Changing Teaching Methods by Cdio Access at Thai Nguyen University of Economics and Business Administration

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ABSTRACT: In order to achieve the goal of improving human resources in the process of transforming the training model at Smart Schools, creating a breakthrough in the innovation of the training model in schools under the impact of the Industrial Revolution 4.0, The innovation of teaching methods is one of the important and decisive contents. This article clearly shows the current situation of CDIO-oriented teaching methods at the University of Economics and Business Administration - Thai Nguyen University in the current period, thereby proposing some innovative methods. teaching to be able to meet the training model in smart schools.
Keywords: Imovation, teaching methods, CDIO approach, Tueba, smart school

I. OPEN START

Towards the goal of "Building the University of Economics & Business Administration (TUEBA) to become a prestigious university in the field of training, research and transfer of science and technology in the region; some fields are comparable to leading universities in the country and in the ASEAN region with the same field of activity" [1], over nearly 20 years of construction and development, TUEBA has gradually affirmed its position as well as the importance of the school in the socio-economic development strategy of the country.

In the 2019-2020 school year, TUEBA has developed a training program in the direction of a synchronous CDIO approach for all industry groups. At the same time, the school has also determined that teaching according to the CDIO approach is a prerequisite for the school to go in the right direction in the development process according to the school's goals. In the spirit of CDIO approach, the school as well as the training program not only benefits the school and students but also employers and the social community.

After 3 years of developing training programs towards CDIO, in the teaching activities of lecturers, it shows that lecturers no longer simply play the role of imparting knowledge but become a guide for students. students on the way to find knowledge. In class, the lecturer plays the role of a leader, a guide in the lessons, all classroom activities and at home are actively implemented by students through group work. As for students, in addition to knowing the course goals and outcomes, and determining the appropriate study plan, students are also more confident in communication and active cooperation in learning activities. The initial results after applying the CDIO approach in teaching are very positive.

However, the process of organizing teaching towards the CDIO approach also encounters many difficulties and obstacles such as students lacking study skills, a part of students who are quite passive in learning, so their learning results are not high. , the workload of lecturers increases because of investing time in redesigning course outlines, designing teaching activities, etc. In order to continue to promote the positives and overcome the above difficulties and obstacles, It is necessary to continue researching, properly assessing the current situation and proposing solutions to perfect and innovate teaching methods towards CDIO approach in the current period.

II. SOME BASIC CONCEPTS
2.1. Teaching concept

Teaching is an activity that holds a central position, dominates all other activities in the school, and is decisive for the quality of the school's education.

According to Nguyen Ngoc Hung (2006), "teaching is defined as an attempt to help someone acquire, or change, a skill, knowledge and ideas" [3]. According to Tran Ba Hoanh (2003), teaching activities are mentioned as a social process in

which students are self-conscious, active, and actively occupy knowledge under the control, direction, organization and guidance. of the teacher in order to accomplish the set teaching objectives and tasks [2].

Thus, teaching can be understood as a system of coordinated and interactive actions between the teacher and the learner, in which, under the dominant influence of the teacher, learners are self-conscious, active, and actively perceive the system. system of scientific knowledge, skills, techniques, development of cognitive ability, action capacity, scientific worldview journey and personality qualities.

2.2. CDIO approach

CDIO was born to train students to become masters of Conceive - Design - Implementation - Operation of complex products and systems. , with added value, in the modern environment, teamwork [6]. In essence, CDIO is a solution to improve the quality of training in the direction of bridging the gap between training and practical requirements. Through building output standards, organizing teaching and evaluating according to output standards, learners after graduation will quickly adapt to the requirements of the job.

The heart of CDIO is the CDIO outline, a statement of training program goals, and a set of 12 CDIO standards designed to help achieve those goals. CDIO is a system of methodology for developing training programs, following strict processes from setting output standards, designing training program frameworks, translating curriculum frameworks into practice, and evaluating results. student learning as well as evaluating the entire program [7]. This is a standard training process, based on output for input design and built to ensure scientific, reasonable, logical and generalized overall methodology, so CDIO can be applied to develop standard procedures for many different training fields.

