MODULE

LEARNING STATIONS

TRAINING MATERIAL

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CONTENT

FOREWORD

Today's world requires each individual to be very active and creative. Rapid changes in society require the curriculum and teaching methodology to be changed, updated and to a have positive effect on society. Differentiated teaching partially meets these social requirements. In Vietnam, differentiation teaching is considered to be an important part of the national education strategy.

Teaching practice shows that each learner has specific psychological characteristics, with different levels of acquisition ability and needs. However, it is impossible for the teacher to differentiate everything, every day, for the learner, because the teacher has to meet the overall teaching objectives. Instead, the teacher chooses to take particular teaching moments to meet the needs in differentiation based on process and summative evaluation. Namely, the teacher can differentiate based on the learners' interests/needs so that the learners can link what they are learning with what they believe to be important. The teacher can also provide options so that some learners can learn individually while others can work in groups. The teacher can also meet the needs in different learning ways, such as learning by reading the materials; analysing based on theory; learning through experiencing, discovering and experimenting; and learning through practicing and observing. As such, differentiated learning both meets general needs and respects individual learning. And this way of differentiating ensures improvement in both teaching and learning quality.

Differentiated learning can be described as the flexible organisation of learning in teaching and learning activities, providing opportunities for learners to express themselves, ensuring that every learner obtains what they need to further develop; ensuring that their potential will be realised; and helping the learner to achieve the highest results.

In differentiated teaching, it is necessary to have appropriate teaching methods, forms of organisation and techniques, such as learning stations, contract work, tablecloth techniques, and puzzle pieces, etc. In this material, we focus on an explanation of learning stations.

Learning stations in this training material is understood to mean a method of organising teaching activities where learners perform different tasks in different places in the classroom, ensuring that learners can learn in depth and comfortably. The tasks in different corners should be different in nature and might also be different in terms of content. In this way, learners with different interests, abilities, learning speeds and learning styles can find ways to adapt and express their ability to achieve their learning goals.

This approach can help learners gradually shift away from the boredom of learning using traditional classroom methods, focusing more on the learners' knowledge, needs and motivation. And that allows everyone to deal more effectively with diversity in the school context.

INTRODUCTION TO THE MATERIAL

The objectives of the training course on learning stations are that by the end participants will be able to design a lesson plan and evaluate a lesson applying learning stations.

The training program includes 9 following activities:

1. Overview of learning stations, including:

(1) Getting started

(2) Understanding a framework for education quality

(3) Exploring learning stations (the concept, levels/different ways of applying learning stations)

(4) Teaching and learning procedures applying learning stations

(5) Advantages and disadvantages of learning stations

2. Applying learning stations, including:

(6) Designing tasks and supporting worksheets

(7) Designing lesson plans applying learning stations

(8) Evaluating a lesson applying learning stations

(9) Summing up the training course

This training material has been designed as activities. In each activity, five elements are included:

Time: The time allocated to the activity (as suggested and agreed by the trainers and the training course organisers).

Objectives: These are based on the overall objectives of the "Training course on learning stations" and described in terms of knowledge, skills and attitudes that learners should achieve after each activity.

Materials: This part describes the minimum necessary materials and facilities based on the content of each activity to support the teaching and learning process (worksheet, resource materials, etc.).

Steps: This part describes the planned steps of training as well as results which should be achieved after each activity.

Each activity includes a specific task or several specific tasks; each specific task clearly describes the activity name, classroom organisation, activities of trainers, activities of learners and supporting facilities (especially sharing experiences and relating to real life).

Resource materials: Information needed for the activities, and found in the Appendices (also includes information that learners should know after participating in the activity).

Assessment: Describes the way to evaluate achievements compared with the pre-set objectives.

Notes: Extra notes on ways to carry out the activities as well as explanations and emphasis.

There are many ways to organise learning stations. The more teachers asked, the more ways of organising them are revealed. Various elements play a part: the objectives you try to pursue, the degree to which you are already familiar with learning stations, the degree to which pupils are able to work independently, the available space, assignments, methods and materials, etc. As such, there are many possibilities for organising learning stations effectively. Learning stations are a way of organising learning that developed from the real practice of teachers working with pupils. It did not originate from the quality criteria/quality scale criteria of activities that should theoretically be applied in the classroom environment.

With learning stations, there are more opportunities to teach flexibly and creatively.

This training material was complied for use at Teacher Training Institutes participating in the training course “Learning Stations”, supported by VVOB Vietnam. This material will also be used for further multiplication courses and in-service training courses.

Sincere thanks to Ms. Đặng Tuyết Anh and Hans Lambrecht, co-ordinators of the Teacher Training- Environmental Education, VVOB, and participants of the training course, whose contributions helped so much to complete this training manual.

ACTIVITIES

Activity 1 Getting started

Time: 30 minutes

Objectives: After this activity, the trainer and participants will:

- Learn more about other participants in the training course.
- Share some personal information such as name, workplace, etc.
- Suggest and agree on objectives and expectations of the training course

Materials Pens, coloured papers, glue

A0 papers

Steps:

1. Playing the game: making friends (Appendix 1).
2. Members of the group introduce themselves and talk about their expectations (each group agrees on five opinions and writes them on five different pieces of coloured papers).
3. Each group introduces its members. The whole class will vote for the group with the most impressive introduction.
4. Each group reads/sticks on the board their expectations.
5. Compare participants' expectations to the training course objectives.

Assessment: Ask participants about the meaning of the activity.

Notes: The trainer:

- Joins in with the other participants.
- Emphasises and repeats important information, trying to be humorous.

Activity 2 Understanding a framework for education quality

Time: 90 minutes

Objectives: After this activity, participants will be able to:

- List and describe a framework for quality and explain the reasons for choosing a process-oriented approach to ensure quality.
- Describe core indicators to ensure education quality.
- Compare two class models (traditional and differentiated classes).
- Use the resource materials (hand-outs, Internet, etc.).

Materials

Worksheet for Activity 2.

Materials for trainer and participants (worksheet, resource materials).

Facilities: Audiovisual equipment, black/whiteboards, markers, A0 paper.

Steps:

The trainer:

1. Introduces a framework for quality.
2. Organises participants into groups and assigns tasks for each group (each one can investigate one item/session in-depth).
3. Instructs groups to read related information (Appendix 2).
4. Asks participants to complete the worksheet, discuss in their groups and reach conclusions on A0 paper.
5. Each group presents their opinion; other groups comment and add information if necessary.
6. The trainer sums up the content.

Assessment: The trainer asks participants about the framework for quality and the reasons for choosing this process approach to ensure quality, and how to meet the differentiation of pupils and face diversity. In this way, the trainer evaluates what participants have achieved compared with the objectives.

Notes:

- Participants might address many factors when talking about differences between the two classroom models. It is important to agree on core factors.
- It is possible to use puzzle techniques for participants to investigate the framework for quality.

Activity 3 Exploring learning stations

Time: 90 minutes

Objectives: After this activity, participants will be able to:
- Explain the concept of learning stations and why it is important to use them.
- List and describe levels/different ways of applying learning stations.
- Find examples for the application of learning stations and levels/different ways of of applying them.
- Use resource materials (hand-outs, Internet, etc.)

Materials Worksheet for Activity 3.
Materials for trainers and participants (Appendix 3).
Facilities: Audiovisual equipment; black/whiteboard, pens, markers, A0 paper.

Steps: The trainer:
1. Organises the class into groups and assigns groups with tasks (each group may study one level of the application of learning stations).
2. Instructs groups to carefully read related information in resource materials.
3. Asks individuals to complete worksheets (Appendix 3b) and discuss in groups, then write group opinions on A0 paper.
4. Representatives from groups present the results of group discussion; other groups comment and add information.
5. The trainer sums up.
6. The whole class discusses opportunities for applying learning stations according to different subjects and local conditions.

Assessment: The trainer asks participants about the level of application of learning stations in some particular lesson plans and examples suggested by participants.

Notes:
- There might be different levels/ways of applying learning stations, depending on specific subjects and local conditions. Participants should give specific examples of the levels/ways of applying this method.
- The trainer can apply the tablecloth technique to organise learning stations.

Activity 4 Teaching and procedures

Time: 120 minutes

Objectives: After this activity, participants will be able to:

- Present and analyse procedures for applying learning stations.
- List and describe five factors to determine pupils' involvement in the learning process.

Materials

- Video of a lesson applying learning stations.
- Worksheet (Appendix 4).
- A0 paper, markers, computers, screen and projector

Steps:

1. The trainer shows an example of a lesson applying learning stations (video).
2. The trainer divides the class into groups and asks them to complete the mindmap of the teaching procedure applying learning stations, based on their own knowledge and the video (Appendix 4).
3. Groups present the results of their work; other groups comment and add information.
4. The trainer sums up and introduces resource materials.
5. The trainer discusses with the whole class the five factors which determine pupils' involvement in the learning process.
6. Show the video at the second time and ask the trainers to fill in the observation form.
7. The trainer discusses with the whole class about the lesson.

Assessment: Through the results of groupwork, discussion and feedback by participants.

Activity 5 Advantages and disadvantages of learning stations

Time: 60 minutes

Objectives: After this activity, participants will be able to:

- Present the advantages and disadvantages of learning stations.
- List conditions needed for learning stations to be effective.
- Be aware of difficulties when applying learning stations and how to deal with these difficulties.

Materials

- Worksheet listing advantages and disadvantages (Appendix 5)
- A0 paper, markers, flipchart.

Steps:

1. The trainer divides the class into groups and asks them to complete the worksheet, then writes results on A0 paper.
2. Groups present their results; other groups comment and add information.
3. The trainer sums up the advantages and disadvantages of learning stations.
4. The trainer uses brainstorming techniques to ask participants to list conditions needed for learning stations to be effective.
5. The trainer analyses and sums up participants' opinions to draw conclusions about conditions needed for learning stations to be effective.
6. Groups share difficulties and advantages when applying learning stations.

Assessment: Based on the completeness of the results of groupwork on advantages and disadvantages; on suggestions from participants of difficulties and ways to overcome them when using learning stations.

Notes: Emphasise advantages of learning stations. Encourage participants to apply this method in their teaching practice.

Activity 6 Designing tasks and supporting worksheets

Time: 120 minutes

Objectives: After this activity, participants will be able to:
- Design tasks according to different learning styles for a specific subject.
- Design supporting worksheets according to different levels for a specific task.

Materials Textbooks (for Lower Secondary School or Teacher Training Institutes)
A0 paper, markers
Resource materials in Appendix 6

Steps:
1. The trainer divides the class into groups based on their subjects.
2. Participants study resource materials in Appendix 6.
3. The trainer gives answers to participants' questions related to resource material.
4. Each group performs two tasks:
- Chooses a specific topic in their subject and designs tasks according to different learning styles.
- Designs supporting worksheets according to different levels for a specific task.
5. Groups present the results of their groupwork; other groups comment and add information.
6. The trainer gives comments and helps groups to complete their part.

Assessment: Based on the results of the two group activities and comments and contributions from each group.

Notes: Participants might face difficulties when they perform the tasks. It is necessary to support them during their group work.

Activity 7 Designing a lesson plan

Time: 180 minutes

Objectives: After this activity, participants will be able to:

- Design a lesson plan for their subject using learning stations.
- Apply learning stations (corner work) flexibly and in a suitable way for their real-life situation.

Materials Textbooks (for Lower Secondary Schools or Teacher Training Institutes).

A0 paper, markers.
Resource materials (Appendix 7).

Steps:

1. The trainer divides the class into groups based on their subjects and asks groups to choose content for which they will design a lesson plan using learning stations.
2. Groups prepare their plans (either on A0 paper or on the computer).
3. Groups examine each other's plans, exchange feedback, and write down comments.
4. Groups revise their lesson plans after receiving comments.
5. Groups present their plans; other groups give comments.
6. The trainer gives comments.
7. The trainer sums up and addresses issues that should be taken into consideration when designing lesson plans applying learning stations.

Assessment: Based on the lesson plans designed by groups and their comments for each other.

Notes:

- The trainer supports the groups during the process of designing lesson plans to ensure that the plans can be completed on time and are of good quality.
- The trainer can use gallery techniques for participants to study and give comments on each other's lesson plans.

Activity 8 Evaluating a lesson applying learning stations

Time: 180 minutes

Objectives: After this activity, participants will be able to:
- Evaluate a lesson applying learning stations.
- Be aware of difficulties during the teaching process when applying learning stations.

Materials Videos of some lessons applying learning stations in Lower Secondary schools (See Appendix 8).
Equipment for using videos.

