DIGITAL DECATHLON

WP2-e

External Evaluation Report

Sharina Alves

Co-funded by the European Union

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About the author

Sharina Alves is a member of staff at the BGG (Civil Engineering, Geosciences and Public Health) department at the Jade University of Applied Sciences and acted as an external evaluator in the project. She was not involved in the teaching and supervision of the students, but was present at all events and meetings in order to gain an impression of the project, record it and draw up suggestions for optimisation. Their work is summarised in this report. It is therefore an external view of the project, an external evaluation.

External report

DIGITAL DECATHLON

Second competition

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Oldenburg, 24.02.2025

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1 INTRODUCTION

1.1 SECOND PHASE OF THE PROJECT

This report is the evaluation of the second competition in the project and builds on the findings of the first report. In my first report, I analysed the processes and structures of the first competition and formulated various suggestions for improvement. These suggestions were integrated into the further development of the project and were considered in the second round of the competition. The following analysis therefore examines the extent to which these adjustments were implemented and what further insights can be derived from the second competition for the future optimization of the project. An additional list in the appendix summarizes the key points of criticism from the first round of the competition and shows which specific improvements were implemented in the second round.

The course of the competition was adapted slightly based on the feedback: At the first meeting, the students are brought together in international groups and are first introduced to the basics of the ten BIM disciplines. As the teams do not yet have comprehensive knowledge in all areas at this point, they are given the opportunity to revise and further develop their projects after returning to their home universities. They are supported in this by feedback from the teachers. At the final event, minor adjustments are made to the assignment, which the students must incorporate into their final designs before presenting it. The competition concludes with a jury evaluation, an award ceremony and a digital exhibition of the results.

1.2 STRUCTURE AND BASIS OF THE REPORT

The following report is structured according to the work packages of the Digital Decathlon project in the chapters Project Management, Quality Management, Learning Management, Event Management and Communication. Each work package is evaluated separately. The report only refers to the first of two competitions to be held during the project period.

The basis for the preparation of the report were:

- Project documents compiled for the project application.
- Scientific publications as well as social media and website contributions on the project published to date.

- Observation protocols that I created during the central events of the project, including the event in Warsaw and the closing event at the Drivers for Wood Construction seminar in Joensuu.
- Participation in internal project meetings.
- Learning materials from all ten disciplines of the project.
- Evaluations of the students' final results.
- Evaluation processes and results of the three surveys of students and teachers.

2 WP01 PROJECT MANAGEMENT

2.1 OBJECTIVES

The achievement of the sub-goals is completed with the second and final competition:

- "creation of a game environment" and "creation of learning content" both achieved
- "implementation of a total of two competitions, as curriculum-integrated events" both achieved
- "holding two symposia as prelude events to the competitions" both achieved
- "the organisation of two final events with jury, award ceremony and exhibition" both achieved
- "the presentation of the training concept at conferences as a contribution to the standardisation of European BIM training" achieved - see section 6.2.6
- "the initiation of measures to continue the competition" achieved – see section 2.3

2.2 RESEARCH INTEGRITY

In the following, only the criteria of The European Code of Conduct for Research Integrity[1], which have changed since the first competition, are discussed.

2.2.1 RESEARCH PROCEDURES

The use of the shared cloud to document the (interim) results improved in the second run, but there is still room for improvement as some documents are still shared by mail or stored on local data carriers. Feedback from the individual project partners was evaluated in time during the second round so that any adjustments required could be implemented directly in the ongoing competition.

2.2.2 DATA PRACTICES AND MANAGEMENT

To ensure the sustainable use of the content developed in the project, the learning materials and the posters with the students' results from both competition rounds will be made publicly accessible. This enables other institutions to use the materials for their own teaching and

[1] ALLEA (2023) The European Code of Conduct for Research Integrity – Revised Edition 2023. Berlin. DOI 10.26356/ECOC

research purposes. In addition, the evaluation results and external reports will be made available to make the progress and further development of the project transparent. To support the best possible use of the materials, the contact information of the project partners is also provided. Interested parties can ask questions or seek advice on implementing the materials.

