

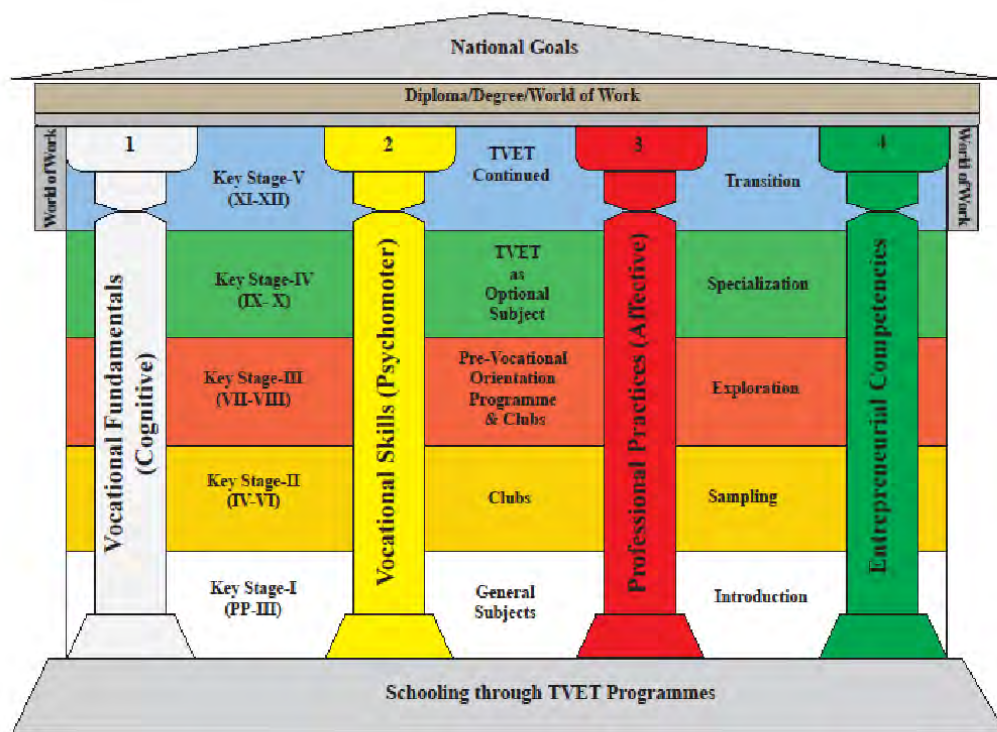
TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET)

NEW NORMAL CURRICULUM

INSTRUCTIONAL GUIDE

(FURNITURE MAKING)

CLASS: XII



Royal Education Council

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FOREWORD

COVID-19 has suddenly caused unforgiving disruptions in the public education all over the world, and brought about threats of fragmentation due to disparities in accessibility and connectivity in many systems. In Bhutan too, continuity of education and learning has been severely affected as a result of nationwide school closures and due to restrictions and health protocols. The disruptions have led to challenges in many existing patterns and trends in education resulting in a massive shift away from learning and teaching in traditional settings with physical interactions to the maximum in terms of relevancy and efficiency. This has caused a major problem for children living in poverty worldwide, who often rely on the physical settings of their schools for educational materials, guidance, and, sometimes, the only decent meal of the day.

In the new normal education, human interaction and well-being is a priority. Technology, particularly digital technology that enables communication, collaboration and learning across distance, is a formidable tool – not a panacea but a source of innovation and expanded potentials. As we embrace this exceptional opportunity to transform the world, and as we reimagine the organization of our educational institutions and learning environments, we will need to think about where we want to go.

In the post COVID 19 era, we must prioritize the development of the whole person not just academic knowledge. Inspiration for the change can be drawn from the 1996 Delors report, *Learning the treasure within*, in its specification of four pillars of learning as “learning to know”, “to do”, “to be”, and “to live together”. Therefore, curricula must be increasingly perceived as an integrated and based on themes and problems that allows learners to learn to live in peace with our common humanity and our common planet. This has the potential in the development of a strong base of knowledge about one’s self and about the world and find purpose and be better able to participate in social and political milieu.

The New Normal Curriculum is, not just a mere response to the pandemic, but also a culmination of the curriculum reform work for the last four years by the Royal Education Council. It is an attempt to transform education from the teaching of “what” to learning of “how” and “why” towards empowering learners with the transversal competencies and the 21st century skills, and preparing them to be lifelong learners. We are optimistic that this move orients our education process towards nurturing nationally rooted and globally competent citizens.