Steps:
1. The trainer introduces a worksheet for evaluating a lesson applying learning stations (Appendix 8).
2. The whole group discusses and gives feedback on the evaluation sheet.
3. Groups watch videos of lessons and rate lessons using the evaluation form.
4. Groups discuss how to improve the lessons.
5. Groups represent their results; other groups give comments and add information.
6. The trainer sums up and addresses issues that might be taken into consideration when applying learning stations.

Assessment: Based on group comments on the lessons watched.

Notes:
- If possible, different groups should watch different videos based on their teaching subject.

Activity 9 Summing up

Time: 30 minutes

Objectives: After this activity, participants will be able to:

- List and describe the main activities in the training course (objectives, content and results of each activity).
- Evaluate their achievements compared with the training course objectives.
- Design individual plans for further investigation and application of learning stations.

Materials Self-evaluation sheet, graph for summing up the training content (Appendix 9).

A4 paper and pens.

Steps:

1. The trainer sums up the training content based on the graph.
2. Individuals complete self-evaluation sheet and give individual plans for further investigation and application of learning stations.
3. The trainer sums up the training course and compares results with participants' expectations.

Assessment: Through analysing evaluation sheets completed by participants.

Notes: The graph can be used to sum up main activities in the training course and to illustrate and discuss what and how to further investigate and apply learning stations.

APPENDICES

Appendix 1

Resource materials for Activity 1

Instruction for playing game:

- Trainees stand into a circle, holding hands.
- The game chief shouts: making friends, making friends, making friends!
- Trainees ask: How many friends ? How many friends?
- The game chief shouts: 3
- Students make the friends of 3.
- The game chief shouts: making friends, making friends, making friends!
- Trainees ask: How many friends ? How many friends?
- The game chief shouts a number (which are equivalent to the number in each group that she/he plan to divide).
- Trainees form into groups

Appendix 2

Resource materials for Activity 2

WORKSHEET FOR ACTIVITY 2

Full name: .....; Group: .....

Task:

(1) Read resource information for Activity 2

(2) Give the answers to the following questions:

a) List the elements of a framework for education quality and analyse advantages and disadvantages of different approaches based on different elements (each group can read in depth one element);

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b) Explain why the process-oriented approach is chosen to ensure quality. List characteristics of well-being and involvement;

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c) Compare the two classroom models: in a traditional classroom and differentiated classroom;

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.....

(3) Groups give comments (each group should give at least two comments on the content or the way of organising activities);

.....

.....

A framework for education quality

Everyone comes in contact with education one way or another. As a pupil or student, teacher, head teacher, inspector, policy maker, etc., it can occupy you daily. Others have at least been in contact with it in the past. As a parent of school-going children, education becomes part of your life again. Consequently, we all have a certain idea of what 'good' education is. We may not always be able to express this into words, but there is always a standard. This becomes apparent when education does not meet our expectations.

1. Context, process and outcome as a framework for education quality

1.1. The context

In a first attempt to define quality we take a look at the 'approach'. We focus on characteristics or variables that are linked to the 'learning environment' in schools. Here, the 'how?' question is central. How should the teacher set to work? How do we wish children to be treated? Which activities should we offer? Which content should be tackled? In other words, what kind of pedagogical environment should be pursued? Naturally, we immediately think of all the aspects that can be changed by the school team, all of which are more or less 'controlled' by the teachers.

In current didactics it is assumed that the learning environment should be empowering, but the way in which this setting is realised can vary considerably: e.g. some choose to introduce project work, while others instruct the whole group.

Either way, defining quality based on the approach is not that far-fetched. On the contrary, it seems the most obvious way to look at it: if we want to know whether education is adequate, just look at what the teacher is doing. This also has a practical side: by indicating which qualities the educational practice should pursue – how the classroom should be arranged, how the interaction with pupils should be, which work forms and content should be adopted, etc. – we could give schools something to hold on to.

There are however a few observations to be made.

First of all, there is the danger that statements on what the teacher should or should not do often result in radical positions. For example, some views are based on the fact that topics should always be put forward by the pupils themselves. Others tend to focus on structure and opt for well-defined themes chosen by the teacher.

When we assess the quality of education based on the approach, we run the risk of prescribing recipes for the teachers. As a result, the latter are reduced to mere 'technicians'. But there is more to it than that to make a successful teacher: For example, the ability to adequately assess each situation and address it appropriately, etc.

During the teaching process, there are also other factors contributing to the success of teachers. For example, the ability to correctly assess a situation and deal with it appropriately.

There is a second reason why taking the approach as a focus for judging the quality of education should be considered with some caution. The approach itself may be recommended, but we now know that there is an aptitude-treatment interaction, i.e. interaction between the approach and the profile of pupils. What works for one child, does not automatically work for another. For example, working with open assignments may be very motivating for a number of pupils, but for some it may be very intimidating and confusing. In other words, we can provide a number of guidelines with regard to the expected approach, but they will only offer a rough outline of what is high-quality. Depending on the pupils and the group it may always turn out differently.

To summarise: the approach perspective may seem inviting, because it is relatively easy to describe which type of education should be offered or pursued. However, criteria with regard to the level of the approach can never guarantee quality of education. For example, you can state that project work offers extraordinary opportunities, but the implementation of it on a regular basis will not guarantee 'good' education. You cannot approach education from the teacher's perspective alone. The difference is made in the concrete implementation, and it is difficult to put this into concrete guidelines.

1.2 The outcome

Instead of focusing on education as shaped by a school or a teacher, we can take a look at what education yields i.e. what effect it has on children. Here, quality is measured not by the provision of education, but by its output. In fact, this seems to be the method par excellence to assess whether a school offers quality education or not. How a school acieves it – the approach – is in fact of subordinate importance. When we assess the quality of a school by looking at the effect, there is no doubt that if every child makes progress with regard to the presupposed competences and attitudes, they must have received quality education. Hence, the effect perspective seems to work.

Where opinions differ, it is generally easier to reach a consensus with regard to the final objectives. In any case, society has a clear opinion on what education should generate, and this is embodied in the curriculum. This is where we can find what results are expected: that children should develop basic insights about man and nature, become socially competent, acquire instrumental skills (reading, writing, etc.), and learn to function as independent individuals, etc. We should be pleased with the fact that the effect perspective can offer us all this. But there are a few disadvantages.

First of all, you can only assess the results a school generates after a certain amount of time. The objectives are (fortunately) so broadly defined and so far-reaching that they cannot be realised in one lesson. This means that you can only make an adequate assessment at the end of the school year.

This is a disadvantage when compared with the approach perspective: there, you can immediately establish whether there are elements that do not meet the recommendations. Besides, research has taught us that the effects of an educational approach may only become visible after several years.

Moreover, assessments with regard to the effects are only useful when they can be compared with pre-assessments. A school can, for example, yield excellent results with regard to arithmetic, but this is not such a great achievement when it excludes pupils with a weaker profile or has a major intake of pupils with a more favourable profile. In order to rule this out, the starting level of pupils should be measured as well. This would enable us to record the 'added value' of learning apart from the end result.

The question is whether this is feasible: can we perform this double assessment for every pupil and for every developmental area?

Then there is a third problem: do we dispose of the adequate instruments to record the true, vital competences in a sound manner? In practice, we notice that the existing tests relatively easily record measurable cognitive skills and unilaterally focus on traditional scholastic areas. We also know that a successful school career and, even more, success in life after school, are not directly linked with these scholastic achievements. Areas such as social competence, communication skills, self-orientation, creativity and entrepreneurship, a positive self-image and self-confidence clearly deserve more attention than they receive. Yet these areas are hardly taken into account when assessing the educational output. Technical reading or vocabulary can easily be assessed, but it is much harder to record how fluently a child can extract a message from a text or how competent a pupil is as a communicator. Tests within the new paradigm of competence-oriented learning that provide true insight into competences (deep level learning) are highly relevant today.

But there is still one problem: to record the progress pupils make in the main areas of development (which is more than language and arithmetic) is quite an assignment. Would there be sufficient time left to do something with the results of this analysis? Are we not already complaining about having to spend too much time on diagnostics (recording) and too little on instruction (intervention)?

All this leads us back to the approach perspective. Should we simply content ourselves with focusing on the approach and more specifically assessing whether schools meet their commitments? Should a quality assessment mainly evaluate whether schools can demonstrate that they sufficiently focus on the areas mentioned in the curriculum?

Or is there a third perspective which exceeds the disadvantages of the previous two – approach and effect – and combines the advantages of both?

1.3 The process

This third way of defining quality does not focus on the learning environment and the teacher within it, as was the case with the approach perspective, but focuses on the child. Contrary to the effect perspective, we do not intend to record the child's progress, but we assess what goes on within the child – the learner – in teaching situations. We concentrate on the present. What does that mean exactly? Which questions will be answered? And how can this help us to gain insight into the quality of education?

First of all, what we want does not seem easy. It seems very ambitious to assess 'what goes on within the learner': it is like wanting to open a pupils' 'black box'. The approach perspective describes what you put in there; the effect what comes out. The process deals with what goes on in between those two perspectives. This is how we can clarify the relationship between approach and effect.

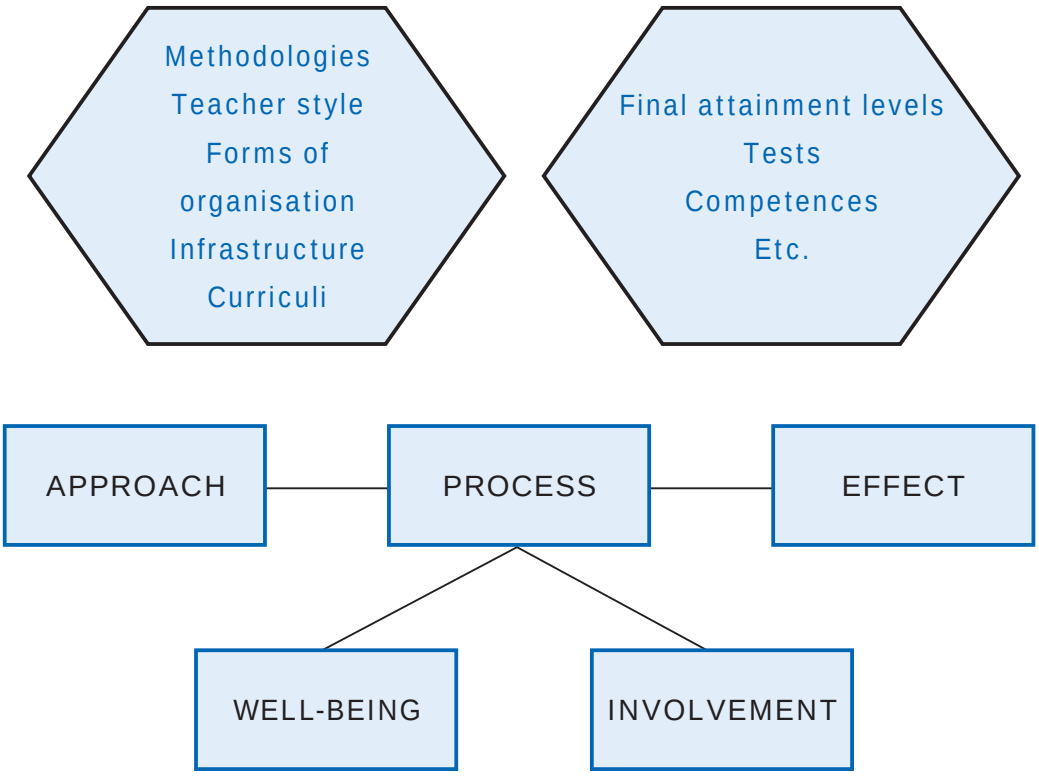
What is inside this 'black box'?

To find out, we use a certain type of analysis to reveal something implicit. How does it feel for a pupil to be in a certain learning environment, or to experience a lesson or activity? You can study the content of the activity (from the approach perspective) and then examine what each pupil makes of it. What do the pupils experience? How do they perceive the information provided by the teacher, his/her words, topics on offer? How do they interpret the assignments? Which cognitive steps do they take? It is clear that such an analysis would be very time-consuming and specialised. It would be unfeasible to do this for each individual lesson and pupil! It could be the subject of a research study or it could be part of diagnosing individual pupils, for example to gain more insight into developmental problems. Hence, we must seek another way to determine the quality of education from the process perspective.

This is exactly what we have been doing throughout the development of the Experiential Education project. The question: 'When are things going well in class?' rose within the group of teachers breaking new ground in the pioneering stage of this EXE project. They had already left the familiar pattern, the safety of a predetermined structured and teacher-guided approach. They were searching for a new hold, a new criterion for good education. i.e. Individually, when can I, as a teacher, feel that my class is doing well, that I give the children what they need to develop? When can I be sure and how can I tell that my unlimited effort and care to make the best of it will bear fruit.

