshop and fire prevention

- Objective:

  Training activities at vocational institutes should ensure that all engaged people such as teachers and students are safe at work and not in any danger.
- In planning and/or designing for buildings and training facilities, it is should be aware of technical safety requirements – e.g:
  - Room layout
  - Working area
  - Lightening
  - Ventilation and noise
  - No obstacles
  - No toxic substances

i). Procurement of training and production materials

- Only purchase the training or production materials with perfect technical requirements. E.g. machinery devices, equipment, the craftsmen table, stairs, office equipment shoud have mark:
  - BG- PRÜFZERT
  - GS
  - VDE
- Only purchase the materials which have no risk to health. If possible, do not use harmful materials.



j). Checking, maintenance and material planning

- Time-frame should be apply for checking training, production materials. For example, materials for work, technical equipment for working rooms, fire fighting equipment, and lifting devices.
- The context of occupational safety should be planned and documented:
  - Responsibility assigned
  - Assessment of working conditions
  - Instructions
  - Occupational health survey
  - Technical Guidelines on safety and fire prevention

k). Safety management

- Summary and assessment of accidents, cases of malfunctions, accidents or risk to accidents.
- Ensure medical care and technical safety as regulations.
- Take necessary first aid measures - such as ensure the first aid kit available, clearly mark the first-aid stuff, have handbook of first aid measures available, and provide training to staff working on first aid.
- First aid kits should be always in covered box, ensure all are in good condition and ready to be used anytime.


- It must be placed at an easily accessible place and clearly marked. Right next to these first aid kits, there should be:
  - *Specific guidance on first aid,*
  - *Name of the first aid staff*
  - *Telephone number of emergency, ambulance, doctors and hospitals*
- Telephones should be available nearly working place and accessible and usable.

- Necessary measures for fire prevention should be applied:
  - *Provide a sufficient number of fire extinguishers*
  - *Clearly mark the fire prevention device*
  - *Hang up fire prevention guides*
  - *Take place fire drills.*
- To ensure the operability of fire extinguishers, such as regular check of seals.
- Mark exit routes and emergency exits, and ensure all exit routes are free and the exit door is unlocked.
- Make a plan for fire escape plan and alarm.

m). Electrical safety

- Sockets, plugs, switches
- Wires, Cables
- Placement of cabinets, socket
- Safety system for each type of machines using power
- Periodic safety inspection on each of electrical equipment and devices



n). Working Environment

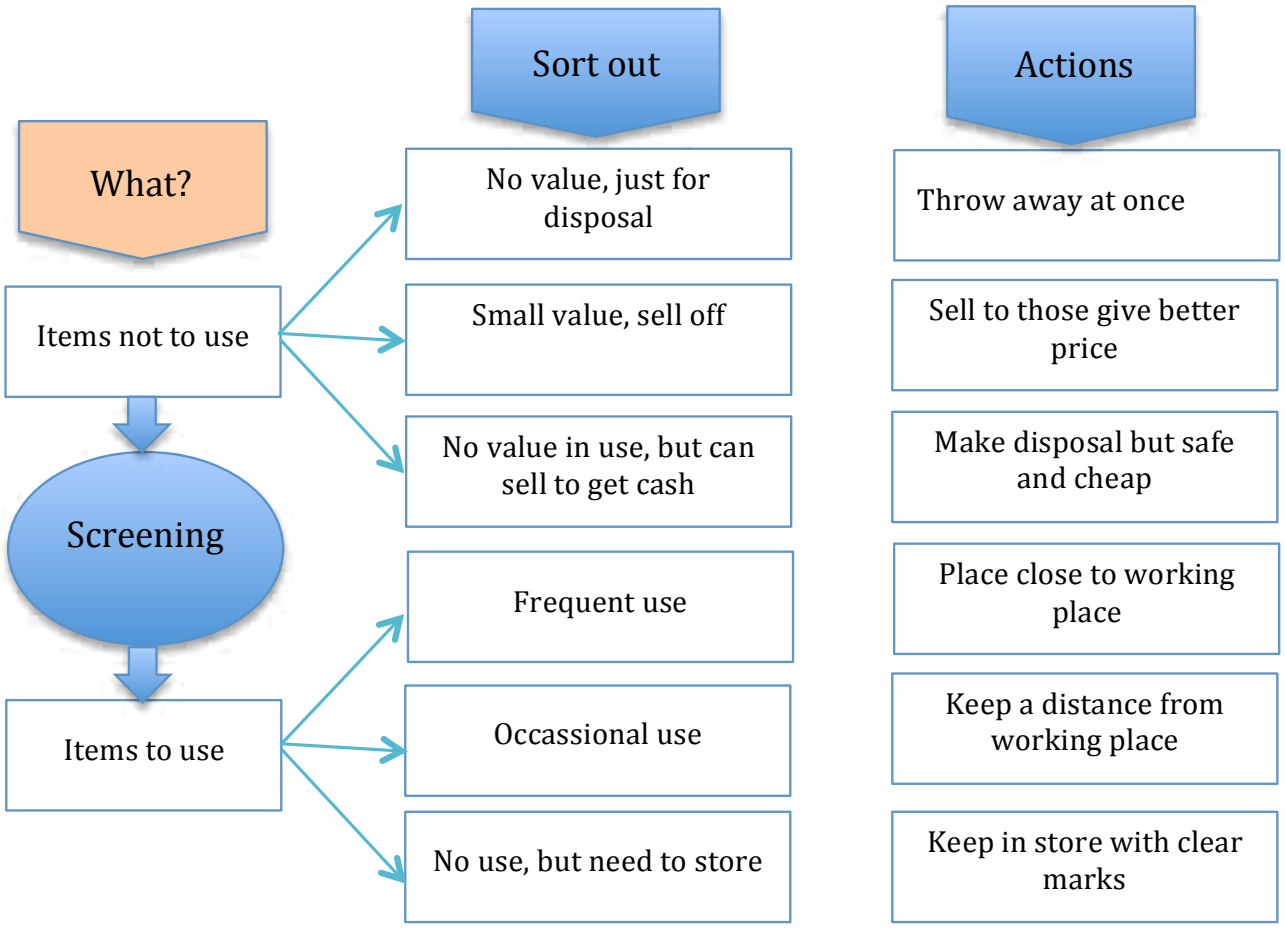
- Temperature in working room
- Light
- Ventilation
- Walking corridor
- Noise

2. 5S model – Workshop management

5S stands for 5 principals in the practice of workshop management, which are: SORTING (in Japanese; Seiri) is to classify out unnecessary things at work and eliminate them, SET IN ORDER (Seiton): to sort things tidy, in a certain order and convenient to use, SHINING (Seiso): to keep clean and hygienic at workplace work (including on the floor, machines and equipment), STANDARDISE (Seiketsu): to always take care and keep things smooth at work, convenient and productive by continually repeating Screening, Sort, Shine, SUSTAIN (Shitsuke): to create a routine, voluntary work habits in maintaining favorable working environment.

(1). SORTING

To make consideration, sorting, selecting and removing unnecessary things at work. This is to repeal a conservative mindset to everything for later use coming up, just to keep devices, tools and equipment necessary for work. Use label "Red" on the tools, equipment and materials necessary to retain.



(2). SET IN ORDER

To arrange and set in order everything neatly which make it easy and quick to use. When arranging things, use visual means that users can easily find out. This is to create a well organized working place, save time for searching wanted stuff, eliminate redundant actions caused wasting.

(3). SHINING

To keep workplace clean and hygienic, including machines, equipment and surrounding

environment. All members are engaged in keeping the working environment fresh and be aware of continuous maintenance. There should be suitable tools and instruments available to do hygiene. There should be also cross and regular check by the institutes' leaders.

(4). STANDARDISE

To continuously maintain, improve the working place by taking previous steps of Screening, Sorting and Shining. Regular maintenance and continuous improvement to achieve greater efficiency is very important and necessary. Establishing an intuitive control system as labelling or marking with color to identify what done and what to be done.

(5). SUSTAIN

To create voluntary habit in taking actions and strictly comply with the regulations at workplace. Educate people to take their awareness in complying rules at work to make very good actions as regular habits, presenting results against 5S standards at workplace to draw experience and lessons learnt. Periodically checking on the principles already established, building a culture of health and effective working.