CDIO provides 12 standards, including: Standard 1: Context; Standard 2: Standard Output; Standard 3: Integrated training program; Standard 4: Introduction to techniques, frameworks, and processes; Standard 5: Design-implement experiences; Standard 6: Technical workspaces; Standard 7: Integrated learning experiences; Standard 8: Active learning; Standard 9: Improve the capacity of trainers' skills; Standard 10: Improve teaching capacity of lecturers; Standard 11: Assessment of learning; Standard 12: Program Accreditation.

2.3. Teaching towards CDIO

On the basis of understanding the theoretical basis of teaching activities as well as research on the nature of CDIO, teaching with the CDIO approach is a system of coordinated and interactive actions between lecturers and students to implement achieve the teaching goals according to CDIO towards developing professional, personal, social and communication skills for students [5]. In that process, under the guidance and direction of lecturers, students are facilitated to evoke their inherent potentials and internal forces and become proactive, self-aware and active people in the process of understanding. knowledge, forming skills, techniques, attitudes and competencies necessary for individuals, as well as future careers. Teaching activities according to the CDIO approach are also carried out with a structure consisting of many components such as: teaching objectives, content, methods and forms of teaching, testing and evaluation, teaching plans and teaching means. study [8]. However, with their own characteristics, the elements in the teaching structure will have changes to suit the requirements set forth by CDIO teaching activities in order to improve the quality of teaching and learning. most effective way.

Current status of innovation in teaching methods towards CDIO approach at College of Economics & Business Administration - Thai Nguyen University

College of Economics & Business Administration - Thai Nguyen University started to develop and implement a training program in the direction of a synchronous CDIO approach for all major groups from the academic year 2019 - 2020. Accordingly, the university The school always has appropriate policies to create favorable mechanisms for the implementation.

In order to successfully organize teaching activities in the direction of CDIO, it is necessary to disseminate and raise awareness for administrators, lecturers and students. The school has invited experts to train teaching according to the CDIO approach for all lecturers and administrators. Through these short training sessions, both lecturers and administrators have firmly grasped important information about teaching in the direction of CDIO approach, in which many lecturers have become aware of the logic and nature of teaching. application in training programs in the direction of CDIO; goals, output standards, and professional competencies that need to be developed for students are clearly defined; The content, form, teaching methods, and

assessment exercises are designed in a variety of ways, enhancing the experience and promoting the activeness and initiative of the students.

After the training session, the Faculty and the subjects focused on building a training program suitable to their industry or subject. The school also requires faculties and departments to review the entire program, rebuilding the output standards for the industry and the output standards for each subject. From this output standard, the faculty redesigned the training program to suit the system of educational goals, including standards and criteria referring to the program philosophy, output standards, integrated training programs. , learning space, learning assessment of CDIO. This is a breakthrough in the construction of training programs while at the same time innovating teaching methods and improving the teaching capacity of lecturers.

Up to the present time, TUEBA has built 18 training majors following the CDIO approach and has conducted teaching courses according to this approach. These training specialties are shown in the table below:

Table 1: Training programs built towards CDIO

1. Accounting training program	10. Financial investment analysis training program
2. Accounting and Auditing Training Program	11. Public management training program
3. International Business Training Program	12. Economic Management Training Program
4. Investment economic training program	13. Business Administration Training Program
5. Training program on agricultural economics and rural development	14. Business Administration training program in hotel and tourism
6. Development Economics training program	15. Marketing Management Training Program
7. Medical Economics training program	16. Corporate Finance training program
8. Logistics and Supply Chain Management training program	17. Banking and finance training program
9. Business Law Training Program	18. International Trade training program

(Source: Report on output standards of TUEBA's full-time undergraduate training program in 2020)

The implementation of the teaching content is followed by the lecturers according to a 5-step process.

Step 1: Express the objectives of the subject in the form of the output standards of the lesson through allocating the output standards of each specific lesson.

Step 2: Determine the main content structure of the lesson to convey the output standard of the lesson.