The core of the answer lies in the way in which learners deal with what is offered to them. Hence, we do not focus on the content of their experience, but on certain qualities of it, on their perception of learning. Do they actively become involved? Do you see them thinking along and taking steps to come to solutions? Are they absorbed, enthusiastic?

Well-being is the first important indicator for good education. The second is involvement. This brings us to the following representation:



Graph 1: Indicators and approaches

2. Two core indicators for ensuring quality of education

With 'well-being' and 'involvement' we shed a light on what goes on within children (and adults) during activities and lessons, while they find themselves in teaching situations. They are quality indicators that are not bound to specific subjects or activities. They constitute a master key which can be used in an almost infinite range of situations. Both deal with indispensable qualities with regard to the learner's perception and 'mental' activity.

'Well-being' refers to feeling at home, being able to be yourself, feeling emotionally safe, and is expressed in spontaneity, vitality and inner peace. Hence, well-being is the indicator par excellence to demonstrate a smooth emotional development.

'Involvement' refers to the intensity of the activity, to concentration, being absorbed, giving it everything, being enthusiastic, enjoying exploration, and operating at the limits of one's capabilities. These characteristics together make involvement the indicator par excellence for the completion of developmental processes.

As such, for all the pupils to have the feelings of 'well-being' and actively participate in the learning process, pupils' differentiation should be taken into consideration.

3. Comparison of the two classroom models

Traditional class *(Treating/teaching all the children in the same way)*	Differentiated class *(Treating/teaching children in such as way that meets their differentiation)*
1. Children's differentiation is not studied carefully	1. Children's differentiation is studied carefully as the basis for planning lessons
2. Assessment usually takes place at the end of the learning process with the purpose of ranking	2. Assessment takes place during the learning process and the teachers use diagnostic assessment to find out ways to meet children's needs better
3. The context is narrow, not allowing many opportunities for creativity	3. The context is diverse, allowing many opportunities for children's creativity
4. Some inflexible "definition" exists of what is best	4. Excellence is defined in its broadest terms, meaning the development of each pupil compared with the starting point.
5. It is rare that teachers pay attention to each child's needs/hobbies	5. Children are often guided to choose the learning style most suitable for them

Traditional class *(Treating/teaching all the children in the same way)*	Differentiated class *(Treating/teaching children in such as way that meets their differentiation)*
6. Some learning styles are used/ encouraged as a common way for all the children	6. Children are provided with many different learning styles
7. The most dominant teaching style is instructing the whole class	7. Different ways of instruction are used
8. Learning instructions are within the cirriculum and textbooks	8. Teacher's instructions are based on the children knowledge, needs and ability
9. Learning objectives are understanding the knowledge well and acquiring skills	9. Learning objectives use basic knowledge and skills to formulate concepts
10. Most often, single-choice task/ assignments are chosen	10. Most often, open tasks/assignments are chosen
11. Time is not flexible	11. Time is flexible as required by children
12. Compulsory and single textbook systems are used	12. Different materials are provided
13. Most often, there is only one way of understanding opinions or facts or solving a problem	13. There are different ways of understanding opinions, facts and solving problems
14. The teacher orients children's behaviour	14. The teacher supports children with skills in self-learning and self-regulation
15. The teacher solves problems	15. Children help each other and solve the problem together with their teacher and try to find more than one way to solve problems
16. The teacher provides the class with a standard for children's classification	16. Children work with the teacher to form general objectives for the whole class and individual objectives for themselves
17. Only one assessement form – regular assessment – is used	17. Children are assessed in different ways
Please list other factors you believe to be important	
....	....

Appendix 3

Materials for Activity 3

WORKSHEET FOR ACTIVITY 3

Full name: .....; Group: .....

Tasks:

(1) Study resource material for Activity 3

(2) Give answers to the following questions:

a) Describe the nature of learning stations

.....

b) Describe levels/different ways of applying learning stations?

.....

.....

c) Each group studies one lesson plan applying learning stations and gives comments on the level/ways of applying them in that lesson plan

.....

d) Give one example of a level of applying learning stations

.....

.....

.....

(3) Based on your own teaching practice, give your suggestions for applying this method

.....

.....

THE CONCEPT OF LEARNING STATIONS

1. Definition

The term "Working in corners" or "Working with areas" or “learning stations” is translated as “làm việc theo góc”, “làm việc theo khu vực” or “*học theo góc”*. “*Học theo góc”* is a way in which the teacher organises children to perform different tasks in certain places in a classroom space, ensuring children receive in-depth learning.

(Note: Well-being and involvement are the main factors of in-depth learning)

When talking about learning stations, it is important to create *a learning environment with a defined structure*, which is encouraging and motivating children to learn through activities. *There are considerable differences in the content and nature* of activities in order to ensure that children can practice, discover and experiment.

1.1. Creating a learning environment with a defined structure

The learning process is divided into areas/corners/stations based on task division and learning material. To have a comprehensive overview, a clear structure is applied so that children can independently search for knowledge in order to fulfil their tasks. Do children know which areas exist and what they should do to fulfil the tasks? Do they need materials to self-correct the results of their work? Is it possible and when can they remove to another corner, etc. Everything is organised in a way that ensures a comfortable atmosphere. It is possible to draw a “defined structure” during the implementation process.

1.2. Encouraging, supporting and motivating children to actively participate

Materials and tasks are challenges. The objectives are for children to discover the boundaries of learning and and improve their achievements. The materials should always be approved by a reliable committee.

1.3. Content diversity does matter

Each area is different. Therefore, children with different interests, abilities, learning speeds and styles can find ways to adapt and express their abilities. This allows them to solve different problems in a group.

1.1. The nature of activities is discovering and experimenting

Children will actively participate in the learning process when they have opportunities to experience the learning content and discover new learning opportunities. In learning stations, it is clear that children have more such opportunities. Each child will have opportunities to develop in their own way.

2. How to start learning stations?

When a teacher wants to practice learning stations, it is advisable to first analyse the classroom and school context. Good organisation of learning stations depends on the following factors:

2.1. Classroom

One important factor is the relationship between the number of students and classroom area. In some activities, the learning process can take place outside the classroom. However, for activities in the classroom, it is desirable to have a room with enough space.

2.1. Children's self-orientation

What are the levels of children's self-orientation and independence in fulfilling tasks? The higher the children's ability to self-orient, the easier it will be for the teacher to organise the classroom. As such, students will be free to be creative. And naturally, they will have more than one opportunity to fulfill their taks. And the situation changes from the teacher controlling the classroom (outside orientation) to children having every opportunity to give their opinions.

2.3. Materials

The implementation of learning stations depends much on the quality of available materials. Which kind of classroom environment can we create? What materials are available? Which materials can we borrow from our colleagues?, etc. Such questions should be taken into consideration before we start organising learning stations in the classroom.

2.4. Scope

The teacher will decide how much time to allow for learning station activities. The scope of learning stations depends on the formula and content (language, literacy, math, etc.) suggested by the teacher.

3. "Formulas": levels/ways of applying learning stations

Depending on suggestions from the children, it is possible to have different "formulas" for organising learning stations. The first variant (learning stations as a transition process) still bears the characteristics of teacher's instructing (instructions from outside); whereas the latter variant (learning based on one's own options and free activities) provides children with more opportunities to give their opinions.

3.1. Learning stations as a transition process

Sometimes, learning stations are used to help students work during the breaks between two periods or two activities. Instead of waiting for other classmates to complete their assignments, those who have completed earlier can work in a certain area of the classroom.

One disadvantage of working this way is that weaker and slower students do not benefit from it much. A transition period is a way for teachers to apply learning stations at the beginning, but it is advisable not to limit it to that. Rather, learning stations should be applied with increasing levels.

3.2. The revolving system

In this system, teachers create an effective learning environment for students. Different working areas with different tasks are created. These tasks not only include assignments in writing but also practice and experiments. In other words, teachers provide different forms of tasks/assignments to meet students' different skills and abilities.

E.g. The class is divided into four areas. There are four students in each area. In each area, students are asked to work in groups, pairs or individually. Some examples of working in transition areas:

- An area of drilling listening skills: There is a cassette for CDs, four headphones and an assignment. As in writing assignments, the teacher will correct students after they complete their tasks.

- An area where students do arithmetic exercises and check results by using calculators and multiplication tables.

- An experimental area where students explore electrically conductive materials through experiments with step-by-step guidelines. The whole group will do the task. Materials to be tested include a torch, battery, battery which no longer operates (dead battery), bamboo rope, copper wire, a file for keeping materials, a jug full of water and a jug full of sand, etc.

- A creative area is an area where students do arts & crafts. When the materials have been prepared, students can use charcoal to draw in the exhibition area to show their artistic skills.

* *Some hints for application*:

1. Spend a whole afternoon organising areas for students to choose as their favourite areas.

2. Spend an hour a day for learning stations so that students can complete their part of the tasks. Check that the areas and materials remain available to the students. (This can be a practical problem!)

3. Organise twice a week, for example, on Mondays and Fridays. In this case, if the teacher organises four tasks, students will complete one task in one day. After two weeks, the four tasks will be completed. Note: the order of completing these tasks is not the same for every student.

Agreement is an important factor in this way of organisation. You should give guidelines for students to move to the next area when they have completed their tasks. (Note that students should take care of their learning materials).

Learning stations in a revolving system brings certain advantages, taking into account the number of students who benefit and situations where the amount of materials is limited. In a revolving system, all the students have the same opportunities to have access learning materials. This means that you won't have to prepare a lot of learning materials. For example, 5 boxes of electrical equipment, and 20 arithmetic dominos or 20 crosswords will be enough, etc.

One disadvantage in this way of organising, especially when assignments are completed separately, is that faster students will have to wait until there is a room for them to move to another corner. It is possible to deal with this issue by using the Option Board or Individual Area Cards in class:

3.3. Option Board or Individual Area Cards

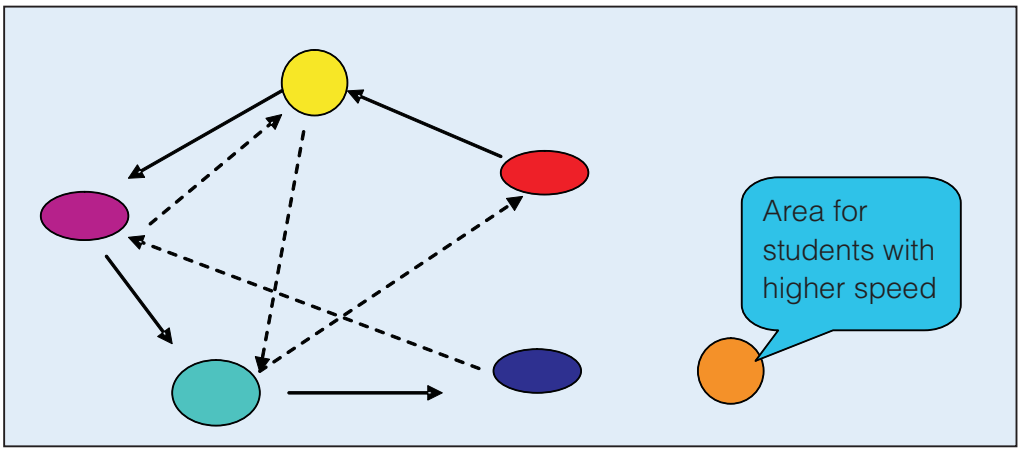
Unlike the revolving system, when students move from one corner to another, as decided by the teacher, option boards give students more opportunities to express their initiative.

The following principles are applied: The task in each area should be completed in a definite period of time; Students have the right to choose the order of corner. We could illustrate the way that 2 students (Minh and Thu) solves problems in the two different areas in the following graph:

Here, we can illustrate the way two students, Tess and Milo, deal with

Minh

Thu



Graph 2: Examples of the learning stations of 2 students

This approach is very closely related to contract work. Sometimes, it is even very difficult to clearly distinguish the two methods. We also often mention this method with the names for areas related to “should-do”(we call it “may-tasks”) and “must do”. You can also integrate these two methods in the teaching process to make themmore effective.

With this approach, it is necessary to limit the number of students in one area. Otherwise, one area might have a quite high number of students, for example, the ICT corner or listening corner, because these activities are very appealing to students.

To create a distinctive area and provide more materials for students who complete tasks/assignments earlier than others, you can create some transition steps in order to reduce the waiting time of the students. However, it is important to avoid "entertainment forms" as the transition step. It is important to ensure that these areas of an entertainment nature are also compulsory so that slower students can also work and benefit.

In order to monitor students who have completed the tasks, the two following systems can be applied:

- Using an Option Board in class (either with magnets or chalk) for students to mark areas where they have completed the tasks. In this way, the teacher can immediately determine students who are left behind and need support.
- Using an Individual Area Card for each student so that they can mark areas where they have completed the tasks.