Why 5S should be applied?

- First, it is not tidy: There are too many things stored in mess, don't know what available, difficult to find out when needed, and still have to buy while they are available. Thus, both storage costs, has no effect.
- Secondly, things are not sorted out and selected to make ready. Keep mixed both usable and unusable stuff, and which usable are not ready ready for use. It wastes time for searching things.
    - *Working environment is in mess and unhygienic, which form a habit of no responsibility, no cares, just only when asking for inspection.*
    - *Good production is good when having good organization and management, which make the product's quality good and stable.*

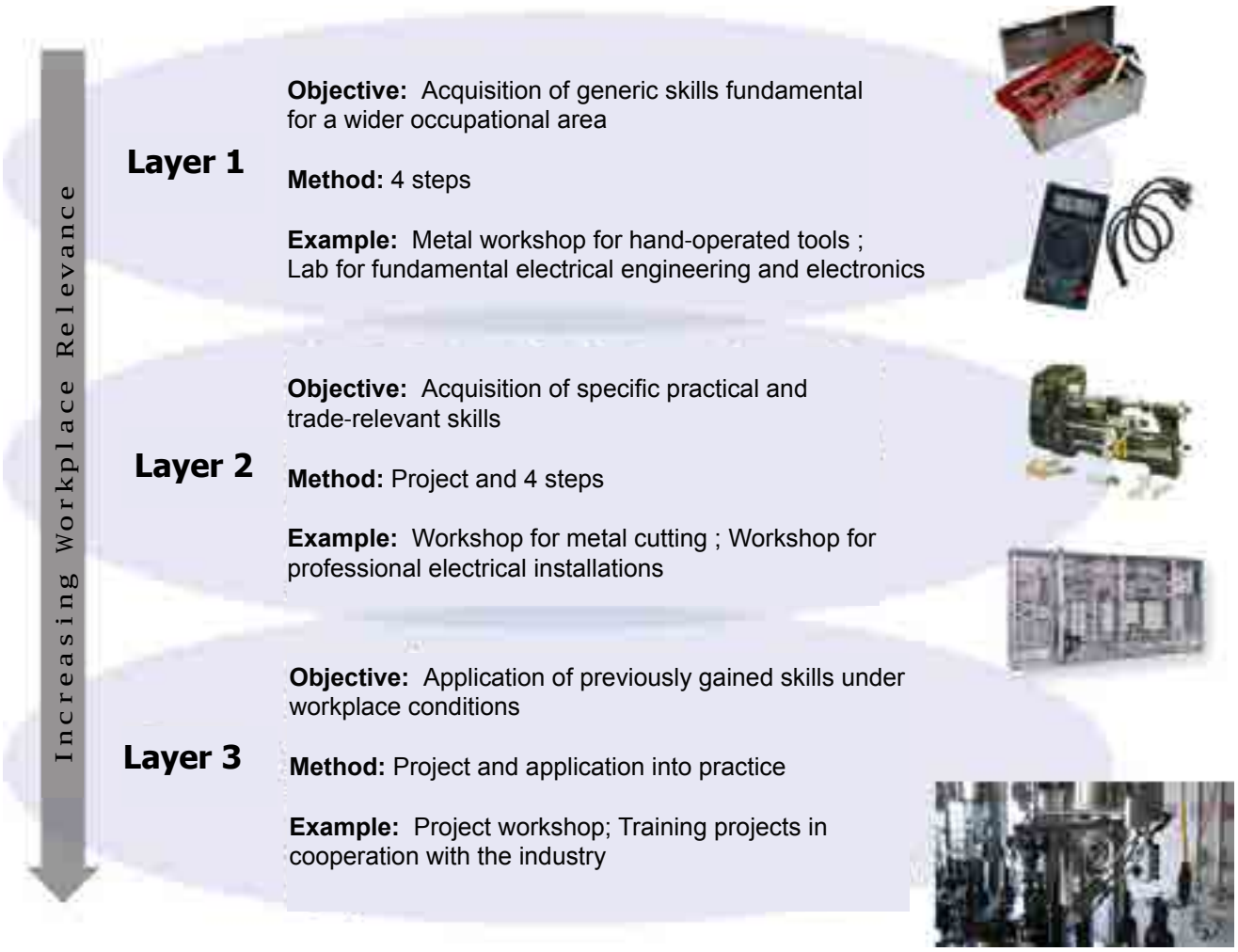

5S
IN THE WORKPLACE
1
SORT
2
SET IN ORDER
3
SHINE
4
STANDARDIZE
5
SUSTAIN

3. Three-layer training workshop

In order to provide employment-relevant training, on the one hand, theoretical training as one pillar must equip trainees with the knowledge base, the methods, and the thinking and problem solving abilities needed for working in the respective occupational area. Practical training as the other pillar should follow a workshop concept that ensures highest employment-relevance.

In order to fill the gap between general skills training and practical application, the 3-layer workshop concept was designed, containing different stages and, accordingly, locations of training by defining three layers, each representing one degree of practical application of workplace-oriented competence in a corresponding workshop set-up. Obviously, the involvement of industrial companies is essential for future success of the project workshop activities. In this regard, cooperating with the regional industry around the TVET institute is crucial for successful implementation of the 3-layer-workshop concept and the sustainable improvement of graduates' competence both on systematic and application level.

Figure below shows a systematic chart of the 3-layer-workshop approach



Photos below are examples of different application in each workshop layer

Workshop layer 1:

Fundamental application: "Mechatronic/ Hydrolic – Pneumatic

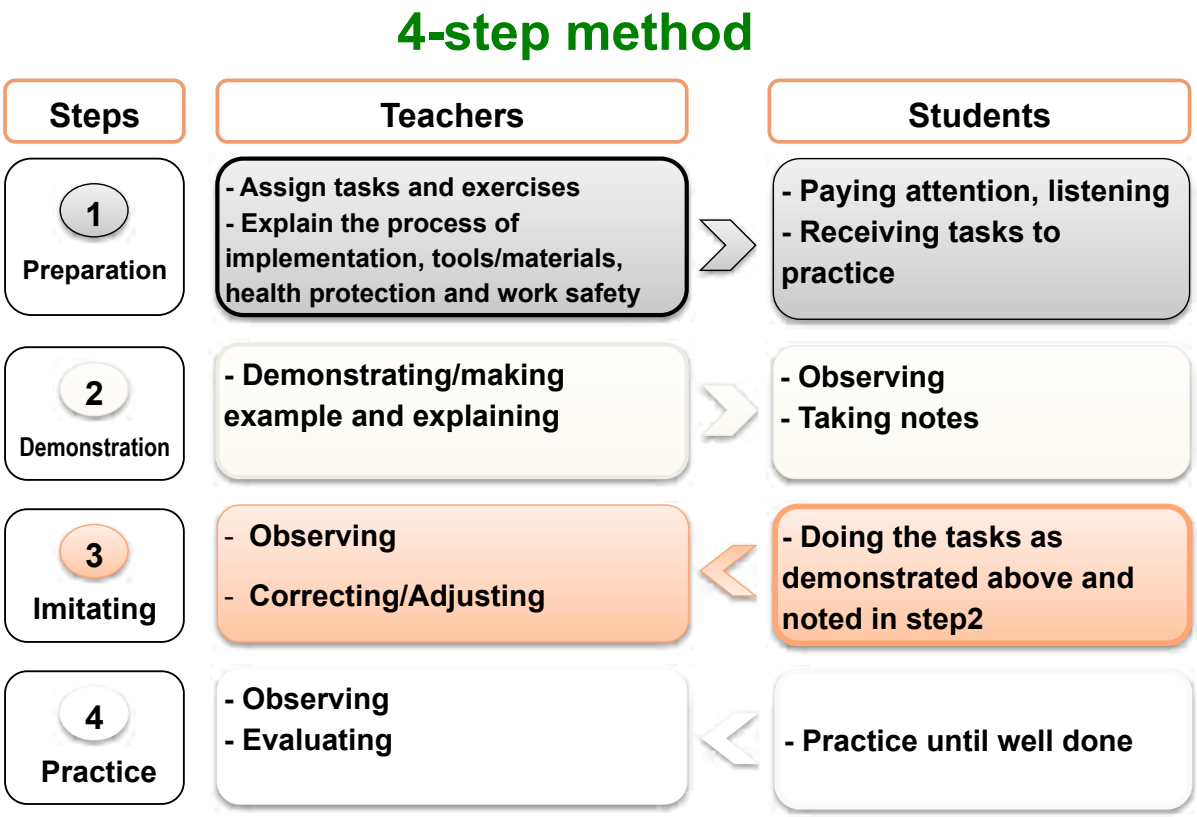
Workshop layer 2:

Intensive application: "Mechatronic/ Hydrolic – Pneumatic"

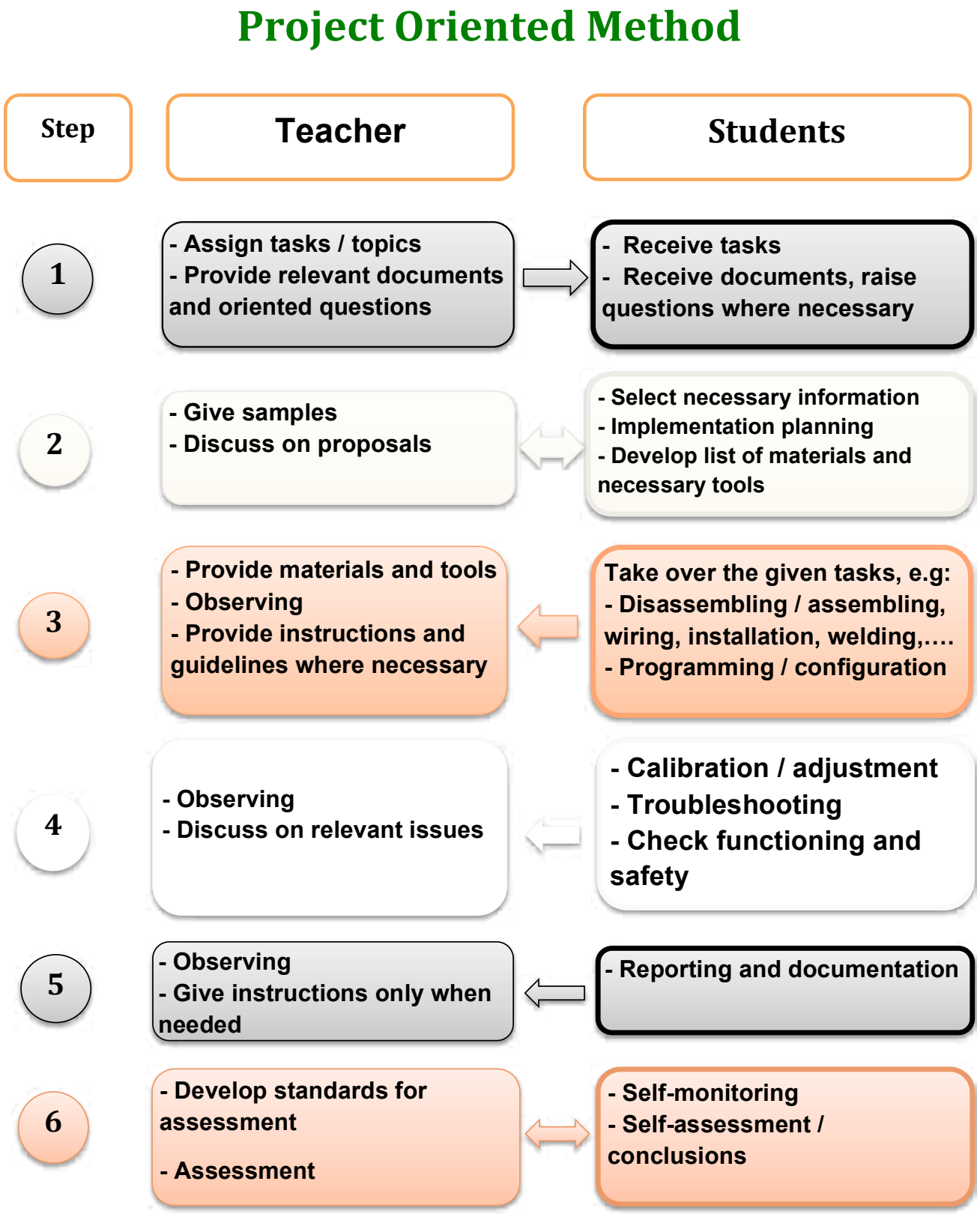
Workshop layer 3:
Project application "Mechatronic"

4. Training methodology

Four step training approaches



Project oriented method



IV. CHECKLIST FOR ASSESSMENT OF CURRENT PRACTICE OF WORKSHOP MANAGEMENT

This checklist covers work-scope/procedures (such as Health protection, Safety, Workshop arrangement, etc.) must be applied for practical workshop and material - tool store. The checklist should be done at least, every 6 months.

No	Scope of work
1	Health protection and work safety
1.1	**Health protection and work safety training and management**
1.1.1	Is the Information of health protection and work safety integrated into regular practical training activities?
1.1.2	Are regular advices/ reminders about work safety and health provided provided to teachers/instructors in regular meetings or in school announcement?
1.1.3	Are teachers encouraged to participate in training courses on health protection and work safety?
1.1.4	Are responsibility for ensuring health protection and work safety specified in the job description for teachers/ instructors?
1.1.5	Are teachers/instructors aware to report to the curator/ manager about hazards and/or accidents?
1.2	**Instructions and risk management**
1.2.1	Smoking ban alerts available?
1.2.2	Posters about hazard warnings with special instructions are visibly hung on or near doors?
1.2.3	Specific signage of work safety and health protection available?
1.2.4	Signage or alert available on working devices?
1.2.5	Handbook of wok safety available at training workshop and frequently updated?
1.2.6	Risk assessment for hazardous activities are performed / annually reviewed?
1.2.7	Teachers and Students are instructed about hazardous assessment?
1.2.8	The risk assessment records are stored in accessible places?
1.2.9	The risk assessment is given in practising plans for each module/unit?

1.2.10	Teacher and student are encouraged to report hazards and risks?
1.2.11	All exits are labelled "EXIT" and provided with light?
1.2.12	All windows, doors and cabinets at workshops are ensured of security to prevent from theft?
1.3	**Machinery devices and equipment**
1.3.1	All machines have a proper safety system?
1.3.2	All emergency stop button active?
1.3.3	The machine safe operation instructions/ warning signs are clear?
1.3.4	The machine is well protected from external touch or damage?
1.3.5	Already removed the obsolete and insecure equipment and devices?
1.3.6	Documents of safety are prepared for all equipment and machinery devices with high risk?
1.3.7	Teachers and students have been trained on safety working procedures when operating machinery devices and equipment?
1.3.8	The machinery devices/ equipment are placed in suitable area (i.e, explosion-proof, ...)
1.3.9	The sound level testing has been done on the machinery devices and equipment, and necessary adjustment made?
1.3.10	Surplus electric measurement equipment are used for electric devices?
1.4	**Personal protection devices**
1.4.1	Personal protection devices are sufficiently provided to the teachers and students?
1.4.2	Personal protection devices are available for use where necessary to apply workflow safety / risk assessment?
1.4.3	Signage with requirements for personal protection devices available?
1.4.4	Protection clothes are in good condition and worn properly?
1.4.5	Wear eyes protection devices when necessary? (such as: mask, safety glasses, protection goggles, ..)
1.4.6	Wear gloves properly when needed? (for sharp objects, chemicals, heat or sparks, etc.)
1.4.7	All personal protection devices are kept clean and not contaminated?
1.4.8	Suitable personal protection devices for emergency situations available? (eg: electric shock, chemical spill, ...)
1.5	**Handle emergencies**
1.5.1	Emergency exit /escape signages are hung in the main working area?
1.5.2	The emergency telephone number "113, 114" are displayed clearly (such as stickers on the phone, put on phone contacts, ...)