Step 3: Design learning activities, methods, teaching organization and assessment methods in accordance with CDIO's core tenet of consistent teaching design with output standards.

Step 4: Select teaching media, design learning materials and learning environment
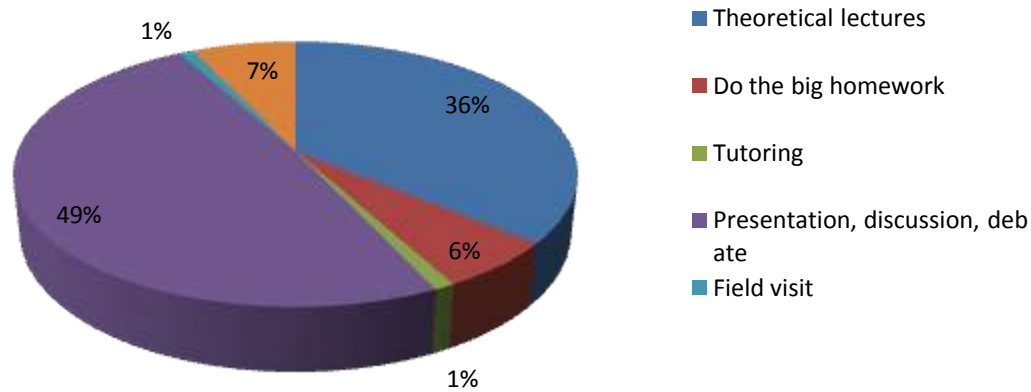
Step 5: Design the lesson plan.

TUEBA's lecturers have invested a lot of time and effort in designing lessons during class and monitoring students' self-study activities, helping when needed, exchanging discussions and giving suggestions to learners. going in the right direction; play the role of initiator, catalyzer, motivator, advisor, referee in exciting research activities and lively debates of students.

Lecturers have also paid much attention to selecting teaching methods and assessment methods suitable to the objectives and content of the lecture. Using a variety of teaching methods according to the principle of "student-centered", combining traditional teaching methods with modern teaching methods. Each teaching method has its advantages, so the lecturer builds his/her own method in accordance with the objectives, the nature of the problem to be discussed, the composition of the class group, the resources available. , teaching - learning tools are available and finally suitable for their interests. The most

popular and commonly used methods at TUEBA are shown in the chart below.

- ■ Theoretical lectures
- ■ Do the big homework
- ■ Tutoring
- ■ Presentation, discussion, debate
- ■ Field visit

Figure 1: Teaching forms of TUEBA

(Source: Report on output standards of TUEBA's full-time undergraduate training program in 2020)

According to the standard output report of TUEBA's 2020 full-time undergraduate training program, it shows that lecturers apply a combination of different teaching methods, of which the most popular are theoretical forms (accounting for 49% of the total number of students).); presenting, discussing, debating (accounting for 36%), asking students to self-study (accounting for 7%), doing big exercises (accounting for 6%). The diverse use of these teaching forms has aroused the positivity, initiative and creativity of students in learning, but the forms of tutoring and field visits have not been applied much because the source School resources and facilities are limited.

In addition, according to the characteristics of each subject and discipline, the lecturer also actively allows students to act out, edit video clips related to the subject's content such as majoring in tourism and hotel management; create probationary trials such as economic law majors...

Lecturers actively and proactively apply information technology in teaching, improve creativity and become more flexible in their teaching process. Specifically, lecturers are not only limited to existing knowledge but also learn more about other specialties such as informatics and learn skills in using images and sounds in lesson design. The use of the staff portal is a positive and effective innovation in sharing and engaging information between faculty and students. In addition, the application of information technology in teaching also gives students the necessary computer skills right from the time they

are in school. This will be a platform and effective support to help students diversify and create presentations in front of the class, and at the same time enhance students' ability to find information for the lesson. To do that, the resources and means used in teaching are very rich and diverse such as computers, projectors, smart TVs, and the Internet. In addition, learning materials can be created relatively quickly and actively, such as questions, excerpts from books or pictures, excerpts of tapes or discs, video tapes or discs, self-collected materials, Available objects around are also commonly used at TUEBA, in which questions and worksheets are very effective means to organize teaching in the direction of CDIO on the basis of common techniques such as speech, information, facts, discussion, research, investigation, practice...