2.3 CONTINUATION OF THE DIGITAL DECATHLON

At this point, it is particularly important to emphasize that the project partners dealt intensively with the question of how the project could be continued in the future at a very early stage and throughout. All project partners were always very convinced of the project and had a great desire for it to continue after the official end of the project, as the feedback from the students and their work together was so positive on the one hand and the need for playful training programs for BIM is so great on the other.

To ensure the sustainability and long-term benefits of the project, interested parties were specifically identified who would like to continue the project. All project members participated in the selection of these potential new partner institutions.

The final event of the second competition was designed in such a way that the new interested parties received a comprehensive introduction to the project and its structure. The students' work was then presented to them. This took place both in person and online, enabling broad participation. The lively participation showed the great interest in continuing the project.

Following the final event, a further networking meeting was organized. Here, the potential new project partners had the opportunity to exchange ideas with the previous partners, clarify open questions and discuss concrete next steps.

A key aspect of the continuation is the subsequent use of the materials developed. The learning materials, student posters, evaluation results and external reports will remain publicly accessible. In addition, the contact information of the previous project partners is available to ensure support in implementing the content.

A particularly positive long-term effect of the project can be seen in the increased institutional cooperation: Inter-Institutional Agreements (IIA) have now been concluded between partner universities that previously had no formal Erasmus cooperation within the framework of Erasmus+. This facilitates and promotes both student exchanges (Student Mobility) and exchanges of teaching and administrative staff (Staff Mobility). The project thus not only

contributes to sustainable knowledge transfer, but also to the long-term international networking of the participating universities.

3 WP02 QUALITY MANAGEMENT

3.1 OBJECTIVES

The evaluation and learning objectives developed in the first competition, which were further developed during the competition, were adopted accordingly for the second competition. This meant that the objectives were available in a coordinated form for all project partners in time.

3.2 EVALUATION METHODOLOGY

The iterative evaluation design was continued in the second competition. No separate surveys were carried out for the teachers in this round. Nevertheless, there was a continuous exchange between the teachers so that feedback could be incorporated directly into the further development of the competition. The close cooperation within the project team made it possible to consider suggestions and proposals for improvement even without formalized surveys.

3.2.1 SURVEYS TO THE STUDENTS

The survey structure for the students was adopted from the first competition for the second competition. In this way, comparability between the competitions can be established at the end.

3.2.2 JURY FOR THE EVALUATION OF THE COMPETITION RESULTS

Detailed assessment criteria with descriptions of which achievements lead to which points were provided to the students from the outset.

3.3 IMPLEMENTATION

The link for the first survey is provided to the students in Warsaw. They get a slot in which they can complete the survey of about 15 minutes. It was explained to the students exactly why the results of the surveys are important. The second link is distributed online to students between events. The importance of the evaluation is addressed again. The last survey link is shared in the final editing phase of the competition. As some students struggle with time pressure to

complete the presentations on time, this timing for the survey should be questioned somewhat critically.

3.4 DATA EVALUATION AND REPORTING

This time, teacher participation in the surveys is more reliable and take place within the set timeframe. This means that the feedback from each project member could be incorporated into the regular project meetings in time to discuss the potential for improvement. The participation rate of students (S1 44/50, S2 33/50, S3 26/50) got lower with time unfortunately. This may have something to do with the fact that the students did not find the time to do this shortly before presenting their projects.

The survey report is structured and detailed. The visualization of the data, which is supported by diagrams and word clouds, should also be emphasized. This facilitates the interpretation of the results and makes trends recognizable at a glance. The mixture of open and closed questions provides both quantitative and qualitative insights into the students' experiences. Overall, the evaluation is carefully documented and provides valuable insights for the further development of the competition.

The survey reports are regularly presented to the project partners in joint meetings and subsequently discussed. Measures are derived jointly from the survey results. These are continuously collected for the further development of the competition and improvements for the following competition are constantly discussed together.