1.5.3	Those in charge of emergency incidents are properly trained and ready in case of emergency?
1.5.4	Appropriate fire protection systems and fire fighting installed at workshops?
1.5.5	Extinguishing hoses are placed in easily accessible within easy reach and there are mounting indications sea?
1.5.6	Check the labels mounted on fire extinguishers within the late nine months?
1.5.7	Sprinklers and smoke alarms in places without any obstacles?
1.5.8	Exit door labelled, visible and no obstacles?
1.5.9	The teachers and students are instructed how to escape in case of emergency?
1.6	**Accidents and first aid**
1.6.1	The teachers are aware of alerting and reporting on work accidents?
1.6.2	All accidents reported are seriously taken into account and thoroughly for no further replication?
1.6.3	First aid staff (nurses) are always on duty during working hours?
1.6.4	Contact information details to first aid staff / nurses is available?
1.6.5	The aid staff / nurses always reserve aid in use valid?
1.6.6	First aid kits are full of essential drugs and installed in workshops?
1.7	**Working environment**
1.7.1	There is no danger of tripping along footpath (e.g by wire)?
1.7.2	Room temperature is appropriate?
1.7.3	Work floors are flat (no carpet knob or with holes)?
1.7.4	Stair treads are in good condition?
1.7.5	Corridors, walkways and work areas are equipped with sufficient light?
1.7.6	Window blinds to minimize light reflection on the computer screen are available?
1.7.7	Ventilation and flue systems are installed at workshop?
1.7.8	Having adequate lighting for all working places (well operating, clean, no flick or glare)
1.7.9	Light levels sufficient to operate the machines / equipment safely?
1.8	**Electrical safety**
1.8.1	All power sockets and switches are in good condition?
1.8.2	Available specific schedule for inspection and labelling on electrical equipment and cables / wires on the basis of a risk assessment?

1.8.3	Available books for monitoring electrical equipment checked?
1.8.4	All portable electrical equipment have valid check label?
1.8.5	All electrical equipment such as power cabinets and power sockets are located away from wet areas?
1.8.6	Equipment / tools using network power are assembled in protection system at all times?
1.8.7	The device are disconnected or isolated from power supply before contacting them? (such as when performing maintenance or repairs)
1.8.8	Wires / Cables are in good condition and installed safely to avoid from falling.
1.9	**Manual Handling**
1.9.1	Wheeled carts to transport heavy objects?
1.9.2	Loads are placed at a height from mid-thigh to shoulder?
1.9.3	Equipment, tools are placed firmly to avoid shifting or falling?
2	**Workshop layout**
2.1	**Machinery devices and equipment**
2.1.1	Machinery devices and equipment are located in the appropriate location in workshop?
2.1.2	There is enough space to move safely in workshops?
2.1.3	Do not allow people who are not related to enter workshops?
2.1.4	Workplaces are arranged properly?
2.1.5	No unused / damaged machines or equipment left in workshops?
2.2	**Tools and materials**
2.2.1	All tools and materials are stored properly
2.2.2	There are enough space to store tools and materials properly (on shelves and in cabinets…)
2.2.3	There are enough space to arrange tools and materials safely for use.
2.2.4	Tools and materials are eligible for practice (ie against electric shock, ...)?
2.2.5	Tools and materials are named / labelled consistent with its storage location?
2.2.6	Teachers and students can easily find / use the tools and materials stored?
2.2.7	Boxes / trays with full appropriate tools for training and working available in workshops?
2.3	**Others**
2.3.1	Layouts of equipment and facilities available for each workshop?
2.3.2	The layout of the facilities, machinery devices and equipment in the workshop is appropriate and effective for training?

2.3.3	Rooms for training preparation are available in each workshop?
2.3.4	5S model or others similar are applied?
3	**Workshop operation plan**
3.1	Operation plan available for each workshop/device group in the week/month/semester?
3.2	Working schedule for each teacher is available at the workshop?
4	**Maintenance**
4.1	Plan of maintenance is applied to all devices in the workshop?
4.2	Plan of risk assessment is available? And risk assessment results are recorded and summarised?
4.3	Currently, machinery devices are supplied with sufficient lubricant, compressor oil and gas to operate well?
4.4	Spare-parts are availbale at workshops and ready to replace in case of need?
4.5	Machinery devices are maintained well and in good condition?
4.6	Protectiion equipment and safety devices are regularly checked and maintained well?
4.7	All activities related to the inspection, testing, maintenance and repair are recorded in machine-log book?
4.8	Safe proof system for maintenance work available? (E.g.: supply isolation, warning signals, controls interrupt, ..)
4.9	Maintenance staff are warned about dangers and prevention measures?
4.10	Maintenance work is done on request?
5	**Workshop cleaning and hygiene**
5.1	Plan and schedule for cleaning and hygiene applied for each workshop?
5.2	Currently, waste classification system and waste bins are installed at workshops?
5.3	Currently, the school has garbage disposal system?
5.4	Windows are kept clean and in good condition?
6	**Management performance and Human resource development**
6.1	For you, the current management of workshops is effective?
6.2	Do you think that the management tools currently applied in workshops are useful?
6.3	Are you facing any difficulties in daily management of workshops?
6.4	Do you receive appropriate support from the management of your school?
6.5	Do you need additional training on "Workshop Management " for teachers /instructors?
6.6	Do you want to get further support of workshop management to your school?

7	Workshop management tasks
7.1	Does the school assign someone to in charge each of workshops?
7.2	Does the school assign someone to check / inspect workshops management?

V. COOPERATION IN ACTION

1. WILLING to change
2. No more REASONS
3. FOCUS is critically required
4. "SMART" to be planned
5. ABC method to be applied
6. Keep it simple and straightforward "KISS"
7. Leave the "COMFORT" zone
8. RESPONSIBILITY to be engaged

1. WILLING to change

When being asked: "Do you really want to change, or just want to complain"? 80% of respondents replied that "I have to do it? This is hard for me "!

This answer belongs to each vocational institute, its management board, technical departments and each of the teachers/instructors.

2. No more REASONS

There are too many reasons for not willing to change, what about you?

3. FOCUS is critically required

Too many things to do?

There is no time?

- Work neglect to be removed
- Focus on the main tasks
- Make a "SMART" plan

Follow a course until success = Focus

FOLLOW
ONE
COURSE
UNTIL
SUCCESSFUL

4. Make a "SMART" plan

- Be wise and focus only on the 20% target will create most impact!
- Only use the "SMART" goal for action planning and monitoring processes.
- Becoming smarter / more successful on the way to follow ABC method.

5. Method ABC to be applied

A = ACTION/
B = Belief/
C = Consistency

The result is:

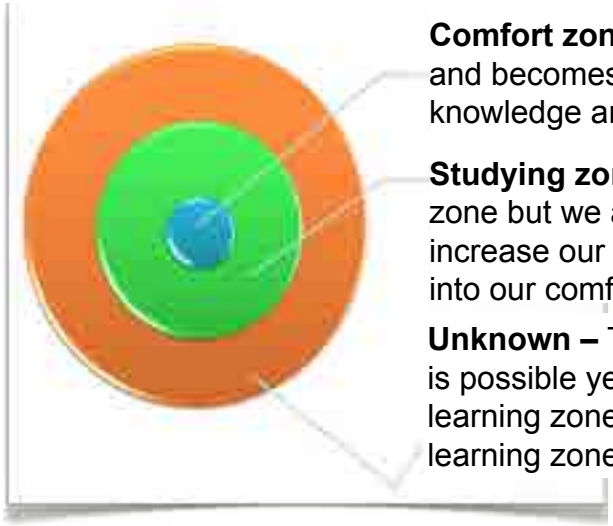
ACTION
+ BELIEF
+ CONSISTENCY
= SUCCESS/ Thành công

6. Keep It Simple and Straightforward "KISS"

KEEP
IT
SIMPLE AND
STRAIGHTFORWARD

Start with a KISS- (keep it simple and straightforward)
- No complicated issue
- As much simple as possible
- Focus on reality

7. Leave the COMFORT zone



Comfort zone – This area expands and becomes our learning zone as our knowledge and skills increase

Studying zone – This is beyond our comfort zone but we are able to learn these skills and increase our comfort zone and take new skills into our comfort zone

Unknown – This area is what we don't even know is possible yet. However, as our comport zone and learning zone expand, our unknown becomes our learning zone.