Wish all our learners and teachers a life enriching experiential teaching and learning.

Kinga Dakpa,
Director General

INTRODUCTION

Technical and Vocational Education and Training (TVET) is education and training which provides knowledge and skills for employment. It comprises of education, training and skills development related to a wide range of occupational fields, production, services and livelihood. The Royal Education Council and Ministry of Education envisage that the TVET curriculum has a place in the mainstream education system, as it is the case in most of the education systems of the developed world. The formal Technical and Vocational Education and Training (TVET) began in 1965 at Don Bosco Technical School (DBTS), in Kharbandi (presently known as Rinchending) in Phuntsholing. Even after that, major curriculum reform was planned by the then Department of Curriculum Research and Development (DCRD) under the Ministry of Education in an attempt to make education relevant to the Bhutanese society through diversification of Secondary Education Curriculum in the schools, which included the introduction of TVET.

As per ‘National Education Framework’ developed collaboratively by the Royal Education Council (REC) and the Ministry of Education (MoE), it provides a pathway on integrating technical/vocational education in the mainstream school education curriculum and as elective subjects in higher classes (NEF, 2009; page 64).

With the collaborative efforts of the Ministry of Labour and Human Resources and the erstwhile Department of Curriculum Research and Development under Ministry of Education, Vocational Curriculum has been introduced in the schools with assistance from TTIs since 2011. After the first MoU that was signed between MoE and MoLHR in 2011, the second MoU was signed again in 2014, to improve technical/vocational courses. The technical/vocational courses offered by the TTIs/IZCs are adapted and redesigned and are offered in schools aligning to the ‘Bhutan Education Blue Print’ 2014-2024, which recommends upscaling and diversification of TVET in schools through the provision of alternative pathways in schools and the tertiary education systems, owing to the limited access to such courses, despite the growing demand for technical skills in the country.

The resolutions of the National School Curriculum Conference 2016, also strongly emphasized the need to upscale and deepen TVET. Accordingly, the TVET framework is developed from classes PP to XII, schools equipped with necessary resources and instructors trained. Tripartite MoU among REC, MoE, and MoLHR was also signed in 2018 to implement the programs collaboratively.

Although the TVET curriculum is competency-based with more emphasis on hands-on experience, further improvements have been made taking care of cognitive and affective domains besides psychomotor. Teaching and learning approaches have also been enriched with the recommendation to use ICT and online resources. Since the pandemic (COVID-19) has resulted in the closure of schools, it has taught us lessons to be prepared for such an untoward situation in the future. Thus, the New Normal Curriculum Instructional Guide is prepared not only to encourage blended learning but also to facilitate remote learning. Thus, the guide would help the schools to implement the curriculum effectively without limiting to contact teaching/learning besides using a variety of pedagogies.

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Module 3: Making bed and sofa frames

Chapter 1: Making Bed

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
1.1.1 Define bed. 1.1.2 State the types of beds. 1.1.3 Label the components of the bed. 1.1.4 State the size of the bed. 1.1.5 Prepare bed components	1.1 Preparing bed components

B. Competencies:

- ✓ Prepare the components to make a new bed/repair a bed.

C. Pedagogy/Learning Experiences

• Contact:

- ✓ Make the students read information sheet 1.1
- ✓ Make the students perform operation sheet 1.1
- ✓ Teacher to give teach all theories related with detailed information.
- ✓ The teacher explains the marking of the bed.
- ✓ Practice guided practice.
- ✓ Practice individual practice.

• Non-contact:

- ✓ Learners to go through the given link showing the process of making bed
<https://www.youtube.com/watch?v=egxmtIvyT6w>
- ✓ Explore the different design of bed from the given link
<https://www.youtube.com/watch?v=FDJnRPrtwCw>
- ✓ Learners to go through the components of Bed from any other resources (Textbook, Google, etc)
- ✓ Explore eight types of beds (teacher may consider giving in groups) and sizes of bed from the textbook and maintain notes.

D. Assessment:

• Contact:

- ✓ Teachers assess their task (Preparing bed components) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.

• Non-contact:

- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on given types and size of the bed)

E. Resources (Online and offline):

- ✓ CBLM
- ✓ <https://www.youtube.com/watch?v=egxmtIvyT6w> (Process of making Bed)
- ✓ <https://www.youtube.com/watch?v=FDJnRPrtwCw> (Different designs of bed)

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
1.2.1 State the types of joints. 1.2.2 Make bed joints.	1.2 Making bed joints

B. Competencies:

- ✓ Use bed joints to make beds of different designs.