4 WP03 LEARNING MANAGEMENT

4.1 FRAMEWORK

A key aspect of improvement in the second round of the competition was the more targeted composition of the teams. In addition to the tried-and-tested international mix, a survey was conducted among the students this time. This survey assessed the knowledge gained to date in the field of BIM as well as experience with various disciplines and software applications. Based on this data, the teams were put together in an even more balanced way. This ensured that different skills were available within each group, making it easier to balance strengths and weaknesses. This led to more effective collaboration and better use of the participants' individual skills.

In addition, the students were provided with a schematic diagram from the outset that illustrated the interaction between the various disciplines and software applications. This made it much easier to understand the complex interrelationships within the project. While there were occasional uncertainties regarding the integration of the disciplines in the first round of the competition, these challenges were largely avoided in the second round thanks to the graphical representation. The students always had a clear orientation as to how the various specialist areas interlinked and what role the software solutions used played in the overall process.

The project team has always emphasized the connection between the competition and the overarching goals of the European Union. In particular, the promotion of digitalization through BIM and the examination of energy-efficient construction methods were highlighted as key contributions to the EU strategies. It was repeatedly pointed out that the project specifically prepares students for the challenges and requirements of a sustainable and digitalized construction industry.

4.2 OBSERVATIONS ON THE COMPETITION PROCEDURE

4.2.1 COMPREHENSIBILITY OF THE TASK

In the second round of the competition, the introduction to the disciplines was fundamentally revised to make it easier for students to get to grips with the complex content. In contrast to

the first round, in which all disciplines were explained one after the other at the beginning, this time the introduction took place in fixed time blocks. In each block, one discipline was introduced and then worked on directly by the students. This structure gave the participants a clear orientation of what they had to do in which time frame. By focusing on one discipline at a time, they were able to gradually familiarize themselves with the topic of BIM without feeling overwhelmed by the amount of information. The time-limited processing phases also motivated them to complete as much as possible within one block. Only in the later phase of the competition, between the events and at the final event, did the teams work on different disciplines in parallel once they had internalized the basics.

Another important optimization point was the transparency of the evaluation criteria. The relevant evaluation criteria for all disciplines were defined and presented in detail at the start of the competition. This information was available to the participants throughout the competition so that they could always understand what would be important in the final assessment. This clarity helped the students to focus their work more specifically and to have a better orientation regarding expectations and requirements.

4.2.2 INTERPLAY BETWEEN THE DISCIPLINES

A central point of the further development was the shift in focus within the competition. While discipline 1 (architecture) had a particularly high weighting in the first round, the focus is now on the entire BIM process. The importance of the individual disciplines was balanced out so that each discipline was given a clearly defined time frame in which the corresponding tasks were to be completed. This ensures a more balanced approach to all relevant BIM areas and prevents a one-sided focus.

Another key element of the new structure was the targeted organization within the groups. At the beginning of the joint work, the teams were given a fixed time slot for project management. In this time slot, the students were able to organize themselves with the support of their teachers, distribute tasks and develop a clear strategy for working on the competition. This structured approach enabled more efficient collaboration within the teams, allowing the students to concentrate on the content of the individual disciplines earlier and in a more targeted manner.

4.2.3 COLLABORATION AND TEAMWORK

Thanks to the new time structure of the disciplines, the previous problems caused by dependencies between the disciplines were eliminated. This led to a significantly improved project flow, as no student had to wait for the preliminary work of another. As a result, all participants were able to work continuously without having to accept delays.

Another decisive advantage resulted from the shift in workload was that as the main work was already done during the first event and the time between the events was only used for the targeted improvement of the project results, collaboration between the students was made considerably easier. The challenges previously posed by the geographical distribution of students at different universities and in different countries were thus mitigated. It also eliminated the need for mandatory meetings with teachers.

The students were particularly positive about the fact that each discipline had a dedicated contact person within the team. At the same time, supporting persons were available for each discipline to assist the respective person responsible with the implementation. This reduced individual pressure and at the same time promoted the exchange of knowledge within the teams.