8. RESPONSIBILITY to be engaged

Who will be responsible?

- MoLISA?
- GDVT?
- Project Management Team?
- Enterprises?
- Experts?
- School management?
- Head of departments?
- Administration department?
- Teachers/Instructors?
- Students?

VI. ASSESSMENT OF CURRENT PRACTICE OF WORKSHOP MANAGEMENT

The training workshops is evaluated by answering the following questions - if the answer is 'Yes' or 'Not applicable', there is no need for further implementation. If the answer is' No ', then please complete the implementation plan in the column "Actions need to do', 'Performer' and 'Time estimated for completion'. The last column is used to fill in 'completion date' when the operation is done.

Questionnaire for workshop performance assessment *(form to be applied)*

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
1	Health protection and work safety							
1.1	**Health protection and work safety training and management**							
1.1.1	Is the Information of health protection and work safety integrated into regular practical training activities?							
1.1.2	Are regular advices/ reminders about work safety and health protection provided to teachers/instructors in regular meetings or in school announcement?							
1.1.3	Are teachers encouraged to participate in training courses on health protection and work safety?							
1.1.4	Are responsibility for ensuring health protection and work safety specified in the job description for teachers/instructors?							
1.1.5	Are teachers/instructors aware to report to the curator/ manager about hazards and/or accidents?							

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
1.2	**Instructions and risk management**							
1.2.1	Smoking ban alerts available?							
1.2.2	Posters about hazard warnings with special instructions are visibly hung on or near doors?							
1.2.3	Specific signage of work safety and health protection available?							
1.2.4	Signage or alert available on working devices?							
1.2.5	Handbook of wok safety available at training workshop and frequently updated?							
1.2.6	Risk assessment for hazardous activities are performed / annually reviewed?							
1.2.7	Teachers and Students are instructed about hazardous assessment?							
1.2.8	The risk assessment records are stored in accessible places?							
1.2.9	The risk assessment is given in practising plans for each module/unit?							
1.2.10	Teacher and student are encouraged to report hazards and risks?							
1.2.11	All exits are labeled "EXIT" and provided with light?							
1.2.12	All windows, doors and cabinets at workshops are ensured of security to prevent from theft?							

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
1.3	**Machinery devices and equipment**							
1.3.1	All machines have a proper safety system?							
1.3.2	All emergency stop button active?							
1.3.3	The machine safe operation instructions/ warning signs are clear?							
1.3.4	The machine is well protected from external touch or damage?							
1.3.5	Already removed the obsolete and insecure equipment and devices?							
1.3.6	Documents of safety are prepared for all equipment and machinery devices with high risk?							
1.3.7	Teachers and students have been trained on safety working procedures when operating machinery devices and equipment?							
1.3.8	The machinery devices/ equipment are placed in suitable area (ie, explosion-proof, ...)							
1.3.9	The sound level testing has been done on the machinery devices and equipment, and necessary adjustment made?							
1.3.10	Surplus electric measurement equipment are used for electric devices?							

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
1.4	**Personal protection devices**							
1.4.1	Personal protection devices are sufficiently provided to the teachers and students?							
1.4.2	Personal protection devices are available for use where necessary to apply workflow safety / risk assessment?							
1.4.3	Signage with requirements for personal protection devices available?							
1.4.4	Protection clothes are in good condition and worn properly?							
1.4.5	Wear eyes protection devices when necessary? (such as: mask, safety glasses, protection goggles, ..)							
1.4.6	Wear gloves properly when needed? (for sharp objects, chemicals, heat or sparks, etc.)							
1.4.7	All personal protection devices are kept clean and not contaminated?							
1.4.8	Suitable personal protection devices for emergency situations available? (eg: electric shock, chemical spill,)							
1.5	**Handle emergencies**							
1.5.1	Emergency exit /escape signages are hung in the main working area?							
1.5.2	The emergency telephone number "113, 114" are displayed clearly (such as stickers on the phone, put on phone contacts, ...)							

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
1.5.3	Those in charge of emergency incidents are properly trained and ready in case of emergency?							
1.5.4	Appropriate fire protection systems and fire fighting installed at workshops?							
1.5.5	Extinguishing hoses are placed in easily accessible within easy reach and there are mounting indications sea?							
1.5.6	Check the labels mounted on fire extinguishers within the late nine months?							
1.5.7	Sprinklers and smoke alarms in places without any obstacles?							
1.5.8	Exit doors are labelled, visible and no obstacles?							
1.5.9	The teachers and students are instructed how to escape in case of emergency?							
1.6	**Accidents and first aid**							
1.6.1	The teachers are aware of alerting and reporting on work accidents?							
1.6.2	All accidents reported are seriously taken into account and thoroughly for no further replication?							
1.6.3	First aid staff (nurses) are always on duty during working hours?							
1.6.4	Contact information details to first aid staff / nurses is available?							
1.6.5	The aid staff / nurses always reserve aid in use valid?							

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
1.6.6	First aid kits are full of essential drugs and installed in workshops?							
1.7	**Working environment**							
1.7.1	There is no danger of tripping along footpath (eg by wire)?							
1.7.2	Room temperature is appropriate?							
1.7.3	Work floors are flat (no carpet knob or with holes)?							
1.7.4	Stair treads are in good condition?							
1.7.5	Corridors, walkways and work areas are equipped with sufficient light?							
1.7.6	Window blinds to minimize light reflection on the computer screen are available?							
1.7.7	Ventilation and flue systems are installed at workshop?							
1.7.8	Having adequate lighting for all working places (well operating, clean, no flick or glare)							
1.7.9	Light levels sufficient to operate the machines / equipment safely?							
1.8	**Electrical safety**							
1.8.1	All power sockets and switches are in good condition?							
1.8.2	Available specific schedule for inspection and labelling on electrical equipment and cables / wires on the basis of a risk assessment?							

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
1.8.3	Available books for monitoring electrical equipment checked?							
1.8.4	All portable electrical equipment have valid check label?							
1.8.5	All electrical equipment such as power cabinets and power sockets are located away from wet areas?							
1.8.6	Equipment / tools using network power are assembled in protection system at all times?							
1.8.7	The device are disconnected or isolated from power supply before contacting them? (such as when performing maintenance or repairs)							
1.8.8	Wires / Cables are in good condition and installed safely to avoid from falling.							
1.9	**Manual Handling**							
1.9.1	Wheeled carts to transport heavy objects?							
1.9.2	Loads are placed at a height from mid-thigh to shoulder?							
1.9.3	Equipment, tools are placed firmly to avoid shifting or falling?							
2	**Workshop layout**							
2.1	**Machinery devices and equipment**							
2.1.1	Machinery devices and equipment are located in the appropriate location in workshop?							

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
2.1.2	There is enough space to move safely in workshops?							
2.1.3	Do not allow people who are not related to enter workshops?							
2.1.4	Workplaces are arranged properly?							
2.1.5	No unused / damaged machines or equipment left in workshops?							
2.2	**Tools and materials**							
2.2.1	All tools and materials are stored properly							
2.2.2	There are enough space to store tools and materials properly (on shelves and in cabinets…)							
2.2.3	There are enough space to arrange tools and materials safely for use.							
2.2.4	Tools and materials are eligible for practice (i.e against electric shock, ...)?							
2.2.5	Tools and materials are named / labelled consistent with its storage location?							
2.2.6	Teachers and students can easily find / use the tools and materials stored?							
2.2.7	Boxes / trays with full appropriate tools for training and working available in workshops?							
2.3	**Others**							
2.3.1	Layouts of equipment and facilities available for each workshop?							

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
2.3.2	The layout of the facilities, machinery devices and equipment in the workshop is appropriate and effective for training?							
2.3.3	Rooms for training preparation are available in each workshop?							
2.3.4	5S model or others similar are applied?							
3	**Workshop operation plan**							
3.1	Operation plan available for each workshop/device group in the week/month/ semester?							
3.2	Working schedule for each teacher is available at the workshop?							
4	**Maintenance**							
4.1	Plan of maintenance is applied to all devices in the workshop?							
4.2	Plan of risk assessment is available? And risk assessment results are recorded and summarised?							
4.3	Currently, machinery devices are supplied with sufficient lubricant, compressor oil and gas to operate well?							
4.4	Spare-parts are available at workshops and ready to replace in case of need?							
4.5	Machinery devices are maintained well and in good condition?							
4.6	Protection equipment and safety devices are regularly checked and maintained well?							

