

FUTURE OF CDIO – WORKING TOWARDS 4.0

TOPIC/PROBLEM/QUESTION

The CDIO initiative has been around for a quarter century. During this time the community has grown from four original collaborators to a community of around 200 universities and institutes. During these years, the CDIO standards have gone through three updates and have been supplemented with optional standards. Similarly, the CDIO syllabus was updated to its current version 3.0. The purpose of these revisions has been to respond to external developments recognized in engineering education and make the CDIO framework future-proof. There are papers such as 'The Value of CDIO' (Kontio & Leong, 2024), 'Why Universities Join CDIO' (Kontio, 2017), and 'Can We Continue the Way We Are?' (Kamp, 2021) that discuss the strengths, attractiveness and future challenges of CDIO. Furthermore, there are papers describing the effects of CDIO on the quality of education (Malmqvist, Bankel, Enelund, Gustafsson, & Wedel, 2010; Malmqvist, Hugo, & Kjellberg, 2015). In 2023, 2024 and the beginning of 2025, we arranged workshops at the international conferences in Trondheim and Tunis, at the International Working Meeting in Singapore, and at the Europe & UK and Ireland regional meeting in Porto addressing the future of CDIO. Several aspects, from information about the nature of the CDIO Initiative to the design and extent of the CDIO Standards were worked on by participants in these workshops. The work is on-going and has now reached the point where it is desirable to set up a working group that co-define the future path of CDIO as well as update the CDIO Standards and Syllabus to its next version.

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TARGET GROUP

The working group is aimed at participants who are familiar with the CDIO framework, standards and syllabus, have experience working with them, and have thoughts and ideas about the future of them. We welcome participants from all ranks within their organisation and from all CDIO regions. Participants can join for one working group day at the Melbourne conference, or become continuously active working group members. They do not need to decide this beforehand.

PRE-CONFERENCE WORK

The participants will familiarize themselves with pre-selected materials. These will consist of relevant papers, workshop presentations and workshop results on the status quo and future of CDIO:

Kamp, A. (2021, June 21-23). *CDIO. Can we continue the way we are?* Paper presented at the 17th International CDIO Conference [online], Bangkok, Thailand.

Kontio, J. (2017, 18.-22.6.2017). *Why Universities want to join CDIO?* Paper presented at the 13th International CDIO Conference, Calgary, Canada.

Kontio, J., & Leong, H. (2024). *Current and future value of being in CDIO - CDIO community ideas.* Paper presented at the 20th International CDIO Conference, Tunis, Tunisia.

Malmqvist, J., Bankel, J., Enelund, M., Gustafsson, G., & Wedel, M. (2010, June 15-18). *Ten Years of CDIO: Experiences from a Long-Term Education Development.* Paper presented at the 6th International CDIO Conference, Montreal, Canada.

Malmqvist, J., Hugo, R., & Kjellberg, M. (2015, June 8-11). *A Survey of CDIO Implementation Globally – Effects on Educational Quality.* Paper presented at the 11th International CDIO Conference, Chengdu, Sichuan, P.R. China.

Furthermore, the materials from Europe & UK and Ireland regional meeting in Porto addressing the future of CDIO will be shared with the working group participants.

Part of the CDIO Leaders online meeting on 13th May will be used to facilitate discussion on this working group.

THINGS TO DO OR CAN BE DONE DURING THE PHYSICAL CONFERENCE

There are three phases in the activities, of which phase 1 takes half of the time allocated for the working group on the first day of the conference. Phase 2 and 3 take the other half of the time.

Phase 1. Current state of CDIO

In this activity the participants, including the working groups leaders, will summarize the key strengths and weaknesses of the CDIO initiative based on the literature earlier workshop and roundtable result as well as their own experiences. They will identify the signature elements of CDIO and categorize other aspects as to be stopped, started or continued. In the latter category, participants will discuss what should be highlighted, clarified, improved, or re-developed, .

Phase 2. Identifying possible futures of CDIO

Based on the outcomes of phase 1, participants will create possible scenarios with proposals for activities for the CDIO community and CDIO council.

Phase 3. The next step

In the final phase, participants will discuss on a concrete level what work can be done next to continue the work. They define clear steps and a timeline for the development work.

HOW WILL THE FINALIZATION OF THE STATE OF THE ART PAPER BE ORGANIZED?

Shortly after the working group has met during the conference, we will submit a state-of-the-art paper for inclusion in the proceedings. The follow-up meetings will be held by the end of September and the results will be elaborated on at the International Working Meeting in Linköping, Sweden in the fall.

OTHER RELEVANT INFORMATION

To broaden the scope of this work roundtables have been and are arranged for open discussions on the future of CDIO with a broader conference audience to collect more viewpoints on challenges and opportunities facing the CDIO Initiative. A roundtable proposal will be submitted for the Melbourne conference as well.