During the final presentation, the students emphasized how much they had benefited from the interdisciplinary and intercultural experiences. They emphasized that they found the contacts they had made, the exchange of different approaches and the diverse strengths within the groups extremely valuable. The cultural aspects of international cooperation were also perceived as enriching and contributed to a positive project experience.

4.2.4 COMMUNICATION AND PROVISION OF INFORMATION

To improve the exchange and management of project data, a Common Data Environment (CDE) was introduced. Students were able to make their project files available on this central platform, eliminating the previous problem of multiple parallel storage locations. This not only made it easier to access relevant files but also ensured a consistent data structure that made the work process more efficient.

The provision of learning materials and competition information was also optimized. All relevant content was made available almost exclusively via the Moodle learning platform. This reduced the previous confusion about where to find which information. In addition, a Q&A area was integrated into Moodle, in which frequent questions from students were collected and

answered for all to see. This helped to avoid misunderstandings and ensure a uniform level of information within the teams, regardless of whether individual students had already obtained information from lecturers.

A recurring issue was the problem of software licenses. Although this also occurred occasionally in the second round of the competition, dealing with it was consciously considered part of the learning process. The instructors conveyed to the students that license problems also occur frequently in professional practice and therefore represent a realistic challenge.

4.2.5 FUTURE BENEFITS FOR THE STUDENTS

A key success of the competition was the students' intensive reflection on their own work. They were not only able to grasp the aspects of BIM, design and sustainability in theory, but also apply them in practice and question them critically. It should be particularly emphasized that the students fully understood the core of BIM - interdisciplinary collaboration - and actively implemented it.

In addition, the participants were inspired to continue using the methods they had learned in future projects. They expressed that the collaboration across different disciplines and the structured use of BIM tools were valuable experiences that they would like to use in their further studies and professional careers.

Another indication of the students' learning success is the close distribution of the assessment results. This shows that all participants have successfully internalized the central concepts of the competition - in particular the principles of BIM and interdisciplinary collaboration. The evenly distributed performance assessment underlines that the teaching concept worked and that the students were able to develop a sound understanding of the content covered, regardless of their individual previous experience. As in the first round, students receive a certificate for participating in the competition for use in future applications.

4.3 LEARNING MATERIALS

4.3.1 GENERAL

In the course documents, models and software of the second competition, particular attention was paid to the exclusive use of English, so that no problems arose for the students.

4.3.2 BIM PRE-COURSE

The BIM pre-course was further improved and enhanced based on student feedback, so that this time all students completed the course in preparation for the competition. No problems with the pre-course were mentioned. In addition, students can take an exam to obtain a certificate for the course.

5 WP04 EVENT MANAGEMENT

5.1 PROJECT FLOW

5.1.1 START IN WARSAW

Monday, 18.11.2024

The second competition starts on November 18 at 9 a.m. in the small auditorium in the main building of the University of Warsaw. The event is opened by a speech by the Vice-President of the University of Warsaw, followed by a presentation by the Dean of the Faculty of Civil Engineering and an introduction to the project by the project leader. The center of the project in this run is an exhibition pavilion in Skwer Kahla, Warsaw. The site of it wasn't visited. The student teams will compete against each other so that a winning team will be chosen at the end of the competition. The first block ends with a group photo and a coffee break.

At around 10 a.m., those responsible for the disciplines present their respective disciplines one after the other in short 10-minute presentations. Examples are used to explain exactly how students can later divide themselves between the various disciplines without overlapping schedules and how team members can help each other. The students are then given time to complete the first survey on their expectations of the project. To help the students get to know each other better, there will then be two games to get to know each other, first in the large group and then in their project groups. It brings the students together from the outset and allows them to overcome differences. The immediate division into international groups breaks up national groupings and encourages students to converse in English from the outset.

After the lunch break at 2 p.m., the teams are allocated rooms in the building of the Civil Engineering Faculty where they can discuss their skills, divide up the disciplines and plan the coming days. Teachers are available to support the students during this time.