** Hints for designing stations*

1. Corners based on styles

In each corner, there will be materials and task instructions for students to study the content and achieve objectives in different learning styles: learning through experience, observation, analysis and application.

Some subjects (such as Science in Teacher Training Institutes; Physics, Chemistry, and Biology in Lower Secondary Schools and Science in Primary Schools) usually have a lot of opportunities to design corners according to learning styles.

Examples of four corners with four different learning styles:

Experience corner: Students do the experiment, observe, explain and draw necessary conclusions.

Observation corner: Students observe real specimens or images of objects, experiments, phenomena on computers and draw necessary conclusions.

Analysis corner: Students read textbooks and reference books to learn and give answers to questions.

Application corner: Students read instructions/supporting letter (only for students who chose the application corner as the starting point), then apply instructions to solving the problems or practical issues.

2. Corners based on different forms of activities

In different corners, students have opportunities to study the content to achieve the learning objectives in different forms: a drawing corner, composition corner, discussion corner, reading corner, etc.

Usually, it is possible to design corners in this way for subjects such as Social Science and Arts. In English, teachers can also organise corners according to skills: reading corner, writing corner, listening corner and speaking corner, etc.

3. Mixed corners

Besides organising corners to meet different learning styles and forms of activities, teachers can also organise learning corners that integrate different content/subjects. For example, with the topic of former Vietnamese president Ho Chi Minh, the teacher can organise a reading corner (History), drawing corner (Arts), a corner for telling stories of good practices of working and living like Uncle Ho (Civic), and a corner for composing a poem or story about Uncle Ho (Vietnam).

3.4. Free activities – Free corners

This is a way of providing students with the most opportunities for creativity. Teachers give hints for each corner, but students are able to choose the area they like and the number of corners they will be able to complete. By providing them opportunities for creativity, this will satisfy their needs the most in exploring the surrounding world.

This way should be introduced gradually, after the teacher has observed the students' involvement and capacity. If the teacher fully understands students' involvement and capacity, free activities will provide students with valuable opportunities to explore knowledge outside of textbooks in greater depth. At the beginning, the teacher usually worries that free activities by students will make the class uncontrollable. However, after some experiments, the teacher and students usually feel the opposite. Students choose activities that inspire them most (exploration motivation) and become considerably more involved.

In well-designed and balanced learning stations, there are usually a mix of obligatory corners and free corners, even when it is the first learning station in the students' curriculum. The strength of learning stations is among other things, the students' being able to choose (well-being, involvement, motivation) and the underlying trust/confidence of the teacher in students' self-organisation and the will to learn. Of course, self-orientation will grow gradually; it is a learning process. In learning stations, the teacher is more like a coach and that it is not always easy for a teacher. In good learning stations, students have a combination of obligatory and free corners. Some teachers let students do the free corners after obligatory corners are finished, but that is not a really good practice.

3.5 Pause Corner

In learning stations that last more than one hour, there should/can be a Pause Corner. Here the students can choose freely when they need a limited break but have to sit in the Pause Corner. This way, the teacher has a clear overview of those who are working and those who are taking a break. The Pause Corner can be designed in an attractive way, if you like, with brainteasers, puzzles, 3D Puzzles, etc. A lot of youngsters like these puzzles and games and while taking a break are still mentally active (but in another way) and active with their hands. And they train and show skills of 'Learning how to learn' by choosing strategies, self-regulation, self-evaluation, communication, etc. The teacher also can observe who's giving up quickly and who has endurance.

Observation: How the students...?
... start the activity?
... continue the activity? Perseverance?
...use strategies for problem solving?
...work together? Do they learn from others?
...reflect on their process?
... correct their process?
What about their well-being? (Or frustration?)
What about their involvement?
Do the students have a successful experience?

3.6. Areas beyond classroom boundaries

You can improve the learning effectiveness in learning stations by connecting different classrooms with each other. In this way, students can take advantage of other learning sources, doing different tasks besides what has been done in class, and obtaining the added social value. Working with new friends and at the same time completing tasks in a group of students from different classes requires higher social skills.

3.7. In the school workshop: a special type of learning station

"Working in the school workshop" requires a separate period of time (half a day) for students to choose activities, materials and working space. In some cases, there could be guests from outside school (students' parents or relatives, experts or artists, or people working in areas related to education, etc). These guests can give their input on sources of information that might support students when necessary. This learning station provides students with opportunities to sustain activities over a longer period of time.

Ideally, each year the teacher will organise 4-6 times for students to work in the school workshop to ensure a diverse level of activities. Activities can include different areas: embroidery, carpentry, mechanics, drawing, designing a website or playing musical instruments, etc.

Working with special materials and techniques will create challenges for students and at the same time inspire them to develop their imagination in different ways. Examples can be techniques in the electric system, techniques in using digital cameras, gardening, decorating, designing, playing musical instruments, making things with paper or clay, etc.

An "empty" room might be very useful. You can leave unfinished products and large materials such as boxes, sticks, decorating objects in this empty room. At the same time, it is possible to change the space of an empty room into workshop space.

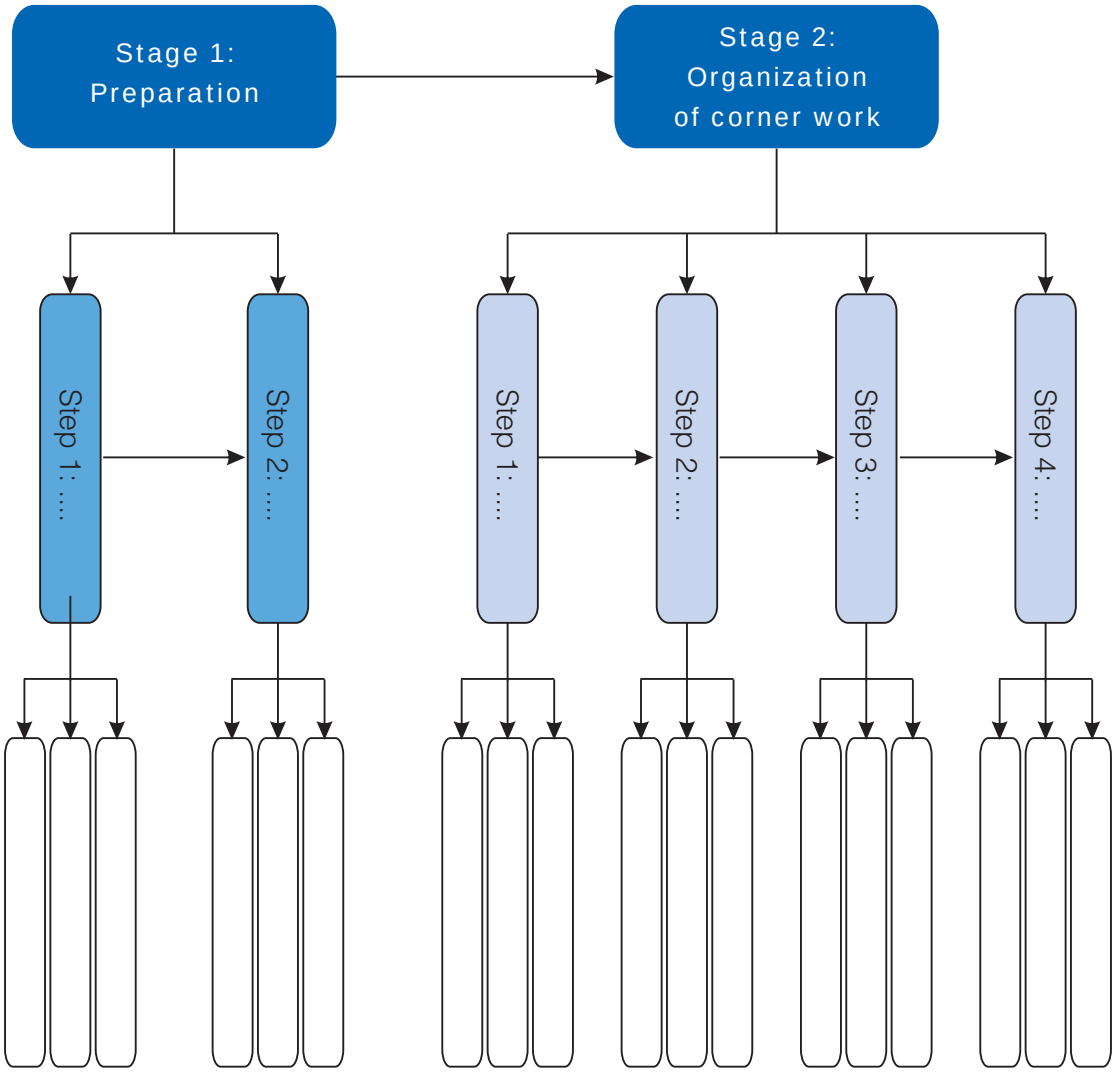
Instead of leaving students to do all the same creative work, it is possible for them make their own choices after discussion with the teacher. The increased number of choices will help students to explore activities suitable for their needs and capacity. It also helps us understand more about students when we provide them with some ways of using and working with materials.

Working in the workshop will be most effective when it is organised among different classes and peer groups and also helps students to develop their social skills. And what is more, as one teacher can only monitor at the maximum two groups working at the same time, when co-teaching, teachers can at the same time monitor four groups or more. Imagine how group motivation can bring positive results for both teachers and students if this is organised well?

Appendix 4

Material for Activity 4

Appendix 4a: GROUP WORK WORKSHEET



Graph 3: Incomplete graph of the procedure for organising learning stations

Appendix 4b: WORKSHEET FOR OBSERVATION OF "LEARNING STATIONS"

Issues to be observed	Level				
	1	2	3	4	5
1. Classroom atmosphere and relationships in the group/class					
The classroom space is arranged to create opportunities for students to actively participate in the learning process					
Students feel comfortable while working in corners					
High interaction between teachers and students					
High interaction between students and students					
There are periods of time for easy entertaining activities during the process of completing tasks					
2. Relevance to students' level of development					
Attention is paid to differences in students' profiles					
Attention is paid to differences in students' working speeds					
Attention is paid to differences in students' learning styles and interests					
Time is allocated for giving questions asking students to brainstorm and for individual support					
Opportunities are created for students to exchange tasks and results					
3. Closeness to real life					
The tasks are closely related to students' interests and real life					
Attention is paid to the application of knowledge/skills in solving real-life problems					
Students have every possible opportunity to take advantage of interacting with real objects/situations					
Attractive teaching aids (presentation, video, photos, etc.) are used to show students real-life issues					
Issues beyond the boundaries of individual subjects are explored					

4. The level and diversity of activities					
The “dead” time and waiting time is minimised					
Moments of activeness and active experience are created					
Tasks and learning activities are organised in different ways					
There is appropriate support (from student to student and from teacher to students)					
There is enough time to practice					
5. Scope of freedom for creativity					
Students can choose activities according to their interests and capacity					
Students can take part in evaluation (self-evaluation and peer evaluation)					
Within certain tasks, students have the freedom to determine their implementation process and products					
Students are encouraged to solve problems and the tasks by themselves					
The teacher gives open questions/tasks instead of close, repeated questions and tasks.					

Note:
1: Incomplete;
3: Partially complete (50%);
5: Complete

Appendix 4c: PROCESS OF IMPLEMENTING LEARNING STATIONS

Preparation: Video of a classroom period in learning stations
Subject:Chemistry – Lesson 13 – Year 9: Chemical reactions (continued)
Teacher: Ms Cao Thi Hong Thuan
School:Nguyen Binh Khiem Lower Secondary School, Thai Nguyen Province.

I. Stage 1: Preparation

Step 1: Determining a learning environment with a defined structure

In order to set up a learning environment with a defined structure (way, level of application of learning stations, the number of corners, the way to divide corners, etc.), it is important to take three/four factors into consideration: the content, classroom space, time and students.

Content: Depending on the characteristics of the subject and lesson (new knowledge, practice, drilling, etc.) and learning content, the teacher can determine a defined structure so that the organisation of learning stations is more effective than other ways of teaching and learning.

Location: Classroom space is a requisite for organisation of learning stations. It is easier to organise corners when there is a big enough space and appropriate number of students. When the space is small and there is a larger number of students, it might be more difficult.

Time: Enough time is also a requisite for good organisation. Students: Students' ability in self-orientation and self-regulation also plays an important role in the teacher's choice of the best way/level to carry out learning stations. Student's activeness and proactiveness contribute much to the effectiveness of this method.