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
4.7	All activities related to the inspection, testing, maintenance and repair are recorded in machine-log book?							
4.8	Safe proof system for maintenance work available? (e.g. supply isolation, warning signals, controls interrupt, ..)							
4.9	Maintenance staff are warned about dangers and prevention measures?							
4.10	Maintenance work is done on request?							
5	**Workshop cleaning and hygiene**							
5.1	Plan and schedule for cleaning and hygiene applied for each workshop?							
5.2	Currently, waste classification system and waste bins are installed at workshops?							
5.3	Currently, the school has garbage disposal system?							
5.4	Windows are kept clean and in good condition?							
6	**Management Performance and Human Resource Development**							
6.1	For you, the current management of workshops is effective?							
6.2	Do you think that the management tools currently applied in workshops are useful?							
6.3	Are you facing any difficulties in daily management of workshops?							

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
6.4	Do you receive appropriate support from the management of your school?							
6.5	Do you need additional training on "Workshop Management " for teachers /instructors?							
6.6	Do you want to get further support of workshop management to your school?							
7	**Workshop management tasks**							
7.1	Does the school assign someone to in charge each of workshops?							
7.2	Does the school assign someone to check / inspect workshops management?							

Other plans to do

Other activities need to be carried out	Person in charge	Time estimated to complete	Date of completion and signature

Samples of filling in the given questionnaire

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
1	**Health protection and work safety**							
1.1	**Health protection and work safety training and management**							
1.1.1	Is the Information of health protection and work safety integrated into regular practical training activities?	X						
1.1.2	Are regular advices/ reminders about work safety and health provided provided to teachers/instructors in regular meetings or in school announcement?		X		It is often integrated in school weekly meeting, department and group meetings	School management board, heads of department and group leaders	Frequently	
1.1.3	Are teachers encouraged to participate in training courses on health protection and work safety?		X		Training courses on health protection and work safety	Proposed by groups, verified by department and approved by school director	Periodically, once per year	
1.1.4	Are responsibility for ensuring health protection and work safety specified in the job description for teachers/instructors?	X						

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
1.1.5	Are teachers/instructors aware to report to the curator/ manager about hazards and/or accidents?		X		Develop and guide the process of reporting risks and hazards to school	Admin department and German experts	Mar 2014	
1.2	**Instructions and risk management**							
1.2.1	Smoking ban alerts available?		X		Provide and install signages to all workshops	Proposed by groups, verified by department and approved by school director	Mar 2014	
1.2.2	Posters about hazard warnings with special instructions are visibly hung on or near doors?		X		Provide and install alert signages to all workshops	Proposed by groups and dep, consulted by German experts, provided by admin and installed by workshop managers	Mar 2014	
1.2.3	Specific signage of work safety and health protection available?		X		Provide and install signages of health protection and work safety	Proposed by groups and dep, consulted by German experts, provided by admin and installed by workshop managers	Mar 2014	
1.2.4	Signage or alert available on working devices?		X		Provide and install appropriate alert signages for each of workshops	Proposed by groups and dep, consulted by German experts, provided by admin and installed by workshop managers	Mar 2014	

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
1.2.5	Handbook of wok safety available at training workshop and frequently updated?		X		Develop record book and update regularly information of each work shop	Proposed by groups and dep, consulted by German experts, provided by admin and installed by workshop managers	Mar 2014	
1.2.6	Risk assessment for hazardous activities are performed / annually reviewed?		X		Assess on risks of each device after completing each module	Reporting: Teachers-> Group leaders -> Dep. head. Annual report to school director	Periodically: Once per year	
1.2.7	Teachers and Students are instructed about hazardous assessment?		X		Conduct training on risk assessment for all teachers and students.	Admin dep. and Experts	Periodically: Once per year	
1.2.8	The risk assessment records are stored in accessible places?		X		Install appropriate cabinets of documents and records at workshops	Proposed by teachers, consulted with experts, provided by admin dep. installed by workshop managers	Mar 2014	
1.2.9	The risk assessment is given in practising plans for each module/ unit?		X		to integrated by training classes	Implemented by teachers, consulted with experts	Frequently	
1.2.10	Teacher and student are encouraged to report hazards and risks?		X		Plan reporting processes and issue awarding policies to encourage teachers, students in reporting risks and hazards at workshops.	Proposed by teachers, students, consulted with experts, verified by dep. head and approved and awarded by school's management	Periodically: Once per year	

No	Work scope	Yes	No	Don't know	To do	Person in charge	Time required to complete	Date of completion
1.2.11	All exits are labelled "EXIT" and provided with light?	X						
1.2.12	All windows, doors and cabinets at workshops are ensured of security to prevent from theft?	X						
1.3	**Machinery devices and equipment**							
1.3.1	All machines have a proper safety system?	X						
1.3.2	All emergency stop button active?	X						
1.3.3	The machine safe operation instructions/ warning signs are clear?		X		Develop instruction for safe machinery operation, to have clear alerts for each of machines.	Proposed by teachers, consulted with experts, provided by admin dep. and implemented by workshop managers		
1.3.4	The machine is well protected from external touch or damage?	X						
1.3.5	Already removed the obsolete and insecure equipment and devices?	X						
1.3.6	Documents of safety are prepared for all equipment and machinery devices with high risk?		X		Compile manual of safe working processes for each of machinery groups at high risks (milling, turning and CNC)	Compiled by teachers, approved by training dep. printed by admin dep.	Mar 2014	
1.3.7	Teachers and students have been trained on safety working procedures when operating machinery devices and equipment?	X						

Photos were collected during the survey - Shortcoming need to be improved

Information board is lack of detailed plan, schedule and responsibilities

The layout of training facilities and machinery devices shows inappropriate

The workshop is so cramped, necessary space is limited

Students' working postures are incorrect

Electrical safety is not unsecured

Poor hygiene

Current practice in a training workshop

No medicines found in first aid box, broken lock

No fire fighting hoses, broken valves

How a store look?

No sort-out, classification of training materials

VII. WORKSHOP MANAGEMENT PLANNING

1. Why does it need planning for a training workshop?

Usable sources are limited

- Machinery devices and equipment
- Trained and skilled teachers
- Work space
  - *Total area of the training workshop*
  - *Possibility for expanding*

Available sources to be optimized for using

- Maximizing training capacity with the available sources
- Ensure high training quality even when high frequency is applied

Cost for training workshop operation to be fully calculated

- It is costly for investing modern technologies, and also will burden for depreciation and maintenance.
- Business benefits should be considered to cover expenses for high frequency of training.
- Surplus sources should be available for other activities on request and/or coming.
- High turnover should be a key criteria of the vocational school for sustainable maintenance of training facilities.
- Well investment and procurement planning should be done to be able to further expanding workshop in the long term.

2. Training services

Formal training

- Fundamental training in a scope of formal training
- Training on key selected occupation


VIỆT NAM MUÔN NĂM !