At around 4 p.m. the first and second disciplines start with a detailed introduction to the task. The students who are responsible for the discipline and the students who support the responsible student are present. They then have approximately 3 hours to work on the first two disciplines.

Tuesday, 19.11.2024

The second day starts at 9 a.m. with an introduction to discipline 3 and a workshop for software that will be required later. Again, the responsible and supporting students are present. During this time, the lecturers responsible for Disciplines 1 and 2 are busy evaluating the results of the previous day and awarding points for each criterion. The first part of the day ends with a lunch breach at 1 p.m.

The second part of the day starts at 2 p.m. with the workshops for discipline 4 and 5 and a subsequent processing time for the students to deal with these disciplines for about 5 hours. During this time, the students also have the opportunity to work on the disciplines that took place before. These results are then no longer included in the evaluation of the time in Warsaw but improve the final presentation at the end of the week and help to improve the project for the final presentation in Joensuu.

Wednesday, 20.11.2024

The third day is very similar to the previous one. The students receive a workshop for discipline 6, 7 and 8 at 9 a.m., separated according to their chosen area of responsibility, and then have time to work on this discipline until the lunch break at 1 p.m. During this time, discipline 4 and 5 is assessed by the teachers.

After the lunch break at 2 p.m., there is a workshop for the students responsible for disciplines 9 and 10, which they can then work on in the following 5 hours. At the same time, the responsible lecturers will assess disciplines 6, 7 and 8.

Thursday, 21.11.2024

The last day starts at 9 am with a VR presentation of the Teams BIM models. Each team can have a look at what they've build so far. Simultaneously they can work further on their final presentations until 1 am lunch time.

After another short working session, the final presentations take place at 3 pm. Each team has 15 minutes to show a summary of their work so far. Afterwards at 6:30 pm the winners of the first part of the competition are announced. For celebration all participants and teachers have a gala dinner together.

5.1.2 INTERIM

After the first event, students receive detailed feedback on each discipline with the score achieved. If necessary, the teachers are available to answer questions about the feedback in

the meantime. Until the final event the students have time to improve their results to achieve a higher score at the end of the competition and to be prepared for the final event. Students can also take an exam as part of the BIM pre-course to obtain a certificate.

5.1.3 FINALS IN JOENSUU

Tuesday, 11.02.2025

The final event in Joensuu in Finland starts at 9 a.m. with an opening speech by the university president, the department head, one of the project managers and the DD project leader to welcome the students. The disciplines are then presented. Work continues on the same project, but there are a few small changes. These changes mainly relate to disciplines one to three and all other disciplines will adapt to these changes accordingly. The student teams must make these changes to the project on this and the following day. Before the students start work, they are given a tour of the campus and the wood and concrete laboratories. After lunch they get in separated rooms and start working on their projects.

Wednesday, 12.02.2025

The teamwork continues at 9 a.m. They have until 3 p.m. to complete all the disciplines. The teams then start with the presentations of their results until around 5 pm. Each team has about eight minutes to show what they have done in each discipline due to the little adjustments they had to make in Joensuu. Afterwards they all get a certificate for participation.

Thursday, 13.02.2025

The teachers as well as the students are invited to the seminar “Drivers for Wood Construction” in Joensuu Science Park. They can attend in all the lectures on the topics of sustainability and wood construction and design. At 1 p.m. there is a session for the DD project, where the project itself is presented by the project leader. Afterwards, the three best teams present their results of the first and the second part of the competition to the participants of the seminar. The winner of the whole competition is then announced officially, and certificates and presents are given. Subsequently there is a discussion on stage about the project as a whole, where the teachers and the students talk about the experiences they made and what possibilities exist to continue this project with new partners. The whole session is also streamed online so that interested parties have the opportunity to watch it in their home country. The seminar ends at 17:30 with a gala dinner for all the participants.

6 WP05 COMMUNICATION

6.1 INTERNAL

For the planning of the second competition, the project team got together at an early stage to learn from the experiences of the first run and implement suggestions for improvement. Thanks to the close cooperation and constructive exchange within the team, many optimizations could already be considered in the planning phase. Communication and coordination ran smoothly, which contributed to the efficient and targeted preparation of the competition. The continuation of the project after the end of the project period is also considered important by everyone and is discussed regularly.