Step 2: Designing tasks and activities in each corner

Based on the defined structure, the teacher should:

- Name the corner so that it expresses characteristics of the learning activities for each corner and is attractive to students.
- Design tasks for each corner and allocate the maximum period of time for students to work in each corner. Important: first identify learning objectives, then search or design tasks according to the learning objectives. By designing tasks, take into account the broad scale of task typology, the different learning styles and the different levels of mental activity (copying/understanding/ integration/ creation). By reconstructing the expected mental activity of each task, you can perhaps discover gaps or one-sidedness in the designed learning stations.

- Playing didactic games, students also learn (but are not always aware of it).
- Don't forget to differentiate in breadth and in profoundness.
- Identify and prepare teaching aids and equipment for the activities in that corner.
- Read over his /her learning station tasks and instructions and ask a 'critical friend' to give feedback. A 'critical friend' can be a colleague, a partner, etc.
- Instruct students to choose the corner and move around in an effective way.

Note: The teacher should identify the learning objectives before designing tasks. Different exercises and tasks should be designed to assess different level of critical thinking of the student (knowing, understanding, applying, analyzing and synthesizing).By designing different learning activities for each task, the teacher is able to find out the gap in the learning station designed lesson. Playing educational games helps students to learn. The teacher should pay attention to the depth and breadth of the learning activity.

Designing the supporting sheets in each corner [4]

In order to conducting the learning activities in every corner, the teacher should design the supporting sheet

Apart from an overview of the assignments, the supporting sheet contains the following information:

Which tasks are 'must' and 'may' tasks respectively
Who will correct the task

Where the necessary material can be found

If tasks must be completed individually or in pairs

When an instruction moment or help is scheduled

Etc.....

The students indicate themselves:

The chosen tasks

The finished tasks

Their evaluation

Their appreciation

Note: Don't forget to add a key if you use pictograms.

Example of a Learning Station Sheet:

[4] *Pil, L. (2010).Corner work: Outline of the Training Manual. CEGO, Leuven.*

Corner Letter

Name :

Campagne HandHygiene 	Must-task	May-task	Individual	In group	Key	Result	Task finished	Interesting	Personal Comment
1: Hospital Hygiene (Text/Slogans/Pictures/ Graphs/Techniques)								1-2-3-4-5	
2: Choice: Movie "Hand Hygiene" (Vietn. or Engl.) or reading a folder								1-2-3-4-5	
3: Hand cleansing Perform + Control set (Self-evaluation)								1-2-3-4-5	
4: Quiz (Self-evaluation):								1-2-3-4-5	
5: Do-Test: How to desinfect hands? (Peer-evaluation)								1-2-3-4-5	
6: Test: When to desinfect hands?								1-2-3-4-5	
7: Make a folder								1-2-3-4-5	
8: Role Play (English): Giving Instructions (with support)								1-2-3-4-5	

II. STAGE 2: ORGANISATION OF TEACHING IN LEARNING STATIONS

Step 1. Arrangement of classroom space

- Arrange the corners/learning areas appropriately for the classroom space. To save time, this activity should be done before the lesson begins.
- In each corner, there should be enough teaching aids and materials appropriate for each corner.

Step 2. Introducing lessons or content

Introduce the lessons or learning content and introduce names and location of the learning stations:

- Briefly talk about the tasks for each corner, the maximum period of time for completing the task in each corner and let students choose their starting corner.
- Students listen, study and choose the starting corner depending on their interests. However, the teacher will have to interfere if too many students choose the same corner.

Note: Students have the right to choose the starting point and the order of moving from one corner to the next one. However, the teacher should avoid a chaotic situation which might cause a waste of time. The teacher may give students a map for them to choose their way of moving from corner to corner.

Step 3. Organising students to work in learning stations

In each corner, students can work individually, in pairs or in groups as required by the tasks (if students work in groups, the whole group will have one result).

During the students' learning process, teachers regularly monitor and observe to notice students' difficulties and to give timely support. For example, in the experiment corner, the teacher should regularly monitor and support techniques of doing experiments, and the best way to observe and record information. In the corner where students observe a video, they should also be helped on how to observe, describe and explain the phenomenon and record results.

The teacher should instruct students to move to another corner. Namely, after some time, before the maximum period of time for the corner ends, the teacher informs students so that they quickly complete their task and prepare to move to another one.

Note:

- Students can move in a certain direction, creating a moving circle or can move based on a route suggested by the teacher. Or they can move freely according to their interests and/or needs. The teacher should monitor and give timely guidelines so that students can quickly settle down in their new corner.

- The teacher can use the Option Board in class or an Individual Area Card to monitor students' progress and give timely support so that slower students can complete tasks on time. The teacher can also create a corner for quicker students.

Step 4. Creating activities for students to exchange and evaluate learning results

- In learning stations, students mainly work individually and in groups. However, it is important for the teacher to correct students' work and evaluate learning results. The teacher can use different forms of evaluation, such as self-correction/self-evaluation with a key, peer evaluation, teacher's feedback in a written form, and discussion with the whole class.
- During the experimental process in Vietnam, in discussion with the whole class at the end of the lesson, students usually chose to report the results of the activity in the last corner or hang/display their products in that corner. The method of sharing opinions and results can be agreed upon by both teacher and students.
- It is useful if at the end, students are allowed to give some feedback about learning stations to the teacher. The teacher can then learn which corners were really interesting and which tasks were clear, etc. and improve the corners the next time, if necessary.
- In some particular cases, the teacher and students can summarise the learning content and share experiences so that working in corners can be more effective.
- The teacher instructs students on how to keep the collected information and products as well as their achievements.
- When there will be evaluation during the learning stations (skills, attitudes, etc.) it is important that this is communicated with/to the students.

Note:

- This step should be carried out flexibly to avoid both overtime and ensure effective learning.

- Based on students' opinions and results, the teacher gives comments to help students understand the content better and more in-depth.

- Ensure there is enough time for practice before evaluation!

Appendix 4d: FACTORS INFLUENCING STUDENTS' INVOLVEMENT

- The learning environment and relationship in the class/group
- Relevance to students' level of development
- Closeness to real life
- The levels and diversity of activities
- The scope of freedom for creativity

1. The learning environment and relationships in the class/group

The content/tasks and activities should be relevant to students' level of development, namely:

- Close to real life; diverse in forms
- Creating opportunities for students to be creative
- Friendly, encouraging and motivating, which is expressed through the arrangement of desks, decorations on the wall and other details, easy activities, jokes, and humorous stories during the learning process
- Supporting individuals actively
- Creating opportunities for students to share with each other, express their viewpoints, values, dreams and co-operation during the learning process.

2. The relevance to students' level of development

- The tasks and learning activities should be differentiated, taking into account students' differences in learning speed and levels of development.
- There should be clear agreement and commitment of expectations between the teacher and students and vice versa.
- Requirements to students should be clear.
- The teacher should encourage students to help each other.
- The teacher observes students to find the learning style and interest of each student, thus providing appropriate support, asking students to brainstorm or support individually if necessary, creating opportunities for students to exchange their learning tasks with each other.

3. Closeness to real life

The content/learning task should be related to students' interests and the surrounding world. The teacher should take advantage of all the possible opportunities for students to be able to use real objects/situations, using attractive teaching aids such as presentations, video, and photos, etc., bringing students to real life. The teacher should also design/ask students to do assignments where they will have to apply practical knowledge/skills or assignments beyond the boundaries of individual subjects.

4. The levels and diversity of activities

- In the learning activities, it is important to minimize "the dead" time and waiting time.
- Create moments of activities and active experience.

- Integrate learning with games (educational games), alternating learning tasks and activities
- Increase experience
- Increase active involvement
- Ensure appropriate support (students support each other and support from teachers)
- Ensure enough time for practice

Support / Needs	Lots	Little	No need
Lots	Balanced	Active	Not enough (felt neglected)
Little	Bored	Balanced	Active
No need	Not active	Bored	Balanced

5. The scope of freedom for creativity

- Students should have opportunities to learn what they are really interested in
- Students have opportunities to participate in designing plans and evaluating lessons (self-evaluation, peer evaluation)
- Within certain tasks, students are encouraged to determine the implementation process and products by themselves
- Students have opportunities to participate in learning activities

Appendix 5

Resource materials for Activity 5

Appendix 5a: WORKSHEET FOR GROUP WORK

No	ADVANTAGES	DISADVANTAGES
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Appendix 5b: ADVANTAGES AND DISADVANTAGES OF LEARNING STATIONS AND ENSURING EFFECTIVE APPLICATION OF LEARNING STATIONS

I. ADVANTAGES AND DISADVANTAGES OF LEARNING STATIONS [5]

1. Advantages

There are many advantages of learning stations that are not found in other traditional methods. Namely:

Students can learn in depth and with long-term effectiveness: Students have opportunities to explore the content in different learning styles and in different activities, thus they can understand new knowledge in depth and for a long time.

Students' involvement is increased, improving their motivation and well-being: Students can chose corners according to their interests, helping them to be active and independent in completing the tasks. This helps increase students' motivation and well-being.

More space is created for active learning moments: The tasks and alternative learning forms in different corners create more opportunities for students to explore, practice, apply, create and play, etc. Thus, students can be more motivated and active.

Interaction is increased between students and teacher, and between students and students: The teacher always monitors and supports when required, creating interaction between students and teacher, especially with weaker students. Students also have opportunities to support and co-operate with each other during the learning process.

Meets students' differentiation in terms of their interests, learning styles, knowledge and speed: Depending on their interests and capacity, students can choose the starting corner and the way of moving which suits them best. The assignments/tasks in each corner are also accompanied by a supporting letter so that students with different levels of knowledge can complete them. As well, in some cases, there are also corners for students with higher learning speeds.

Students' responsibility for the learning process is increased: learning stations appeal to students' self-orientation and self-regulation. They also can decide freely when they need a break (Pause Corner).

More opportunities to advance skills and attitudes: such as enterpreneurship, ability to choose, responsibility, cooperation, communication, self-evaluation, etc.

[5] Bi Project. (2008). Training manual

More opportunities for the teacher to observe students, to support individuals and to evaluate in a broad way.

2. Disadvantages

Learning stations also display certain disadvantages:

Class space might be one of the difficulties. It is necessary to have a large class space with an appropriate number of students; a very large number of students can also be a difficulty.

It requires quite a lot of time for the learning activity: In some cases, when there is one activity, students can approach it in different ways, requiring more time. As well, there should be enough time for students to choose the corner and time for moving around.

The teacher needs a lot of time to prepare: The teacher should design tasks, instructions, supporting letter, key, evaluation tools, etc. and prepare teaching aids for each corner. He/she needs time to set the corners before class time and to remove them afterward.

Application: Learning stations cannot be applied for every lesson/content. For inexperienced teachers, the organisation, management, monitoring of the learning process and evaluation of students' results can appear quite challenging. Therefore, it is advisable to apply this method at certain moments and in certain contexts rather than continuously. Learning stations, designed and organised by a team, can also be a solution.

II. ENSURING EFFECTIVE APPLICATION OF LEARNING STATIONS

Learning stations can be effective when they meet the following requirements:

Content: The lesson content is chosen so that it is appropriate for the organisation of learning activities in corners.

Space and time: The class is big enough and there is enough time to organise students to learn in corners.

Teaching aids and materials: It is important to prepare all the necessary teaching aids and materials.

Teacher: The teacher should be active, enthusiastic, capable of organising active teaching and designing lessons applying learning stations. He/she should be capable of imagining and understanding how students learn and see and use class diversity as a positive fact.

Appendix 6

Learning Resource for Activity 6

DESIGNING TASKS AND SUPPORTING SHEETS

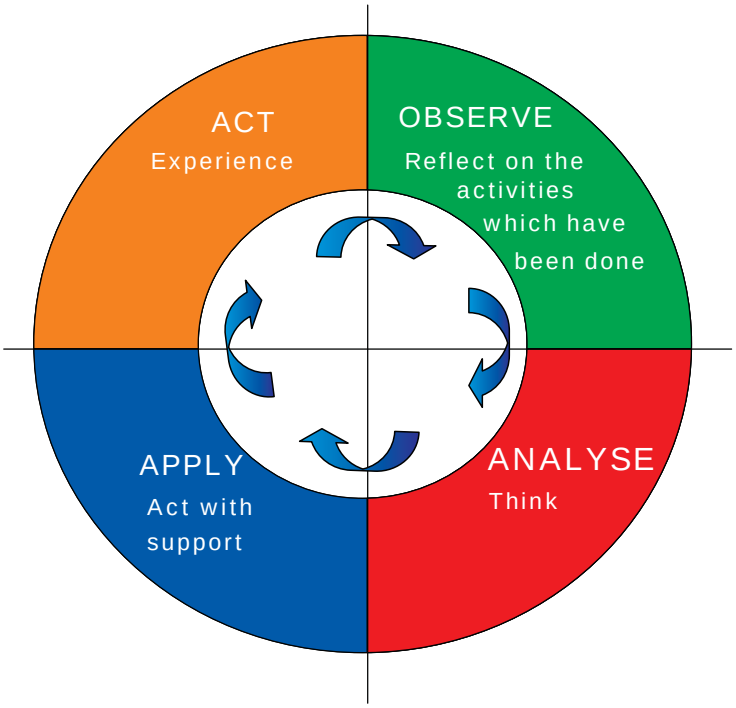
Learning stations meet students' differentiation in many aspects, especially their differentiation in learning styles, level of knowledge and learning speed. But, one of the most difficult tasks for the teacher is to design learning tasks to meet requirements of different learning styles and level of knowledge.