Training for on-demand target groups

- Advanced training for professionals from enterprises
  - Regarding focus exploitation of devices available in the workshop
  - Regarding technical modules of fundamental or advanced technical areas
- Training for unskilled workers from enterprises
  - Fundamental occupations on requested areas
- Training on labor market demand
  - Advanced vocational training

3. Criteria of sources

Machinery devices and systems

- Quantity and variety of machinery devices and systems
- Max usable time of each device in a day
- Max number of person work together on a machine

Teachers/Instructors and trainees

- Max number of trainees to be instructed by one trainer
  - *If many, trainer provide instruction only on one topics*
  - *If a few, teacher can provide instruction on several topics*
- Qualifications and experience of teachers

Work-space

- Total area of workshop
  - *Number of work-benches are base for calculating quantity of trainees*
  - *Number and capacity of break-rooms and WCs*
- Unused spaces which can be used in case of need for and during training
  - *Note: any cost rising?*
- Other capacities for expanding (medium and long terms)
  - Planning for use in medium and long terms
  - Cost rising as expanding and buying more facilities

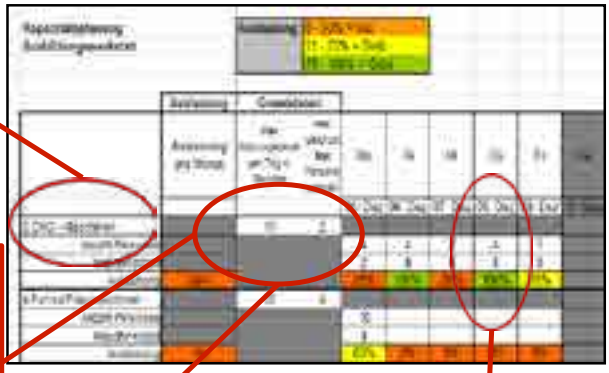
- Capacity for using other spaces
    - For internal use or for more staff?
    - Necessity of common agreement?
- Time using the spaces
    - Total time per day (hours)?
    - Able to use in different shifts?
    - In which period, the training taking place?

4. Frequency of use

- The use frequency is the ratio between the average rate of production and existing capacities (machines, manpower, space, ...)
- Unit of use frequency measure is [%]
- Use frequency = average rate of production / existing capacities:
- Untapped capacity [%] = 100 – frequency of use
- If, currently, up to 100% capacity of all resources is the goal of the enterprise, the new approach indicates that the frequency of full-time use of all the resources is not always have a positive impact on training practice workshops.
- Risks might occur when exploiting 100% capacity:
    - *Excessive depreciation of machinery devices and tools*
    - *Shorter cycle of maintenance and shorter longevity of machines*
    - *No break time for the using machines*
    - *Increasing risk of occupational accidents caused by stress and hurry.*

5. Resources planning

Total number of machine (02)

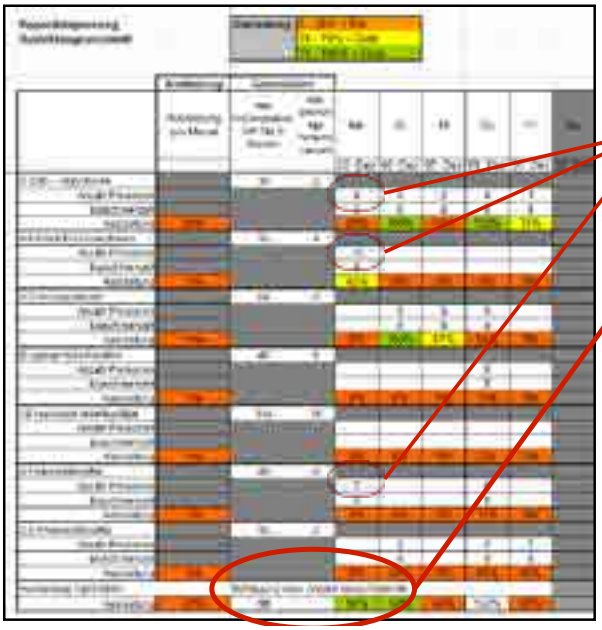


Time used in one day:

- Estimated for 8 hours
- No. of machine: 02
- Total: 2 x 8 = 16

Maximum 2 persons working on a machine:
2 x 16 = 32 hours for working on CNC in a day

HR: 4 persons, 8 hours for each = 32 hours in total



Number of students/day:
4 + 10 + 3 = 17

One teacher can cover max 18 students

→ **This table is inserted in annex of module in the form of calculation**

6. Training plan

Training plan including a time sequence and duration of the training units is expected for a defined period (e.g. for one year)

- The training should be arranged a meaningful criteria which is consistent with each other
- Reservations and corresponding utilization of resources should be planned for next training courses.

In which, training plan and resource planning are interdependent

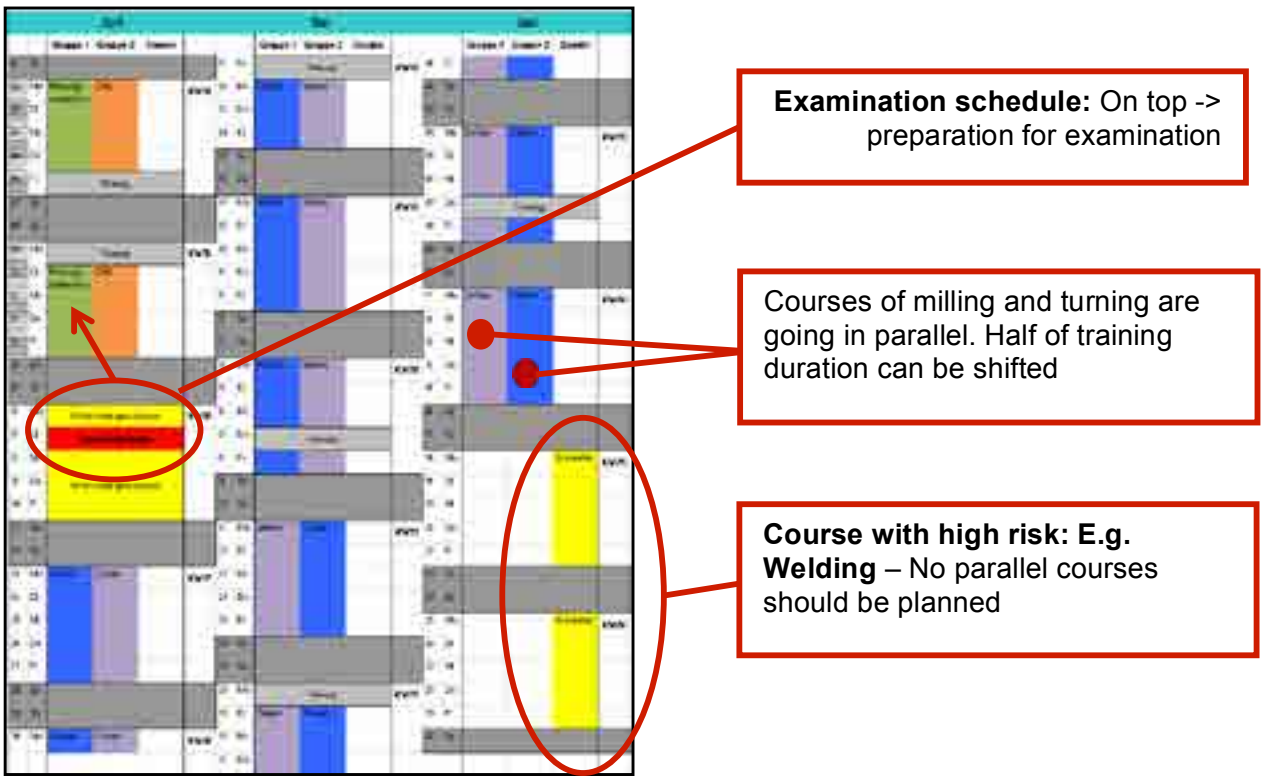
- Training can be arranged corresponding resources are available
- No training plan, no resource planning

Consideration on optimal arrangement of training units

- Specific training unit must be built interdependently or set on certain preliminary knowledge
- External schedules should determine their certain training units (e.g. schedule for examinations)
- Training units should be arranged along with availability of machinery devices, rate of use in each period
- Corresponding training units can be arranged in parallel. E.g. basic courses milling and lathing and basic pneumatic

The training unit has big potential risks (e.g. welding)

- This should be arranged with low frequency and with close supervision.