C. Pedagogy/Learning Experiences

• **Contact:**

- ✓ Make the students read information sheet 1.2
- ✓ Make the students perform operation sheet 1.2
- ✓ Practice guided practice.
- ✓ Practice individual practice.

• **Non-contact:**

- ✓ Make learners explore joints used in bed making and identify which joints are strongest for making the bed.
- ✓ Learners to make bed model.

D. Assessment:

• **Contact:**

- ✓ The teacher assesses their task (Preparing bed components) using a rubric.
- ✓ Assess the use of PPE and OHS while handling tools and machines.

• **Non-contact:**

- ✓ Assesses the learners based on work submitted in the Google Classroom (bed joints and bed model)

D. Resources (Online and offline):

- ✓ CBLM

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
1.3.1 Define ironmongery. 1.3.2 State the types of hardware fittings for the bed.	1.3 Assembling component of the bed

1.3.3	State the importance of diagonal checking.	
1.3.4	Assemble component of a bed.	

B. Competencies:

- ✓ Assemble the components to make a new bed/repair a bed.

C. Pedagogy/Learning Experiences

- **Contact:**

- ✓ Make the students read information sheet 1.3
- ✓ Make the students perform operation sheet 1.3
- ✓ Practice guided practice.
- ✓ Practice individual practice.

- **Non-contact:**

- ✓ Explore joints used in bed making and identify which joints are strongest for making the bed.

D. Assessment:

- **Contact:**

- ✓ The teacher assesses their task (assemble bed components) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.

- **Non-contact:**

- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on given types and size of the bed)

E. Resources (Online and offline):

- ✓ CBLM

Chapter 2: Make sofa

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
2.1.1 Define sofa.	2.1 Making sofa frame
2.1.2 State the types of sofa.	
2.1.3 State the function of the woodturning lathe machine.	
2.1.4 Label the parts of the woodturning lathe machine.	
2.1.5 Prepare sofa components.	

B. Competencies:

- ✓ Prepare sofa frames of different designs using a lathe machine.

C. Pedagogy/Learning Experiences

- **Contact:**

- ✓ Make the students read information sheet 2.1
- ✓ Make the students perform operation sheet 2.1
- ✓ Practice guided practice.
- ✓ Practice individual practice.

- **Non-contact:**

- ✓ Teacher to give notes on the definition and six types of sofa frame and learners to take notes.
- ✓ Make learners go through the link on parts and function of the lathe machine <https://www.youtube.com/watch?v=1e6L6Gk0RbI>
- ✓ Make learners go through given links <http://www.madehow.com/Volume-3/Sofa.html> (Components of a sofa and related information)
- ✓ Learners to make sofa model (prepare sofa components)
- ✓ Make learners go through the given link on operating lathe machine https://www.youtube.com/watch?v=2_P19jZjGOk

D. Assessment:

- **Contact:**

- ✓ The teacher assesses their task (sofa components) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.

- **Non-contact:**

- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on sofa components)
- ✓ Assess sofa components (model).

E. Resources (Online and offline):

- ✓ CBLM
- ✓ <http://www.madehow.com/Volume-3/Sofa.html> (Components of a sofa and related information)
- ✓ <https://www.youtube.com/watch?v=1e6L6Gk0RbI> (Parts of the lathe machine)
- ✓ https://www.youtube.com/watch?v=2_P19jZjGOk (Operating lathe machine)

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
2.2.1 State the types of joints.	2.2 Preparing sofa joints
2.2.2 State the function of the band saw machine.	
2.2.3 Label the parts of the band saw machine.	
2.2.4 States the function of jigs and fixtures.	

2.2.5 Use band sawing machine.	
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B. Competencies:

- ✓ Use different joints to make a sofa using a band saw machine.

C. Pedagogy/Learning Experiences

• **Contact:**

- ✓ Make the students read information sheet 2.2
- ✓ Make the students perform operation sheet 2.2
- ✓ Brief learners on the band saw about parts and how it functions.
- ✓ Practice guided practice (operating band machine/marking workpiece).
- ✓ Practice individual practice.

• **Non-contact:**

- ✓ Make learners go through the given link on operating band saw and different uses of the band saw <https://www.youtube.com/watch?v=6XPK9xJyEPs>
- ✓ Make learners point out the differences/similarities between jig saw and band saw.
- ✓ Link showing parts and function of the band saw machine <https://www.youtube.com/watch?v=jhc6TWgqxcQ>

D. Assessment:

• **Contact:**

- ✓ The teacher assesses their task (sofa joints) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.