I. DESIGNING TASKS

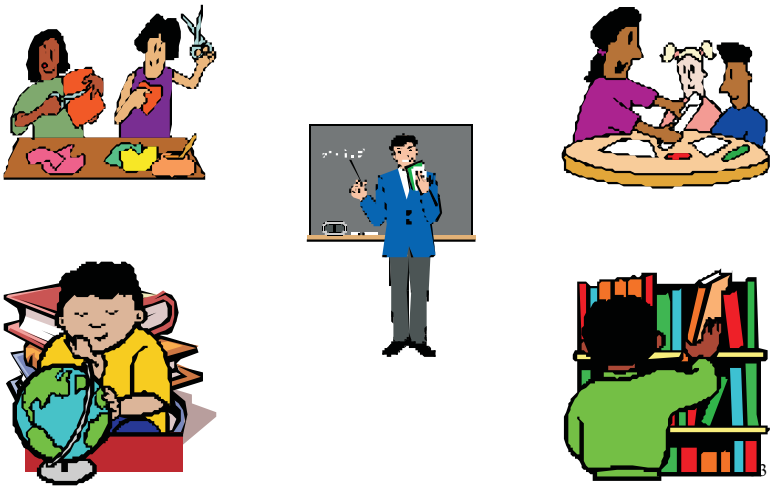
1. Designing tasks for different learning styles

We know that students have different learning styles. Some students prefer learning through experience (exploring and trying to draw conclusions or to obtain knowledge). Others want to learn through observation (observe how other people do or observe images to draw conclusions or obtain knowledge). Others prefer to learn through analysis (analysing documents or reading books to draw conclusions or obtain knowledge. Others prefer to learn through applying (learning through practicing to draw conclusions or obtain knowledge). To meet all these learning styles, the teacher should be able to design tasks based on different learning styles, helping students to both achieve their learning objectives and have opportunities to develop their individual capacity in different ways.

Learning Styles



Learning Styles and Learning in Stations



Graph 4: Learning Styles and Learning in Station

Below are some examples of designing tasks based on different learning styles or based on the combination of learning styles and forms of activities in some subjects

Example 1: Lesson 19. Practice: Lettuce salad with oil and vinegar – Technology - Year 6

In order to teach this lesson, the teacher can arrange for students to learn in three groups as below:

Corner 1: Observation corner
Time: 7 minutes
Task: Students observe a video instructing how to prepare lettuce salad with oil and vinegar and give answers to the following questions:
- What are the ingredients for preparing the lettuce salad with oil and vinegar?
- What are the steps for preparing lettuce salad with oil and vinegar?

Corner 2: Analysis corner
Time: 7 minutes
Task: Based on pre-obtained knowledge and textbook instructions, students write down:
- What steps should be taken into consideration when preparing lettuce salad with oil and vinegar? Why?
- Analyse the nutritional values of lettuce salad with oil and vinegar.

Corner 3: Application corner
Time: 7 minutes
Task: Students prepare the lettuce salad with oil and vinegar as instructed in the textbook and pre-prepared materials.
- Display the product
- Students of different groups study and evaluate each other's products

Example 2: Lesson 1. Electrolysis - Chemistry

Corner 1: Experiment corner
Time: 10 -12 minutes
Task: Students carry out an experiment to study the conductivity of different solutions
- Read instructions on how to do experiments
- Do the experiments, observe the phenomenon, draw conclusions of the conductivity
  + Condensed water
  + Solution of saccarine
  + Solution of HCl
  + Solution of NaCl
  + Solution of Na0H
- Write down results in Worksheet 1
- Give comments on the conductivity of different solutions
- Learn the concept of electrolytes and electrolysis.

WORKSHEET 1

Solution	Electrically conductive	Electrically non-conductive
Solution of NaCl		
Purified water		
Solution of Hcl		
Solution of Na0H		
Solution of sugar		

Corner 2: Analysis corner

Time: 10 -12 minutes

Task: Students read the textbook, observe the simulation and use the pre-obtained knowledge to complete Worksheet 2

WORKSHEET 2

Do the following:

1.Describe the molecular structure of water.

2.Describe the molecular struture of NaCl.

3.Describe the influence of water on the electrolysis of NaCl.

Describe causes and mechanism of electrolysis of NaCl in water.

Corner 3: Application corner

Time: 10 -12 minutes

Task:

1.1. Students individually study the following information:

- Electrolyte: is a substance that releases ions when it is dissolved in water.
- Solutions of electrolytes are electrically conductive; solutions of non-electrolytes are not electrically conductive.
- Electrolysis: is the process of dividing substances in water into ions. Electrolysis is expressed in the electrolysis formula.

1.2. Students complete the following tasks:

WORKSHEET 3:

1. Dissolve the solution of $CuCl_2$ in the solvent of H_2O. The resultant solution is electrically conductive. Is the solution of $CuCl_2$ an electrolyte or not? Why?
2. Write the electrolysis formula of the following substances in solutions: H_2SO_4, Na_2CO_3, $KHSO_4$, NaH_2PO_4
3. What role does water play in the electrolysis process of the substances in the solutions?
   A. As an electrolyis environment. B. As an unpolarising solution.
   C. As a polarising solution. D. Creating hydrogen linkage with soluble subtances.

Example 3: Lesson – Understanding administrative texts

Corner 1: Observation corner

Task:

- Study some types of administrative texts (administrative, self-narrative, explanatory, argumentative, etc.).
- Identify administrative texts and distinguish them from other types of text.

Corner 2: Analysis corner

Task: Based on the textbook and their own knowledge, students:

- Analyse characteristics and format of administrative texts.
- Distinguish types of administrative text.

Corner 3: Application corner

Task: Based on the table of supporting knowledge, write an administrative text.

Example 4: Lesson – Emotion/Feelings/Content: The phenomenon of stress (expression, causes and effects) – Psychology

Corner 1: Observation

Time: 12 – 15 minutes

Task: Observe images and videos and give answers to the following questions:

- What are the expressions of stress?
- What are the main causes of stress?
- How does stress affect one's life?

Corner 2: Analysis corner
Time: 12 – 15 minutes
Task: Read and analyse materials to give answers to the following questions:

- What is stress?
- What are the expressions of stress?
- What are the main causes of stress?
- What are the possible consequences of stress?

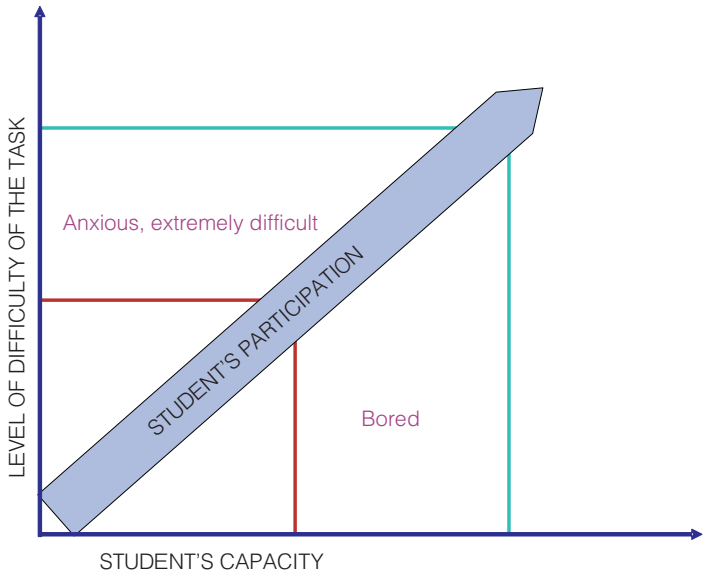
Corner 3: Role play corner
Time: 12 – 15 minutes
Task: Students write and perform a short play on the following situation:

- Hương is an excellent student
- Her teachers, parents and friends always expect a lot from her
- Hương is very proud of her academic achievements
- But Hương failed in her entry exam to university

At present, Hương is very depressed and always criticises herself.

2. DESIGNING A SUPPORTING SHEET WITH DIFFERENT LEVELS OF SUPPORT

A good task is one that gives challenges to students. A task should not be easy because an easy task will create boredom. However, if the task is too difficult, it will create worries. For students to participate in the learning process effectively, it is necessary for the teacher to provide timely and appropriate support, creating appropriate challenges to students. As such, the support will be effective only when it comes from students' needs.



Graph 5: The relationship between students' capacity and the level of difficulty of the task

In fact, in a class, not every task can be done independently by all the students. Strong students can do the task without any support. But weaker students need support at different levels so that they can complete the task. Therefore, it is important for the teacher to support directly or with the help of a supporting letter. Note that supporting letters are not keys but just concrete instructions according to the levels that the teacher predicts. It is designed in an appropriate way to create opportunities for students to complete the task according to their competencies.

Example: Tasks with different levels of support in Physics

TASK
Supporting sheet A- Little support (blue)
Calculate the pressure on the hand when one holds a heavy bag
Instructions: $p = \frac{F(N)}{S(m^2)}$

Supporting sheet B – reasonable support (grey)

TASK

Calculate the pressure on the hand when one holds a heavy bag

Instruction:

- Determine the force on the hand
- Calculate the area of the bag's handle on the hand

Apply the formula for calculating the pressure of the bag on the hand, taking into account that the unit of pressure is N/ m^2

$$p = \frac{F(N)}{S(m^2)}$$

Imagine that you have to solve this problem without any support from the teacher. What are the necessary steps for solving this problem?

Supporting sheet C – greater support (white)

TASK

Calculate the pressure on the hand when one holds a heavy bag

Instructions:

- **Calculate the force on the hand:**
  - Weigh the bag (kg)
  - Calculate the pressure through weight by multiplying it by 10 (F = mass x 10) (the unit is N)
- **Calculate the area of the handle on the hand**
  - Measure the length and width of the part of the bag handle which comes into contact with the palm (cm)
  - Calculate the area of the bag handle which comes into contact with the palm (S) based on the formula S = L x d (cm^2)
  - Convert the area into m^2

Note: 1 cm^2 = 0.0001 m^2

- **Apply the formula for calculating pressure to calculate the pressure**

Appendix 7

Resource materials for Activity 7

WORKSHEET FOR ACTIVITY 7

Group: .....

Task:

(1) Study the resource materials for Activity 7

(2) Groups by subjects choose the relevant lesson/content to design a lesson plan using learning stations and write down the results on A0 paper;

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.....

(3) Suggestions by the learners (if any):

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DESIGNING LESSON PLANS

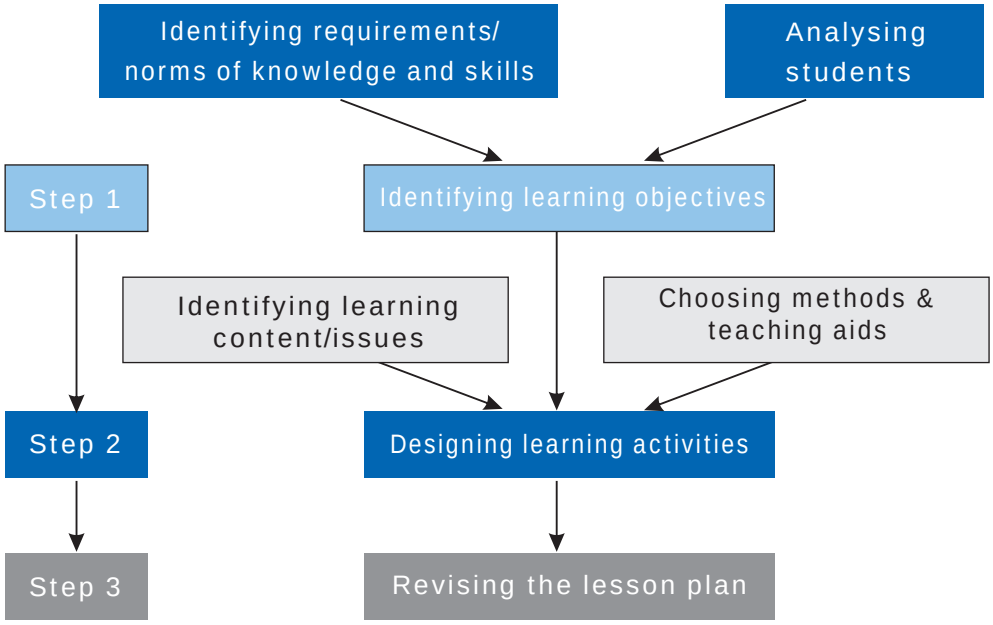
I. POINTS TO TAKE INTO CONSIDERATION WHEN APPLYING LEARNING STATIONS

Designing a lesson plan usually includes the three following steps, also illustrated in the graph:

Step1. Identifying lesson objectives

Step 2. Designing learning activities

Step 3. Revising the lesson plan



Graph 6: Steps of designing lesson plan

When designing a lesson plan applying learning stations, the teacher should pay attention to the following things:.