Internal communication within the project continues to take place mainly by email, although Moodle is planned as the central communication tool. However, the coordination processes were more structured compared to the first competition. The deadlines set for feedback were consistently adhered to, which significantly improved efficiency and the flow of information within the team. Overall, there was an increased level of commitment and clarity in communication, which led to smoother collaboration. Project meetings were held in person during the events and online before and after events. The project meetings did not take place regularly, but always as required.

6.2 EXTERNAL

6.2.1 WEBSITE

The website https://digitaldecathlon.projekt.jade-hs.de/ was continuously updated and played a central role in the project's public relations work. Regular press releases and reports on the progress of the project ensured that both interested parties, and external institutions were informed about the progress and results at all times.

In addition, the website serves as a central platform for the long-term provision of the materials developed in the project. After the end of the project, all relevant learning materials, results and evaluations will be published there so that other interested parties can access them and benefit from the findings. This ensures the sustainable use of the developed content beyond the duration of the project.

6.2.2 INSTAGRAM

Once again, the Instagram channel was filled with posts from both teachers and students. The students were very motivated to post their own contributions and thus be able to report on their work in the project to the outside world. This was also evident from the fact that many used their private channels to show their friends and acquaintances what they were experiencing in the project.

6.2.3 PRESS

20.12.2024 „Digital Decathlon startet in die zweite Phase“ Jade Newsroom https://newsroom.jade-hs.de/magazin/digital-decathlon-startet-in-die-zweite-phase

6.2.4 PUBLICATIONS

- Grunwald, G. (2025). Digital Decathlon stärkt BIM-Planungskompetenz. Mehr als ein Wettbewerb. In Bauen aktuell, https://www.bauen-aktuell.eu/mehr-als-ein-wettbewerb-a-533258bf96fc90ff1670b74f956cdc01/?xing_share=news
- Zeisberg, L. (in publication). Digital DECATHLON, in Luhmann, T., Sieberth, T. (Hrsg.): Photogrammetrie-Laserscanning-Optische 3D-Messtechnik – 22. Oldenburger 3D-Tage. Wichmann Verlag, Berlin/Offenbach

6.2.5 PRESENTATIONS

The project was presented at the following events:

- Meins-Becker A.: DD, panel discussion ChallengING, Ingenieurkammer BAU NRW, online, November 2024
- Zeisberg, L.: DIGITAL DECATHLON. Oldenburger BIM Tag, Jade University of Applied Sciences, Oldenburg, Germany, January 2025
- Grunwald, G.: Digital Decathlon Competition – Wooden Paviljon. Conference "Drivers for Wood Construction", Joensuu, Finland, February 2025