• **Non-contact:**

- ✓ Assesses the learners based on work submitted in the Google Classroom (Jigsaw and band saw)
- ✓ Assess sofa components (model).

E. Resources (Online and offline):

- ✓ CBLM
- ✓ <https://www.youtube.com/watch?v=6XPK9xJyEPs> (Using band saw)
- ✓ <https://www.youtube.com/watch?v=jhc6TWgqxcQ> (Parts of band saw)

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
2.3.1 Interpret drawing. 2.3.2 State the importance of alignment 2.3.3 State the function of furniture stability 2.3.4 Assemble sofa components.	2.3 Assembling sofa components.

B. Competencies:

- ✓ Assemble the components to make a new sofa/repair a sofa.

C. Pedagogy/Learning Experiences

• **Contact:**

- ✓ Make the students read information sheet 2.3
- ✓ Make the students perform operation sheet 2.3
- ✓ Teacher to interpret drawing to learners while assembling.
- ✓ Ask students to interpret drawing.
- ✓ Practice guided practice.
- ✓ Practice individual practice.

• **Non-contact:**

- ✓ Make learners go through the textbook on drawing and try to interpret through audio records.
- ✓ Make learners assemble their sofa model and necessary finishing work.
- ✓ Make learners take notes on the importance of alignment and the purpose of furniture stability.

D. Assessment:

• **Contact:**

- ✓ The teacher assesses their task (sofa joints) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.

• **Non-contact:**

- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on given content)
- ✓ Assess sofa components (model).

E. Resources

- ✓ CBLM

Module 4: Making storage Cabinet

Chapter 1: Preparing cabinet

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
1.1.1 Define cabinet 1.1.2 State types of cabinet 1.1.3 Label the component of the cabinet.	1.1 Preparing cabinet component

B. Competencies:

- ✓ Prepare cabinets of different designs.

C. Pedagogy/Learning Experiences

- **Contact:**

- ✓ Make the students read information sheet 1.1
- ✓ Make the students perform operation sheet 1.1
- ✓ Practice guided practice.
- ✓ Practice individual practice.

- **Non-contact:**

- ✓ Make learners go through the given link on making the cabinet, for preparing the cabinet components, watch for 2 minutes.
<https://www.youtube.com/watch?v=vbZLfsjuS1k>
- ✓ Make learners go through notes on nine types of cabinets and components of cabinets.
- ✓ Make learners prepare a cabinet model (design to be given by the teacher).

D. Assessment:

- **Contact:**

- ✓ The teacher assesses their task (Cabinet components) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.

- **Non-contact:**

- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on types and components)
- ✓ Assess sofa components (model)

E. Resources

- ✓ CBLM
- ✓ <https://www.youtube.com/watch?v=vbZLfsjuS1k> (Making cabinet)

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
1.2.1 State types of cabinet joint 1.2.2 Make cabinet joint	1.2 Make cabinet joint

B. Competencies:

- ✓ Use different joints to make the cabinet.

C. Pedagogy/Learning Experiences

- **Contact:**

- ✓ Make the students read information sheet 1.2
- ✓ Make the students perform operation sheet 1.2
- ✓ Practice guided practice.
- ✓ Practice individual practice.

- **Non-contact:**
 - ✓ Make learners revise on types of joints.

D. Assessment:

- **Contact:**
 - ✓ The teacher assesses their task (Cabinet joints) using rubrics.
 - ✓ Assess the use of PPE and OHS while handling tools and machines.
- **Non-contact:**
 - ✓ Assesses the learners based on work submitted in the Google Classroom (joints)
 - ✓ Make learners solve a SAMPLE OF SELF CHECK 1.2 from a textbook.
 - ✓ Assess sofa components (model)

E. Resources

- ✓ CBLM

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
1.3.1 Interpret design drawing	1.3 Assembling cabinet components
1.3.2 Assemble cabinet components.	

B. Competencies:

- ✓ Assemble the components to make a new cabinet/repair a cabinet.

C. Pedagogy/Learning Experiences

- **Contact:**
 - ✓ Make the students read information sheet 1.3
 - ✓ Make the students perform operation sheet 1.3
 - ✓ Practice guided practice.
 - ✓ Practice individual practice.