1. Choosing an appropriate level/way to apply learning stations

The teacher should give answers to the following questions:

- How familiar am I with the method of learning stations?
- What is the students' ability in self-orientation and independent working?
- How can the corners be arranged within the classroom space?
- What materials and teaching aids are available?
- How much time can be spent on learning stations?

2. Identifying learning objectives

Besides the lesson objectives according to the requirements/norms in knowledge and skills, the teacher can also identify the lesson objectives in terms of other skills (see following table).

Learn the ways of learning	Social skills	Organisational skills
1. Planning	1. Asking for help and offering help to other people	1. Making a choice
2. Willingness to work and patience	2. Helping other people	2. Designing an activity plan
3. Finding a way to solve problems	3. Instructing other people	3. Implementing the task
4. Solving problems	4. Accepting guidelines and co-operation	4. Suggesting initiatives
5. Monitoring and evaluating oneself	5. Protecting one's opinions	5. Becoming the person working based on the contract work
6. Regulating	6. Viewing the issue with critical thinking	
7. Working together	7. Expressing one's identity	
8. Using sources of information	8. Expressing one's dignity	
9. Processing information	9. Expressing oneself to other people	

Skills that students can develop when working in learning stations/corners

3. Designing learning activities effectively

The teacher should have answers to the following questions:

- How many corners/areas are there for students to work in and how these corners are formed?
- Which corners are "Must-tasks"(obligatory) and which corners are "May-tasks" (optional)?
- What are the agreements between the teacher and students?
- What support might students ask for and how will they be supported?
- What should the teacher do to correct the tasks and make student evaluation effective?
- How should activities be organised to make them suitable for students and not cause disorder?
- How should learning outcomes be evaluated in a broad way?

II. EXAMPLES OF LESSON PLANS APPLYING LEARNING STATIONS

LESSON PLAN FOR GEOGRAPHY – GRADE 8

Period 2/Lesson 2: THE CLIMATE IN ASIA

Prior knowledge	New knowledge to be obtained
– Asian geographical position – Asian area, territory shapes	– The distribution of zones, climate types in Asia – General characteristics of continental and monsoon climates in Asia

I. OBJECTIVES

After the lesson, the students will be able to:

1 Knowledge:

- Present and explain the climatic characteristics, the distribution of zones and different climate styles in Asia
- List and explain the difference between a continental climate and monsoon climate in Asia

2. Skills:

- Analyse the relationship between natural components, read climatic graphs, draw climatic graphs

3. Attitude:

- Be aware of protecting the environment to reduce direct and indirect human contributions to desertification.

II. PREPARATION

1. Teaching aids

* The teacher:

+ Asia's climate map
+ Asia's natural geographic map
+ Blank Asia graphs
+ Globe
+ Images, vocabulary for animals, plants, expressions of temperature, rainfall related to popular landscapes in Asia (forest, desert)
+ A0 paper, worksheet, tape, scissors

* Students:

+ Paint, rulers, pencils, textbooks, notebooks, etc.
+ Pictures related to the lesson content
+ Read (at home) the lesson: The climate in Asia
+ Review mapping symbols, charting skills
+ Each student prepares a chart with drawn coordinate axes and records of temperature, rainfall, time (uniform size paper).

2. Method:

Learning stations

– Practice
– Groupwork
– Visual teaching and learning
– Q&A
– Game

III. TEACHING ACTIVITIES

Time	Content	Teacher's activities	Student activities	Materials
3'	Introduction of the new lesson	- Invite two students to list on the board factors which form the climate. - The teacher concludes and introduces the new lesson.	- 2 students go to the board to write down (1') - Others give comments	
36' -37'	Organisation of activities in corners	- Introduces the content in the corners, lets the students choose the corner suitable for their learning styles - Encourages students to balance the numbers in each corner - Announces the form, time and outcome of each corner. Notes the direction for rotating corners - Observes, guides, suggests, supports students to perform tasks in the corners.	- Listen - Choose the corner suitable with their own learning style and seat in the chosen corners.	

Time	Content	Teacher's activities	Student activities	Materials
36' -37'	Observation corner *Tasks (Annex 1)* Identify names and positions of climatic zones, climate types. Vietnam's geographic position. Analysis corner *Tasks (Annex 2)* Analyse causes of complex and various climate; climatic characteristics of the continental and monsoon climates Application corner *Tasks (Annex 3)* Draw graphs, determine climate types through charts, paste graphs onto the appropriate location on the blank Asia graphs.	- Asks students to determine the distribution ranges of different zones, the climate types on the climate map. (shown on the map). What climate region is Vietnam situated in? - Guides students to analyse: Why do we have alpine climates? Why does continental climate cover a large area? What elements form these climate types? Etc. - Based on the rainfall (rainy, less rainy), define whether the graph is of a continental climate or a monsoon climate. - Based on the temperature, define whether the graph is of a temperate climate or tropical climate. After students have rotated and completed tasks in all corners, the teacher asks students to give a presentation on the results achieved in each corner (ask the representative of the group presently sitting at the corner to give the results achieved there). - Concludes the learnt knowledge	- Study and complete tasks at the corner in the regulated time. When time is up, stop and move to the next corner. - List the names of climatic zones and types. - Practice to identify climatic zones and types of Asia on the map. *Use 'placemat' technique* Step 1: Individual Read the textbook (Part 1, 2) and, combined with knowledge learned about Asia, complete the tasks in the worksheet (written on the parts for individuals' ideas on A0 paper) Step 2: discuss in groups, 1 student writes the agreed contents on the center of A0 paper (part for group's idea) - Based on the data table, draw the graph, colour and stick on suitable areas on the blank Asia graphs. - Representatives of the corners take turn to present the results. While a group representative gives presentation, other groups listen and send their group representatives to respective corner to compare with their own results, or add comments (if any)	Asian climatic map, globe. Asian natural geographic map, textbook Blank Asia graphs, Data table listing temperature, rainfall in several areas.

Time	Content	Teacher's activities	Student activities	Materials
5'	Closing	- Organises a game GEOGRAPHIC LOGIC Announces the rules of the game: There are two teams: tropical rainforest team and tropical desert team Each team consists of 5 members. + Hangs two pictures of two kinds of typical landscape in Asia: Tropical rainforest Tropical desert Announces the existing data to conduct games and guides students how to play, etc. + Asks 1 student to keep track of time + The teacher referees the game: When the time expires, check the contents the two teams stuck to the pictures – Let students give comments * Remind students to study the lesson and do homework in the textbooks and map exercises.	Listen and take part in the game - Select, stick the images or words (logical in regards of the nature of climate, the formation and characteristics of two types of climates) onto two pictures. Give comments and choose the winner.	

OBSERVATION CORNER

Annex 1

Groupwork (Time: 10 - 12 minutes)

TASK: Observe Asian climatic zone map, identify:

+ Names of climatic zones from the North Pole to the Equator (longitude 80 degrees)
+ Names of tropical and temperate climates
+ Names of continental and monsoon climates
+ Give comments and define the distribution of different climatic zones and climatic regions on the map
+ What climate area occupies the largest area?
+ What is the climate type in Vietnam?

ANALYSIS CORNER

Annex 2

'Placemat' (Time: 10 - 12 minutes)

TASK: Read the textbook, observe the Asian natural map and combine with prior knowledge:

+ List the characteristics of continental and monsoon climates; Explain the difference between these two types of climates.
+ Why does Asia have so many climate zones and types?
+ How does the greenhouse effect affect the development and expansion of deserts in Asia?

APPLICATION CORNER

Annex 3

Individual + group (Time: 10 - 12 minutes)

TASK: Based on the rainfall and the temperature of several areas in Asia and combined with prior knowledge:

+ Draw the temperature and rainfall graphs at those locations
+ Identify, write the names of the climate types on the graphs and stick the graphs on appropriate locations on the blank Asia graphs; Explain the reasons.

TABLE OF DATA

Temperature and rainfall of several areas in Asia

Asia	*Month* / *Element*	1	2	3	4	5	6	7	8	9	10	11	12
A	Temperature (0°)	25	27	30	32	30,5	27,2	26	27	28	29	28	25,5
	Rainfall (mm)	40	40	40,2	65	320	525	580	512	410	205	95	50
B	Temperature (0°)	- 7	- 4	2	10	19	23	25	20	18	13	8	-6
	Rainfall (mm)	4	5,5	6	10	15	55	42	12	8	0	0	0
C	Temperature (0°)	14	18	22	27	31,5	35	37	34	30	23	20	18
	Rainfall (mm)	20	32	20	15	0	10	0	0	0	0	10	12

LESSON PLAN FOR CHEMISTRY – GRADE 8

Period 19- Lesson 13: CHEMICAL REACTIONS (Cont.)

Relevant prior knowledge	New knowledge to be obtained
– The concept of chemical reaction – Process of chemical reaction	- How to make a chemical reaction take place - How to know that a chemical reaction has taken place

I. OBJECTIVES

1. Knowledge: Present conditions for a chemical reaction and signs to identify a chemical reaction.

2. Skills:

- Write and read the letter equation of the reaction occurring in the given phenomenon.
- Conduct the experiments safely and successfully.
- Observe the phenomenon, give comments on the conditions for chemical reaction and identify signs of a chemical reaction.
- Self-study and perform assigned tasks independently and cooperately in the corners.
- Present learning results and make assessments.

3. Attitude

- Be positive, comfortable and engaged in activities.
- Be cooperative, initiative, creative in learning.

II. PREPARATION

1. Teaching aids

* The teacher:
- Tools: test tubes, wooden clamps, alcohol lamp, glass spoons, straws.
- Chemicals: FeCl3 solution, Na OH solution, aqueous HCl, white sugar, hydrogen peroxide, MnO2, Zn particles
- Worksheets, tasks for groups, A0, A3 and A4 paper.

* Students:
- Grade 8 Chemistry textbook
- Notebook + pen + ruler

2. Teaching methods:

- Learning stations
- Using chemistry equipment, experiment
- Groupwork
- etc.

III. TEACHING ACTIVITIES

Time	Content	Teacher's activities	Student activities	Teaching aids
		Introduction of new lesson		
31'	**II. How to make a chemical reaction take place?** Conditions for the occurrence of chemical reactions are: 1. Substances in contact with each other. Example: see the textbook 2. Be heated to appropriate temperature. Example: see the textbook 3. Have a catalyst. Example: see the textbook.	Last lesson we learnt about what a chemical reaction is and the process of a chemical reaction. So how do chemical reactions occur and what are the signs to tell us that a chemical reaction has occurred? Let's study this in this lesson. Present objectives and how to perform tasks in the corners, time for each each corner is 10 minutes as stated in the appendices. - Briefly present the objectives and tasks of the corners (shown on the screen and in the corners); Ask students to choose appropriate corners based on their learning styles, interests, and abilities. - Guide students to the starting corners chosen based on learning styles. If many students all come to a corner, the teacher gently encourages them to go to other corners.	- Listen - Observe, think and choose corners based on their learning styles. -At each corner, assign group secretary and leader. - Work in pairs or in groups to study tasks at corners. - Make conclusions and write on A4 and A3 paper respectively. - Rotate through the corners. Write the results recorded at the last corner on A0 paper.	Worksheets <u>Experiment Corner</u> - Tools: test tubes, wood clamps, alcohol lamp, glass spoons, straws - Chemicals: content FeCl3, ¬ Na OH solution, aqueous HCl, white sugar, hydrogen peroxide, MnO2, Zn particles

Time	Content	Teacher's activities	Student activities	Teaching aids
10'	**III. How do we know that a chemical reaction has taken place?** Based on some signs which show that a new sustance has been formed: 1. Change of status: solid or gas or both, etc. Example: see the textbook. 2. Change of colour: colour loss or red, yellow colour appears, etc. Example: see the textbook. 3. There is light, heat, etc. Example: see the textbook.	- Observe, monitor activities and support students e.g. experiment instructions, how to do the exercises, etc. - Remind students to rotate to different corners. **Instruct students to present learning results** - Ask each group to stick their learning results at the respective corners; learning results of the final corners are stuck on the board. - Ask group representatives (analysis corner, experience corner and then application corner to present their learning results). - Ask other groups to send their representatives to monitor their group's results at each corner respectively; give comments, additions. - Ask questions (if any). - Make conclusions and guide students	Stick the learning results in the corresponding corners and the results of final corners on the board. - Each group appoints a representative to present the results on the board. The two remaining groups appoint representatives to the respective corners to check their results. - Representatives of the group present results of group activities. - Others raise questions, comments and additions. - Check, self-evaluate, compare and revise their group's learning results after the teacher gives comments.	<u>Analysis corner:</u> - Grade 8 chemistry textbook. - Markers, A3, A0 paper/ <u>Application corner:</u> - Extra knowledge table. - Worksheet No. 2 on A4, A3 and A0 paper.