Previously, lecturers kept a monopoly on student assessment, but according to the CDIO approach, TUEBA instructors have guided students to develop self-assessment skills to self-regulate learning. That is, the lecturer has created favorable conditions for students to participate in mutual evaluation. After each group discussion, the lecturer will let the students in the group self-assess each other, see the level of active participation in the discussion, the quality of the constructive contributions, and then the lecturer will give Output the final score of each student. The form of self-assessment form for group members is built as in Table 2 below. Correct self-assessment and timely adjustment of activities are essential competencies for success in life that schools must equip students with.

Table 2: Evaluation of group members when participating in discussions

Name	ID	Degree evaluation		
		A	B	C
1. Nguyen Van A				
2. Nguyen Thi B				
,,,,				
A: Level of active participation B: Low level of participation C: Not engaged				

(Source: Report on output standards of TUEBA's full-time undergraduate training program in 2020)

In addition, the school also regularly organizes bonding activities between students and businesses such as organizing meetings and exchanges with CEOs and former CEOs in the field, creating opportunities for students to be assigned During the tour, students will have a clear understanding of the start-up process, the specifics of the discipline as well as the speaker's experience. Such sharing and orientation will be a valuable lesson for students in future career orientation.

A number of other useful programs for students have also been implemented at TUEBA such as seminars on soft skills to help students discover their own potentials and equip themselves with necessary skills in learning. , personal development and professional development; The innovative startup program for students helps to create a close connection between schools and businesses, uses high-quality human resources, initiates ideas, creates and delivers results of research projects. save to use.

Some shortcomings in the innovation of teaching methods towards CDIO approach at College of Economics & Business Administration - Thai Nguyen University
In addition to the results achieved in the initial step of implementing innovation in teaching methods towards the CDIO approach, there are still certain limitations in teaching activities, specifically:
- The form of teaching organization still follows the old training program, mainly lecturers impart one-way communication, heavy on lectures, not really stimulating the initiative and creativity of students.
- In the design of teaching activities in general, there is no consistency and agreement between the goals, contents and methods in teaching.
- The ability to teach practice, skills and pedagogy is still limited.
- The lecturers' computer and foreign language skills are still weak, thus limiting the updating of information and exploiting documents to serve teaching and professional training tasks.

- The quality of training products has not really made learners confident after graduation.

Some solutions to innovate teaching methods towards CDIO approach at College of Economics & Business Administration - Thai Nguyen University
On the basis of the current situation and the remaining limitations in the work of renewing teaching methods towards CDIO approach at the University of Economics and Business Administration - Thai Nguyen University, the author proposes some solutions. Measures to overcome these limitations are as follows:
- Each lecturer needs to apply flexibly and diversify forms of teaching organization. In addition, each lecturer also needs to comply with the standards of teaching design and convey the output standards of the program in each lecture, each teaching activity, with specific procedures to ensure the implementation of the program. convenient, in accordance with the actual conditions of the school and the society.
- Students need to be guided to study according to the new model and gradually form them the habit of self-discipline, active learning and actively participating in learning experiences according to the program's output standards.
- It is necessary to focus on investing in facilities and a favorable environment for the design, implementation, practice, and innovation of teaching and assessment methods in order to improve the training effectiveness of the program.
- Regularly organize seminars, training hours, share experiences in teaching at subject, faculty and school level. This is a necessary solution to share experiences in teaching according to CDIO among lecturers, so that lecturers can quickly access and make timely adjustments in teaching activities to meet the needs of the real world. farewell.

III.   CONCLUSION

Innovating teaching methods towards CDIO in universities is now becoming an urgent requirement of educational innovation in smart schools under the impact of the industrial revolution 4.0. In that context, the University of Economics and Business Administration - Thai Nguyen University needs to further innovate in teaching methods to improve the quality to reach the international level.

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