- **Non-contact:**
 - ✓ Make learners revise on types of joints.
 - ✓ Solve a SAMPLE OF SELF CHECK 2.3

D. Assessment:

- **Contact:**
 - ✓ Teachers assess their task (Cabinet joints) using rubrics.
 - ✓ Assess the use of PPE and OHS while handling tools and machines.
- **Non-contact:**
 - ✓ Assesses the learners based on work submitted in the Google Classroom (joints)
 - ✓ Assess cabinet (model)

E. Resources

- ✓ CBLM

Chapter 2: Making shutter joint and assemble parts

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
2.1.1 Define shutter. 2.1.2 State the types of the shutter. 2.1.3 Label the components of the shutter. 2.1.4 Prepare shutter components.	2.1 Prepare shutter components

B. Competencies:

- ✓ Prepare shutter components of different designs.

C. Pedagogy/Learning Experiences

• Contact:

- ✓ Make the students read information sheet 2.1
- ✓ Make the students perform operation sheet 2.1
- ✓ Teacher to brief on marking and drawing of the shutter.

• Non-contact:

- ✓ Make learners go through the definition and types of the shutter from a textbook.
- ✓ Make learners make shutter model (Teacher to give every detail of shutter including design).
- ✓ Make learners go through the given link on components and their function
<https://perfectfitshutters.com/shutter-terminology/>

D. Assessment:

• Contact:

- ✓ The teacher assesses their task (Shutter) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.

• Non-contact:

- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on definition and types of the shutter).
- ✓ Assess shutter (model).

E. Resources

- ✓ CBLM
- ✓ <https://perfectfitshutters.com/shutter-terminology/> (Components and function of the shutter).

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
2.2.1 State the types of shutter joints. 2.2.2 Make shutter joint.	2.2 Making shutter joints

B. Competencies:

- ✓ Use different joints to make a shutter.

C. Pedagogy/Learning Experiences

• **Contact:**

- ✓ Make the students read information sheet 2.2
- ✓ Make the students perform operation sheet 2.2
- ✓ Teacher to brief on joints.

• **Non-contact:**

- ✓ Make learners explore joints used in shutters.
- ✓ Make learners make shutter model (Teacher to give details on which joints to be used in shutter).

D. Assessment:

• **Contact:**

- ✓ The teacher assesses their task (Shutter) using rubrics.
- ✓ Assess the use of PPE and OHS while handling tools and machines.

• **Non-contact:**

- ✓ Assesses the learners based on work submitted in the Google Classroom (Notes on joints used in shutter).
- ✓ Assess shutter (model).

E. Resources

- ✓ CBLM

A. Learning objectives/ Broad theme / Strand/Chapter/topic:

Learning objectives	Core concepts (Chapters/Topics)
2.3.1 Interpret design drawing 2.3.2 State the application of hardware fittings. 2.3.3 State the types of shutter hardware fittings. 2.3.4 Fix hardware fittings on the shutter. 2.3.5 Assemble shutter.	2.3 Assembling shutter

B. Competencies:

- ✓ Assemble the components to make a new shutter/repair shutter.
- ✓ Select latches, knobs, tower bolt, magnetic door catcher, and handle according to the job requirement.

C. Pedagogy/Learning Experiences

- **Contact:**
 - ✓ Make the students read information sheet 2.3
 - ✓ Make the students perform operation sheet 2.3
 - ✓ Conduct class tests.
 - ✓ Make learners do a presentation on the given content.
 - ✓ Make learners bring different designs of shutters and let them explain.
- **Non-contact:**
 - ✓ Make learners explore types of latches and locks (from the textbook, google, etc.
 - ✓ The teacher gives notes on the following content:
 - Types of magnetic door catcher
 - Types of handle
 - Types of knobs
 - Types of Tower bolts
 - ✓ Make learners make shutter model (assemble shutter and necessary finishing).
 - ✓ Given link take learners to select the hinges according to job requirement
<https://www.youtube.com/watch?v=SM0KwTvZfOU>

D. Assessment:

- **Contact:**
 - ✓ The teacher assesses their task using rubrics.
 - ✓ Assess the use of PPE and OHS while handling tools and machines.
- **Non-contact:**
 - ✓ Assess the learners based on work submitted in the Google Classroom.
 - ✓ Assess shutter (model).

E. Resources

- ✓ CBLM
- ✓ <https://www.youtube.com/watch?v=SM0KwTvZfOU> (Ways to select hinges according to job requirement).

RESOURCES

- 1) Technical and Vocational Education and Training (TVET) New normal Curriculum Framework (Classes: PP-XII)
- 2) Competency Based Learning Materials (Furniture Making)