Time	Content	Teacher's activities	Student activities	Teaching aids
4'		Consolidate - Evaluate - Remind Ask questions: 1. When does a chemical reaction occur? 2. How do you know that chemical reactions have occurred? Ask questions related to real life and related to Worksheet 2 in the application corner. Ask students to submit completed exercise No. 1 at the application corner. Reminds, assigns	1-2 students answer Submit exercise No. 1 Note down	

Annex

"Experience" corner

(Maximum time: 10 minutes)

1. Objectives: From the experiments, the student will find out the reaction conditions and chemical signs that show a reaction occurs.

2. Tasks:

2.1. Read guidelines on how to conduct experiments.

2.2.Do the experiments as directed, observe phenomena, draw conclusions about the reaction conditions and signs to identify that the chemical reaction has occurred.

2.3. Write the results in the boxes in Worksheet 1

Worksheet No. 1

No	Performanc	Conditions (phenomena) showing that the chemical reaction has occurred	Conditions for the chemical reaction to occur
1	Add a tablet of zinc into a tube of 2ml hydrochloric acid solution		
2	Add 2 tablespoons white sugar into a tube, observe the phenomenon. Heat the tube with an alcohol lamp for 2 minutes		
3	Add 4 to 5 drops of sodium hydroxide solution into a tube containing 2ml solution of iron (III) chloride		
4	Observe the tube containing 2 ml hydrogen peroxide. Then add powdered manganese dioxide into the tube (a grain the size of corn)		

"Analysis" corner

(Maximum time: 10 minutes)

1. Objectives: Study knowledge content in the textbook to find out the reaction conditions and chemical signs that a reaction occurs.

2. Tasks :

2.1.Individual task: study content in the textbook:

+ Item III: When does a chemical reaction occur (Page 49)

+ Item IV: How to identify that a chemical reaction has occurred (Page 50)

2.2. Discuss in pairs and answer the following:

+ List conditions for a chemical reaction to occur. Give examples for each condition.

+ List signs showing that a chemical reactions has occurred. Give examples and write the reaction equations.

2.3. Agree results in groups and write down on A3, A0 paper

Worksheet 2

I. Conditions for chemical reactions to occur:

1. The substances must .....

For example, zinc must ..... with hydrochloric acid solution.

2. The substances must..... but need .....

For example: Iron ..... with sulphur but

3. Some reactions need to have .....

Example: Light alcohol needs ..... to form vinegar.

II. Signs showing that a chemical reation has occurred:

New substances formed with different properties from the reactants:

.....

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"Application" corner

(Maximum time: 10 minutes)

1. Objectives: From the teacher's extra knowledge table, students can solve the exercises and relate to real life regarding conditions for occuring chemical reactions and signs showing that chemical reactions occur.

2.Tasks:

2.1. Study (individually) content in the following extra knowledge table:

Condition for occuring chemical reactions	Signs showing that chemical reactions occur
1. Substances react with one another in normal conditions.	1. New substances formed with different properties from the reactants. Signs: status change (appearance of bubbles or insoluble solids).
2. Substances react with one another and are burnt to a certain heat	2. New substances formed with different properties from the reactants. Signs: colour change.
3. Substances react with one another and have catalyst(s)	3. New substances formed with different properties from the reactants. Signs: appearance of heat and light

(Catalysts are substances that make chemical reactions happen faster but do not participate in chemical reactions).

2.2. Complete exercises in Worksheet 3:

WORKSHEET 3

Exercise 1: Work individually on A4 paper
1.Read the supporting sheet. Fill in the blanks:

No	Phenomenon	Signs	Note down and read reaction equation
1	When adding zinc to the test tube containing hydrochloric acid solution, we can see hydrogen air bubbles and zinc chloride		
2	When adding lime (yellow solid) to water to form water lime (white paste) used to build a house, the water boils and the heat radiates very strongly.		
3	When brewing rice (starch) with wine for a few days, we feel the heat, smell ethyl alcohol and 'see' carbon dioxide gas.		

2. Circle the correct letter:
When burning coal in stoves, coal burns lightly with heat and colorless carbon dioxide. Conditions for the reaction are:

A. Catalyst and at room temperature
B. Contact with oxygen in the air and coal is heated
C. Contact with oxygen in the air and at room temperature
D. Catalyst and at high temperature

Exercise 2: Work individually
Study the following table. Fill in the banks:

Phenomenon	Sign of chemical reaction	Conditions for chemical reaction to occur	Useful reaction	Useless reaction
Iron left in the moist air for a long time will form reddish-brown rust.				
Methane gas causing explosion in mines forms carbon dioxide and water		Heat (cigarette butts, burning matches, etc.)		
Light wine,when reacting with vinegar glaze and air, oxygen will form water and vinegar	New substances are sour			
The process of tree photosynthesis produces starch (making iodine solution turn green) and oxygen (from carbon dioxide and water) under the effect of chlorophyll and sunlight.		Chlorophyll and sunlight		

Appendix 8

Resource materials for Activity 8

1. Some videos (from Viet-Bi project)

1.1. Video of a Geography lesson

Lesson: The Climate of Asia - Year 8

Teacher: Tăng Thị Thắm

Nguyễn Bỉnh Khiêm Ethnic Minority Boarding School – Thái Nguyên

1.2. Video of a Music lesson – Year 6

Lesson: Revision of the song "My Joy' – Reading music notes 6

Teacher: Phạm Hồng Ngọc

Chiềng Sinh Lower Secondary School – Sơn La

1.3. Video of a Physics lesson – Year 6

Lesson: Calculating the volume of a water-non-absorbing solid

Teacher: Đỗ Thị Minh Hương

School: Bát Xát Ethnic Minority Boarding School – Lào Cai

1.4. Video of a Biology lesson – Teacher Training Institute

Lesson: Worm (periods 2, 3)

Teacher: Phạm Thị Loan

Quảng Ninh Teacher Training Institute

1.5. Video of a lesson in Literature teaching methodology

Lesson: Practicing pedagogical skills

Teaching reading comprehension in the literature program for lower secondary schools (periods 4,5)

Teacher: Nguyễn Thị Loan

Thái Nguyên Teacher Training Institute

2. Evaluation sheet for a lesson applying learning stations

EVALUATION SHEET
for a lesson applying learning stations

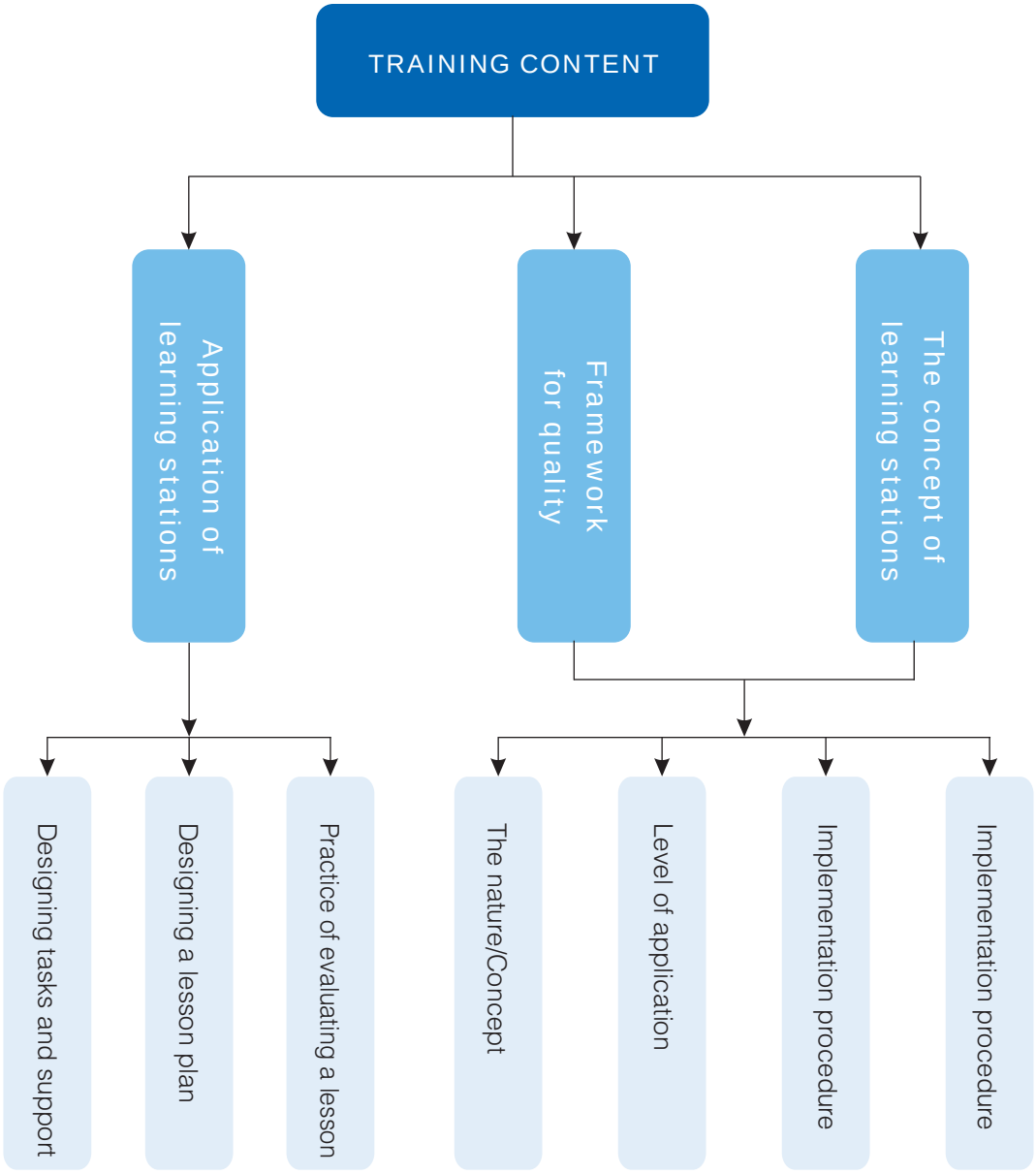
Teacher's full name:..... School: ..... Province.....
Lesson:.....Subject.....
.....Class..... . Date.....
Evaluator's name :.....Specialisation:.....Position ..... Department:.....

Criteria	Maximum score	Evaluator's score	Remarks
1. Content	**6**		
1.1. Concrete, correct, systematic, and focusing on the main knowledge of the lesson	2		
1.2. Meeting other requirements as stipulated in the norms in knowledge and skills	2		
1.3. Updated/related to real life and educational	2		
2. Methods	**11**		
2.1. Using task letters, assignments, supporting letter, helping: Organise students' activities in corners clearly, suitable to their capacity Students' activities are closely connected to each other, aiming for the general lesson objectives, ensuring in-depth learning Students accquire the knowledge of the lesson, ensuring practicality, effectiveness and feasibility	3		

2.2. Organising/instructing students so that: There are suitable corners in the classroom with enough appropriate teaching aids and materials Students can choose corners suitable for them, creating motivation, ensuring well-being; Students are instructed to do the task in the corners with timely support Students are instructed about moving to other corners effectively, ensuring in-depth and effective learning	3		
2.3. Students: Are enthusiastic, active, creative, have suitable learning styles with suitable levels of knowledge and learning speed Have opportunities to develop their capacity Have interaction during the self-study process and learn from each other Combine both theory and practice, ensuring in-depth learning on the basis of relating what they already know to the new knowledge, drilling skills and application in real life	4		
2.4. Time allocation for the corners is appropriate, ensuring requirements on time	1		
3. Evaluation	**3**		
3.1. Evaluation is flexible and appropriate, combining both teacher's evaluation and students' evaluation	1		
3.2. Students have opportunities for self-evaluation and peer	1		
3.3.Achieve the lesson objectives	1		
Total	**20**		

Appendix 9

Resource materials for Activity 9



Graph 7: Summary of the training content

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