Examination schedule: On top -> preparation for examination
Courses of milling and turning are going in parallel. Half of training duration can be shifted
Course with high risk: E.g. Welding – No parallel courses should be planned

7. Tools for workshop management planning

a). Table for current status assessment

Topics	Current regulations and policies	How these regulations and policies are implemented
Health protection		
Work safety		
Waste treatment		
Environment protection		
Production/Practice project		
Machine planning for operation		
Tools for practice		
Materials for practice and production		

b). Personal planning

Checklist

Operation, Maintenance and Cleanliness at at workplace

Department / Workshop:

Department

Work area:

Responsible for implementation

Name and portrait

Task List

1 - Daily task, when completed

2 - On Friday, every week

3 - Monthly, on last Friday

Aug-11

Day	Date	Task			Signature
Mo	1	1			
Tue	2	1			
Wed	3	1			
Thu	4	1			
Fri	5	1	2		
Sa	6				
Sun	7				
Mo	8	1			
Tue	9	1			
Wed	10	1			
Thu	11	1			
Fri	12	1	2		
Sa	13				
Sun	14				
Mo	15	1			
Tue	16	1			
Wed	17	1			
Thu	18	1			
Fri	19	1	2		
Sa	20				
Sun	21				
Mo	22	1			
Tue	23	1			
Wed	24	1			
Thu	25	1			
Fri	26	1	2	3	
Sa	27				
Sun	28				
Mon	29	1			
Tue	30	1			
Wed	31	1			

Please submit this list by the end of month and get a new one!

c). Plans for maintenance

Maintenance Plan

Machine Number:	1 - 4	Month:	Feb-11
Machine group	3	Numerical sign	Turning machine WF200

Maintenance Period				Date	Workshop manager	Notes
Week	Month	Half year	Year			
☒	☒	☐	☐	2/1/11	Mr. A	
☒	☐	☒	☐	2/4/11	Mr. A	
☒	☐	☐	☐	2/11/11	Mr. A	Machine 3 is broken, moved out
☒	☐	☐	☒	2/18/11	Mr. A	
☒	☐	☐	☐	2/25/11	Mr. A	

Weekly maintenance

Note: Before starting, use lubrication as stipulated instruction (see arrows).
1. Check engine oil.
2. Check all functions of the machine under provisions of Health protection and Safety (eg test arbor tolerance, closeness of felt-base, the safety of the supplied accessories, toolholders, ...)
3. Every 14 days, check the basic safety indicators once (Using form of Health protection and Work safety, noted: It might be changed.
4. Cleaning (no use of pneumatic air-compressor for cleaning shavings on machine). After cleaning skating surface, use appropriate lubricant (Note: also for machine vise especially when not used for a long time. Note: See the directions for use at table 3 Section 7)

Monthly maintenance

1.Comprehensive inspection of industrial hygiene and safety; electrical components
2. Check where might slip at all positions

Half-year maintenance

Note: To repair complex cases (See Catalog 3) to be performed by professional workers
1. Change gearbox oil change, after each operational cycle (about 2000 hours)
2. Check the tightness of felt-base system
3. Check accuracy (size adjustable - machine vise)
4. Change coolants (see instructions for environmental protection)

Yearly maintenance

No apply – Not yet

8. Questions regarding Work safety

1. What safety signs are differently available?
2. What used to prevent threats to face and eyes?
3. What safeguards are applied to electrical equipment?
4. What is the purpose to prevent from accidents at workplace
5. What are prohibition signs
6. By what preventive safety measures are used to avoid accidents?
7. What are the commandments for accident prevention?
8. What are five information to be included in an emergency call?
9. On a grinding machine, there is a sign for "Wear eye protection". A person with normal glasses and no other protection means, should this person work here? Give your answer
10. When drilling, in what moment is the most danger? What are dangers when making improper handling?
11. How to keep away from threads to accidents when grinding on machine?
12. What safety rules should be applied when changing a grinding wheel?
13. Please name two dangers when working with machine coolant?

    a) Indicate 5 ways to minimize health risk when working with coolants?

    b) How do you do when a colleague gets coolant into the eye?
14. There is a significant amount of unusable lubrication and coolant at workshop. Your colleague is asking to fill in the barrels with others for sell off. How do you respond to colleagues?

What are your answers?

Answers for the questions regarding work safety

1. There are different safety signs; mandatory signs, prohibition signs, warning signs and emergency signs
   - Mandatory signs are round and blue-white
   - Prohibition signs are round and white-red-black
   - Warning signs are triangular and yellow-black
   - Emergency signs are square or rectangular and green-white
2. Protection glasses, shields and panels can reduce the risk to face and eyes.
   - Each employee must know clearly the accident prevention regulations and strictly obey.
3. Accidents can be caused by human error or technical failure.
   - Accident are caused by human error such as disregard of danger, carelessness. Technical failure may be, for example, caused by material fatigue.
4. Protection measures are:
   - Insulation: All live parts must be insulated.
   - Protection measures in technical systems: All enclosures of electrical equipment connected to the protective conductor PE.
   - Protection switches: All electrical connections must have a protective conductor PE.
   - Protective isolation: The electrical equipment is isolated by a transformer from the circuit.
   - Breakers: Each electrical equipment must be protected by a circuit breaker.
5. People need to be aware and responsible for prevention of accidents at workplace. Each professional requires for different prevention regulations which have to be obeyed.
6. Prohibition signs are round and show the prohibited action with black sign on white background ad red around. A red cross indicates forbidden action.

7. Accidents can be avoided by eliminating dangers which are indicated by signs of dangers and hazards. Every employee is obliged to involve in accident prevention.
8. Measures of accident prevention are:
   - Wear fitting and tidy clothes while working on machinery devices and moving parts.
   - Wheels, spindles, shafts and interlocking parts should be covered so that no one is detected.
   - Safety equipment and protective devices must not be removed away.
   - Employees with long hair must wear head protection when operating machines.
   - Wear protection glasses when grinding on machines.
   - Valves and connectors on oxygen cylinders must be protected and are free of grease and oil.
   - Gas cylinders must be covered with a protective cap during transportation.
   - Electrical fuses must not be cut away.
   - Any breach must be treated immediately and professionally.
   - In severe injuries, a doctor must be consulted.
   - **Accident prevent is always better than treatment!**
9. The five details of an emergency call:
   - Where is the accident happened?
   - What happened?
   - How many casualties there?
   - The nature of injuries
   - Wait for questions
10. A normal glasses is not eligible, because the side protection is entirely absent. The normal glasses can be broken during working, and also using the normal glasses as protection one might reduce its value of accuracy.

11. The greatest hazard when drilling is the drill might get out of the working material.
12. The tack is sharpened by grinding wheel. The tack is held with the left hand, wherein the hand is supported on the support. The Tack has obliquely upwards until it touches the top of the grinding wheel
13. Safety rules.
    - Grinding must be checked before mounting for cracks.
    - Materials are ground on the grinding spindle and in the elastic liners.
    - Check after clamping the wheels on balance, possibly balance
    - Perform test of running about 5 minutes on the permissible speed.

14. Dangers when using coolants:
    - Skin loses when constant contact with coolants, it is susceptible to infection and skin diseases.
    - Periphery subjects in cooling lubricants, such as small metal shavings might cause tiny injuries that can also lead to further skin damage.

    a) *Avoid contact with coolants as much as possible.*
    - *Before working, use skin protection cream.*
    - *After contacting with coolants, clean hands with appropriate substances. E.g. - Wash with emulsion cleaners. No reuse this liquid.*
    - *Change clothes with coolants immediately and not on wear until it is dry.*
    - *Wear protection glasses to against splashes of coolants.*

    b) First, the eye should be rinsed with water. Then, depends on each case, consult with an ophthalmologist.

15. Lubricants and coolants are special waste and must be treated on special ways as regulations.

9. Photos of some standard training workshop

Spare-parts and equipment are arranged in order and systematically

Tools are placed neatly and accessible

Materials in store are arranged neatly and accessible

Wastes are classified

Electrical safety and fire protection

Training environment is clean, tidy and comfortable

Reference

1. **Training material on workshop management** , by Markus Kamann workshops, Gpdm International, Germny
2. **Vocational Training Programme 2008**, the project document under Programme Reform of TVET in Vietnam
3. **Project documents**, Innovation Programme Vietnam Training
4. **Guidelines 5S deployment model** (http://www.ictroi.com/giaiphap/erp/san-xuat/trien-khai-5s-lean-manufacturing-vao-doanh-nghiep/)
5. **Results of the survey on Business Management by GIZ workshops** / TVET implementing partners in vocational schools PVT2008 project.
6. **Some other references** gathered from the Internet, such as www.bienbaoantoan.com


TRƯỜNG CAO ĐẲNG NGHỀ
LONG AN