Digital Decathlon - External Report - Criticism and Improvement

Chapter reference	Point of criticism 1. competition	Description	Improvement 2. competition	Further improvement needed?
2. WP01 PROJECT MANAGEMENT				
2.2.1 Research Procedures	Inconsistent cloud usage	Not all partners use the shared cloud to document interim results consistently. Action: Discuss barriers to usage and encourage more uniform participation.	The use of the shared cloud to document the (interim) results improved in the second run, but there is still room for improvement as some documents are still shared by mail or stored on local data carriers.	Yes
	Delayed survey evaluation	Surveys are used to gather feedback, but delays in evaluation hinder timely responses to suggestions.	Feedback from the individual project partners was evaluated in time during the second round so that any adjustments required could be implemented directly in the ongoing competition.	No
2.2.4 Collaborative Working	Lack of formal research integrity agreement	No formal agreement covering research integrity standards, intellectual property, conflict resolution, and misconduct procedures has been established.		Yes
3. WP02 QUALITY MANAGEMENT				
3.1 Objectives	Delay of evaluation and learning objectives	The evaluation and learning objectives were not available for everyone to discuss before the start of the first competition.	The goals were ready before the start of the second competition and could be coordinated with each other.	No
3.2 Methods	Delay of evaluation criteria for final students results	The evaluation criteria for the student work were not available to the students before submission.	Detailed assessment criteria with descriptions of which achievements lead to which points were provided to the students from the outset.	No
3.4 Data Evaluation and Reporting	Delay of completion of survey by teacher	Some of the project partners themselves do not take part in the surveys in time and thus prevent the timely discussion of suggestions for improvement.	Teachers complete the surveys in good time, which enables timely discussion and implementation of improvements.	No
4. WP03 LEARNING MANAGEMENT				
4.1 Framework	Lack of "map" for disciplines	There's no clear structure or relationship between disciplines. This lack of coherence can lead to workload imbalances and confusion, making it hard for students to contextualize their tasks across different fields.	To link the disciplines with each other, a map was created as part of discipline 5, which shows the connections between the various disciplines and software as part of the competition and supported the students in their work.	No
4.3 Observations on Competition Procedure	Comprehensability of the task	Some disciplines have presented these very clearly at the beginning. The other disciplines should also be guided by these criteria and clearly set out their objectives in the initial course.	The evaluation criteria were presented and explained by all disciplines in the introductory presentation.	No
	Interplay between the disciplines	Discipline 1 (Architecture) receives disproportionate attention, while others are underemphasized. Architecture's central role causes dependency delays; other disciplines cannot start without initial architectural models. Future iterations should set earlier deadlines for architectural inputs and include a project management workshop to improve team organization and scheduling.	The project task has been restructured so that the focus is no longer on discipline 1. The partial focus on design was completely shifted to the BIM process. Each discipline only has an equal status and a specific time frame in which it is processed. In addition, the students were given time at the beginning of the competition for project management, which they were able to	No

	Collaboration and teamwork	Dependence on specific team members for essential tasks, particularly in architecture, has created dependencies. Teams where architectural work lagged were given “dummies,” but this only partially mitigates disruption. Moreover, varied schedules and commitments of students make coordination difficult, indicating the need for mandatory group meetings or check-ins.	By structuring the disciplines over time, the problems of dependencies between the disciplines could be completely eliminated. This resulted in an improved project flow and it was possible to avoid mandatory meetings with the lecturers.	No
		During working hours in the students' home countries, there were communication problems between the students, as some students were difficult for others to reach. This was exacerbated by the dependency between the disciplines.	By shifting the main tasks of the competition to the two face-to-face sessions, the communication problems between the students have improved significantly. Using the time at home as training time, adapted to the students' own motivation to prepare even better for the second part of the competition, worked without any problems.	No
	Communication and provision of information	There were inconsistencies in information distribution, with some groups receiving different or additional updates from mentors. Information scattered across multiple platforms overwhelmed students, who ended up creating their own reference guides. For the next round, a central communication tool is suggested, such as a CDE (Common Data Environment), with FAQ sections in Moodle to streamline information.	A CDE was introduced in discipline 5 and a Q&A area was introduced in Moodle. This has led to a significant improvement in student support for lecturers and less confusion for students.	No
4.4 Learning Materials	General	Some BIM materials and model object names are in German, posing challenges for international students.	In the course documents, models and software of the second competition, particular attention was paid to the exclusive use of English, so that no problems arose for the students.	No
	BIM Pre-course	Although intended to be optional, the introductory BIM course saw low participation. Some students found it unhelpful, yet those unfamiliar with BIM could benefit significantly. Offering more incentives for completion, such as integration with the main competition or additional mentorship, could encourage participation.	The BIM preliminary course was further improved and enhanced based on student feedback, so that this time all students completed the course in preparation for the competition.	No
5. WP04 EVENT MANAGEMENT				
5.1 Project Flow	Site visit		Unlike in the first round, the site was not visited. However, the students would have liked this in order to find a suitable design for the pavilion.	Yes
6. WP05 COMMUNICATION				
6.1 Internal	Deadlines	The binding nature of set deadlines was not understood equally by all project partners	Deadlines were consistently met by all participants, leading to smoother coordination	No